



**Australian Government**  

---

**Department of Health**

# Allied health workforce data gap analysis

Issues Paper  
10 June 2022

## Revision history

Version	Date	Modification
1.2	10 June 2022	
1.2.1	8 September 2022	Amendment error reporting 248 Orthotists and Prosthetists and replaced with 410.

## Disclaimer

In accordance with Health Policy Analysis' policy, we are obliged to advise that neither Health Policy Analysis nor any employee nor sub-contractor undertakes responsibility in any way whatsoever to any person or organisation (other than the Australian Government Department of Health) in respect of information set out in this report, including any errors or omissions therein, arising through negligence or otherwise however caused.

## Health Policy Analysis Pty Ltd

Suite 101, 30 Atchison Street, St Leonards NSW 2065  
PO Box 403, St Leonards NSW 1590  
ABN: 54 105 830 920  
ACN: 105 830 920  
[www.healthpolicy.com.au](http://www.healthpolicy.com.au)

# Contents

1. Executive summary.....	1
2. The need for allied health data.....	4
Fundamental functions of workforce data .....	5
3. Planning / modelling .....	10
4. Proposed minimum dataset.....	14
5. Current sources of allied health data .....	17
6. Analysis and limitations.....	26
Breakdown of the allied health workforce by profession .....	26
National level data .....	29
Data qualifications or limitations .....	34
Defining allied health .....	41
7. Recommendations.....	46
<b>Primary recommendations for data improvement</b> .....	47
<b>Interim recommendations to improve data collection for allied health</b> .....	51
References .....	53
Appendix 1: Existing sources of allied health workforce data.....	56
Appendix 2: Existing data sources assessed against the proposed minimum dataset.....	67
Appendix 3: Breakdown of the allied health workforce by profession and sector.....	71

# Acronyms and glossary

<b>ABS</b>	Australian Bureau of Statistics
<b>ABS Labour Force Survey</b>	The Labour Force Survey conducted monthly by the ABS is designed to primarily provide estimates of employment and unemployment.
<b>AHPA</b>	Allied Health Professions Australia
<b>Ahpra</b>	Australian Health Practitioner Regulation Agency
<b>Ahpra regulated</b>	Health professions regulated the Australian Health Practitioner Regulation Agency
<b>AIHW</b>	Australian Institute of Health and Welfare
<b>ANZSCO</b>	Australian and New Zealand Standard Classification of Occupations
<b>ANZSIC</b>	Australian and New Zealand Standard Industrial Classification
<b>ATO data</b>	ATO individual tax return statistics
<b>ATO Single Touch Payroll</b>	Data collection requiring business to report employee's tax and superannuation information to the ATO on a continuing basis.
<b>BLADE</b>	Business Longitudinal Analysis Data Environment - BLADE is an economic data tool combining tax, trade and intellectual property data with information from ABS.
<b>Census</b>	Census of Population and Housing, Australia's national census that occurs every 5 years.
<b>DVA</b>	Department of Veterans Affairs (although also used to describe healthcare scheme related to claims made by eligible consumers)
<b>MADIP</b>	Multi-Agency Data Integration Project - MADIP is a secure data asset combining information on health, education, government payments, income and taxation, employment, and population demographics.
<b>MBS</b>	Medicare Benefits Schedule
<b>PMDS</b>	Proposed minimum dataset
<b>NASRHP</b>	National Alliance of Self-Regulating Health Professions
<b>National Aged Care Workforce Census</b>	Survey of aged care facilities and providers conducted every 4 years by an external provider under contract by the Australian Government Department of Health
<b>NDIA</b>	National Disability Insurance Agency
<b>NDIS</b>	National Disability Insurance Scheme
<b>NDS workforce census</b>	The NDS Workforce <i>Census</i> data collection conducted by National Disability Services (NDS) a membership organisation for non-government disability service organisations. On average, around 200 organisations participate in the NDS conducted survey annually.
<b>NHWDS</b>	National Health Workforce Dataset
<b>PHN</b>	Primary Health Networks
<b>Self-regulated allied health professions</b>	Allied health professions not regulated by Australian Health Practitioner Regulation Agency (Ahpra)

# Executive summary

Allied health is one of the 3 pillars of the Australian health and patient care workforce along with medicine and nursing.<sup>1</sup> However, planning for and understanding allied health remains problematic as there is little consistency in collection or integration of data to allow policy makers to get a clear picture of the workforce.

With that as a starting point, Health Policy Analysis was engaged by the Office of the Chief Allied Health Officer in the Australian Government Department of Health, to conduct an allied health workforce data gap analysis.

To illustrate potential gaps, the Department posed the following questions:

1. *What is the breakdown of the allied health workforce by profession (numbers of each type of allied health professional) and what is the breakdown across sectors?*
2. *What datasets capture the allied health workforce?*
3. *What datasets capture allied health services that may be used as proxy for workforce numbers?*
4. *What is the 'journey' of allied health workforce or service data in each dataset?*
5. *What is the value of collecting nationally consistent and timely allied health data?*
6. *What emerging mechanisms will support better data collection, and how?*

For this analysis, 22 allied health professions were identified by the Department, 9 of which are Australian Health Practitioner Regulation Agency (Ahpra)-regulated, and 13 are self-regulated (to varying degrees).

The purpose of this paper is to identify gaps in current data sources for workforce planning for the 22 identified allied health professions in Australia, and outline data improvement strategies. Understanding the supply side of a workforce is crucial for planning services for the future.

This paper is the result of consultations with almost 150 stakeholders including

- allied health professional associations
- educational institutions
- national agencies/committees
- National Allied Health Advisors and Chief Officers Committee members
- employers of allied health professionals
- private health insurers
- Australian Government Departments
- state and territory health authorities
- academics
- allied health advocacy bodies

---

<sup>1</sup> Philip, K. (2015, Jun). Allied health: untapped potential in the Australian health system. *Aust Health Rev*, 39(3), 244-247. <https://doi.org/10.1071/ah14194>

## The need for allied health data

Understanding the **supply side** of a workforce is crucial for planning services for the future. Australian governments use a stock and flow model to understand and plan medical and nursing workforce supply. This approach adjusts for health professionals entering and exiting the workforce, including the training and immigration pipeline of professionals. At a minimum, this is what allied health workforce planning, and the data required to underpin it, should set out to achieve.

The key workforce functions can be characterised in the following questions:

1. How many health professionals are active?
2. Where and how do they work (sectors, models of care, service delivery types)?
3. How long have they been working and intend to keep on working?

To inform the key workforce functions for allied health, data needed that reflects the current workforce (including the various sectors [primary/ tertiary health care, aged care, disability care, or other] settings and locations hours worked etc) as well as information on workforce dynamics (the inflows and outflows, including new graduates, immigrants, changes in hours worked and retirement or other exits from the profession).

While the National Health Workforce Dataset (NHWDS) provides the majority of data needed for workforce planning of Ahpra regulated allied health professions, there is currently no single source of workforce information across all professions including self-regulated allied health professions. There are several alternative and proxy sources of data including **ABS Census of population and housing**, **ABS Labour Force Survey** and from **ATO individual tax return statistics**. However, by virtue of their design for other specific purposes, these sources have significant limitations in relation to workforce planning.

## Primary recommendations for data improvement

### **Recommendation 1 – National register for defined allied health professionals**

The most significant data gap for allied health professions, specifically self-regulated professions, is the absence of a comprehensive list of all members of the profession. The best solution is to mandate registration with the national register as a requirement of practice, as this guarantees the most comprehensive and up-to-date information.

### **Recommendation 2 – Nationally consistent survey of all defined allied health professionals**

There is no single national data collection that collects a nationally consistent allied health dataset. A new nationally consistent survey should use the NHWDS professional survey as its starting point, updated to uniformly collect — as requirement — the sectors, settings and the hours worked by each professional in each job holding.

The most direct and robust way to address the gaps allied health workforce data is to use the frame created by a national register and survey all allied health professionals at the time of annual registration. Short of this, the frame created by a national

register would enable the use of a core and supplement, and or sampled survey models that could provide similar utility overall.

### **Recommendation 3 – National Repository for allied health workforce data**

To manage, analyse and enhance any data obtained from associations, employers, and a new regulatory model, a national repository is essential. The repository organisation would be responsible for further developing and managing the national dataset, storing, reporting on, and making available to third parties, the data collected on allied health professionals. The repository could also provide data linkage infrastructure to further expand access and utility of the data.

## **Interim recommendations to improve data collection for allied health**

In recognising there may be difficulty, expense or delay involved in establishing a new national collection for self-regulated professions there are interim or partial solutions that may start to address data gaps and inform workforce planning.

**Interim 1 - Enhancement of existing surveys conducted by professional associations** at the time of annual re-registration to ask a similar range of questions as those for the NHWDS. Due to the partial coverage of the professions by the associations (with those in public sector employment often under-represented), there is likely to be bias in the responses received. This option is likely to require establishment of a national data repository agency to drive this process as well as collating, processing and analysing the survey for its use in national workforce development.

**Interim 2 -Collection of data from employers to complement** the collection of data from professional associations. This could be conducted for other sectors in a similar way to the Aged Care Workforce Census or could be collected as an administrative by-product via extracts from HR and payroll systems. This would be a relatively expensive option as it requires a stand-alone survey and would really only be valuable if repeated at regular intervals. A realistic time frame for implementation would be 3-5 years.

## The need for allied health data

Allied health is one of the 3 pillars of the Australian health and patient care workforce along with medicine and nursing.<sup>2</sup> However, planning for and understanding of allied health remains problematic as there is little consistency in data collection or integration to provide policy makers a clear picture of the workforce.

The Royal Commission into Aged Care Safety and Quality (*Aged Care Royal Commission*) made 148 recommendations in its final report *Care Dignity and Respect*, throughout which allied health features heavily.<sup>3</sup> The Commission found that an additional 80,000 aged care workers will be required by 2030, and 180,000 by 2050, of which allied health professionals will make up a significant portion.

The National Disability Insurance Scheme (NDIS) National Workforce Plan: 2021–2025 (*NDIS workforce plan*) identifies that since the NDIS was established in July 2013, it has grown to include over 450,000 participants, receiving support and services from over 11,600 providers, employing approximately 270,000 workers.<sup>4</sup> By 2024, it is estimated that 500,000 participants will require support from approximately 353,000 workers, of which many will be allied health professionals given the needs of people with disabilities.

The National Rural Health Commissioner also consulted widely in 2018 and 2019 (*Rural Health Commissioner's Report*) in a bid to address the poorer health outcomes of residents of rural and remote towns as a result of undersupply and maldistribution of allied health services.<sup>5</sup> The Commissioner's detailed recommendations included focused investment in allied health data and infrastructure, specifically calling for the development of a National Allied Health Data Strategy and a National Allied Health Workforce Minimum Dataset.<sup>6</sup>

Accessibility to mental health care services, and therefore allied health professionals, was also a key issue identified by the **Productivity Commission in its Inquiry into Mental Health**.<sup>7</sup> The Commission suggested that up to 2.5 million Australians who could be benefiting from *low intensity* interventions are missing out as a result of a "lack of information — for referring clinicians and for consumers — about the existence of such services"<sup>8</sup> Low intensity interventions that may include counselling, diet, exercise prescription and sleep hygiene, would fall on professions (Counsellors, Dietitians and Exercise Physiologists) where workforce numbers, and locations are not easily determined. The Commission's recommendation 12; Address health care gaps; community mental healthcare, and 15; Link consumers with the

---

<sup>2</sup> Ibid.

<sup>3</sup> Royal Commission into Aged Care Quality and Safety. (2021). *Final Report: Care, Dignity and Respect*.

<sup>4</sup> Australian Government Department of Social Services. (2021). *NDIS National Workforce Plan: 2021–2025*.

<sup>5</sup> National Rural Health Commissioner. (2020). *Improvement of Access, Quality and Distribution of Allied Health Services in Regional, Rural and Remote Australia*.

<sup>6</sup> Ibid.

<sup>7</sup> Australian Government Productivity Commission. (2020). *Mental Health - Productivity Commission Inquiry Report*.

<sup>8</sup> Ibid p29.



services they need, is reliant on there being an allied health workforce there to support those recommendations.

## Fundamental functions of workforce data

Understanding the supply side of a workforce is crucial for planning services for the future. The Australian Government Department of Health uses a stock and flow model to understand medical and nursing workforce supply. This approach adjusts for health professionals entering and exiting the workforce, including the training and immigration pipeline of professionals.

Models using these dynamics are important for anticipating workforce opportunities and challenges that exist in meeting the health needs of the population. However, the ability to conduct robust analysis and provide predictions relies heavily on the attributes and characteristics of the underlying data. These same principles will underpin workforce modelling of allied health. Supply and demand modelling is discussed in further depth later in this Chapter.

Underneath the broad umbrella of workforce planning, there are several key functions of workforce data. These functions place specific demands and minimum requirements on the underlying datasets and individual elements to ensure suitable inferences can be drawn.

### Who – are the professionals required to do the work?

When considering nursing or medical professions, understanding *who* is the focus of the analysis is relatively straightforward. It can be complicated slightly by specialties within professions, however, most medical activity datasets seem to align well with various specialisations. There are also professional practice boundary issues which make planning complex, but these can be explicitly considered as part of the planning activities.

Many allied health professions provide services that are complementary to those provided by medical, nursing and indeed other allied health professions. However, this is overlaid by the heterogeneity of the allied health workforce; a dietitian is not a physiotherapist, however depending on the role and setting, there may be some crossover and interchangeability (for example, between an exercise physiologist and a physiotherapist). Therefore, it is not enough to count allied health positions and FTE, but to count these for specific allied health professions. Understanding and planning for the health service needs of a community requires a picture of all professional services required to meet the health needs, and then identify the professionals best equipped to deliver these services.

This becomes a particularly acute issue when considering the finding from the Aged Care Royal Commission that an additional 80,000 aged care workers will be required by 2030, and 180,000 by 2050.<sup>9</sup> Nurse practitioners, registered and enrolled nurses, allied health professionals, allied health assistants, and personal care workers are expected to make up most of these new positions.

The Aged Care Royal Commission found chronic under-utilisation of allied health. Allied health workers can play a significant role in maintaining or enhancing peoples' mobility,

---

<sup>9</sup> Royal Commission into Aged Care Quality and Safety. (2021). *Final Report: Care, Dignity and Respect*. .

dexterity, and cognitive function, and prevent deterioration.<sup>10</sup> However, to address specific treatment goals of older people, planning needs to include a good understanding of the specific allied health professions required.

Similarly, the disability sector is also going through a period of rapid growth. The NDIS workforce plan suggests that allied health professionals accounted for 7.4% of the NDIS workforce, or approximately 20,000 allied health professionals. It projected a 40% increase in need (an additional 8,000 individuals) by 2024.<sup>11</sup>

With both aged care and disability sectors undergoing significant growth and change over the next 5–10 years, the Aged Care Royal Commission noted that allied health workforce planning needs to be prioritised.<sup>12</sup>

The National Health Workforce Dataset (**NHWDS**) captures a lot of the information needed to start addressing some of these questions. However, it only captures Ahpra-regulated professions, which cover 9 of the 22 allied health professions which are the focus of this paper.

In interviews for developing this paper, state and territory health authorities also noted definitional problems associated with identifying and counting allied health professionals within their own data and systems, leading to difficulties in developing policies for the professional grouping as a whole. These issues are discussed further in Chapter 6 *Analysis and Limitations* starting page 26.

Finally, for several allied health professions, that is, within the self-regulated envelope where there is no formal credentialing requirement, trying to understand who is captured within their membership as a proportion of the entire profession may only be possible (with data available to the association) every 5 years via the Census of Population and Housing. Even then, its use is limited for these associations, because of the time lag in accessing the data, its self-reported nature, and the lack of granularity of the ANZSCO coding of occupations.

### Questions of *Who*

- Who are the **professionals needed**?
- **How many** individuals in Australia **are eligible** to be a practitioner in the profession?
  - Of this group, how many are **currently active** in the profession?
  - Of this active group, **how many hours do they typically work** and what is the **full-time equivalent (FTE)** represented by the number of active individuals?
- How **senior are the professionals required**, and how **senior are the positions** they occupy (particularly advanced practice clinical roles)?

---

<sup>10</sup> Ibid.

<sup>11</sup> Australian Government Department of Social Services. (2021). *NDIS National Workforce Plan: 2021–2025*.

<sup>12</sup> Royal Commission into Aged Care Quality and Safety. (2021). *Final Report: Care, Dignity and Respect*.

## Where and How – do the professionals work?

In planning it is important to understand the size and location of a professional pool. Geography is the most obvious *where*, but as described earlier, the sector and setting is equally important in assessing competition for professionals and whether the professions are appropriately distributed. *How* services are being delivered is also important. Emerging modes of service delivery such as telehealth, and how the professionals are engaged to deliver these services (for example, private contracts, part-time, casual and gig economy work) have significant implications for workforce planning and traditionally held underlying assumptions.

When considering the medical workforce (and to a lesser degree nursing), most services, and therefore the focus of planning, is within health. Medicare (MBS) and hospitalisation datasets are extremely rich sources of the where and how of medical professionals delivering services. While allied health services are captured in these datasets, it is generally only a proportion (and often a small proportion) of total activity. Allied health professionals are engaged heavily in aged care, disability care, non-MBS reimbursable private practice, and non-health related fields. Therefore, current billing or hospitalisation data can only ever provide part of the picture.

Even state and territory health authorities, who collect much of this data, report difficulties in identifying allied health professionals and allied health professional activity. State and territory health authorities are interested in being able to measure the number of professionals working across different clinical settings, as well as those who provide rural outreach.

The National Rural Health Commissioner's first 3 recommendations – improving access, enhancing quality, and expanding distribution – require the ability to count and place allied health professionals where they deliver services. Therefore, the data needs to provide for the location of the professional and the location where their services are provided. The traditional assumption that professionals deliver services close to where they live is now significantly weakened with the growth of telehealth throughout the COVID-19 pandemic.

Location, sector, setting, and mode are particularly important factors in benchmarking service levels and service models. State and territory authorities, local hospital networks (LHNs), and professional associations alike, all expressed keen interest in being able to benchmark service models and levels to make sense of varying health outcomes in different sectors and regions.

Further complicating the question of how professionals work is the fact that allied health professionals are disproportionality employed/ engaged on a part-time or contractual basis. Allied health professional regularly combine engagements, often across multiple sectors, to make up a full-time equivalent (FTE) workload. Therefore, comparison of counts and FTE within a setting, or even sector, that suggests unutilised capacity need to be approached with caution.

## Questions of *Where and How*

- What proportion of work is in **clinical** versus management, research or other non-patient-facing roles?
- In **what type of sectors** (hospital, aged care, disability services, private practice, education, etc.) do the professionals tend to work?
- In what **settings** do they work? (residential aged care, community aged care, in home care, private clinic, school etc.)?
- In what **locations** do individuals in this profession work?
  - How **accessible** are their services to residents of rural and remote locations?
- What are the **principal services offered** by the profession?
  - Does this vary by setting or location?
- What **modes of delivery** are typically used in this profession (for example, face-to-face, telephone)?
  - To what extent is **telehealth** used?
- What **capacity** they are engaged? (full-time, part-time, casual, gig, private contacts etc.)
- Are there any current/ projected **supply shortages and oversupply** for particular professions, **sectors, regions and settings**?

## How long – do professionals spend?

How long is actually 2 questions: how long do professionals spend getting qualified/ specialising, and how long do they spend within the profession? Overlaid are those factors known to influence these outcomes, that is, age, gender, availability of clinical placements, work/visa status, and education completion/ conversion to profession rates.

