

National Healthcare Agreement: PI 33-Full time equivalent employed health practitioners per 1,000 population (by age group), 2018 QS

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Identifying and definitional attributes

Metadata item type:	Data Quality Statement
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Data quality

Data quality statement summary:

- The rates have been calculated per 100,000 population for this indicator to assist with interpretation.
- Due to the differences in data collection, processing and estimation methods, including survey design and questionnaire, it is recommended that comparisons between workforce data from the National Health Workforce Data Set (NHWDS) and the previous Australian Institute of Health and Welfare (AIHW) Labour Force Survey be made with caution and noted in any analyses.
- Results for the indicator are estimates because the survey data have undergone imputation to adjust for non-response. It should be noted that any of these adjustments may have introduced some bias in the estimates and any bias is likely to become more pronounced when response rates are low or when estimates are based on a small number of survey records. Care should be taken when drawing conclusions about the size of the differences between estimates.
- From 2012 medical workforce, occupational therapists and psychologist indicator data exclude provisional registrants.
- There is no provisional registration type for dental practitioners (dentists, dental hygienists, dental prosthetists, dental therapists and oral health therapists), nurses and midwives.

Institutional environment:

The Australian Institute of Health and Welfare (AIHW) has calculated this indicator using estimates derived from the National Health Workforce Data Set (NHWDS). The NHWDS is developed through the collaboration of 3 agencies.

The Australian Health Practitioner Regulation Agency (AHPRA) is the organisation responsible for the implementation of the National Registration and Accreditation Scheme (NRAS) across Australia, including collecting registration data and administering the workforce surveys.

Health Workforce Australia was responsible for the development of the health workforce surveys until its closure by the Australian Government on 6 August 2014. The Australian Government Department of Health (DoH) now performs this function. DoH is a federal government agency that has a diverse set of responsibilities reflected in their vision statement: [Better health and wellbeing for all Australians, now and for future generations](#).

DoH receives registration and survey data from the AHPRA. The registration and workforce survey data are combined, cleansed and adjusted for non-response to form the NHWDS, and the findings reported by profession. DoH is the data custodian of the NHWDS. These data are used for workforce planning, monitoring and reporting.

DoH provide a copy of the database to states and territories and the AIHW. The AIHW is an independent corporate Commonwealth entity within the Health portfolio, which is accountable to the Parliament of Australia through the Minister. For further information, see the AIHW website.

Timeliness:**National Health Workforce Data Set:**

The NHWDS for each of the registered professions will be produced annually during the national registration renewal process. Each profession will also be administered a Workforce Survey as part of the registration renewal process.

— Medical practitioners 2016

The NHWDS: medical practitioners is produced annually from information collected by the national registration renewal process, conducted between 1 July and 30 September each year, including the collection of the Medical Workforce Survey.

— Nurses and midwives 2016

The NHWDS: nurses and midwives is produced annually from information collected by the national registration renewal process, conducted between 1 April and 31 May each year, including the collection of the Nursing and Midwifery Workforce Survey.

— Allied health practitioners 2016

The NHWDS: allied health practitioners is produced annually from information collected by the national registration renewal process, conducted between 1 September and 30 November each year, including the collection of the profession-specific workforce surveys.

Practitioners with limited registration are due for renewal on the anniversary of their first registration and can thus renew and complete a survey at any time through the year.

This data set includes the dental practitioner workforce, which is comprised of dentists, dental hygienists, dental prosthetists, dental therapists and oral health therapists.

Accessibility:

Published products available on the [AIHW website](#) include workforce online webpages, survey questionnaires and supplementary detailed tables. User guides to the data sets are available on request from the AIHW.

Interpretability:

Explanatory information for the Medical Workforce Survey, Dental Workforce Survey and the Nursing and Midwifery Workforce Survey is contained in the published online webpages, supplementary detailed tables and data quality statements to the data set for each profession. For the allied health professions, information about their workforce surveys is available in the National Health Workforce Data Set: allied health practitioners data quality statement. This includes collection method, scope and coverage, survey response, imputation and weighting procedures, and assessment of data quality (including comparison with other data sources).

These are available via the AIHW website and readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator.

