

# National Health Workforce Data Set: medical practitioners 2010: National Health Workforce Data Set, 2010; Data Quality Statement

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# National Health Workforce Data Set: medical practitioners 2010: National Health Workforce Data Set, 2010; Data Quality Statement

## Identifying and definitional attributes

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## Data quality

### Data quality statement summary:

- The National Health Workforce Data Set (NHWDS): medical practitioners 2010 contains information on the demographics, employment characteristics, primary work location and work activity of all medical practitioners in Australia who renewed their medical registration with the Medical Board of Australia via the National Registration and Accreditation Scheme (NRAS) introduced on 1 July 2010.
- This is the first data release from the new national registration scheme. The data set is comprised of registration (including demographic) information provided by the Australian Health Practitioner Regulation Agency (AHPRA) and workforce details obtained by the Medical Workforce Survey. The survey instrument varies significantly in some areas from previous years, however, is now nationally consistent.
- The NHWDS: medical practitioner 2010 excludes the workforce survey records of medical practitioners whose principal state of practice was Queensland and Western Australia, because not all registrations in Queensland and Western Australia expired on 30 September 2010, the date prescribed by AHPRA as the official closing data for registration renewal.

The NHWDS: medical practitioner 2010 is a combination of data collected through the medical practitioner registration renewal process.

Medical practitioners are required to renew their registration with the Medical Board of Australia through the NRAS, either online via the AHPRA website or using a paper form provided by AHPRA. For initial registration, medical practitioners must use a paper form and provide supplementary supporting documentation. This information is referred to as 'registration data'. Data collected include demographic information such as age, sex, country of birth; and details of health qualification(s) and registration status (see <http://www.medicalboard.gov.au/Registration/Types.aspx>, select link to registration type then registration form).

When medical practitioners renew their registration online they are also asked to complete an online version of the Medical Workforce Survey 2010 questionnaire. The questionnaire collects information on the employment characteristics, work locations and work activity of medical practitioners (see <http://www.aihw.gov.au/workforce-publications/> (select link to Medical workforce 2010)). AHPRA stores both the online registration data and the survey information in separate databases. They then send these two data sets to AIHW, where they are merged into a de-identified national data set.

When medical practitioners renew their registration on a paper form they are also asked to complete a paper version of the Medical Workforce Survey 2010 questionnaire. The paper registration and survey forms are sent back to AHPRA, where the paper registration forms are scanned and merged with the data obtained from the online process. AHPRA sends the paper survey forms to Health Workforce Australia (HWA) to be scanned into a data set. HWA then sends this data set to AIHW for merging with the online survey forms and registration data, cleansing and adjustment for non-response to form a nationally consistent data set. The final data set is then known as the National Health Workforce Data Set: medical practitioners, containing information sourced from registration data and workforce survey data.

**Institutional environment:** The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia's health and welfare. It is an independent statutory authority established in 1987, governed by a management Board, and accountable to the Australian Parliament through the Health and Ageing portfolio.

The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.

The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.

One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.

The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality. For further information see the AIHW website <http://www.aihw.gov.au>.

Under agreement with AHMAC's Health Workforce Principal Committee, the AIHW receives registration information on health practitioners via the mandatory national registration process administered by Australian Health Practitioner Regulation Agency (AHPRA) and the voluntary Health Workforce Survey data collected at the time of registration renewal. The registration and workforce survey data are combined, cleansed and adjusted for non-response to form the National Health Workforce Data Set (NHWDS), and the findings reported by profession. AIHW is the data custodian of the NHWDS. These data are used for workforce planning, monitoring and reporting.

The AIHW is an independent statutory authority within the Health and Ageing portfolio, which is accountable to the Parliament of Australia through the Minister. For further information see the AIHW website.

**Timeliness:**

The NHWDS: medical practitioners will be produced annually during the national registration renewal process, conducted between 1 July and 30 September each year, including the collection of the Medical Workforce Survey. The period for the 2010 renewal process was extended to the end of January 2011. Despite this extension, there were still Queensland and Western Australia registrants with expiry dates after January. Therefore data from these states were not included in the 2010 data set.

Due to the data set being the first release from the new national registration system, the timeliness of the release was much later than originally scheduled. AIHW expected to receive both the registration and workforce survey data simultaneously at the end of October 2010. Due to a number of factors, including issues with migration of data from existing systems into the AHPRA registration system, the AIHW received useable registration and workforce survey data from AHPRA in August 2011.

Continuing delays in the process meant that AIHW did not receive useable 2011 data till May 2012. Large differences between the original 2010 data and the data supplied for 2011 were found.

As a result the data for both 2010 and 2011 were revised in September 2012.

**Accessibility:** Results from the NHWDS: medical practitioners 2010 are published in the Medical workforce 2010 report. The report, workforce survey questionnaire, user guide to the data set and additional detailed tables are available on the AIHW website <http://www.aihw.gov.au/workforce-publications/> (select link to Medical workforce 2010).