Considerations of how long requires an understanding of sources of supply (university entry and completion, clinical placement, immigration), and any pressure points that may exist.

Stakeholders across the spectrum expressed particular interest in understanding career paths, pay rates, seniority and progression into management and policy roles. Further, information is required on continuing education leading to enhanced skills and scope of practice and how this may be coupled with location, sector and setting to determine models of care in differing environments.

## Questions of *How long*

- What are the characteristics of professionals in this group?
  - **Demographic** (for example, age, gender, Aboriginal and Torres Strait Islander status)?
  - What **additional qualifications** and advanced practice skill certifications do they have?
- What is the **training pathway** for practitioners in this profession? How many current trainees are there?
  - **The number of students** currently in training and their intentions to practice.
  - The number of **clinical supervision** positions currently filled and/or availability in the future.
- What proportion of practitioners have **trained overseas**?
  - What is the rate at which new **practitioners enter Australia** to practice?
  - For overseas qualified, how much **time is taken to achieve certification** to practice in Australia?
- At what rate are **individuals leaving the profession**, reducing their hours, or ceasing clinical work? What are the reasons for this?
  - Measures of **movement between employers, job types, sectors, settings** and regions.
  - Measures of **retirement intentions** among those currently clinically active
  - Measures of **intentions to increase or reduce hours worked**
- Of those who are eligible to practice, but are not currently active, what proportion are **willing to resume clinical work**?

## Planning / modelling

For some professions, particularly those regulated by Ahpra and subject to the NHWDS survey, there are existing sources that can be used for planning and modelling workforce requirements. For self-regulated professions, there is not a single national data source that can address the elements or answer the questions important to stakeholders.

The focus of workforce data is to provide comprehensive supply information under a stock and flow model. A typical model is shown in Figure 1.

A workforce dataset seeks to collect information about the current workforce, including the various sectors, settings and locations in which the work occurs, and the hours of work in each. Information is also collected on workforce dynamics, that is, the inflows and outflows, including new graduates, immigrants, changes in hours worked and retirement or other exits from the profession. This allows a picture to be built up of changes to the composition of the profession over time. Together these data items provide a comprehensive picture of the current profession and important workforce dynamics affecting supply.

Figure 1: Typical stock and flow model

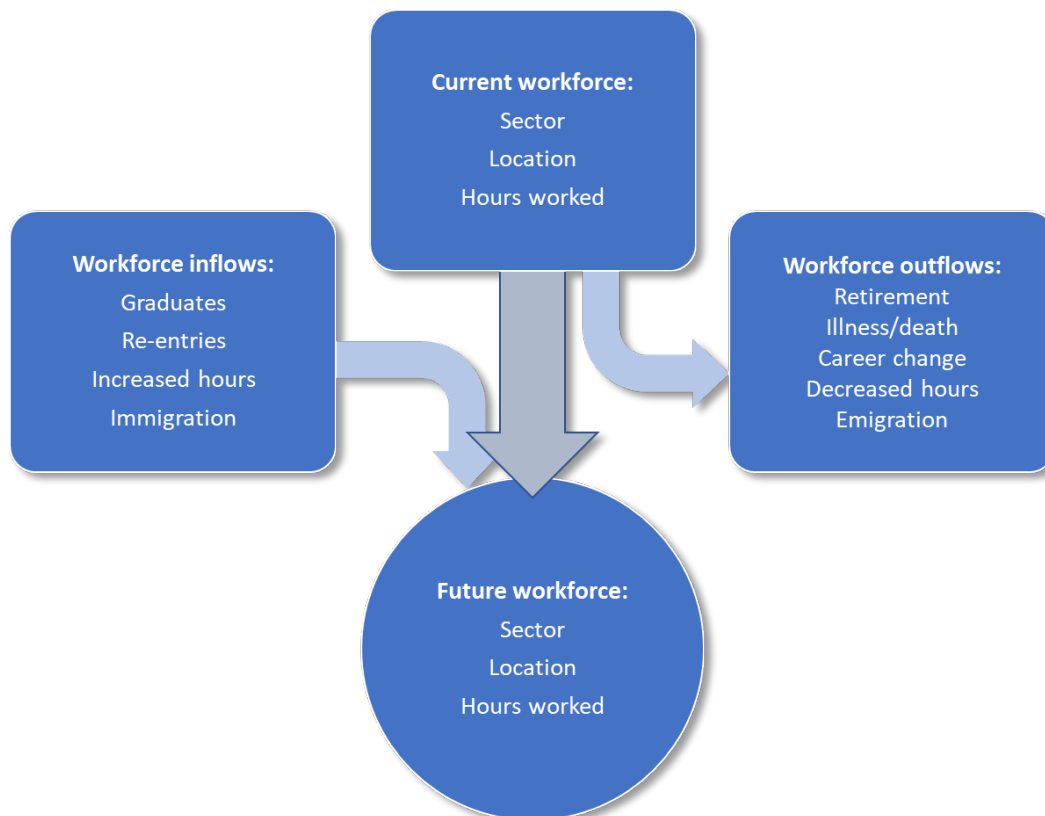


Table 1 provides core data items for workforce planning that would allow for a stock and flow model to be developed for any given profession. The list assumes a relevant period for which the respondent would report their working arrangements. The Ahpra surveys use the previous week. Alternatives could include the previous fortnight or month. Longer periods have problems with recall. Short periods may not be representative. This is not of significant concern for large professional groups but may be a problem for smaller groups.

The data items listed in Table 1 can be used as a template for assessing the value of specific datasets to inform questions regarding allied health workforce supply.

Table 1: Core data items required for a stock and flow workforce model for a given profession

Data item list for workforce planning	
<b>Core items:</b>	
1.	Place and year of qualification
2.	Certification for practice (including in areas of specialisation)
3.	Age
4.	Gender
5.	Aboriginal and/or Torres Strait Islander status
6.	Whether working in the profession
7.	If not working in the profession, reason why
8.	Whether actively looking for work (or more work) in the profession
<b>For each separate concurrent work location:</b>	
9.	Number of clinical/non-clinical hours worked in the period
10.	Occupation/job title
11.	Location
12.	Whether worked in regional/rural area in addition to main location
13.	Location of additional regional/rural work
14.	Setting (aged care, primary health care, disability services, other)
15.	Intention to remain at this job location in future
<b>Workforce dynamics items:</b>	
16.	For current students: Proposed year of graduation
17.	For current students: Intention to work in the profession
18.	For currently inactive professionals: willingness to return to active clinical work in the profession
19.	For overseas trained professionals: when certified to practice in Australia
20.	If recent/temporary arrival: visa type
<i>For all respondents:</i>	
21.	If intending to change working hours, amount of increase or decrease
22.	Number of years intending to remain active in the profession
<b>Supplementary or optional items:</b>	
23.	Items of interest for the survey period (e.g. use of telehealth)

## Medical and nursing workforce planning

Workforce planning and modelling for medical and nursing workforces are carried out by the Department of Health and by state and territory health authorities. It is much less common for this type of modelling and planning to be done by the allied health professions. This section briefly discusses how workforce modelling is done for medical and nursing to illustrate the gaps in information that prevent modelling for many of the allied health professions.

### Workforce supply

Workforce modelling relies on data to inform estimates of the supply of the workforce of interest, and the inputs to supply modelling are discussed above. For the medical and nursing workforces these are largely obtained from the NHWDS, as well as from education and immigration data sources for

workforce dynamics estimates. From the perspective of comparison with allied health, the major requirements of these sources for successful modelling are (1) completeness, that is, all members of the profession are covered, (2) sector and setting coverage, that is, all sectors and settings of interest are included, and it is possible to map all clinically active professionals to these, (3) estimates of work undertaken in the period. This is in the form of hours worked, and ideally is split by sector and setting. For medical and nursing, these estimates are obtained from the NHWDS, but not in sufficient detail to model aged care or disability, nor to account for concurrent employment. Hours are available however on medical specialties (including doctors in training) and major areas of nursing practice. This provides important information which can be analysed with activity data to derive workforce output estimates.

In contrast, for self-regulated professions, there is not complete coverage of the profession. There is also only partial coverage of settings and sectors in terms of hours worked, even for the Ahpra-regulated professions.

## Workforce activity

To model the future demand for health workforce, a common method is to obtain estimates of the current activity of that workforce which can be translated into workforce outputs, and then apply projection methods to estimate what the future output is likely to be, and match that with a projection of required output. The required future output is often modelled as current output with allowance made for population change together with any known impacts that would affect demand (for example, technological change leading to a shift in how certain conditions are treated).

What is required for these estimates is a method of calculating activity from each health professional so that the hours worked data can be converted to estimates of output (for example, patients seen per hour, number of procedures per week etc.). These commonly take the form of patient hospitalisation episodes, procedures and treatments or patient encounters. For the medical workforce, Medicare billings provide comprehensive information on the number of patient encounters in a given period, and, particularly for some specialties, information on procedures and treatments. Patient hospitalisation statistics can be used for both the medical and nursing workforces to develop work output measures.

Activity measures, and hence output measures, can be derived for both workforces, for hospital-based activity, and, for some specialists, for private work. It is less easy to derive such estimates for some medical specialties (for example, paediatricians and geriatricians), for hospital outpatient activity, and for non-health areas such as disability or aged care where the concept of a specific episode or course of treatment does not apply.

For allied health professions, there are significant gaps in the ability to obtain activity and output measures. This is because activity for many professions is a mix of Medicare billing, private health insurance billing and patients paying out of their own pockets. For allied health professionals employed in public sector settings, including hospitals, there are not patient episodes or activity-based funding data that could be used as proxies for output measures. For example, allied health procedures are often not recorded, and professionals employed in public sector primary health settings often do not systematically record the number of clients seen in a period. Many allied health professionals are employed in aged care and disability settings, where, in common with medical and nursing workforces, deriving activity measures is less straightforward than for health.

## Workforce demand

Workforce demand estimates require a means of calculating required output per health professional. This may take the form of projections of current output adjusted for population change or other



methods based on population need for certain treatments or procedures using epidemiological methods. In either case, it is necessary to be able to allocate the requirements to a specific type of health professional. This is done for medical and nursing using the methods described above for allocating activity to individual professionals. The problems of assigning allied health activity mean that projecting demand for allied health has similar problems to activity calculation. This is compounded by limitations in being able to unambiguously assign patients with various conditions as requiring particular allied health procedures or requiring intervention from a specific allied health profession. Unlike the case for many medical specialties there are a variety of treatments possible and a variety of allied health professions able to provide some form of treatment for different conditions. This makes developing demand estimates problematic for these professions.

In common with the medical and nursing workforces, there are similar difficulties in developing demand estimates for allied health in aged care and disability services due to the less clear relationship between activity and units of output.

Overall, while workforce modelling is well-developed for nursing, and particularly for the medical workforces, the same is not true for allied health, due to both data issues, and also conceptual difficulties in being able to assign the work of allied health professionals to units of output that can be compared to demand estimates.

## Proposed minimum dataset

The proposed minimum dataset (PMDS) presented in Table 2 brings together the base data requirements of a stock and flow model outlined in Chapter 3, and allied health specific considerations identified in Chapter 2. The PMDS outlines data that is required at an individual allied health professional level and then the data that is required at an employer level to deliver on requirements set out in Chapters 2 and 3.

Table 2 also compares the data currently collected for medical practitioners as part of the NHWDS, (currently the most comprehensive collection of data from any health profession), it then brings in 2 other workforce related data collections, the **National Disability Services (NDS) workforce census** and **National Aged Care Workforce Census**, as examples. Appendix 2 (Page 6767) provides a comprehensive comparison of primary datasets identified through consultation, and a visual demonstration of the gaps associated with allied health workforce data.

While many of these datasets provide data that conforms to a specific element, one should be cognisant that sources or even the specific elements themselves may be subject to significant limitations in completeness, comprehensiveness, and quality. This is one of the key issues in identifying proxy measures, as primary datasets are established, collected, cleaned, shaped, and validated for their intended purpose. Workforce is a purpose where completeness, quality, and traceability (to avoid double counting) are paramount. With that comes an increased attention to detail and level of burden that is just not required for the underlying purposes of these collections. This is not a shortcoming of these collections, it is a design feature as a primary consideration of any data collection is that it should impose the least amount of burden possible on a subject, to simultaneously meet the objectives of the collection and maximise quality and completeness of response. The limitations of various proxy sources of allied health workforce data are explored in Chapter 6.

Table 2: Proposed minimum data requirements for an allied health stock and flow model, alongside medical stock and flow data, National Disability Services (NDS) Workforce Census and Aged Care Workforce Census data.

Proposed minimum data requirements for allied health professionals		Core requirements stock and flow	Medical stock and flow <sup>13</sup>	NDS workforce census <sup>14</sup>	National aged care workforce census <sup>15</sup>
<b>From Health professionals (e.g. via registration survey)</b>					
<b>Core items</b>					
1	Place and year of qualification	Y	Y		
2	Certification for practice (including in areas of specialisation)	Y	Y		
3	Age	Y	Y	Y	Y
4	Gender	Y	Y	Y	Y
5	Aboriginal and/or Torres Strait Islander status	Y	Y		
6	Whether working in the profession	Y	Y	Y	Y
7	If not working in the profession, reason why	Y	Y		
8	Whether actively looking for work in the profession	Y	Y		
<b>For each separate concurrent work location</b>					
9	Specialisation / Qualifications and advanced practice certification obtained in the last 12 months		Y		
10	Number of clinical/non-clinical hours worked in the period	Y	Y	Not individually	Not individually
11	Occupation/job title	Y	Y		
12	Location (finest detail)	Y	Y		Y (at least state)
13	Whether worked in regional/rural area in addition to main location	Y	Y		
14	Location of additional regional/rural work	Y	Y		Y
15	Sector (aged care, primary health care, disability services, other)	Y	Y	Y (disability)	Y (aged care)
16	Setting (residential care, in patient's home, clinic, school, workplace, etc)				Y
17	Intention to remain at this job location in future	Y			
<b>Workforce dynamics items</b>					
18	Projected Year of graduation (Current students)	Y	Y		
19	Intention to work in the profession (Current students)	Y			
20	Willingness to return to active clinical work in the profession (Currently inactive professionals)	Y			
21	When certified to practice in Australia (for overseas trained professionals)	Y			
22	Visa Type (If recent/temporary arrival)	Y	Y (linked dataset)		
23	If intending to change working hours, amount of increase or decrease	Y	Y		
24	Number of years intending to remain active in the profession	Y	Y		
<b>Minimum data requirements from employers</b>					

<sup>13</sup> Australian Government Department of Health. (Year unknown). *Inflow and outflow supply methodology*.

<sup>14</sup> National Disability Services. (2018). *Australian Disability Workforce Report February 2018*.

<sup>15</sup> Australian Government Department of Health. (2021). *2020 Aged Care Workforce Census Report*. Australian Government Department of Health.

Proposed minimum data requirements for allied health professionals		Core requirements stock and flow	Medical stock and flow <sup>13</sup>	NDS workforce census <sup>14</sup>	National aged care workforce census <sup>15</sup>
25	Sector of employer		Y (linked dataset)	Y (disability)	Y (aged care)
26	Employer industry				
27	State/territory(ies) of operation		Y (linked dataset)		Y
28	Number of allied health employees		Y (linked dataset)		
29	Number of agency allied health staff				
30	Number of allied health employees by job title		Y (linked dataset)		
31	Number of allied health positions by seniority				
32	Number of allied health assistants employed				
<b>For each location</b>					
33	Location		Y (linked dataset)		Y (at least state)
34	Number of allied health employees				
35	Number of allied health agency staff				
36	Number of sessions/hours of sub-contracted allied health services				
37	Number of allied health assistants employed				
38	Number of positions vacant				
39	Average length of time positions vacant				
<b>Dynamics</b>					
40	Intention to expand/contract number of allied health employees				

# Current sources of allied health data

Using the proposed minimum data requirements for workforce planning for allied health outlined in the previous chapter, it is possible to assess existing data sources against these requirements.

## Composition of the current workforce

This includes datasets that provide counts of the numbers of practitioners, such as professional association membership lists or the national Census, and more detailed surveys such as the NHWDS obtained as part of the Ahpra registration process for some professions. It also includes data obtained from administrative sources such as HR or payroll data from private employers or state and territory health authorities, or purpose-designed surveys such as the National Aged Care Census.

## Workforce dynamics

Workforce dynamics relates to and includes data from education authorities on the numbers of graduates, current students and trainees, and data on immigration, including both temporary and permanent migrants who may be eligible to practice in particular professions. It also includes surveys relating to future intentions, such as retirement, changes in working hours or transitions between sectors. Workforce dynamics can also take in underlying factors influencing an individual's decisions. Such an important indicator, more nuanced and detailed collections around intentions are carried out by employers via employee satisfaction surveys. Collections of intentions at national level needs to be constrained as local influences may expand exponentially at the national level.

## Activity data

Activity data can be used to assess the amount and type of services delivered by each individual allied health worker, as well as the settings where the services are provided and the client groups receiving the services. These sources include data from employers on activity in state and territory health authority systems, from private employers on activity in private hospitals, from aged care facilities and home-based aged care, from NDIS on use of allied health in the disability sector and MBS and private health insurance data on activity by independent private providers.

## Data and collection features

For the workforce data to be useful for addressing the questions set out earlier in this report, a data source would ideally have the following features:

- All individuals within the profession in the relevant region (Australia, state or territory, employer etc.) in the counting period are included.
- Every individual is counted only once.
- The data are collected in the same way on a regular basis, to allow establishment of a time series.

The data sources also vary in terms of whether they are purpose-designed to collect workforce data, such as a survey or census. In the case of purpose-designed collection, instruments and methods can be tailored to the data requirements, the scope and coverage of the data collection can be specified and the data can be edited and summarised as required. Valuable data are also derived as a by-product of administrative processes. These can be highly detailed and granular data sources, but they are not designed to capture data on workforce specifically, and this can lead to difficulties in interpreting the data for workforce planning purposes.

To illustrate, the national Census is a purpose-built collection conducted every 5 years using the same methods. Its scope is all Australians, it counts every individual only once, and it distinguishes between different jobs that a person may be doing over a 12-month period. By contrast, a payroll system will count instances of employment which may or may not distinguish the same individual over time, its scope is the service within which it operates (for example, NSW Health, Ramsay Health Care), it will not account for any work the same individual does with other employers over the same time period, and the way in which it counts individuals is subject to change as it functions as a by-product of an administrative system designed for a different purpose. On the other hand, the Census has only minimal information relevant to the details of any particular allied health profession, while a payroll system can give accurate information about location, sector, and number of hours worked on a continuous basis. The Census is thus a complete but sparse data source, useful for establishing broad counts, while a payroll system is a partial but rich data source, useful for obtaining details about particular sectors or settings as well as data on services provided.

Table 3 summarises the key characteristics of the data sources that are relevant for developing an allied health workforce dataset.