Relevance:

Medical practitioners, nurses/midwives and allied health practitioners are required by law to be registered with their relevant national board to practise in Australia. All medical practitioners, nurses/midwives and nominated allied health practitioners must complete the formal registration renewal form(s) to practise in Australia. This is the compulsory component of the renewal process. The exception is Aboriginal and Torres Strait Islander health practitioners in the allied health workforce; where those who are not required by their employer to use the title 'Aboriginal and Torres Strait Islander health practitioner', 'Aboriginal health practitioner' or 'Torres Strait Islander health practitioner' are not required to be registered, and can continue to work using their current titles (e.g. 'Aboriginal health worker', 'drug and alcohol worker' and 'mental health worker').

The health workforce surveys for each of these professions is voluntary and only practitioners who renew their registration receive a questionnaire for completion. New registrants will not receive a survey form until they renew their registration the following year, during the registration renewal period. Practitioners with registration type of 'Limited' (referred to as 'limited registration') are due for renewal on the anniversary of their first registration and can thus renew and complete a survey at any time through the year.

National Health Workforce Data Set: medical practitioners 2016:

The NHWDS: medical practitioners 2016 contain registration details of all registered medical practitioners in Australia, at 30 September on the annual renewal date. Data were extracted from the AHPRA database at the end of November of the same year. The NHWDS also contains workforce data of respondents obtained from the Medical Workforce Survey 2016.

National Health Workforce Data Set: nurses and midwives 2016:

The NHWDS: nurses and midwives 2016 contain registration details of all registered nurses/midwives in Australia at 31 May on the annual renewal date. Data were extracted from the AHPRA database at the end of November of the same year. The NHWDS also contains workforce data obtained from the Nursing and Midwifery Workforce Survey 2016.

National Health Workforce Data Set: allied health practitioners 2016:

The NHWDS: allied health practitioners 2016 contains registration details of all registered allied health practitioners in Australia, at 30 November on the annual renewal date. Data were extracted from the AHPRA database at the end of January the following year. The NHWDS also contains workforce data obtained from each profession-specific health workforce survey.

Allied health professions not in the National Registration and Accreditation Scheme are not included in the data set (e.g. sonographers and optical technicians).

The dental practitioner workforce data are part of the NHWDS: allied health practitioners 2016. The dental practitioner workforce is comprised of 5 types of practitioners: dentists, dental hygienists, dental prosthetists, dental therapists and oral health therapists. Dental practitioners may register in more than 1 practitioner type, resulting in double counting of practitioners. For the purposes of this indicator, data for the dental practitioner workforce is for dentists only—the other practitioner types are excluded.

Indicator data reported for allied health practitioners are comparable from 2013 to 2016. The same professions are included in all years. And, data for these years will not include dental practitioners which are reported separately. However, indicator data for allied health practitioners are not comparable between 2012 and 2013. Due to transitional arrangements with the migration of data from state and territory-based systems to NRAS, in 2012, many medical radiation practitioners in Queensland, Western Australia and Tasmania were not required to renew their registrations and, as a result did not complete a workforce survey. As a consequence, data for Queensland, Western Australia and Tasmania for this profession are excluded from the indicator data for allied health practitioners.

For the same reason, occupational therapists in Queensland, Western Australia and South Australia are excluded from the indicator data for allied health practitioners in 2012.

Accuracy:

Data manipulation and estimation processes:

The registration and workforce survey data for each health profession are combined, cleansed and adjusted for non-response to form the NHWDS. The cleaning and editing procedures included range and logic checks, clerical scrutiny at unit record level, and validation of unit record and aggregate data.

Imputation methods are used to account for item non-response and survey non-response. In 2013, the methodology for survey non-response was changed from a weighting-based methodology to a randomised sequential hot deck-based imputation.

It should be noted that both of these kinds of non-response is likely to introduce some bias in the estimates and any bias is likely to become more pronounced when response rates are low or when estimates are based on a small number of records. Care should be taken when drawing conclusions about the size of the differences between estimates.

As a result of the estimation method to adjust for non-response, numbers of medical practitioners, nurses/midwives or allied health practitioners may have been in fractions, but have been rounded to whole numbers for this indicator. The full-time equivalent rate calculations are based on rounded numbers.

Registration data from the National Registration and Accreditation Scheme (NRAS):

Registration details were migrated from the respective state and territory professional board (or council) for practitioners with registrations expiring after the official AHPRA closing date for their profession.