Users can request data not available online or in reports via the Communications, Media and Marketing Unit on (02) 6244 1032 or via email to [info@aihw.gov.au](mailto:info@aihw.gov.au). Requests that take longer than half an hour to compile are charged for on a cost-recovery basis.

Access to the master unit record file may be requested through the AIHW Ethics Committee.

**Interpretability:** Information to aid in the interpretation of the NHWDS: medical practitioners 2010 may be found in Appendix A of the Medical Workforce 2010 report. The report is based on this data set. See 'Accessibility' for details.

Extensive explanatory information for the Medical Workforce Survey is contained in the published reports, supplementary detailed tables and data quality statements to the data set for each, including collection method, scope and coverage, survey response, imputation and weighting procedures, and assessment of data quality (including comparability 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 are required by law to be registered with their relevant national board to practise in Australia. All medical practitioners must complete the formal registration renewal form(s) to practise in Australia. This is the compulsory component of the renewal process.

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 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. While the reference period is notionally the renewal date, legislation allows for a one month period of grace. Thus the official registration closure date is one month after the renewal date. AHPRA allow for a further two weeks to allow for mail and data entry delays before the registrations are considered expired and not renewed. As a result the extraction of data (the extraction date) is at a point in time a month and a half after the renewal date. Ages are calculated as at the official registration closure date.

Large differences were found between the originally supplied Medical practitioner 2010 and 2011 registration data. It was apparent that these differences were caused by differences in the way these data were stored and/or extracted from the AHPRA databases and did not reflect real trends. As a result, the data were re-extracted and supplied for both the 2010 and 2011 Medical practitioner registrations.

#### National Health Workforce Data Set: medical practitioners 2010

The NHWDS: medical practitioners 2010 contain registration details of all registered medical practitioners in Australia, as at 30 September 2010 annual renewal date. Data were extracted from the AHPRA backup database as at the end of November 2010. It also contains workforce data of respondents whose principal state of practice was not Queensland or Western Australia, obtained from the Medical Workforce Survey 2010. These states were excluded from the survey because not all registrations in these states expired prior to the national registration deadline. Therefore, not all Queensland and Western Australia medical practitioners completed the registration renewal process in 2010.

Queensland and Western Australia medical practitioners with registrations expiring after the official AHPRA closing date had their registration details migrated from the respective state medical boards. See 'Accuracy' for quality of migrated data.

**Accuracy:** Data manipulation and estimation processes

The registration and workforce survey data are combined, cleansed and adjusted for non-response to form the National Health Workforce Data Set (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.

The data have undergone imputation for item non response and are weighting to adjust for population non response. It should be noted that both of these kinds of non-response is likely to introduce some bias in the final survey data and any bias is likely to become more pronounced when response rates are low. 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 may have been in fractions, but have been rounded to whole numbers for publication. The FTE rate calculations are based on rounded numbers.

#### Registration data from the 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 migrated data items from the respective state medical boards were incomplete. In particular, there were issues with the quality and completeness of date of birth, sex and state and territory of principal practice, which is of particular concern as these data items are used in the estimation process. A small number of missing values of date of birth and sex were imputed, and thus affected the weighting method.

Medical 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. Therefore, the missing values cannot be imputed, and thus affected the weighting method.

#### Health Workforce Survey

The online survey questionnaire did not include electronic sequencing of questions to automatically guide the respondent to the next appropriate question based on previous responses to questions. This resulted in a number of inconsistent responses.

The order of the response categories for the 'Reason not working in medicine in Australia' question appears to be an issue. The question has 'Retired from regular work' after 'Not working in paid employment at all' which may not be logical as practitioners may be retired but may still work irregularly (for example, as a locum medical practitioner). This may have led to an undercount of those retired from regular work and an over-count of those not working in paid employment.

Variation between the online and paper surveys has provided additional data quality issues for a number of questions. For example, the state of main job included the category 'Other territories' on the paper form while the same response category in the online form was labelled 'Other'. The data showed a large number in the 'Other' category captured in the online method, which was not similarly found in the paper responses. In addition, state/territory of principal practice and residence data items does not include the category 'Other territories' or 'Other'. Adding to this confusion was the treatment of people who had overseas addresses, as many of them ticked the box 'Other territories' and reported non-Australian addresses.

#### NHWDS data by profession

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

- The data include employed professionals who did not state or adequately describe their state of principal practice and employed professionals who reside overseas. Therefore, the national estimates include this group.

National Health Workforce Data Set: medical practitioners 2010

- The overall response rate for 2010 (excluding Queensland and Western Australia) was 76.6 per cent. Of these respondents, 65.4 per cent completed the survey online and 34.6 per cent used the paper form.
- The overall response rate for 2011 was 85.3 per cent. Of these respondents, 84.7 per cent completed the survey online and 15.3 per cent used the paper form.
- The data for 2010 exclude medical practitioners whose principal state of practice

## Coherence:

was Queensland or Western Australia because not all registrations in these states expired by the national registration deadline of 30 September.