Table 3: Key characteristics of identified data sources

<b>1. Scope</b>	The scope of the dataset. This may be a geographic region (e.g. national, state or territory), or all staff of a particular employer or all professionals in a particular sector (such as aged care). The latter may also be confined to a specific geographic area depending on the reach of the employer.
<b>2. Counting units</b>	<p>The elements in the data source that can be counted and aggregated. These may be individual practitioners counted only once in the data source, but it may also count episodes of employment for example and so may include an individual more than once in any given period.</p> <p>A data source that has national scope and counts unique individuals is referred to as complete. A source with less than national scope or which does</p>

	not count unique individuals is referred to as partial that is, it has a sub-set of the group of interest. It is generally not possible to add together data from different partial sources to obtain a national count unless it is possible to eliminate any multiple counts across data sources.
<b>3. Profession coverage</b>	The range of allied health professions covered by the dataset.
<b>4. Data collection method</b>	This distinguishes between a purpose-designed data collection instrument such as a survey or census and data derived as a by-product from an administrative system such as a payroll or HR system.
<b>5. Sample size</b>	For surveys, the size of the sample will affect the usefulness of the data, particularly for some of the smaller professions. For example, while the coverage of a survey such as the Labour Force Survey is all professions, due to the size of the national sample and the small number of individuals in some professions, it will be a poor data source for any but the largest allied health groups.
<b>6. Data items available</b>	Refers to the range of data items in the dataset that are relevant to those set out in Figure 1 as relevant to workforce planning. Datasets are described as sparse or rich in terms of the availability of relevant data items.
<b>7. Geographical granularity</b>	Refers to the use of the data source in producing statistics for small geographical areas (that is, sub-state).
<b>8. Availability of data products</b>	Refers to the availability of reports, spreadsheets, data cubes etc. from the data source which can be used for workforce analysis.
<b>9. Collection frequency and regularity</b>	For surveys, this refers to how often the survey is conducted, if the survey was a one-off or has been discontinued. For administrative by-product data, in theory the data are available continuously while the administrative system continues. In practice this may refer to the frequency with which data are extracted for secondary analysis.

Appendix 1 includes a series of boxes of the principal data sources that capture allied health professionals or activity. Each box describes the data available, the collection methods, data products and any limitations of the source from the perspective of its use for allied health workforce planning.

## Professions captured

One of the challenges in attempting to capture a full dataset from disparate sources is coverage. The varied nature of allied health services means that allied health professionals are represented or captured in various collections to varying degrees. Table 4 provides a brief summary of the characteristics of each of the identified professions, compiled from publicly available sources.

Table 4 illustrates the range of services provided by allied health professionals, the settings within which they practice as well as the gaps in the readily available data. From this it is clear that only the Ahpra-regulated allied professions have a national count of practitioners. For the self-regulating professions, the 2016 Census provides some information but even basic counts are difficult to compile. Note this will only include those who reported receiving income from the profession at some point in the 12 months before the Census. This is therefore a different count to Ahpra, which includes all those registered, including those

looking for work in the profession. For the smaller professions the Census data are less useful, and the counts reported in the table are numbers of members of the relevant professional associations for the most recently available year. These data are generally taken from annual reports. A count of members will exclude practitioners who choose not to be members of the association, so will undercount the number of practitioners. On the other hand, it may also include non-practicing members.



Table 4: Base characteristics of each profession

Profession	Regulation	Size	Source	Settings	Services
Art therapists	Self	547	ANZACATA website accessed 20 March 2022	Private practice, community health, education, hospital, mental health settings, rehabilitation facilities, disability sector, aged care and palliative care.	Therapeutic interventions using the visual arts, including drawing, painting, sculpture, sand and play for mental health diagnoses, wellbeing, early intervention and developmental disorders. Arts therapies can help people to resolve conflicts, develop interpersonal skills, manage behaviour, reduce stress, increase self-esteem and achieve insight.
Audiologists	Self	2,985	Projected to 2020 from 2016-2019 ATO data	Hospitals, schools, residential aged care facilities and private practice.	Hearing tests to measure auditory and neural function, tinnitus and test balance (vestibular function). They can prescribe and fit devices and aids such as ear plugs, hearing aids and have specialised knowledge about implantable devices such as cochlear implants.
Dietitians	Self	6524	Dietitians Australia Annual Report 2020-21 Accredited Practicing Dietitians Credentialled.	Sports organisations, fitness centres, private dietetic practices, larger multidisciplinary health practices, community health centres, public and private hospitals, aged care, mental health and disability facilities.	Working with patients to assess their health and nutritional needs and to assist them to manage their medical condition(s) and symptoms via the use of a specifically tailored diet. Providing food service management in residential aged care facilities, childcare centres and group homes for people with disabilities. Working with non-government and government organisations to develop preventive health programs.
Exercise physiologists	Self	6,315	Exercise and Sport Science Australia 2020 Annual Report Number of Accredited Exercise Physiologists	Public and private hospitals, private and multidisciplinary clinics, government and not-for profit organisations, workplace health and rehabilitation, aged care facilities, fitness centres, gymnasiums and sports organisations	Behavioural coaching, health education, exercise counselling and physical rehabilitation. Services include the prescription of tailored exercise programs, promoting leisure-time and incidental activity, and counselling to reduce sedentary behaviours. Do not provide invasive services, diagnosis, joint manipulation or pharmaceutical medicines.
Genetic counsellors	Self	480	Reported by in consultation with Australasian Society of Genetic Counsellors: source 2017 Census conducted by the Human	Hospitals and community health centres, medical specialist clinics, obstetric ultrasound practices, research institutions, genetics laboratories and policy and project roles with government.	Help people make informed decisions about genetic testing, interpret test results and communicate the implications of the result, for the individual and their family members. Genetic counsellors also consider the implications of a genetic diagnosis on the patient's

Profession	Regulation	Size	Source	Settings	Services
			Genetics Society of Australasia (unpublished)		immediate and extended family. For example, reproductive, cancer and paediatric genetic counselling.
Music therapists	Self	650	Australian Music Therapy Association website accessed 20 March 2022	Often work as part of an allied health team in a variety of settings including hospitals, residential aged care facilities, schools and the community.	Use music-based interventions in individual or group sessions to address a range of cognitive, physical and socio-emotional goals determined through an assessment by the music therapist. These interventions may include singing, song writing, musical improvisation, receptive music listening and other speciality techniques.
Orthoptists	Self	987	Projected to 2020 from 2016-2019 ATO data	Hospitals, private specialist practices, agencies, independent private practice and research centres	Assessment and management of various ocular and vision disorders, including amblyopia (lazy eye) and strabismus (misalignment of eyes) in children, eye movement disorders, visual conditions such as diplopia (double vision) and visual field loss, patients with neurological deficits (e.g. loss of visual field subsequent to stroke), screening for diabetic retinopathy screening, glaucoma or high eye pressure and evaluation of occupational standards and/or driving.
Orthotists/ prosthetists	Self	410	Ridgewell et al. (2021)	Public and private hospitals, rehabilitation facilities, private orthotic/prosthetic centres, universities, research facilities and non-government organisations	Support people in managing function and mobility through the assessment, prescription, design, manufacture and fitting of all types of devices (orthoses and prostheses) to patients. Work with external bodies to provide specialist advice to specific client groups such as those requiring third-party compensation and medico-legal representation.
Perfusionists	Self	128	Certified Perfusionists as per the Australian and New Zealand College of Perfusionists (ANZCP) website accessed 20 March 2022	Operating theatres in public and private hospitals, intensive care units; cardiac catheter laboratories and research laboratories.	Perfusion is the technology of organ preservation by the circulation of oxygenated blood outside the body, using a heart-lung bypass machine. Virtually all heart operations require the services of a perfusionist to operate the heart-lung bypass machine.
Rehabilitation counsellors	Self	1,825	Projected to 2020 from 2016-2019 ATO data	Public and private occupational and vocational rehabilitation, life insurance, disability employment, NDIS, universities and TAFEs, state and commonwealth departments, DVA and health rehabilitation services.	Wide range of services to people experiencing illness, injury and/or disability, including needs, eligibility medico-legal and career assessments, vocational, work readiness counselling, disability and injury counselling, mental health advice and planning, capacity building and social prescription.

Profession	Regulation	Size	Source	Settings	Services
Social workers	Self	46,291	Projected to 2020 from 2016-2019 ATO data	Community health centres, and public and private hospitals, aged care facilities, education facilities, mental health settings; alcohol and drug services, private clinics and non-government organisations, refugee facilities, correctional institutions, universities and research facilities, group homes, supported employment and government departments.	Wide range of services and sectors. Services in the primary health space include personal and family counselling or therapies and group work, service information and facilitated referral or linking to relevant services, service coordination or care management and advocacy with individuals, families and particularly people experiencing social disadvantage.
Sonographers	Self	3,774	Projected to 2020 from 2016-2019 ATO data	Public and private hospitals, clinics and community health centres	Sonography can be used to examine many parts of the body. This makes it very useful for diagnosing, and guiding management for a range of medical conditions. Ultrasound imaging is highly operator-dependent, and the outcome of a sonographic examination is dependent on the medical knowledge as well as the technical skills of the sonographer. Other health professionals such as doctors, nurses, midwives and physiotherapists may also use ultrasound as part of their diagnostic practice.
Speech pathologists	Self	9,452	Projected to 2020 from 2016-2019 ATO data	Community health, aged care, disability	Diagnose and treat communication disorders, including difficulties with speaking, listening, understanding language, reading, writing, social skills, stuttering and using voice.
Chiropractors	Ahpra	5,130	2020 National Health Workforce Dataset	private practice	Use manual therapies such as manipulation and massage to treat and prevent dysfunction of the musculoskeletal system. Chiropractors also provide ergonomic and lifestyle advice about movement with an emphasis on wellness and prevention
Medical radiation practitioners	Ahpra	15,380	2020 National Health Workforce Dataset	Public hospitals, many private hospitals and private radiology practices and may be large or small, metropolitan or rural.	Nuclear medicine scientists/nuclear medicine technologists are medical imaging experts who use radioactive materials to diagnose physiological and metabolic changes within the body and treat diseases. Radiation therapists design, plan and administer radiation treatment to cancer patients, and provide related care to patients in conjunction with radiation oncologists or other medical

Profession	Regulation	Size	Source	Settings	Services
					specialists and medical imaging practitioners use x-ray, CT, MRI to produce images for diagnostic purposes.
Occupational therapists	Ahpra	21,709	2020 National Health Workforce Dataset	Community health, aged care, hospitals	Focus on promoting health and wellbeing by enabling people to participate in the everyday occupations of life, such as self-care activities including showering, dressing, preparing food; productive activities such as education, work, volunteering and caring for others; and leisure/social activities, such as being part of a community group, engaging in a hobby, and being part of a friendship group. Occupational therapists play a particularly crucial role in enabling people experiencing disability to identify and implement methods that support their participation in occupations. This may include modifying an activity or an environment.
Optometrists	Ahpra	5,437	2020 National Health Workforce Dataset	Most optometrists are self employed or work in private practice, including independent practices or as part of large optical companies. They also work in public clinics with ophthalmologists, hospitals and community health centres.	Primary care for people experiencing problems with their eyes or having difficulty seeing. Monitor patient vision and eye health and determine problems with eyes and vision through examination. Correct vision defects by prescribing and dispensing glasses, contact lenses and other visual aids. Treat eyes by prescribing therapeutic drugs. Shared care with ophthalmologists and general practitioners for conditions like glaucoma and diabetes. Postoperative care in association with ophthalmologists for eyes surgery such as cataract extraction and laser vision correction. Eye screening and environmental health advice.
Osteopaths	Ahpra	2,538	2020 National Health Workforce Dataset	Mainly private practice, but also clinics and aged care facilities	Provide direct manual therapy interventions including exercise prescription, needling, education and associated lifestyle advice to improve movement, reduce pain and manage and/or treat a range of physical impairments
Pharmacists	Ahpra	26,795	2020 National Health Workforce Dataset	Most pharmacists work in community pharmacies. They also work in public and private hospitals, primary care settings and can be accredited to provided medication reviews in home and residential aged care.	Optimise health outcomes and minimise misadventure in the use of medications. The practice of pharmacy includes the custody, preparation, dispensing and provision of medicines. Pharmacists counsel patients on the best use of medicines, provide advice on symptoms, management of common conditions, prepare and formulate medications,

Profession	Regulation	Size	Source	Settings	Services
					advise on side-effects and drug interactions, review medication use and provide education.
Physiotherapists	Ahpra	30,527	2020 National Health Workforce Dataset	Private practice, hospital and aged care settings	Assess, diagnose, plan and manage the care of patients across a broad range of areas with musculoskeletal, cardiothoracic and neurological problems. They help patients with chronic disease management, provide lifestyle modification and self-management advice, prescribe aids and appliances, prescribe and supervise exercises for both patients and carers, and provide health promotion education, occupational health assessments and injury prevention activities.
Podiatrists	Ahpra	5,082	2020 National Health Workforce Dataset	Mainly private practice but also include hospital and aged care	Services range from the treatment of calluses to the treatment of bone and joint disorders. The podiatrist's scope of practice includes areas such as paediatrics, diabetes, sports injuries, structural problems, treatment of the elderly as well as general foot care. Podiatrists with additional qualifications and registration may also perform foot surgery
Psychologists	Ahpra	31,618	2020 National Health Workforce Dataset	Private practice, schools, public and private hospitals, courts, community health services, prisons, businesses, the defence forces, government and not-for profit organisations	Psychologists provide assessment and therapy to clients, help facilitate organisational or social change, or administer psychological tests to individuals or groups.

# Analysis and limitations

This Chapter commences by attempting to answer the project question of:

1. *What is the breakdown of the allied health workforce by profession (numbers of each type of allied health professional) and what is the breakdown across sectors?*

The chapter then explores the PMDS set out in Chapter 4 and the datasets identified in Chapter 5, taking a close look at those collections and comparing the measures they can provide and identifying any limitations.

## Breakdown of the allied health workforce by profession

Table 5 provides a side by side comparison of the total number of professionals as recorded by the NHWDS, ATO income tax return data (across various years), the Census of population and housing and the Labour Force Survey. These sources were chosen because they are the most comprehensive sources of national data available. Presenting the data like this demonstrates the gaps that exist at this fundamental counting level, along with the variation between sources.

In Table 6, we present the best estimates we are able to derive from the datasets in Table 5 (with the addition of the aged care workforce census) to apportion professionals across the sectors of interest (Primary health care, tertiary health care, residential aged care and disability care). The NHWDS, being the most complete, only covers 9 of the 22 allied health professions of interest. ATO income tax return data (across various years), the Census of Population and Housing and the Labour Force Survey had to be used to supplement 8 self-regulated professions. We used numbers derived from professional associations themselves for estimates of the 5 self-regulated professions remaining.

The estimates provided in Table 6 have significant limitations. Firstly, they are an analysis of **primary job and sector** only. While the NHWDS provides for secondary job, the source required to derive self-regulated professional numbers (for example ATO Taxation statistics) only provide for primary occupation and job sector. Further, different data sources have different rules for recording primary job it is highly likely that there is a significant degree of conceptual misalignment that effect counts. Limitations in data interpretation, double counting, multiple job holding, and sectors that are not included in the analysis (e.g. education, sports, etc) means that the percentages presented in Table 6 will not add up to 100% and in some cases exceed it.

In short, the estimates provided are indicative of the numbers in the sectors only and not robust enough for detailed planning. Further, these are estimates of static numbers. The proxy sources used to derive the self-regulated professional numbers (ATO, Census etc) do

not provide enough detail to inform a stock and flow model, nor the detail required to answer other workforce related enquiries as set out in the proposed minimum data set.

Further breakdown of Table 6 and details of the analysis are provided at Appendix 3 (page 71).

Table 5 Comparison of profession totals across data collections

Allied Health Profession	NHWDS 2016	NHWDS 2020	Census 2016	ATO 2016	ATO 2019	Labour force survey 2020	Association reported
Occupational therapists	15,928	<b>21,709</b>	12,352	15,015	18,510	23,760	
Pharmacists	23,842	<b>26,795</b>	23,372	22,024	25,810	30,723	
Physiotherapists	24,271	<b>30,527</b>	20,746	20,729	24,962	26,666	
Podiatrists	4,327	<b>5,082</b>	3,696	2,818	3,405	6,358	
Psychologists	25,219	<b>31,618</b>	22,730	17,997	20,901	32,857	
Chiropractors <sup>a</sup>	4,589	<b>5,130</b>	3,879	2,145	2,342	4,409	
Medical radiation practitioners <sup>a</sup>	13,156	<b>15,380</b>	12,750	13,013	14,252	15,236	
Optometrists <sup>a</sup>	4,734	<b>5,437</b>	4,141	3,787	4,388	6,544	
Osteopaths <sup>a</sup>	1,914	<b>2,538</b>	1,401	593	846	1,593	
Social workers			21,943	38,426	<b>44,325</b>	32,324	13,104
Audiologists			9,155	2,360	<b>2,829</b>	12,259	2,900
Dietitians <sup>a</sup>			4,264	4,610	<b>5,279</b>	7,398	6,524
Orthoptists <sup>a</sup>			896	838	<b>950</b>	1,417	
Sonographers <sup>a</sup>			3,145	2,742	<b>3,516</b>	3,759	
Speech pathologists <sup>a</sup>			6,930	6,887	<b>8,811</b>	9,280	>9,000
Orthotists/prosthetists				401	<b>448</b>		410
Rehabilitation counsellors				1,706	<b>1,795</b>		>1,000
Art therapists							<b>547</b>
Exercise physiologists				1,602	<b>3,036</b>		6,315
Genetic counsellors							<b>480</b>
Music therapists							<b>650</b>
Perfusionists							<b>128</b>

Best count in **bold** and the source used in Table 6 analysis, (when considering the alternates presented in the table 6).

<sup>a</sup> ANZSCO group includes other professions, Census and LFS data are estimated from ATO 2019 group proportions

<sup>b</sup> Projected using trends 2016-2019 data

Table 6 Allied health profession by primary job sector, 2020

Allied Health Profession	Total		Residential Aged Care <sup>a</sup>			State/Territory <sup>b</sup>			Primary <sup>c</sup>			Disability <sup>d</sup>			Other <sup>e</sup>		
	count	acc.	count	%**	acc.†	count	%**	acc.†	count	%**	acc.†	count	%**	acc.†	count	%**	acc.
Occupational therapists	21,709	1	1,268	5.8%	1	8,705	40%	3	5,080	23%	2	2,108	9.7%	2	5,988	23%	3
Pharmacists	26,795	1	268	1.0%	1	3,858	14%	3	17,390	65%	2				1,837	6.8%	3
Physiotherapists	30,527	1	2,518	8.3%	1	7,601	25%	3	13,188	43%	2	696	2.3%	2	1,857	6.0%	3
Podiatrists	5,082	1	247	4.9%	1	534	11%	3	3,608	71%	2	3	<0.5%	2	154	3.0%	3
Psychologists	31,618	1	158	0.5%	1	7,905	25%	3	14,418	46%	2	487	1.5%	2	8,021	27%	3
Chiropractors	5,130	1	0	<0.5%	1	7	<0.5%	4	4,986	97%	2				129	2.5%	3
Med. radiation practitioners	15,380	1	0	<0.5%	1	5,506	36%	4	6,121	40%	2				397	2.6%	3
Optometrists	5,437	1	5	<0.5%	1	122	2.3%	4	4,621	85%	2				720	13%	3
Osteopaths	2,538	1	58	2.3%	1	3	<0.5%	4	2,436	96%	2				60	2.4%	3
Social workers	44,325	2	3,148	6.8%	2	15,071	34%	3	1,374	3.1%	4						
Audiologists	2,829	2	(3 - 62)*	(0.1%-2.2%)*	3	905	32%	4	1,273	45%	4						
Dietitians	5,279	2	(111 - 739)*	(2.1%-14%)*	3	2,111	40%	4	1,425	27%	4						
Orthoptists	950	2	<5	<0.5%	3	22	2.3%	4	883	93%	4						
Sonographers	3,516	2	0	<0.5%	3	1,265	36%	4	457	13%	4						
Speech pathologists	8,811	2	97	1.1%	3	2,819	32%	4	3,964	45%	4						
Orthotists/prosthetists	448	2	(0 - 32)*	1.0%	5	161	36%	5									
Rehabilitation counsellors	1,795	2	0	<0.5%	5	269	15%	5									
Art therapists	547	4	(0 - 191)*	(0%-35%)*	5												
Exercise physiologists	3,036	2	(30 - 166)*	(1.0%-5.5%)*	4												
Genetic counsellors	480	4															
Music therapists	650	4															
Perfusionists	128	4															

a: Ahpra regulated; NHWDS. Self-regulated; Aged Care Workforce Census, Census of population and housing 2016, and the Australian industry survey 2018-19

b: Census 2016 Government/Non-Government Employer Indicator (GNGP) - *employed by State/Territory Government*

c: Classified by select responses to Census 2016 ANZSIC or NHWDS Job sector relating to private practice, including *Community Pharmacy*

d: NHWDS

e: NHWDS Job sector not counted elsewhere and excluding *Hospitals, Defence, etc.*

\* Where sector data was available from multiple sources, an upper and lower bound has been reported to describe a credible interval or to confirm a point estimate

\*\*Due to the multiple job holdings, amalgamation of different data sources with different rules of recording etc. percentages across may not add up to, and in some cases exceed 100%

† Estimates provided Table 6 against each profession and sector have been given an accuracy rating (acc.) 1-5 where:

1. Excellent: count from a current data collection that includes data that accurately define both occupation and job sector. This is primarily the NHWDS.
2. Good: estimate from a dataset that may be incomplete or not current, that accurately defines both occupation and job sector. This includes ATO personal income tax data and clearly defined sectors available via ANZSIC codes.
3. Useful: estimate from multiple incomplete datasets or from data that defines occupation or job sector with less precision as ratings 1 or 2. These may include Census of population and housing, aged care census, and/or where there is imperfect ANZSIC and or ANZSCO code alignment.
4. Poor: estimate from inappropriate or unofficial data source or with inappropriate classification of occupation, job sector. This may include ANZSCO coding that aggregates a number of professions, and poor matches with ANZSIC codes.
5. Not of use for modelling: estimation is provided as an interval representing upper/lower bound derived from different sources or a source that groups professions or sectors where only a proportion is relevant to the primary profession or sector.