Some data items previously collected by the AIHW Labour Force Surveys are now collected by the NRAS. However, some data quality issues due to migrated data items from the respective state and territory health profession boards may have affected the weighting method.

Medical practitioners, nurses/midwives and allied health practitioners who reside overseas have been included with practitioners whose state or territory of principal practice and state or territory of main job, respectively, could not be determined.

Health Workforce Survey:

In 2013, the online survey questionnaire included for the first time electronic sequencing of questions to automatically guide the respondent to the next appropriate question based on previous responses to questions.

The online survey questionnaire prior to 2013 and in the paper version of the questionnaire, respondents may have made inconsistent responses by not correctly following the sequencing instructions.

The *order* of the response categories for some questions may have also impacted on the accuracy of the information captured. In addition, there was variation in some responses between the online and paper surveys.

NHWDS data by profession:

The following should be noted when comparing state and territory indicator data:

- the data include employed professionals who did not state or adequately describe their state of principal practice and employed professionals who reside overseas. The national estimates include this group.
- *National Health Workforce Data Set: medical practitioners 2016*: the overall response rate (excludes provisional registrants) of medical practitioners for 2015 was 94.6%.
- *National Health Workforce Data Set: nurses and midwives 2016*: the overall response rate of nurses and midwives for 2016 was 96.5%.

The response rate excludes provisional registrants.

Coherence:

Health Workforce Survey—coherence with previous surveys:

Labour force data published by the AIHW before the NRAS was established in July 2010 were the result of collated jurisdiction-level occupation-specific surveys. The current Health Workforce Survey gathers similar information from each professional group through a separate questionnaire, tailored slightly to take account of profession-specific responses to certain questions, e.g. work setting of main job. For this indicator, the workforce surveys for medical practitioners, nurses/midwives and allied health practitioners collect similar data items, but the methodology differs from previous years. The AHPRA is now the single source of registered practitioner data instead of eight state and territories bodies for each profession, and there is greater consistency between jurisdictions and years in the scope of registration information.

The scope and coverage of the Health Workforce Survey is also different from that of the previous series of AIHW Labour Force Surveys as not all jurisdictions surveyed all types of registered health practitioners.

If the location of principal practice recorded in the registration data was different from the corresponding details of their main job self-reported by practitioners in the survey, the location was derived hierarchically based on main job information and then on principal practice location then place of residence.

Date of birth is one of many data items previously collected by the AIHW Labour Force Surveys, which is now collected by the NRAS.

The 3 employment-related questions in the new survey are now nationally consistent, but vary from the previous AIHW Labour Force Survey. Due to the differences in data collection (including survey design and questionnaire), processing and estimation methods, it is recommended that comparisons between workforce data from the NHWDS and the previous AIHW Labour Force Survey be made with caution.

- Enhanced geocoding methods were applied, which resulted in improved location data, and supports a more granular analysis of the geographic distribution of the health workforce.
- It was decided that as health professionals with non-practising registration were not legally permitted to practice under national law, records where a respondent with non-practising registration reported themselves as being employed in the profession in Australia were amended from being 'employed' to 'not employed'.

These amended records included a small number of respondents who reported working in administration, teaching or research, and a small number of respondents whose registration status had changed between data provision and data extraction (for example where a respondent had retired subsequent to providing survey data).

This change applies to all National Health Workforce Medical, Nursing and Midwifery and Allied Health Profession Data Sets from 2013 to 2016. Note that NHWDS data previously provide by the AIHW (i.e. 2015 and earlier data) include registered non-practising health professionals.

Revised NHWDS releases may vary from original versions due to minor differences in the method of imputation for survey non-response.

For this indicator, the rates are based on practitioners employed in the medical, allied health and nursing and midwifery workforces, which is consistent with data published in AIHW and DoH's workforce output products available online.

Relational attributes

Related metadata references:

Supersedes [National Healthcare Agreement: PI 33-Full time equivalent employed health practitioners per 1,000 population \(by age group\), 2017 QS Health!](#), Standard 31/01/2017

Indicators linked to this Data Quality statement:

[National Healthcare Agreement: PI 33-Full time equivalent employed health practitioners per 1,000 population \(by age group\), 2018 Health!](#), Superseded 19/06/2019