- For this indicator, state and territory is based on the state and territory of principal practice for 2010 and Derived State for 2011 (see coherence notes below).  
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 the same 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.

The Workforce Surveys for medical practitioners collects similar data items. However, the survey methodology has changed from the previous AIHW Labour Force Surveys, as has the method of obtaining benchmark data on which the numbers of total registrations are based. The AHPRA is now the one source of benchmark data instead of eight state and territories bodies for each profession, and there is less chance of inconsistency between jurisdictions and years in the scope of benchmark data.

The scope and coverage of the Health Workforce Survey is also different from that of the previous series of AIHW Labour Force Surveys because in some jurisdictions not all types of registered health practitioners were sent a survey form.

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 three employment-related questions in the Health Workforce Survey questionnaire are nationally consistent, which is an improvement on the previous AIHW Labour Force Survey, where the questionnaire varied across jurisdictions. However, the redesigned question on working status no longer includes in its explanation of 'Working in the profession' a description of work activity/hours (that is 'worked for a total of 1 hour or more last week in a job or business (including own business) for pay, commission, payment in kind or profit; or hours usually worked but away from work on leave, or rostered off last week'). Inclusion of the additional explanation may have avoided confusion for health practitioners who worked during the survey reference week but in a voluntary capacity.

Due to the differences in data collection methods, including survey design and questionnaire, it is recommended that comparisons between workforce data from the NHWDS and the previous AIHW Labour Force Survey be made with caution.

A major point of difference between Medical Practitioner Workforce analysis in 2010 compared to 2011 and the data for the other professions is that the location variables, including State were based on state of principal practice while the latter data is based on a derived state (see above). The jurisdiction most affected by this is the Northern Territory where the proportion of Medical practitioners working in the jurisdiction in the week prior to the survey is 16.6% higher than the number of medical practitioners with the Northern Territory as a state of principal practice.

### Health Workforce Survey—coherence with other data sources

#### ABS Census

The ABS Census of Population and Housing, conducted every 5 years, is the other main source of data on health workforce numbers in Australia. The Census is self-enumerated by respondents and therefore the numbers of people who report their occupation as a health professional is not directly comparable with numbers from the NRAS or estimates from the Workforce Surveys. The results of the 2011 Census include data on occupations classified using the Australian and New Zealand Standard Classification of Occupations revision 1 (ANZSCO) (ABS 2009). Occupation data are collected for the main job held during the week before Census night.

The ANZSCO definition of medical practitioners and dentists effectively excludes non-clinicians but the nursing and midwifery group includes categories for nurse managers, educators and researchers.

In the 2011 Census results there were :

- 70,229 medical practitioners, compared to 73,980 employed clinicians in the

NHWDS: medical practitioners 2011 (5.3% higher). This is consistent with the differences found between the 2006 census and the earlier AIHW survey. There were 189,017 not stated and unknown responses to the occupation field in the census plus 32,125 Professionals (no further description) plus 2,114 Health professionals (no further description) coded in the Census. If these unknowns were evenly distributed the Census figures above would be around 4% higher.

#### Medicare claims data from DoHA

According to the Medicare claims systems, 27,639 medical practitioners provided General practice services claimed for on Medicare during to 2010/11 financial year, which is equivalent to 20,226 full time working equivalents (DoHA, 2012). In the NHWDS: medical practitioners 2011, there were 25,056 general practitioners working on average 39.1 hours in the week prior to the survey. There are a number of possible reasons for this difference, including that not all activities being undertaken by general practitioners are Medicare billable. In addition, some salaried specialists may be responsible for a small number of general practitioner type claims on Medicare and no specialist items, resulting in them being classed as general practitioners.

#### Report on Government Services (ROGS) data

The rates in the ROGS report are based on people in the medical practitioner, while the AIHW generally reports only on those who are employed. As a result, the rates in the ROGS report are slightly higher than those published elsewhere.

#### Registration data from the NRAS—coherence with published Board data

AIHW numbers are a point in time estimate while the AHPRA numbers include people registered in the previous 12 months, thereby including registrants whose registration terminated during that period (including short term registrants)

#### Medical practitioners in 2010 and 2011

The medical practitioner registration data for 2010 is consistent with data reported in the 2010–11 AHPRA annual report (with 84,516 total registrations for 2010 and 87,790 total registrations on the files used by AIHW for 2011, compared with 88,293 registrations at 30 June 2011 in the AHPRA annual report. Furthermore, the Medical Board of Australia in their quarterly data tables reported 91,354 for March 2012 and 91,645 for June 2012.

## Source and reference attributes

**Submitting organisation:** Australian Institute of Health and Welfare (AIHW)

**Steward:** [Australian Institute of Health and Welfare](#)