## National level data

The only sources of national, sector wide data on the allied health workforce are the NHWDS, ABS Census, ABS Labour Force Survey and from ATO individual tax return statistics. There are sector specific datasets, for example NDIS registered providers, but these have their own limitations not least of which are the fact that they only describe a select portion of the allied health workforce within that sector.

For professions regulated by Ahpra, the NHWDS does a good job in providing coverage and is used as a basis framework for other collections (including state/territory health authority data sets) that extends richness of data potentially available. For self-regulated professions, coverage is partial, patchy, or non-existent. Limitations with a range of datasets, including coverage of sectors and professions are discussed later in the chapter.

### Availability and accuracy

Because the NHWDS has exceptional coverage of registered professionals, it lends itself as a benchmark against how well national level datasets count individual allied health professions. Figure 2 shows the variation in allied health profession counts across datasets. For pharmacists these data are extremely consistent, for physiotherapists and occupational therapists they are somewhat consistent, and for social workers the number of practitioners counted in ATO returns is consistently higher than the number counted in the ABS. Specifically for social workers, 2016 ATO data recorded 16,484 more social workers than did in the Census 2016.

## Australian and New Zealand Standard Classification of Occupations - ANZSCO

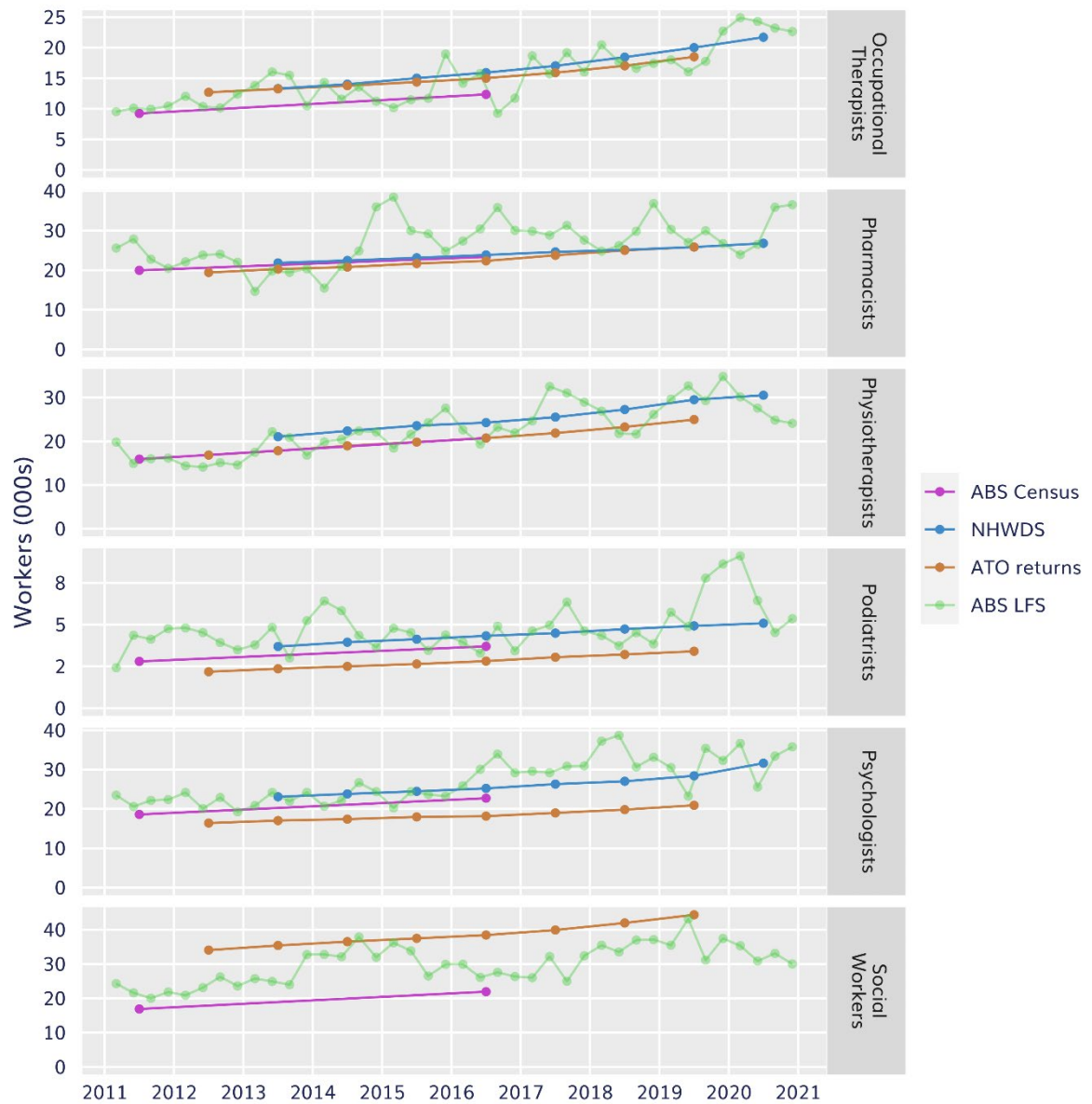
The Australian and New Zealand Standard Classification of Occupations (**ANZSCO**) is a coding system (rather than a data source), widely used across government including ATO, Census, AIHW and ABS collections/ reports. ANZSCO classifies 1,070 occupations across 5 hierarchical levels.

To illustrate by example, Osteopath is classified across 5 levels as:

1. 2: Major Group – Professionals
2. 25: Sub-Major Group – Health Professionals
3. 252: Minor Group – Health Therapy Professionals
4. 2521: Unit Group – Chiropractors and Osteopaths
5. 252112: Occupation – Osteopath

Levels 4 and 5 are often referred to as the 4-digit and 6-digit level, as the first 4 levels up to *unit grouping* provide the first 4 digits and the last occupation level provides that last to 2 to make it a 6-digit code. Note ANZSIC, the Australian and New Zealand Standard Industrial Classification, is a related code set that standardises the classification of industries. ANZSCO and ANZSIC coding, while consistent, do have limitations (discussed later in the chapter) when it comes to allied health workforce planning.

Figure 2: Comparison of professional count by data source and year across 6 selected professions defined by 4-digit ANZSCO code

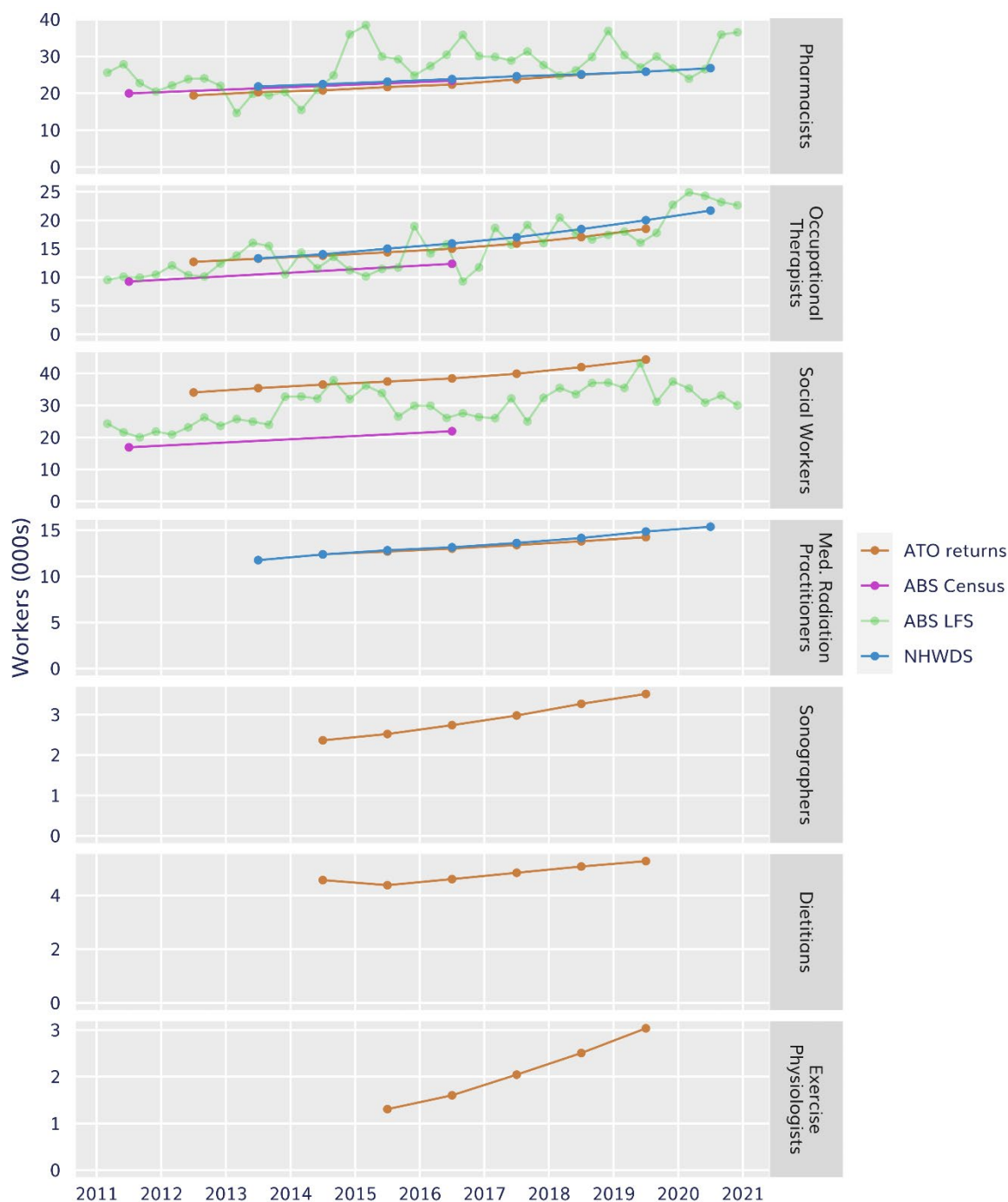


NHWDS data includes those "Currently working in a registered profession"

Census Data includes those employed full-time, part-time or employed but away from work at the census date

The availability of data also varies by profession (Figure 3). For example, data on pharmacists is available from every national level dataset, data on medical radiation practitioners is available in ATO and NHWDS data, data on sonographers is only present in ATO data and there is no national level data for perfusionists or music therapists.

Figure 3: Demonstration of national data sources across professions at 6 Digit ANZCO data level



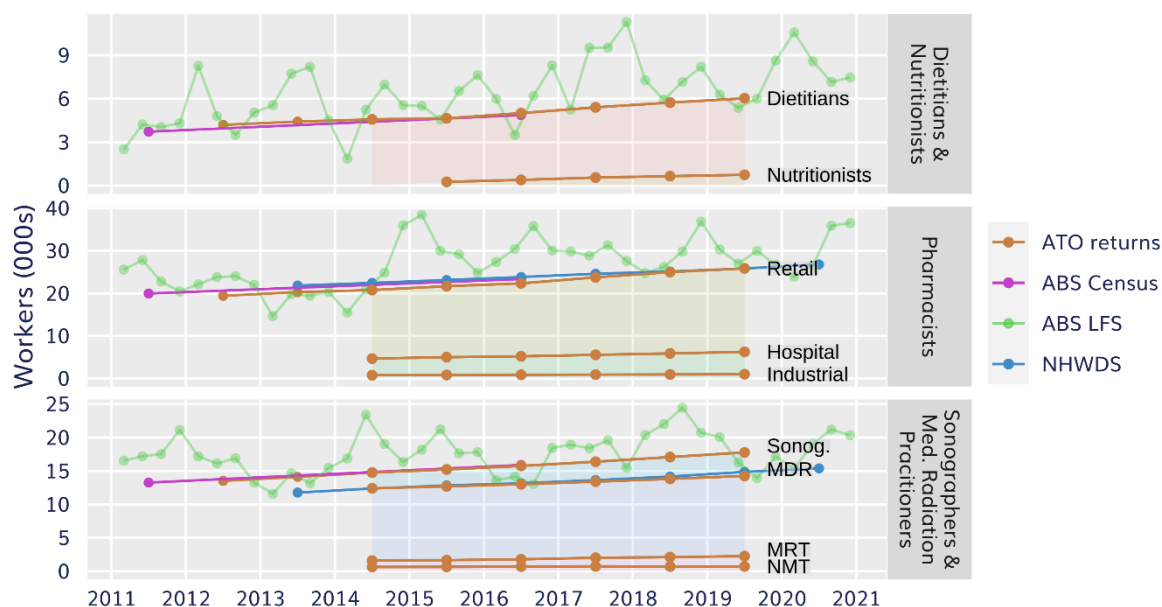
NHWDS data includes those "Currently working in a registered profession"

Census Data includes those employed full-time, part-time or employed but away from work at the census date

In some datasets professions are grouped, for example, sonographers are only present in ATO data, since they are well defined by their 6-digit ANZSCO code, but at the level of 4-digit ANZSCO code they are grouped with medical radiation practitioners. Similarly, dietitians are defined together with nutritionists (not an allied health profession) under their relevant 4-digit ANZSCO code.

Figure 4 shows how individually defined professions in one dataset can add up to the less specifically defined group in another dataset. Pharmacy is presented as a comparison as it is made up of multiple 6-digit ANZSCO groups. Using data from one source on the proportion of the ANZSCO 4-digit profession that is made up of each ANZSCO 6-digit profession, it is possible to validate an estimate for these professions, that are not available in the NHWDS: sonographer, dietitian, orthoptist, audiologist and speech therapist

Figure 4: How professions can be grouped in national datasets



NHWDS data includes those "Currently working in a registered profession"

Census Data includes those employed full-time, part-time or employed but away from work at the census date

**Sonog:** Sonographers. **MDR:** Medical Diagnostic Radiographers **MRT:** Medical Radiation Therapists **NMT:** Nuclear Medicine Technologists

Finally, Table 7 provides a comparison of allied health professional counts from the various data sources in 2016 to align with the last published Census of Population and Housing Data.

Table 7: Count of allied health professionals in specific professions for 2016

Profession	ATO	NHWDS	LFS	Census
Social workers	38,426		27,475	21,942
Pharmacists	22,024	23,842	30,924	23,366
Physiotherapists	20,729	24,269	21,771	20,747
Psychologists	17,997	25,219	29,774	22,723
Occupational therapists	15,015	15,925	12,742	12,359
Medical radiation practitioners	13,013	13,156		
Sonographers	2,742		14,807	15,895
Audiologists	2,360			
Speech pathologists	6,887		11,324	9,155
Chiropractors	2,145	4,591		
Osteopaths	593	1,916	8,645	5,280
Optometrists	3,787	4,732		
Orthoptists	838		5,305	5,037
Dietitians	4,610			
Podiatrists	2,818	4,329	3,893	3,701
Rehabilitation counsellors <sup>†</sup>	1,706			
Exercise physiologists <sup>†</sup>	1,602			
Orthotists/prosthetists <sup>†</sup>	401			
Art therapists* <sup>†</sup>				
Genetic counsellors** <sup>†</sup>				
Music therapists* <sup>†</sup>				
Perfusionists*** <sup>†</sup>				

\*Music and Art therapists are coded under ANZSCO code 252299 *Complementary health therapists not elsewhere classified*, this category can also include Dance Therapists, Drama Therapists and Hypnotherapists therefore a specific count at the required detail is not possible via ATO, Census data or the Labour Force Survey.

\*\* Genetic Counsellors are captured in ANZSCO code 251999 *Health Diagnostic and Promotion Professionals not elsewhere classified*. The 4-digit code 2519 captures Health promotions officers, Orthotists and Prosthetists so like occupations that do not fall in those codes would be captured in the same code as Genetic Counsellors meaning specific count at the required detail is not possible via ATO, Census data or the Labour Force Survey.

\*\*\* Perfusionists are captured as 311299 *Medical Technicians not elsewhere classified* this includes at least 9 other occupations Dialysis Technician, Renal Technician and Ophthalmic Technician. Therefore, specific count at the required detail is not possible via ATO, Census data or the Labour Force Survey.

† Census data can be analysed by special request that may allow numbers for these professions to be extracted from occupation free text field.

## Data qualifications or limitations

This chapter has already introduced several sources of allied health data, identifying, and demonstrating some of their limitations. The following sections look at those sources again, as well as others, in more depth. The analysis considers several factors, including the ways in which it is coded and collected, to articulate the limitations of those sources which impact their utility for workforce planning purposes.

### ANZSCO

The Australian and New Zealand Standard Classification of Occupations (ANZSCO) system, rather than a dataset, is a widely used coding system across government including ATO, Census, AIHW and ABS collections/ reports. ANZSCO classifies 1,070 occupations across five hierarchical levels.

At the start of the chapter, the example of Osteopath was provided as good example of ANZSCO coding relative to an allied health profession as the 6-digit (and final) level only contains a single occupation. In contrast *Perfusionists* are also coded to the 6-digit level however final title or description of the occupation code is less specific than code that for "Osteopath" being "311299 Medical Technicians NEC" broken down below:

1. 3: Major Group – Technicians and Trades Workers
2. 31: Sub-Major Group – Engineering, ICT and Science Technicians
3. 311: Minor Group – Agricultural, Medical and Science Technicians
4. 3112: Unit Group – Medical Technicians
5. 311299: Occupation –Medical Technicians NEC

The *NEC*: nomenclature stands for *Not Elsewhere Classified* and is a "catch-all" code that in this specific circumstance includes Audiometrists, Dialysis Technicians, Electroencephalographic Technicians, Mortuary Technicians, Neurophysiological Technicians, Ophthalmic Technicians, Orthotic and Prosthetic Technicians and Renal Technicians alongside Perfusionists.

Further issues with ANZSCO coding arise as it is ultimately a coding of occupation and not necessarily the underlying profession or qualification. For example, within the same Medical Technician grouping, the occupation of Cardiac Technicians (6-digit code 311212) is commonly held by exercise physiologists and/or sonographers. An argument may be mounted that a professional working in an occupation other than their profession should or should not be counted for workforce purposes, however it is important to recognise again that allied health professional may hold multiple roles, and the differing rules of proxy collections which may obscure them. For example, ATO and the Labour Force Survey both use ANZSCO code to report a single *occupation* or *main job*. ATO occupation is the individual's *occupation* where they derive their largest income. The Labour Force survey report an individual's *main job* as an as the one where they work the most hours. This results in conceptual misalignment error as these collections are using the same codes for slightly different concepts, aims, and/or intended uses.

## ANZSIC

ANZSIC is the Australian and New Zealand Standard Industrial Classification that is used to classify responses relating to industries.

Like ANZSCO codes, ANZSIC has 4 primary levels: Division, Subdivision, Group, Class and a fifth level for ATO Business Industry Codes, however this fifth level data availability is dataset dependent. The example 85399 - Other Allied Health Services (Mainstream) is broken down below:

1. 8: Health Care and Social Assistance
2. 85: Medical and other health care services
3. 853: Allied health services
4. 8539: Other allied health services
5. 85399: Other Allied Health Services (Mainstream)

Issues arise when using ANZSIC codes to derive industry or sector in relation to allied health workforce. In some instances, like residential aged care, there is a very good alignment with the ANSZIC coding, however with disability there is almost no meaningful alignment, and then the coding of primary care and state and territory funded care lay somewhere in between. For example:

- Definition of ANZSIC 8601 - Aged care residential services align perfectly with RACFs.
- Primary health care not cleanly captured by ANZSIC. Most classes within 85 - Medical and other health care services are relevant to primary health care.
- State/territory funded settings (hospitals/community) are not well defined by ANZSIC alone. Subdivisions 84, 86, 87 capture the relevant industries but data needs to be crossed with public/private sector status. NHWDS and Census captures public/private sector information which can provide an indication.
- Disability is not well defined by ANZSIC. Relevant classes are: 8790 - Other social assistance services and 8609 - Other residential care services. However, both include business activities that are not relevant to disability.

## National level – Workforce/ registration datasets

The main registration datasets currently available that cover allied health professionals are the NDIS provider registration data and the NHWDS.

The initial limitation of the **NDIS provider registration dataset** is that it covers only the disability sector. Further, a single provider registration can be sole trader, a large company, or any organisational iteration in between. Therefore, counting individual allied health professions and professionals is not possible.

A further limitation is that not all professionals providing disability, or even NDIS, services need to be NDIS-registered. There are 3 types of plan an NDIS recipient may be managed under: Centrally or NDIA managed plan (17% of NDIS plans), an agency managed plan (53%), and a self-managed plan (30%).<sup>16</sup> NDIS provider registration is only a requirement for delivering services to recipients on centrally managed plans. Therefore, even if NDIS registration were to require all professionals engaged by larger organisations to register

---

<sup>16</sup> National Disability Insurance Agency. (2021). *NDIS Quarterly Report to disability ministers; 31 December 2021*.

individually, up to 83% of NDIS recipients are able to use non NDIS registered allied health professionals to provide services under their plans.

The **National Health Workforce Dataset**, obtained by surveying Ahpra-regulated professions at annual re-registration, is the most comprehensive set of data relevant to workforce planning available for the health professions covered. The NHWDS collection covers most elements in the PMDS required of individual professionals. The only exception is additional detail on multiple job holding. The NHWDS does collect data on multiple job holding, however it is not uniform across all allied health professions and nor does it uniformly capture the required detail in subsequent jobs, for example where services are delivered.

One way in which the PMDS may address multiple roles would be to collect information on hours worked in all concurrently held jobs in the last week (as is the case in the NHWDS), fortnight, or month. At a minimum, serious consideration should be given to harmonise multiple job questions across professional surveys, alongside ways to extract relevant information away from an employer centric focus to more service centric, recognising single employers/enterprises routinely deliver services across multiple sectors, settings and locations. This limits to some degree the collection's ability to understand workforce supply within specific sectors, settings and regions.

Within the Medical survey currently, there are questions relevant to specialist practice and specialist training. While allied health professions may not have formally recognised specialities like medicine, specialised skills and practice areas are recognised within many professions, certified and required for advanced practice roles. For example, in paediatrics or mental health. Therefore, the PMDS sets out specific questions on multiple job holding and information on advanced training and practice.

As the NHWDS survey forms part of the registration process, it has an exceptionally high response rate. Therefore, additions or alterations need to be approached with care so as not to affect the response rate and not to interrupt established timeseries. Therefore, increasing response burden in the survey needs to be balanced against the potential benefit that collection may provide to planning overall.

Notwithstanding these limitations, the NHWDS provides a very high proportion of the data items needed to populate the PMDS and hence meet most of the requirements that have been identified. The principal constraint on the use of the NHWDS for allied health is the partial coverage of allied health professions. If the NHWDS and survey processes were expanded to include a larger number of allied health professions, most user requirements could be met.

**Allied health association registration and survey data** conducted by professional associations are a significant potential source of data. This is particularly the case where several associations have voluntarily adopted all or part of the NHWDS survey as part of their annual registration processes. This provides a means of developing a national dataset that goes beyond the Ahpra-regulated professions.

Significant limitations in this source are the partial profession coverage of most associations, with generally greater representation among those in private practice, as public sector employees are less likely to register or see the benefit in membership with an association.



Without an independent means of developing a complete list of all the practitioners in each profession it is difficult to quantify the extent of the population being surveyed capturing.

In addition to these coverage issues, there are also issues to be resolved regarding data custodianship, use of data by third parties (including the Department of Health), responsibility for processing and quality assurance of the survey if this becomes burdensome for the association, and concerns regarding costs to members.

**Primary Health Care Data Collection** under development by the AIHW has potential to provide support and fill some gaps as far as the current allied health data landscape is concerned. However, the purpose of this data collection is to enable national, population level data analytics and reporting on encounters with allied health practitioners working in the primary health care sector. The primary source of data for this collection will be sourced from practice management systems used by allied health professions, predominantly working in private practice. While the focus of the collection will be deidentified patient level data, it will likely include some provider level data, such as geographic location and clinical setting. The timeframes in which this collection will be established, mature and reach critical mass (i.e. capture a representative sample of allied health professions and professionals in primary care) is difficult to predict. Based on currently available data collection and collation mechanisms it is likely a medium to long term (5 years or more) vision.

Allied health information could also be sourced from GP patient management systems and potentially My Health Record. Even with the introduction of these data collections in future, the Primary Health Care Data Collection is primarily a public health dataset. Therefore, it will be at best a proxy for workforce numbers, intending to capture activity and type of provider, but not unique providers. As such, the dataset will be beset by the same limitations as other activity datasets, a good proxy to determine FTE required to deliver service recorded, subject to a degree of double counting of some professionals and missing others. It will provide insights into the settings and mode of service delivery, along with activity as a rate within a population and or diagnostic category. Therefore, it has potential as a source of demand/ unmet needs data, brought together with supply side, to model and forecast future needs.

**Australian Tax Office Returns Data** (ATO data) provides reasonable coverage of employed allied health professionals. It can also provide some indication of sector, i.e. public, aged care, disability care, where directly engaged, however contract or labour hire arrangements will be obscured.

Another limitation of this dataset is identifying owner managers of unincorporated enterprise, or small business as they will be coded as such rather than the profession in which they are actually delivering services. This would affect a nontrivial number of allied health practitioners where contract work is common within and across sectors.

**ATO Single Touch Payroll** is a new business report employee's tax and superannuation information to the ATO on a continuing basis. It is hypothesised that it may provide real time (pay period to pay period) insight into professional movements however, it does not capture occupation or industry, so is extremely limited for this purpose unless it is linked to other datasets for example Multi-Agency Data Integration Project (**MADIP**) or Business Longitudinal Analysis Data Environment (**BLADE**) discussed later in Linked and Synthetic Datasets.

## Census and surveys

The **Census of Population and Housing** addresses some of the PMDS requirements. It covers more allied health professions than the NHWDS and has information on job title and role in main job. It does not address the critical question of multiple job holding nor of hours worked in a period. Adding questions to the Census is extremely difficult and unlikely to increase the ability of this source to meet PMDS requirements. Further issues are the level of detail available in identifying and classifying allied health professionals. The census does not provide for an indication as to whether the sector, setting, or role someone is employed in is a clinical role or otherwise, nor does it consider whether their credentialing has lapsed (or indeed whether they are qualified to practice the occupation they state in the Census).

The **Labour Force Survey** provides greater detail about job holding and hours worked in the counting period, for some of the larger allied health professions. However, when considering the counts Figure 2 shows the significant fluctuation the count is subject to. Thus, while it may be the only option available in some instances its overall suitability for workforce planning is questionable, especially for the smaller professions.

Both the Census and Labour Force survey use ANZSCO. This classification lacks specificity regarding some allied health professions (for example, audiologists and speech pathologists are classified together at the lowest – 6<sup>th</sup> digit – level, and allied health assistants cannot be separated from personal care assistants). These limitations again reduce the usefulness of these and many other data sources and cannot easily be remedied.

Limited to Aged Care, the **Aged Care Census** has the potential to address sector specific questions. In 2020 the Aged Care Census received responses from 49% of residential aged care facilities, and 47% of home care providers and the representativeness of this response rate is difficult to assess. Further, providers are asked to complete a separate response for each service care type they provide, so there is likely to be a degree of double counting of providers and workers.

The main issue with surveys and census' is the response rate, overall and relating to specific questions, and the level of generalisation, and therefore self-reporting, required to make the surveys applicable to specific contexts.

## Linked and synthetic datasets

**Multi-Agency Data Integration Project (MADIP)** contains occupation data from both the census and ATO. Therefore, it is subject to the same limitations as those datasets. Sector or industry is only captured in Census and Apprentice and Trainee datasets, not via personal income tax returns. This represents a significant limitation for allied health workforce purposes as allied health professionals, including trainees, will not appear in Apprentice and Trainee datasets, and an allied health professional may change industry or employer many times between Census of housing and population without changing ATO captured occupation. Even then, the Census then only captures industry for the primary job reported.

MADIP may be more useful for allied health workforce purposes if ATO personal income tax data also included ANZSIC 2006 industry data items. However, it would still be subject to the same limitations of the underlying ATO personal income tax returns dataset.

The **Business Longitudinal Analysis Data Environment (BLADE)** is an economic data tool combining tax, trade and intellectual property data with information from ABS surveys to provide a better understanding of the Australian economy and businesses performance over time. While it provides industry information via ANZSIC 2006, it has limited application to workforce planning as it does not provide any information on employees beyond headcount, therefore is limited in not being able to distinguish individual professions.

Potentially a significant issue facing the ongoing use of MADIP and BLADE is that their primary purpose is to inform research. Operational or ongoing use of the datasets is not provided for and would likely require legislative amendment.

**Jobs in Australia** statistics are compiled from the Linked Employer-Employee Dataset (LEED), which is built using Australian Tax Office administrative data linked to ABS Business Longitudinal Analytical Data Environment (BLADE). While this may overcome the limitations of MADIP (lack of ANZSIC code) and Blade (lack of individual employee occupation granularity) it is still subject to limitations inherent in the ATO personal income tax return dataset.

There are **several general limitations** that synthetic / linked datasets share. These include conceptual misalignment, incomplete information, and in the specific data sets we are considering, occupation.

**Conceptual misalignment**, where datasets and classifications are designed for a different purpose, then used to align with other standards for example industry or sector via ANZSIC or occupation via ANZSCO.

**Incomplete information** where individual Tax Returns are not lodged, or not all items (for example occupation) are completed. The ABS routinely advises caution when interpreting data subject to high rates of missing information.

**Occupation** is derived from recording of main job only. We know that allied health professionals may have multiple sources of employment, while the job title or occupation may be the same or similar across different employers, the industry or sector is more likely to differ. Further occupation in main job cannot be determined for a person who is only employed as an owner manager of unincorporated enterprise, in addition the main job as reported by the ATO is the job in which they received the highest employment income. This differs from ABS household surveys, which define a person's main job as the job in which the most hours are usually worked.

## Employer data

In theory, public hospital HR and payroll systems should be able to provide robust data about those allied health professionals located within the public sector. However, across almost all jurisdictions definitional issues abound. In several jurisdictions, allied health professionals are defined in HR and payroll data under the title that appears on their enterprise bargaining agreement. Therefore, many allied health professionals are lumped together under the same title. The difficulty that this represents is compounded when states include different professions under the umbrella of allied health. In jurisdictions with devolved governance arrangements, planning is performed at the local health network/ district level, however individual service budgets routinely used to plan and employ allied health professionals are

done at a local level. The data that is relied upon, and or reported back centrally was described by many stakeholders as less than robust. In one example, local patient administration systems default to a specific allied health profession and require managers/ IT to manually select the correct profession for an employee when granting access. An incorrect designation does not affect access to the system or day to day functioning, so in many instances employee designation is left as the default. Therefore, when looking at this data to assess specific profession numbers, it is significantly biased by the system default/ collection mechanism.

These issues can be overcome but these data sources will only ever capture a proportion of the allied health workforce and will be very difficult to aggregate with other datasets to provide a more comprehensive picture.

When considering the proposed minimum data requirements from employers, **aged care providers** almost universally reported collecting most of the fields identified in the PMDS. In consultation, some providers saw no problem in providing this data to government for the purposes of workforce planning, they noted however that a clear use case would need to be articulated and a reassurance that all necessary privacy laws would be adhered to satisfy internal sign off for disclosure. Providers also noted that much of this data is not all that different to the data that is required with respect to aged care packages, and with relatively minor alterations, the majority should be able to be derived from existing systems. That said, there were providers that expressed some hesitation in reporting this data, fearing that it may lead to penalties or reduced funding if providers were unable to meet staffing requirements.

In responses similar to aged care, **disability care and service providers** generally collect most of the pertinent fields identified for employers in the PMDS. Broader elements where respondents had gaps were workforce visa details if sponsored by an employee, and the number of research hours worked. Although the number of administration/ management hours was reported to be collected by a majority of respondents, it is worth noting that the need to identify face-to-face clinical hours against administrative hours remained a common issue amongst respondents when pressed about data and information needs to support their work.

It appears from survey and consultation that both **aged care** and **disability care** providers are a relatively untapped source of sector specific workforce data. The difficulty will be in establishing a sector wide picture. In aged care, this may be assisted by Commonwealth funding of aged care to provide a comprehensive picture of suppliers and services or use of the Australian Business Register. However, with NDIS provider registration not required to deliver services in most cases, getting a comprehensive picture of the **disability sector may be more difficult**.

## Primary Health Networks and needs assessments

**Primary Health Networks** (PHNs) regularly undertake needs analysis as part of their commissioning cycles. The PHNs' analyses consider needs for the allied health workforce within their catchments. However, the Department of Health acknowledges that PHNs have

"differing and sometimes unique sources of data" which makes standardisation difficult.<sup>17</sup> Further, PHNs tend to report that any analysis on allied health workforce or capacity is typically specific to funded projects or priorities. For example, a priority area for the PHN may be Mental Health therefore an assessment on allied health professionals in the area will focus on the professionals specific to that priority area and/or potentially those professions specified by program funding guidelines. For some PHNs this work includes workforce surveys and service mapping, however it must be stressed that these projects are limited to priority areas.

PHNs are primarily interested in the availability of services in particular locations, rather than the numbers of allied health professionals in aggregate. For them, a facility such as the National Health Services Directory (NHSD) is of greater potential benefit. This allows a user to identify a specific allied health service and whether it is located in a particular town. Opening hours are also available for some services. There are, however, significant limitations with the current NHSD, particularly for allied health. Only some allied health services are shown, and where an allied health service is available through a group practice this may not be shown. While opening hours for the facility are useful, the allied health professional may only work on certain days, and for certain hours, and this is not shown. Similarly, a service may be an outreach from a regional centre and only available at certain times. Some services may be provided via telehealth. Finally, the NHSD relies on service providers maintaining the currency of the data on their facility, and the data may thus not be up to date.

## Billing and financial data

Activity datasets such as MBS and hospitalisation data are extremely rich sources for where and how medical professionals are delivering services. Except for optometry (with almost complete coverage by MBS), only a proportion of allied health activity is captured within these datasets. Furthermore, patient claim limitations and the necessity for GP referral means MBS-reimbursable allied health service activity may be subject to some biases in these datasets.

Private health insurer data may cover some of the gaps. However, there is still allied health activity paid outside of these systems that may have implications for estimations of FTE.

Appendix 2 (page 67), provides a table of existing datasets where allied health professionals and allied health services appear. The table then compares the elements captured within these sets against the PMDS and the data currently available for the medical profession within the NHWDS.

## Defining allied health

Another fundamental barrier to nationally consistent collections across allied health professions is defining what constitutes an allied health profession for the purpose of the collection.

---

<sup>17</sup> Australian Government Department of Health. (2015). *Needs assessment guide*. [https://www1.health.gov.au/internet/main/publishing.nsf/Content/98D184E26BF30004CA257F9A000718F4/\\$File/PHN%20Needs%20Assessment%20Guide.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/98D184E26BF30004CA257F9A000718F4/$File/PHN%20Needs%20Assessment%20Guide.pdf).

In Australia, allied health professionals are typically tertiary trained with most professions only recognising qualifications at Australian Qualifications Framework (AQF) Level 7 or higher. The definition of an allied health professional provided by Allied Health Professions Australia (AHPA), a collegiate body that represents 23 professions or associations as members and a further 14 as affiliates, defines an allied health profession as one which has:

- A direct patient care role and may have application to broader public health outcomes.
- A national professional organisation with a code of ethics/conduct and clearly defined membership requirements.
- University health sciences courses (not medical, dental or nursing) at AQF Level 7 or higher, accredited by their relevant national accreditation body
- Clearly articulated national entry level competency standards and assessment procedures.
- A defined core scope of practice.
- Robust and enforceable regulatory mechanisms (Allied Health Professions Australia, 2022).

Each state, territory and the Australian Government have slight variations in who and how they define as allied health. Some of these take in technical or scientific workers that provide health services would not fall under the AHPA definition due to not being involved in direct patient care. State and territory definitions are further confounded by allied health Enterprise Agreements or Awards that are subject to other definitions. By way of comparison, Table 8 provides a list of allied health professions as defined or recognised across different jurisdictions.

Table 8: Allied health professions as recognised by Ahpra and jurisdictions

Profession	Cth	Ahpra <sup>18</sup>	NSW <sup>19</sup>	Vic <sup>20</sup>	Qld <sup>21</sup>	SA <sup>22*</sup>	WA <sup>23</sup>	Tas <sup>24</sup>	NT <sup>25</sup>	ACT <sup>26</sup>
Art therapists	Y		Y	Y	Y	Y				Y
Audiologists	Y		Y	Y	Y	Y	Y	Y	Y	Y
Chiropractors	Y	Y		Y						
Dietitians	Y		Y	Y	Y	Y	Y	Y	Y	Y
Exercise physiologists	Y		Y	Y	Y	Y	Y	Y		Y
Genetic counsellors	Y		Y			Y		Y		Y

<sup>18</sup> Australian Health Practitioner Regulation Agency. (2022). *Register of practitioners*. Retrieved 20 March 2022 from <https://www.ahpra.gov.au/Registration/Registers-of-Practitioners.aspx>

<sup>19</sup> NSW Health. *Allied Health Professions within NSW Health*. NSW Health,.. Retrieved 20 March 2022 from <https://www.health.nsw.gov.au/workforce/alliedhealth/Pages/default.aspx>

<sup>20</sup> Victorian Department of Health. *Allied Health: Therapy and Science Disciplines*. Retrieved 20 March 2022 from <https://www.health.vic.gov.au/allied-health-workforce/allied-health-professions>

<sup>21</sup> Queensland Health. (2017). *Allied Health Professions' Office of Queensland*. Queensland Health,.. Retrieved 20 March 2022 from <https://www.health.qld.gov.au/ahwac>

<sup>22</sup> SA Health. (2019-2022). *SA Health Allied Health and Scientific Health position statement*. <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+governance+and+leadership/allied+and+scientific+health/allied+and+scientific+health>

<sup>23</sup> Western Australian Department of Health. *Allied Health and Health Sciences*. Retrieved 20 March 2022 from <https://ww2.health.wa.gov.au/Careers/Occupations/Allied-health-and-health-sciences>

<sup>24</sup> Tasmanian Minister administering the state services ACT 2000, Australian Education Union Tasmania, Community & Public Sector Union Tasmania, & Health Services Union Tasmania. (2019). *Allied health professionals Public Sector Unions Wages Agreement 2019*.

<sup>25</sup> NT Health. (2021). *Allied Health*. NT Health,.. Retrieved 20 March 2020 from <https://health.nt.gov.au/professionals/allied-health>

<sup>26</sup> ACT Health. (2022). *Eligible Allied Health Professions Postgraduate Scholarship Scheme*.

Profession	Cth	Ahpra <sup>18</sup>	NSW <sup>19</sup>	Vic <sup>20</sup>	Qld <sup>21</sup>	SA <sup>22*</sup>	WA <sup>23</sup>	Tas <sup>24</sup>	NT <sup>25</sup>	ACT <sup>26</sup>
Medical radiation practitioners	Y	Y			Y				Y	
Music therapists	Y		Y	Y	Y	Y		Y		
Occupational therapists	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Optometrists	Y	Y		Y	Y	Y		Y		
Orthoptists	Y		Y	Y	Y	Y		Y	Y	Y
Orthotists/prosthetists	Y		Y	Y	Y	Y	Y	Y	Y	Y
Osteopaths	Y	Y		Y						
Perfusionists	Y					Y		Y		Y
Pharmacists	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Physiotherapists	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Podiatrists	Y	Y	Y	Y	Y	Y		Y	Y	Y
Psychologists	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Rehabilitation counsellors	Y									
Social workers	Y		Y	Y	Y	Y	Y	Y	Y	Y
Sonographers	Y			Y	Y	Y	Y	Y		Y
Speech pathologists	Y		Y		Y	Y	Y		Y	Y
<b>Not in scope</b>										
Aboriginal health worker								Y		
ACAT Assessor								Y		
Alcohol and other drug worker								Y		
Analytical Scientist - Forensic Chemist, Environmental Chemist, Microbiologist, Forensic Toxicologist										Y
Biomedical engineer							Y			Y
Biomedical science				Y			Y	Y		
Cardiac physiologists						Y				
Cardiac scientist										Y
Cardiology/health professional								Y		
Case manager								Y		
Child Life Therapy			Y							
Children and families/youth justice professional								Y		
Clinical measurements					Y					
Clinical physiology					Y					
Counsellors			Y							Y
Dental prosthetics								Y		Y
Dental therapist						Y		Y		Y
Development educator						Y				
Diversional Therapy			Y							
Environment/public health officer								Y		Y
Epidemiologist						Y		Y		Y

Profession	Cth	Ahpra <sup>18</sup>	NSW <sup>19</sup>	Vic <sup>20</sup>	Qld <sup>21</sup>	SA <sup>22*</sup>	WA <sup>23</sup>	Tas <sup>24</sup>	NT <sup>25</sup>	ACT <sup>26</sup>
Health physicists								Y		
Health professional/project manager								Y		
Leisure therapists					Y					
Medical laboratory science				Y					Y	Y
Medical librarianship							Y	Y		
Medical physicist								Y		Y
Microbiologists								Y		
Neurophysiology scientist					Y		Y	Y		Y
Nuclear medicine technology			Y	Y	Y	Y	Y	Y		Y
Oral health (not dentistry)				Y				Y	Y	Y
Physicists					Y					
Radiation oncology medical physics				Y			Y			
Radiation therapists			Y	Y		Y	Y		Y	Y
Radiographers			Y	Y	Y	Y		Y		Y
Rehabilitation engineering					Y					
Respiratory scientist							Y	Y		Y
Scientific/Research Officer								Y		
Sexual Assault			Y							
Sleep technician							Y			Y
Speech therapists				Y	Y			Y		
Welfare			Y							

## Allied health assistants

The National Rural Health Commissioner's report identified a study from 2015 that suggested up to 17% of an allied health professional's workload could be carried out by allied health assistants.<sup>27</sup> Further, *The National Mental Health Service Planning Framework* predicts a growth in the mental health workforce of 13,000 FTE between 2019 and 2030. This includes 29% vocationally qualified mental health workers, 6% peer workers.<sup>28</sup>

An Allied Health Assistant typically works under the supervision and direction of an allied health professional to perform clinical and non-clinical duties in a discipline specific area or across a multi-disciplinary team. The use of assistants varied significantly across different professions, with variations in their views on how suitable the profession would be to engaging an assistant workforce. Some, including Exercise Physiology and Dietetics, even had levels of qualification short of full credentialing that suited supervised allied health assistant roles.

<sup>27</sup> Somerville, L., Davis, A., Elliott, A. L., Terrill, D., Austin, N., & Philip, K. (2015, Jun). Building allied health workforce capacity: a strategic approach to workforce innovation. *Aust Health Rev*, 39(3), 264-270. <https://doi.org/10.1071/ah14211>

<sup>28</sup> Australian Institute of Health and Welfare. (2021). *National Mental Health Service Planning Framework tool*/Retrieved 20 March 2022 from <https://www.aihw.gov.au/nmhspf>



Stakeholders also identified that barriers for qualification or employment as an allied health assistant are lower than for many other allied health professions. This was more acutely observed in rural and remote areas, and Indigenous health settings.

Therefore, capturing this segment of the health workforce is important in understanding not only capacity and eventually unmet need, but also critical training/qualification pathways as well.

## Care workforce

The Royal Commission into Aged Care identified that 'personal care workers (health)' and 'assistants in nursing' are forming a crucial part of the aged care workforce, increasingly spending more time caring for older people than any other staff types.<sup>29</sup> Commissioners recommended that the national registration scheme should be expanded to include the personal care workforce. If workforce planning in aged care is a primary goal of a nationally consistent dataset, then serious consideration to accounting for this workforce is needed.

---

<sup>29</sup> Royal Commission into Aged Care Quality and Safety. (2021). *Final Report: Care, Dignity and Respect*.

## Recommendations

The *Workload Measures for Allied Health Professionals* report<sup>30</sup> stated:

*It is not currently known with any precision how many allied health professionals are working in Australia, the volume of activities they perform, or how these are changing over time. Comprehensive and accurate information on the numbers and workload of the allied health workforce is urgently required for national workforce planning. If such data are not improved, then it will continue to be impossible to conduct national workforce planning for these groups in Australia.*  
(p. 5)

Recommendation number 3 of the National Rural Health Commissioner's report<sup>31</sup> focused on the investment in allied health data and infrastructure. The Commissioner specifically called for a "Minimum dataset that incorporates comprehensive rural and remote allied health workforce data".

*Care Dignity and Respect*<sup>32</sup> also stated:

*To protect older people, all aged care workers should be registered, as they would be in other health professions. Registration will deliver national standardisation of entry-level and ongoing qualifications and development requirements for personal care workers, as it does for health care workers such as doctors, nurses and allied health care workers.* (p.14)

The previous chapters in this report have proposed content for a minimum dataset which would meet the needs assessed for allied health workforce data. This Chapter outlines options for meeting these needs for allied health professions listed in scope.

The recommendations walk through what is practically required to meet the rigors of workforce planning for allied health. They were developed in full consideration of existing data rich sources, but at the same time, cognisant of the significant gaps that remain. Recognising that a comprehensive solution may be difficult to implement and will take some time, we have included interim solutions to enhance the data for the self-regulated professions while permanent systems are put in place.

---

<sup>30</sup> Health Workforce Australia. (2010). *National Health Workforce Planning and Research Collaboration 2010: Workload Measures for Allied Health Professionals Final Report*.

<sup>31</sup> National Rural Health Commissioner. (2020). *Improvement of Access, Quality and Distribution of Allied Health Services in Regional, Rural and Remote Australia*.

<sup>32</sup> Royal Commission into Aged Care Quality and Safety. (2021). *Final Report: Care, Dignity and Respect*.

## Primary recommendations for data improvement

### Recommendation 1 – National register for defined allied health professionals

The **most significant data gap** for allied health professions, **specifically self-regulated professions**, is the **absence of a comprehensive list of all members of the profession**. Associations and employers have partial lists, but these cannot easily be brought together. This means that the **Census of Population and Housing is the only source from which basic counts can be obtained**. But more importantly, **there is currently no way to create a survey frame** from which professionals can be selected, **and therefore little confidence that the sample will be representative** of the profession.

The best solution is to **mandate registration** with the national register **as a requirement of practice**, as this guarantees the most comprehensive and up-to-date information. If this is not feasible, professionals could be encouraged to register voluntarily. Voluntary registration may require specific inducements and will likely take longer to develop the critical mass required to make statistically robust workforce decisions.

The Department of Health is currently working with the self-regulated health professions on co-designing a **Commonwealth led approach to addressing the gaps in consistent standards of qualifications and skills and in workforce data**. The regulatory solution will need to:

- Codify a set of national standards for certification for the included professions. These standards will provide confidence that government policies which identify or engage these professions are fit for purpose and consistent with the profession's standards of practice. These national standards, and the confident inclusion of these professions in government policy will also improve their professional recognition.
- Register the professionals certified against the national standards in a publicly accessible register, providing transparency for employers and health consumers, and improving the workforce data capability of the Commonwealth.
- Reduce the burden on professionals and employers by providing a single source of truth in relation to matters of certification and qualification.
- Publish professional misconduct findings, where appropriate, improving accountability and transparency in these professions.

The registry of certified professionals, (subject to professions included) would be the single biggest advance in allied health workforce data since the National Registration & Accreditation Scheme was established. Depending on its implementation, it could provide us with a robust count of professionals, their respective disciplines, and a frame on which the NHWDS could be extended to currently self-regulated allied health professions and wider.

#### Feasibility

#### National register for defined allied health professionals

It is likely that, while being **the most comprehensive and fit for purpose option** to address the data gaps faced by self-regulated professions, it will be **most expensive and lengthy option**, but **will provide the foundation for allied health workforce data collection into the future.**

It will **require the Department to coordinate and or determine the allied health professions and related vocations** (allied health assistants/ care workforce) **to be covered by the register and would also require government to establish an agency**, or assign an existing agency, the responsibility to administer, store, process and analyse the survey and its data.

This approach will require a **full costing and Federal Budget bid** and likely require a **timeframe of 5-10 years for full implementation.** The **timeframe may be shorter** through **building on** the progress made on the **Commonwealth Regulatory Model already in consideration.**

## **Recommendation 2 – Nationally consistent survey of all defined allied health professionals**

Fundamentally, **there is no single national data collection** that collects a nationally consistent allied health dataset. Even the **NHWDS, in collecting 9 of 22 professions**, has inconsistencies in how it handles part time work and multiple job holding, a common feature of allied health practice. **The most direct and robust way** to address the gaps allied health workforce data is to use the **frame created by a national register and survey all allied health professionals** at the time of annual registration.

A new nationally consistent survey should use the **NHWDS professional survey as its starting point.** To meet the unique challenges that multiple job holding poses in allied health, the NHWDS should be updated to **collect as requirement the sectors, settings and the hours worked by each professional in each job holding.** Further, responses in each **job holding should provide opportunity to select multiple sectors that job may work across.**

Short of the option above option one, the frame created by a national register would enable the following survey models that could provide similar utility while placing a lower burden on respondents overall:

- A. Use of a core and supplement survey model.** This approach would collect a relatively small set of core information from all respondents every survey cycle, as well as a rotating set of supplementary questions. Supplementary questions could canvass many topics, including multiple job holdings, across one or more supplementary surveys. This would mean that each respondent would answer the core set every year, and complete one supplementary survey. In the next cycle the core would be repeated but a different supplementary set would be used.
- B. Use of a sample of respondents.** In this option, all respondents would complete the core survey. In any one cycle, a randomly selected sub-sample of respondents would be asked to complete an additional set of questions about multiple job holdings. Respondent selection could be done in such a way to ensure no individual respondent

could be re-selected again until the entire population had completed the supplementary survey. In this approach, individuals would only receive the additional questions relatively infrequently.

## Feasibility

### Nationally consistent survey of all defined allied health professionals

#### Ahpra regulated allied health professions

Enhancement of the NHWDS as outlined could be introduced from the next survey cycle of health professional registrations, therefore, so **would be the quickest component to implement**. There would be **modest costs associated** with re-design of NHWDS survey materials and processing of additional content. **Principal resistance** would come from the potential **impact** that modifications to the survey may have **on well-established time series** and response rate however, these **issues should not be insurmountable**. Discussions within the relevant areas of the Department and Ahpra could commence immediately. **A timeframe of 1-2 years would be possible**, with the objective of introducing the **changes in the 2024 survey cycle**.

#### Self-regulated allied health professions

This survey will **depend on the establishment of the National Registry** of allied health professionals, as well as the **Department's coordination and determine the allied health professions and related vocations** (allied health assistants/ care workforce) **to be covered by the survey**.

**Again, a timeframe of 1-2 years would be possible** from the time that a National Register is established, and registrations reach critical mass to provide a robust survey frame.

## Recommendation 3 – National Repository for allied health workforce data

Establishing a national data repository would be desirable to manage, analyse and enhance any data obtained from associations, employers, or a new regulatory model. The repository organisation would be responsible for further developing and managing the national dataset, storing, reporting on, and making available to third parties, the data collected on allied health professionals.

A data repository would also provide some of the infrastructure needed for a data linkage capability and could explore the potential for linking data from associations and employers to develop a more comprehensive picture. Data linkage work is likely to be complex and limited to datasets with sufficient detail to link individuals. Data governance and privacy issues will be significant.

## Feasibility

### Recommendation 3 – National repository.

A national repository could be established relatively quickly, particularly if an existing government entity was designated (e.g. Department of Health, AIHW).

Costs associated with **obtaining, storing, and managing** the data from multiple sources **would be the principal cost** (data collection costs would be accounted for in the costs already discussed in the other options). The **national repository could also analyse other data sources such as ATO and Census data** and analyse existing **linked data assets such as MADIP** as well as create new linked data assets from association and employer data sources.

An agency can be designated in the next 12 months but would only **begin to provide useful data as other data sources (such as association and employer surveys) come online**. Costs associated with this option would depend on the functions assigned to the agency and the speed with which these functions were enlivened.

**Negotiations with professional associations, including ownership, privacy, collection and coordination of the data, could commence immediately with minimal costs**. However, it is likely that **additional costs and resources will be required** as associations **expand their collections to meet the full dataset specification**.

**Timeframe 1 year**, with **mature datasets** in select self-regulated professions in **3-5 years**.

## Interim recommendations to improve data collection for allied health

In recognition of the time, difficulty and expense involved in establishing a new national collection for self-regulated professions, this section considers some partial solutions that could improve data for these professionals. These options are all complementary and could all be implemented concurrently.

### Interim 1 - Enhancement of existing surveys conducted by professional associations

Surveys could be conducted at the time of annual re-registration to ask a similar range of questions as those for the NHWDS. A standard survey could be developed based on the NHWDS and using a core and rotating supplement survey model it would be possible to collect a more comprehensive set of data across multiple years. Several associations, such as Exercise and Sports Science Australia, already conduct annual surveys as part of membership and accreditation renewals. Other associations either collect data via a separate process or do not regularly collect data. An annual survey as part of the renewal process is most desirable as it offers an opportunity to access all members and is most likely to produce an acceptable response rate. A survey could, however, be run as a separate exercise by associations, if desired.

There are several issues with this option. Due to the partial coverage of the professions by the associations (with those in public sector employment often under-represented), there is likely to be bias in the responses received. In addition, the data collected will need to be justified for both associations' uses and for their members. Similarly, there may be concerns among some associations about the use made of the data by government and other third parties. Funding is likely to be needed, particularly for those associations who do not currently conduct an annual survey. Finally, administration of the surveys, including validation and reporting, may be problematic with variations in how well these processes are managed by different associations.

#### Feasibility

#### Enhancement of existing surveys conducted by professional associations

This option can be adopted sequentially, i.e. **associations can take on the survey as they develop the necessary infrastructure**. It would be relatively low-cost, with many of the associations already running some form of survey, or looking to include a survey with annual registration. However, it would not be a *no cost* avenue, as smaller associations may not have the financial capacity to purchase and configure systems required for the capture and processing of survey data.

**This option will require an agency, new or existing, to act as an allied health data repository.** The agency, as well as acting as a repository, could also take on a role in driving this work with the associations, negotiate access with each in turn, take responsibility for data management issues and process the survey results.

**Principal barriers would be negotiating data ownership and control issues with the associations** and managing their concerns regarding push-back from their membership. There would also be a management **task in coordinating the multiple surveys across associations and with Ahpra registration / NHWDS survey to ensure consistency.**

This is an option that **could commence development immediately**, involving discussions with the department to ensure coordination of surveys with Allied Health Professions Australia and or the National Alliance of Self-Regulating Health Professions (NASRHP).

**Timeframe 1-3 years** (time until all associations are able to collect data) **following establishment of the national repository. (discussed above)**

## Interim 2 - Collection of data from employers

To complement the collection of data from professional associations, data could be collected from major employers of allied health professionals (state/territory and private health organisations). This could be conducted for other sectors in a similar way to the Aged Care Census or could be collected as an administrative by-product via extracts from HR and payroll systems. This type of collection would add to that from the associations as it would cover sectors such public health which are under-represented by association membership and may also potentially provide richer data on hours worked and activity.

### Feasibility

#### Collection of data from employers

This option requires an agency able to develop, administer and process an employer survey. It could be done by a commercial operator (as is done with the aged care census) or via a government agency such as ABS or AIHW. A suitable survey frame could be taken from the ABS Business Register.

This would be a relatively expensive option as it requires a stand-alone survey and would really only be valuable if repeated at regular intervals.

This approach is likely to require a full costing and Federal Budget bid.

Timeframe 3-5 years



# References

ACT Health. (2022). *Eligible Allied Health Professions Postgraduate Scholarship Scheme*.

Allied Health Professions Australia. (2022). *What is allied health?* Retrieved 20 March 2022 from <https://ahpa.com.au/what-is-allied-health/>

Australian Government Department of Health. (2015). *Needs assessment guide*. [https://www1.health.gov.au/internet/main/publishing.nsf/Content/98D184E26BF30004CA257F9A000718F4/\\$File/PHN%20Needs%20Assessment%20Guide.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/98D184E26BF30004CA257F9A000718F4/$File/PHN%20Needs%20Assessment%20Guide.pdf)

Australian Government Department of Health. (2020). *Health Workforce Data Tool* <https://hwd.health.gov.au/datatool/>

Australian Government Department of Health. (2021). *2020 Aged Care Workforce Census Report*. Australian Government Department of Health.

Australian Government Department of Health. (Year unknown). *Inflow and outflow supply methodology*.

Australian Government Department of Social Services. (2021). *NDIS National Workforce Plan: 2021–2025*.

Australian Government Productivity Commission. (2020). *Mental Health - Productivity Commission Inquiry Report*.

Australian Health Practitioner Regulation Agency. (2022). *Register of practitioners*. Retrieved 20 March 2022 from <https://www.ahpra.gov.au/Registration/Registers-of-Practitioners.aspx>

Australian Institute of Health and Welfare. (2021). *National Mental Health Service Planning Framework tool* Retrieved 20 March 2022 from <https://www.aihw.gov.au/nmhspf>

Australian Music Therapy Association. (2022). *What is AMTA?* Australian Music Therapy Association,,. Retrieved 20 March 2022 from <https://www.austmta.org.au/index.cfm//about-us/what-is-amta/>

Australian Tax Office. (2020). *Individuals - Table 14 Selected items, by occupation, sex and taxable income range, 2010–11 to 2017–18 income years*. <https://data.gov.au/dataset/ds-dga-23b8c299-a85b-4fc0-a07d-5ed14e23a103/distribution/dist-dga-6a989b47-29ce-451a-a9ef-ed57be644b61/details?q=Taxation%20statistics>

Dietitians Australia. (2021). *Dietitians Australia Annual Report 2020-21*.

Exercise and Sport Science Australia. (2020). *Exercise and Sport Science Australia 2020 Annual Report*.

Health Workforce Australia. (2010). *National Health Workforce Planning and Research Collaboration 2010: Workload Measures for Allied Health Professionals Final Report*.

National Disability Insurance Agency. (2021). *NDIS Quarterly Report to disability ministers; 31 December 2021*.

National Disability Services. (2018). *Australian Disability Workforce Report February 2018*.

National Rural Health Commissioner. (2020). *Improvement of Access, Quality and Distribution of Allied Health Services in Regional, Rural and Remote Australia*.

NSW Health. *Allied Health Professions within NSW Health*. NSW Health,, Retrieved 20 March 2022 from <https://www.health.nsw.gov.au/workforce/alliedhealth/Pages/default.aspx>

NT Health. (2021). *Allied Health*. NT Health,, Retrieved 20 March 2020 from <https://health.nt.gov.au/professionals/allied-health>

Philip, K. (2015, Jun). Allied health: untapped potential in the Australian health system. *Aust Health Rev*, 39(3), 244-247. <https://doi.org/10.1071/ah14194>

Queensland Health. (2017). *Allied Health Professions' Office of Queensland*. Queensland Health,, Retrieved 20 March 2022 from <https://www.health.qld.gov.au/ahwac>

Ridgewell, E., Clarke, L., Anderson, S., & Dillon, M. P. (2021, Mar 17). The changing demographics of the orthotist/prosthetist workforce in Australia: 2007, 2012 and 2019. *Hum Resour Health*, 19(1), 34. <https://doi.org/10.1186/s12960-021-00581-4>

Royal Commission into Aged Care Quality and Safety. (2021). *Final Report: Care, Dignity and Respect*.

SA Health. (2019-2022). *SA Health Allied Health and Scientific Health position statement*. <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+governance+and+leadership/allied+and+scientific+health/allied+and+scientific+health>

Somerville, L., Davis, A., Elliott, A. L., Terrill, D., Austin, N., & Philip, K. (2015, Jun). Building allied health workforce capacity: a strategic approach to workforce innovation. *Aust Health Rev*, 39(3), 264-270. <https://doi.org/10.1071/ah14211>

Tasmanian Minister administering the state services ACT 2000, Australian Education Union Tasmania, Community & Public Sector Union Tasmania, & Health Services Union Tasmania. (2019). *Allied health professionals Public Sector Unions Wages Agreement 2019*.

The Australian and New Zealand College of Perfusionists. (2022). *Currently Certified (CCP (ANZ) and OTP)*. The Australian and New Zealand College of Perfusionists,, Retrieved 20 March 2022 from <https://anzcp.org/professional-standards/ccp-currently-certified/>

The Australian New Zealand and Asian Creative Arts Therapies Association. (2021). *Welcome to our 'Find a Therapist' directory*. Retrieved 20 March 2022 from <https://www.anzacata.org/FIND-A-THERAPIST>

Victorian Department of Health. *Allied Health: Therapy and Science Disciplines*. Retrieved 20 March 2022 from <https://www.health.vic.gov.au/allied-health-workforce/allied-health-professions>

Western Australian Department of Health. *Allied Health and Health Sciences*. Retrieved 20 March 2022 from <https://ww2.health.wa.gov.au/Careers/Occupations/Allied-health-and-health-sciences>

# Appendix 1: Existing sources of allied health workforce data

## National Health Workforce Dataset

<b>1. Scope</b>	National survey
<b>2. Counting unit</b>	All individuals in the profession are counted once
<b>3. Profession coverage</b>	National registration process for 16 health professions. The following Apha-regulated allied health professions relevant to the current project are included: <ul style="list-style-type: none"> <li>• Chinese medicine practitioners</li> <li>• Chiropractors</li> <li>• Medical radiation practitioners</li> <li>• Occupational therapists</li> <li>• Optometrists</li> <li>• Osteopaths</li> <li>• Pharmacists</li> <li>• Physiotherapists</li> <li>• Podiatrists</li> <li>• Psychologists</li> </ul>
<b>4. Data collection method and Journey</b>	Annual survey completed at the same time as Ahpra registration. This approach results in response rates between 93%–97%. Ahpra creates database extracts from both the registration database and the workforce survey database to build the NHWDS.
<b>5. Sample size</b>	801,659 registered health practitioners across 16 professions as of 2019–20. High survey response rates (average: 93%–97%)
<b>6. Data items available</b>	<ul style="list-style-type: none"> <li>• Place of initial qualification</li> <li>• Whether working last week in the profession</li> <li>• If not, why not working in the profession last week</li> <li>• Occupation</li> <li>• Whether looking for work in the profession</li> <li>• Total hours worked in the last week clinical/non-clinical</li> <li>• Hours worked in private/public in the last week</li> <li>• Principal role in main job</li> <li>• Type of clinical stream in main job</li> <li>• Principal scope of practice in main job</li> <li>• Principal work setting</li> <li>• Location of work</li> <li>• Amount of regional/rural work done in addition to main location</li> <li>• How often rural work is undertaken</li> <li>• Aboriginal and Torres Strait Islander origin</li> <li>• Number of years worked in the profession</li> <li>• How many more years intending to work</li> <li>• Whether a temporary resident, and visa type entered under</li> </ul>
<b>7. Geographical granularity</b>	Collects information on location of main job via state/territory, postcode and suburb.
<b>8. Availability of data products</b>	Publicly available annual reports and data spreadsheet
<b>9. Collection frequency and regularity</b>	Annual

## Labour Force Survey

<b>1. Scope</b>	National survey/interviews to collect information
<b>2. Counting unit</b>	Dwellings counted and individuals residing within dwellings
<b>3. Profession coverage</b>	Provides estimates of employment and unemployment nationally and by state and territory
<b>4. Data collection method and Journey</b>	<p>Conducted by the Australian Bureau of Statistics (ABS), the LFS is based on a multi-stage area sample of:</p> <ul style="list-style-type: none"> <li>• private dwellings</li> <li>• discrete Aboriginal and Torres Strait Islander communities; and</li> <li>• non-private dwellings (i.e. hotels, motels, hospitals, retirement villages, etc.).</li> </ul> <ul style="list-style-type: none"> <li>• Households within selected dwellings are interviewed each month for 8 months, with one-eighth of the sample being replaced each month</li> <li>• Information collected either by interviewers or through self-completion online.</li> </ul>
<b>5. Sample size</b>	Most recent LFS in Sept 2021 represented approximately 26,000 dwellings resulting in a sample of approximately 50,000 people (about 0.32% civilian population aged 15 and up)
<b>6. Data items available</b>	<p>Core labour force variables include:</p> <ul style="list-style-type: none"> <li>• Labour force status</li> <li>• Status in employment</li> <li>• Hours worked</li> <li>• Full-time/part-time status</li> <li>• Duration of job search</li> </ul> <p>In particular, LFS captures:</p> <ul style="list-style-type: none"> <li>• Work undertaken in the last week (paid and unpaid) and average amount of hours worked weekly</li> <li>• Actively seeking full or part-time employment</li> <li>• Payment arrangements</li> <li>• Type of employment (employer, own business, other)</li> <li>• Time off, overtime</li> <li>• Changes in employment</li> <li>• Academic status and educational qualifications</li> <li>• Level of education achieved</li> </ul>
<b>7. Geographical granularity</b>	Includes information by state/territory and breakdown by SA4
<b>8. Availability of data products</b>	Data released monthly in 2 stages. Includes an initial release which provides high level estimates, and second release includes more granular monthly and quarterly data. Detailed longitudinal data also available.
<b>9. Collection frequency and regularity</b>	Monthly

## Aged Care Workforce Census

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Responses collected at provider level by service type; therefore, workers may be counted more than once across provider and service type.
<b>3. Profession coverage</b>	Includes 3 aged care service types: residential aged care facilities, home care providers and CHSP providers. Survey sent to providers that are in the 3 service categories.
<b>4. Data collection method and Journey</b>	Survey of In-scope aged care providers. This included included all active registered providers who employed staff involved in direct care services (nurses, personal care workers or allied health staff).
<b>5. Sample size</b>	<p>2020 Aged Care Workforce Census sample size included:</p> <ul style="list-style-type: none"> <li>• 2,716 RAC facilities</li> <li>• 834 HCPP providers</li> <li>• 630 CHSP providers</li> </ul> <p>Translates to: 277,671 workers in RAC, 80,340 workers in HCPP and 76,096 workers in CHSP.</p> <p>Responses were received from 1,329 RAC facilities (49 per cent), 616 HCPP (47 per cent) and 505 CHSP providers (38 per cent) across aged care planning regions.</p>
<b>6. Data items available</b>	<ul style="list-style-type: none"> <li>• Employment types national and by state</li> <li>• Occupation</li> <li>• Workforce demographics</li> <li>• Workforce qualifications</li> <li>• Training and skills</li> <li>• Vacancies</li> <li>• Volunteers</li> <li>• NDIS and DVA</li> <li>• Impact of COVID-19 on work levels</li> </ul>
<b>7. Geographical granularity</b>	Organisations may provide services via HCPP and CHSP and have addresses located in different aged care planning regions (ACPRs). Providers were asked to complete responses for provide different responses for each ACPR they operate in to reflect their workforce across the difference ACPRs. HCPP and CHSP ACPRs and remoteness indicators mapped to provider addresses for all staff included in the responses.
<b>8. Availability of data products</b>	Information available through aged care workforce census report.
<b>9. Collection frequency and regularity</b>	Survey has been conducted every 4 years since 2003 (most recent 2020).

## Medicare data

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Individual provider numbers of the service providers are available. Count of individual professionals is limited by the fact one individual may have multiple provider numbers if delivering services across multiple locations.
<b>3. Profession coverage</b>	Those eligible for MBS
<b>4. Data collection method and Journey</b>	Administrative billing data. MBS claims and the professionals who deliver the service.
<b>5. Sample size</b>	N/A
<b>6. Data items available</b>	<ul style="list-style-type: none"> <li>• MBS item</li> <li>• Service provider number</li> <li>• Service provider location</li> <li>• Patient Postcode</li> <li>• In hospital treatment indicator</li> </ul>
<b>7. Geographical granularity</b>	Postcode
<b>8. Availability of data products</b>	Owned by Department of Health
<b>9. Collection frequency and regularity</b>	N/A

## Census of Population and Housing

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Counts every individual once and distinguishes between different jobs that a person may be doing over a 12-month period.
<b>3. Profession coverage</b>	Includes all individuals staying in Australian households on Census night; therefore, includes overseas visitors (excludes foreign diplomats and their families and unoccupied non-private dwellings i.e. hospitals, prisons, hotels, etc.).
<b>4. Data collection method and Journey</b>	Conducted and managed by the ABS, the Census of population and housing is a Compulsory purpose-built national survey completed online or via mail.
<b>5. Sample size</b>	Total of 23,401,892 people counted in 2016 census
<b>6. Data items available</b>	Includes information on age, ancestry, immigration status, sex, year of arrival Australia, education and qualifications, employment, income and unpaid work, disability, children, family characteristics, address and internal migration, dwelling and household characteristics, household income and costs.
<b>7. Geographical granularity</b>	ABS provides a wide range of interactive statistical maps that allow users to explore particular geographic breakdowns (i.e. SA level, LGA, electorate, significant urban areas, postal areas, etc.).
<b>8. Availability of data products</b>	Data publicly available on ABS website. Specifically, available data packs include: <ul style="list-style-type: none"> <li>• General community profile</li> <li>• Aboriginal and Torres Strait Islander Peoples Profiles</li> <li>• Time Series Profiles</li> <li>• Place of Enumeration data</li> <li>• Working Population data</li> </ul>
<b>9. Collection frequency and regularity</b>	Conducted every 5 years.

## National Disability Insurance Scheme – Provider Registration

<b>1. Data source</b>	<b>National Disability Insurance Scheme Provider Registration</b>
<b>2. Scope</b>	National registry
<b>3. Counting unit</b>	Count single provider by registration Provider can be a sole trader, a large organisation or anything in between.
<b>4. Profession coverage</b>	Contains information on all registered NDIS providers. Emphasis on promoting quality and safety in the disability sector.
<b>5. Data collection method and Journey</b>	Collected as providers register as an NDIS provider.
<b>6. Sample size</b>	9,145 active NDIS providers across Australia during Apr-June 2021
<b>7. Data items available</b>	Includes identifying information i.e., provider name, ABN, residential suburb or place of business, business entity, registration groups which are classification of services delivered under NDIS and can be classified according to the type of service or support delivered to NDIS participants, location(s) of service delivery, conditions of registration, current registration status, enforcement actions.
<b>8. Geographical granularity</b>	Breakdown of active providers by state and territory and includes service district where participant receiving service resides.
<b>9. Availability of data products</b>	Datasets publicly available on NDIS website. Website also includes reports and analyses, insights forums and further data exploration
<b>10. Collection frequency and regularity</b>	NDIS providers are required to renew their registration every 3 years; therefore, data is collected and updated on an ongoing basis. Renewal includes undergoing an audit process.

## Visa Data – Work Visas

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Visa grants and number of visa holders in Australia
<b>3. Profession coverage</b>	Provides information on all visa grants and the number of visa holders in Australia. Data is available on Temporary Skill Shortage (TSS Subclass 482) visa and Temporary Work (Skilled (Subclass 457) visa
<b>4. Data collection method and Journey</b>	Information is collected through the visa application process.
<b>5. Sample size</b>	Number of primary visa holders in Australia at 30 June 2021 was 55,030
<b>6. Data items available</b>	<ul style="list-style-type: none"> <li>• Applications lodged and granted</li> <li>• Number of primary visa holders</li> <li>• Primary visa grant by ANZSCO group</li> <li>• Sponsor industry</li> <li>• Occupation</li> <li>• Salary, skills and qualifications, locations of nominated positions</li> <li>• Citizenship country</li> <li>• Number of temporary skill visa holders nominated PR or provision visa</li> <li>• Includes comparison of previous 10 years</li> </ul>
<b>7. Geographical granularity</b>	Breakdown by state/territory of nominated position location.
<b>8. Availability of data products</b>	Information publicly available via reports. Includes summary of key statistics and trends.
<b>9. Collection frequency and regularity</b>	Information available quarterly. Subclass 457 quarterly and annual reports and pivot tables also available (subclass 457 ceased so information provided up to December 2017).



## Visa data – Student

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Count number of student visa applications lodged and granted
<b>3. Profession coverage</b>	Provides information on student visa applications and grants
<b>4. Data collection method and Journey</b>	Information is collected through the visa application process
<b>5. Sample size</b>	In 2020–21 262,633 student visa applications lodged and 232,750 student visas granted. Total of 374,056 student visa holders in Australia as of 30 June 2021.
<b>6. Data items available</b>	<ul style="list-style-type: none"> <li>• Citizenship country</li> <li>• Applicant type</li> <li>• Destination</li> <li>• Number of visa grants, last visa held or lodged</li> <li>• Location of client at time visa was lodged</li> <li>• Primary applicant and application</li> <li>• Primary visa holder, secondary applicants, secondary visa holder</li> <li>• School sector</li> <li>• Destinations (i.e. students granted another visa other than a student visa in the same sector)</li> <li>• Processing times</li> </ul>
<b>7. Geographical granularity</b>	Geographic breakdown by GA1
<b>8. Availability of data products</b>	Datasets publicly available, including biannual reports that provide statistical information on international students on various visa programs.
<b>9. Collection frequency and regularity</b>	Dataset updated monthly for visa subclass 500, 570 to 576 in current and previous financial years (includes information on financial year and quarter of visa grant, the gender, age, education provider registered state, sector, client location, lodgement channel and citizenship country). Bi-annual reports across all student visa programs available.

## Higher Education Statistics

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Student enrolments counted
<b>3. Profession coverage</b>	All studies
<b>4. Data collection method and Journey</b>	Data provided to the DESE by universities as part of Commonwealth funding of education. Captures higher education enrolments, FTE student load, completions reported by higher education providers
<b>5. Sample size</b>	Total of 1,609,798 students as of 2019
<b>6. Data items available</b>	<ul style="list-style-type: none"> <li>• Course information including level, field of education and special course flag</li> <li>• Age (date of birth)</li> <li>• Gender</li> <li>• Citizenship</li> <li>• Aboriginal and Torres Strait Islander indicator</li> <li>• Location of term residence</li> <li>• Location of permanent home residence</li> <li>• Basis for admission to course</li> <li>• Type of attendance (full-time / part-time)</li> <li>• Mode of attendance (internal, external, multi-modal)</li> <li>• Country of birth</li> <li>• Language spoken at home</li> <li>• Year of arrival in Australia</li> <li>• Language spoken at home</li> <li>• Tertiary entrance score</li> <li>• Equity data (Disability, Low-SES, NESB, Women in non-traditional areas, Regional/Remote)</li> <li>• Highest educational attainment prior to commencement</li> <li>• Award course completions</li> </ul>
<b>7. Geographical granularity</b>	Breakdown by state/territory of institution
<b>8. Availability of data products</b>	Summary infographic and tables provided via Department of Education, Skills and Employment website
<b>9. Collection frequency and regularity</b>	Scheduled yearly release dates

## Primary Health Network Data

<b>1. Scope</b>	PHN level
<b>2. Counting unit</b>	Variable
<b>3. Profession coverage</b>	Variable across PHN
<b>4. Data collection method and Journey</b>	Allied health workforce numbers are sporadically reported in PHN annual reports and needs assessment. Some PHNs perform analysis, such as a breakdown by profession, however, the unit of count varies between PHNs (for example, FTE, per population). Data are often taken from external sources, which also varies between PHNs. Granularity of data rarely extends beyond workforce numbers by profession.
<b>5. Sample size</b>	Variable across PHNs
<b>6. Data items available</b>	Variable across PHNs
<b>7. Geographical granularity</b>	Variable across PHNs
<b>8. Availability of data products</b>	Variable across PHNs
<b>9. Collection frequency and regularity</b>	Variable across PHNs

## The Public Hospital Establishment Data - AIHW

<b>1. Data source</b>	
<b>2. Scope</b>	National
<b>3. Counting unit</b>	Variable
<b>4. Profession coverage</b>	Those recorded in public hospital electronic records
<b>5. Data collection method and Journey</b>	Collated from data supplied by states and territory health departments. Hospitals supply this data to the states and territories. Some other data are maintained at the LHN and are forwarded to the relevant state or territory health authority for inclusion. Includes psychiatric hospitals, and alcohol and drug treatment centres. Maintained and managed by AIHW.
<b>6. Sample size</b>	N/A
<b>7. Data items available</b>	All activity, recurrent expenditure and related revenue in the public hospital's general ledger
<b>8. Geographical granularity</b>	By hospital
<b>9. Availability of data products</b>	Available to those with access to METeOR
<b>10. Collection frequency and regularity</b>	States and Territories provide data to AIHW annually, with the financial year ending 30 June.

## Private Hospital Data – ABS

1. Scope	National
2. Counting unit	Variable
3. Profession coverage	All professions within private hospitals in Australia
4. Data collection method and Journey	Released in 2018. Obtained from an annual census of all licensed private hospitals in Australia. Includes data on facilities, activities, staffing and finances of all private hospitals in Australia for the 2016-17 financial year and earlier. Includes private acute and psychiatric hospitals. Further collection has been ceased.
5. Sample size	34,339 private hospitals (2016-17)
6. Data items available	Detailed datasets covering a range of items. Includes FTE allied health workforce numbers broken up by occupational therapists, social workers, psychologists and other. Also includes allied health professionals broadly (grouped with diagnostic professionals) by state.
7. Geographical granularity	By state and territory
8. Availability of data products	Publicly available on ABS website
9. Collection frequency and regularity	Annually, however, stopped collecting data from 2018.

## National Disability Insurance Agency – activity billing data

1. Scope	National
2. Counting unit	N/A
3. Profession coverage	<ul style="list-style-type: none"> <li>• Aboriginal Health Worker</li> <li>• Art Therapist</li> <li>• Audiologist</li> <li>• Audiometrist</li> <li>• Counsellor</li> <li>• Developmental Educator</li> <li>• Dietitian</li> <li>• Exercise Physiologist</li> <li>• Music Therapist</li> <li>• Occupational Therapist</li> <li>• Orthoptist</li> <li>• Orthotist/Prosthetist</li> <li>• Podiatrist</li> <li>• Physiotherapist</li> <li>• Podiatrist</li> <li>• Psychologist</li> <li>• Rehabilitation Counsellor</li> <li>• Social Worker</li> <li>• Speech Pathologist</li> </ul>
4. Data collection method and Journey	Transactional data captured from client claims and receipts against care packages.
5. Sample size	N/A
6. Data items available	Hours of therapy purchased by NDIA , not the number of therapists.
7. Geographical granularity	N/A
8. Availability of data products	N/A
9. Collection frequency and regularity	N/A

## NDS Workforce Census

<b>1. Scope</b>	National, state and territory
<b>2. Counting unit</b>	Variable
<b>3. Profession coverage</b>	Allied health and disability support workers
<b>4. Data collection method and Journey</b>	Surveys have been implemented since 2015 and comprise 10 survey questions answered by organisations within the disability sector. In September, the survey is implemented synergistically with the Annual Market Survey. The NDS releases a Key Findings Report approximately 3 months after each census, which is publicly accessible on their website.
<b>5. Sample size</b>	Data entered by approximately 200 organisations
<b>6. Data items available</b>	<ul style="list-style-type: none"> <li>• Permanent/casual/fixed employment status</li> <li>• Share of full-time/part-time workers</li> <li>• Average hours worked per week</li> <li>• Female vs male staffing ratios</li> <li>• Share of workers by age</li> <li>• Staff turnover</li> </ul>
<b>7. Geographical granularity</b>	State and territory
<b>8. Availability of data products</b>	Key Findings Report publicly available on NDS website, published twice per year
<b>9. Collection frequency and regularity</b>	February/March and September

## Department of Veterans Affairs Data - Accepted Conditions for veterans of Selected Conflicts, and Annual Report

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Claims by condition
<b>3. Profession coverage</b>	N/A
<b>4. Data collection method and Journey</b>	DVA details the top 20 accepted conditions from DVA claims in a Top-20 Accepted Conditions Report based on accepted VEA and MRCA conditions as coded by the Statements of Principles for the following the Afghanistan, Iraq, East Timor (Timor Leste), Solomon Islands and Vietnam conflicts.
<b>5. Sample size</b>	79,511 accepted conditions reported in September 2021 Claims Report
<b>6. Data items available</b>	Top 20 accepted conditions under DVA, broken down by conflict. Annual report includes data on the claimants. No information on allied health providers.
<b>7. Geographical granularity</b>	Accepted Conditions Report is reported by conflict, Annual report contains patient statistics by state and territory
<b>8. Availability of data products</b>	Accepted Conditions Report is publicly available on the DVA website, Annual Report is publicly available through the Australian Government's Transparency Portal
<b>9. Collection frequency and regularity</b>	Accepted Conditions Report is reported bi-annually in March and September, Annual Report is reported annually

## ATO Data – Individual professions

<b>1. Scope</b>	National
<b>2. Counting unit</b>	Number of individuals by occupation
<b>3. Profession coverage</b>	All allied health professions specifically defined by the ATO
<b>4. Data collection method and Journey</b>	Data are collated by the ATO from individual tax returns and then made publicly accessible on the ATO website through the Taxation Statistics Report.
<b>5. Sample size</b>	Approximately 720 different professions comprised of approximately 14.5 million individuals
<b>6. Data items available</b>	Allied health occupations defined by the ATO. Numerous individual data items from individual tax returns, unrelated to project. Includes income group.
<b>7. Geographical granularity</b>	Collected by occupation in Australia
<b>8. Availability of data products</b>	The Taxation Statistics Report is publicly available on the ATO website
<b>9. Collection frequency and regularity</b>	Produced annually. Latest available report is from 2018-19

# Appendix 2: Existing data sources assessed against the proposed minimum dataset

Proposed minimum data requirements for allied health professionals		Census of Population and Housing	National Health Workforce Dataset	Public Hospital Establishment data - AIHW	Private hospital data - ABS	ATO data - by individual professions	Labour force survey microdata	Visa data - work	Visa data - student	Education Inc graduate outcomes survey	Immigration	State Health	Aged Care Providers	Disability Care Provider
<b>From Health professionals (e.g. via registration survey)</b>														
<b>Core items</b>														
	Profession	Self-reported	Ahpra reg	State defined	Hospital defined	Self-reported	Self-reported	Y	Y (course)	Y (course)	Y	State defined	Provider defined	Provider defined
1	Place and year of qualification	L (highest qual)	Y (place) C? (year)									Varies	Varies	Varies
2	Certification for practice (including in areas of specialisation)												Varies	Varies
3	Age	Y	Y									Y	Y	Y
4	Gender	Y	Y			Y	Y					Y	Y	Y
5	Aboriginal or Torres Strait Islander status	Y	Y									Varies	Varies	Varies
6	Whether working in the profession	L	Y			L	L							
7	If not working in the profession, reason why	L (reason generally)	Y (limited)				L (reason generally)							
8	Whether actively looking for work in the profession	L (looking generally)	Y				L (looking generally)							
<b>For each separate concurrent work location</b>														
9	Specialisation / Qualifications and advanced practice certification obtained in the last 12 months		Y											

Proposed minimum data requirements for allied health professionals		Census of Population and Housing	National Health Workforce Dataset	Public Hospital Establishment data - AIHW	Private hospital data - ABS	ATO data - by individual professions	Labour force survey microdata	Visa data - work	Visa data - student	Education Inc graduate outcomes survey	Immigration	State Health	Aged Care Providers	Disability Care Provider
10	Number of clinical/non-clinical hours worked in the period		Y											
11	Occupation/job title	Y	C										Y	Y
12	Location (finest detail)	Y (SA1)	Y (SA3, LGA)				Y (SA4)						Y	Y
13	Whether worked in regional/rural area in addition to main location	Y												
14	Location of additional regional/rural work	Y (derived)	Y				Y						Y	Y
15	Sector (aged care, primary health care, disability services, other)	Y	Y	Y (public hosp)	Y (private hosp)	Y	Y						Y	Y
16	Setting (residential care, in patient's home, clinic, school, workplace, etc)											Varies	Y	Y
17	Intention to remain at this job location in future													
<b>Workforce dynamics items</b>														
18	Projected Year of graduation (Current students)		Y							Y				
19	Intention to work in the profession (Current students)		Y (separate Ed & Training dataset)							Y				
20	Willingness to return to active clinical work in the profession (Currently inactive professionals)													
21	When certified to practice in Australia (for overseas trained professionals)													



Proposed minimum data requirements for allied health professionals		Census of Population and Housing	National Health Workforce Dataset	Public Hospital Establishment data - AIHW	Private hospital data - ABS	ATO data - by individual professions	Labour force survey microdata	Visa data - work	Visa data - student	Education Inc graduate outcomes survey	Immigration	State Health	Aged Care Providers	Disability Care Provider
22	Visa Type (If recent/temporary arrival)	?									Y			
23	If intending to change working hours, amount of increase or decrease	?												
24	Number of years intending to remain active in the profession	?												
<b>Propo5ed minimum data requirements from employers</b>														
25	Sector of employer	Y	Y	Y (public hosp)	Y (private hosp)	Y	Y						Y	Y
26	Employer industry											Y	Y	Y
27	State/territory(ies) of operation	Y (derived)	Y				Y						Y	Y
28	Number of allied health employees	Y	Y									Varies	Y	Y
29	Number of agency allied health staff											?	?	?
30	Number of allied health employees by job title	Y	C (scope, position, role, area)									Varies	Y	Y
31	Number of allied health positions by seniority											Varies	Y	Y
32	Number of allied health assistants employed											Varies	?	?
<b>For each location</b>														
33	Location	Y (SA1)	Y (SA3, LGA)				Y (SA4)						Y	Y
34	Number of allied health employees	Y										Y	Y	Y
35	Number of allied health agency staff												?	?
36	Number of sessions/hours of sub-contracted allied health services											Y	?	?
37	Number of allied health assistants employed											Varies	?	?

Proposed minimum data requirements for allied health professionals		Census of Population and Housing	National Health Workforce Dataset	Public Hospital Establishment data - AIHW	Private hospital data - ABS	ATO data - by individual professions	Labour force survey microdata	Visa data - work	Visa data - student	Education Inc graduate outcomes survey	Immigration	State Health	Aged Care Providers	Disability Care Provider
38	Number of positions vacant											Varies	?	?
39	Average length of time positions vacant											Varies	?	?
<b>Dynamics</b>														
40	Intention to expand/contract number of allied health employees											Varies	Y	Y

# Appendix 3: Breakdown of the allied health workforce by profession and sector

The estimations of allied health workforce in this document have been brought together from several sources, each with their own limitations. Across all estimates **only data on primary job holding** has been used to provide a degree of comparability across the dominant data sources underpinning Ahpra and Self-regulated profession estimates

To derive sector specific estimates, proportion of each profession working in the sector is estimated from best source(s) and then applied to best total population estimate. For example, this may be the breakdown in the 2020 NHWDS, or the 2016 Census of population and housing adjusted for 2020 numbers.

Where sector data was available from multiple sources, an upper and lower bound has been reported to describe a credible interval or to confirm a point estimate. Nature of data source (e.g. subset of sector, FTE vs head count) determines how data is incorporated into estimate. In cases where there is evidence of a profession working within RACF but insufficient data to estimate a lower bound, 0.1% taken as lower bound for the credible interval. In cases where a point estimate is taken from a poor quality dataset, or where Australia-wide profession count is uncertain 2x the point estimate taken to set an upper bound for the credible interval.

Table 9 provides a key of the data sources used to make estimations in tables 11- 15. It should be noted that the data provide in these tables is a point in time. There is insufficient data currently available across all professions to inform a stock and flow model as set out in chapters 2, 3, and proposed minimum dataset in chapter 4.

**Table 9: Key of data sources used to derive an estimation of Allied Health Professionals and sector breakdowns.**

Source	Abbreviation	Description	Profession categorisation	Industry categorisation	Other available categorisations
National Health Workforce Dataset	NHWDS	Collected by survey with Ahpra registration	Ahpra professions only	Limited ANZSIC-like multi-choice option question	Data includes multiple demographic, geographic and work characteristics
Australian Census 2016	Census	Australian Census 2016	ANZSCO 4-digit	ANZSIC 4-digit	Data includes multiple demographic, geographic and work characteristics
Australian Census 2016	Census (grp)	Uses Australian Census 2016 professions partially defined at 4-digit ANZSCO level and then apportions to 6-digit ANZSCO using proportions derived from ATO tax return data	ANZSCO 4-digit	ANZSIC 4-digit	Data includes multiple demographic, geographic and work characteristics
ATO tax returns, individuals data	ATO	Data from ATO for individual income tax returns	ANZSCO 6-digit	No	Gender only
AIHWS Aged Care Workforce Census	ACWC	Data from a survey of aged care providers	Limited to 9 relevant professions	Specific to Aged Care with some delineation by setting: RACF, Home Care	Data includes FTE and individual (>0 hrs/week) counts, can be used for point estimate and upper bounds for CI respectively
Australian Industry Survey 2018/19	Aus Ind	Data from the Australian industry survey, 2018/19 included detailed information on Healthcare industry	Limited to 7 relevant ANZSCO 6-digit categories for "Residential Care Services"	Limited to 4 ANZSIC 2-digit categories, within Division Q - Healthcare and Social Assistance, including "Residential Care Services"	Data for private sector only, limited use for lower bound of CI
Professional association data	Assoc	Largely membership and/or workforce estimation data from relevant associations	Specific profession only	In limited instances	In limited instances

**Table 10: Residential aged care – Estimate of allied health professionals engaged in residential aged care as their primary job by profession.**

Profession	Lower	Estimate of profession as %	Upper	Lower	Estimate number of professionals	Upper	Source
Occupational therapists		<b>5.8%</b>			1268		NHWDS
Pharmacists		<b>1.0%</b>			268		Census/ACWC
Physiotherapists		<b>8.3%</b>			2518		NHWDS
Podiatrists		<b>4.9%</b>			247		NHWDS
Psychologists	0.1%	<b>0.5%</b>	0.6%	32	158	185	Census/ACWC
Chiropractors	0.0%		0.1%	0	-	5	Census (grp)
Medical radiation practitioners	0.0%		0.1%	0	-	15	Census (grp)
Optometrists	0.0%		0.2%	0	-	11	Census (grp)
Osteopaths		<b>2.3%</b>			58		NHWDS
Social workers	6.0%	<b>6.8%</b>	13.0%	2777	3148	6018	Census/ACWC/Aus Ind
Audiologists	0.1%		2.2%	3	-	66	Census/Aus Ind
Dietitians	2.1%		14.1%	116	-	777	ACWC/Aus Ind
Orthoptists	0.0%		0.2%	0	-	2	Census (grp)
Sonographers	0.0%		0.1%	0	-	4	Census (grp)
Speech pathologists	0.5%	<b>1.1%</b>	7.2%	47	104	677	ACWC/Aus Ind
Orthotists/prosthetists	0.0%	<b>1.0%</b>	7.0%	0	5	32	Census (grp)
Rehabilitation counsellors	0.0%		0.1%	0	-	2	Census (grp)
Art therapists	0.0%		35.0%	0	-	191	Assoc
Exercise physiologists	1.0%		5.5%	35	-	192	ACWC
Genetic counsellors					-	-	N/A
Music therapists					-	-	N/A
Perfusionists					-	-	N/A

**Table 11 : State/ territory health care -- Estimate of allied health professionals engaged in state/ territory health care as their primary job by profession**

Profession	Estimate of profession as %	Estimate number of professionals	Source
Occupational therapists	40%	8705	Census
Pharmacists	14%	3858	Census
Physiotherapists	25%	7601	Census
Podiatrists	11%	534	Census
Psychologists	25%	7905	Census
Chiropractors	0%	7	Census grp
Medical radiation practitioners	36%	5506	Census grp
Optometrists	2%	122	Census grp
Osteopaths	0%	3	Census grp
Social workers	34%	15508	Census
Audiologists	32%	949	Census grp
Dietitians	40%	2206	Census grp
Orthoptists	2%	22	Census grp
Sonographers	36%	1351	Census grp
Speech pathologists	32%	3006	Census grp
Orthotists/prosthetists	36%	166	Census grp
Rehabilitation counsellors	15%	266	Census grp
Art therapists	-	-	-
Exercise physiologists	-	-	-
Genetic counsellors	-	-	-
Music therapists	-	-	-
Perfusionists	-	-	-

**Table 12: Primary health care – Estimate of allied health professionals engaged in primary health care as their primary job by profession**

Profession	Estimate of profession as %	Estimate number of professionals	Source
Occupational therapists	23%	5080	NHWDS
Pharmacists	65%	17390	NHWDS
Physiotherapists	43%	13188	NHWDS
Podiatrists	71%	3608	NHWDS
Psychologists	46%	14418	NHWDS
Chiropractors	97%	4986	NHWDS
Medical radiation practitioners	40%	6121	NHWDS
Optometrists	85%	4621	NHWDS
Osteopaths	96%	2436	NHWDS
Social workers	3%	1435	Census
Audiologists	45%	1343	Census (grp)
Dietitians	27%	1469	Census (grp)
Orthoptists	93%	915	Census (grp)
Sonographers	13%	483	Census (grp)
Speech pathologists	45%	4254	Census (grp)
Orthotists/prosthetists	-	-	-
Rehabilitation counsellors	-	-	-
Art therapists	-	-	-
Exercise physiologists	-	-	-
Genetic counsellors	-	-	-
Music therapists	-	-	-
Perfusionists	-	-	-

**Table 13: Disability care – Estimate of allied health professionals engaged in disability care as their primary job by profession**

Profession	Estimate of profession as %	Estimate number of professionals	Source
Occupational therapists	10%	2108	NHWDS
Pharmacists	-	-	-
Physiotherapists	2%	696	NHWDS
Podiatrists	0%	3	NHWDS
Psychologists	2%	487	NHWDS
Chiropractors	-	-	-
Medical radiation practitioners	-	-	-
Optometrists	-	-	-
Osteopaths	-	-	-
Social workers	-	-	-
Audiologists	-	-	-
Dietitians	-	-	-
Orthoptists	-	-	-
Sonographers	-	-	-
Speech pathologists	-	-	-
Orthotists/prosthetists	-	-	-
Rehabilitation counsellors	-	-	-
Art therapists	-	-	-
Exercise physiologists	-	-	-
Genetic counsellors	-	-	-
Music therapists	-	-	-
Perfusionists	-	-	-



**Table 14; Other – Estimate of allied health professionals engaged other sectors as their primary job by profession**

Profession	Estimate as a % of profession	Estimate number of professionals	Source
Occupational therapists	23%	5988	NHWDS
Pharmacists	7%	1837	NHWDS
Physiotherapists	6%	1857	NHWDS
Podiatrists	3%	154	NHWDS
Psychologists	27%	8021	NHWDS
Chiropractors	3%	129	NHWDS
Medical radiation practitioners	3%	397	NHWDS
Optometrists	13%	720	NHWDS
Osteopaths	2%	60	NHWDS
Social workers	-	-	-
Audiologists	-	-	-
Dietitians	-	-	-
Orthoptists	-	-	-
Sonographers	-	-	-
Speech pathologists	-	-	-
Orthotists/prosthetists	-	-	-
Rehabilitation counsellors	-	-	-
Art therapists	-	-	-
Exercise physiologists	-	-	-
Genetic counsellors	-	-	-
Music therapists	-	-	-
Perfusionists	-	-	-