National Healthcare Agreement: P65-Net growth in health workforce, 2010 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:

- Results of the surveys are estimates because the raw data have undergone imputation and weighting to adjust for non response. It should be noted that any of these adjustments may have introduced some bias in the final survey data and any bias is likely to become more pronounced as response rates decline.
- Care should be taken when drawing conclusions about the size of the differences between estimates.
- Care is also advised with state and territory comparisons because of low response rates in some jurisdictions.

Institutional environment: The Australian Institute of Health and Welfare (AIHW) has calculated this indicator. The data are estimates from the AIHW National Health Labour Force Survey series which are annual surveys managed by each state and territory health authority, with the questionnaire administered by the relevant registration boards in each jurisdiction as part of the registration renewal process. Under agreement with the Australian Health Ministers Advisory Committee's (AHMAC) Health Workforce Principal Committee, the AIHW cleans, manipulates, collates and weights the state and territory survey results to obtain national estimates of the total medical labour force and reports the findings. 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 reference periods for the indicator data from the Medical Labour Force Survey are the 2005, 2006 and 2007 calendar years. The reference periods for the indicator data from the Nursing and Midwifery Labour Force Survey are the 2005 and 2007 calendar years. The reference periods for the indicator data from the Dental Labour Force Survey are the 2005 and 2006 calendar years.

Accessibility: Published products available on the AIHW website are:

- *Medical Labour Force Survey* reports with associated Excel tables.
- *Nursing and Midwifery Labour Force Survey* reports with associated Excel tables.
- *Dental Labour Force Survey* reports.
- Adhoc data are available on request (cost recovery charges apply).

Interpretability: Extensive explanatory information for the medical, the nursing and midwifery and the dental surveys is contained in the published reports and supplementary Excel tables for each, including collection method, scope and coverage, survey response, imputation and weighting procedures. These are available via the AIHW web site and readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator.

Relevance:

This indicator is an interim measure, pending the implementation of the National Registration and Accreditation Scheme (NRAS) in mid-2010. Long term indicators using NRAS data are expected to be available in 2012 and will include a much larger group of health professions. To date, there have been difficulties collecting consistent, quality data on the health workforce and many of these difficulties are expected to be resolved by the shift to NRAS data, particularly that of national consistency.

The estimates for this indicator are based on the weighted responses from the AIHW surveys of the Medical Labour Force, the Nursing and Midwifery Labour Force and the Dental Labour Force. The three surveys have been conducted using very similar methods and measure similar concepts. The survey populations have been drawn from the respective professional registers for these occupations, maintained by each state and territory registration board. The registers contain demographic information on all professionals allowed to practise in that state or territory and have been the most suitable framework for surveying the professions. The surveys have been designed to measure employment-related activity for each profession.

The states and territories have agreed on the core content of the data collected, but there has been some variation in actual questions asked and in the questionnaire format. Where necessary and possible, the AIHW has mapped responses to provide nationally comparable estimates from each survey.

Reference periods differed across jurisdictions but were within a single calendar year. The questionnaires were generally sent out with registration renewal papers by the respective registration boards for the professions, with survey timing depending on the registration practices for each profession within each jurisdiction.

The indicators are disaggregated by state/territory information primarily sourced from the registration boards. It should be noted that response varied considerably across jurisdictions resulting in some variation in the reliability of the estimates.

Estimates were produced from the survey data, after weighting to adjust for non-response. For this indicator, data are presented as a full-time equivalent (FTE) number of health professionals. FTE = (number of employed professionals in each profession x average hours worked) ÷ the standard working week for each profession. The clinician/non-clinician disaggregation is based on work activity of main job.

For the indicator reporting, the standard working week for medical practitioners is 40 hours and 38 hours for nurses/midwives and dentists. AIHW labour force reports also present FTE data based on 38, 40 and 45 hour working weeks for medical practitioners, 35 and 38 hour weeks for nurses and midwives and 35, 37.5 and 40 hour weeks for dentists.

Postcode information was collected although, for the indicator reporting, its quality does not support disaggregation by variables based on postcode. Data disaggregation by the ASGC Remoteness Areas is to be assessed for possible inclusion in future indicator reporting, pending further investigation into the quality of postcode information available.

The indicator is intended to measure the percentage change in the health workforce. For 2010 reporting, data are available for the health professions of medical practitioner, nurse/midwife and dentist. The medical workforce measure has two components, change between 2006 and 2007 and change between 2005 and 2006, to allow comparisons with the nursing and midwifery workforce measure of change between 2005 and 2007, because there are no nursing data for 2006, and allow comparisons with the most recent dentist workforce data (2005 and 2006).

Accuracy:

Data capture and initial processing of the survey data were undertaken by the individual state/territory health authorities and the procedures varied. AIHW conducts independent cleaning, editing and manipulation of the data received in order to produce more nationally consistent data. 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 surveys were conducted in conjunction with the registration renewal process and as a result, people registering in a profession for the first time in the reference

year were not sent a questionnaire. The Dental Labour Force Survey was similar except for Western Australia and Tasmania. A direct mail-out to dentists was conducted, separate from the registration process in these two states; and there was one reminder mail-out. For the medical survey, practitioners with conditional registration have not always been included. Overseas trained medical practitioners doing postgraduate or supervised training were not surveyed and interns were surveyed in some jurisdictions only.

There was no sampling undertaken for the data collection, the entire population of re-registrants was targeted. The national response rate for the medical survey was 71.3% in 2005, 70.2% in 2006 and 69.9% in 2007. The national response rate for the nursing and midwifery survey was 55.0% in 2005 and 49.6% in 2007. The national response rate to the Dental Labour Force Survey was 83.4% in 2005 and 79.6% in 2006. It should be noted that some dental boards did not include all registered practitioners in the survey as some practitioners registering for the first time were not forwarded a questionnaire.

The data have undergone imputation for item non-response and weighting to adjust for population non-response. It should be noted that either 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 as response rates decline. Care should be taken when drawing conclusions about the size of the differences between estimates.

Where possible, benchmark data were the number of registered medical practitioners, nurses/midwives or dentists in each state and territory, supplied to the AIHW by the state and territory registration boards for each profession. Also if possible, benchmarks were broken down by age group and sex and if the data were not available from the boards this way, benchmark figures were obtained from other sources, such as registration board annual reports. Where available, benchmark data relate to the time the survey was conducted. Details of the benchmarks supplied by the states and territories for each survey can be found in the published survey reports on the AIHW website.

It should be noted that in the Medical Labour Force Survey and the Nursing and Midwifery Labour Force Survey, comparability between jurisdictions is limited by differences between the surveyed population and the available benchmark data. Currently there is no information available about the effect of these differences on the indicator data.

As a result, the following should be noted when comparing state and territory indicator data from the Medical and Nursing and Midwifery Labour Force Surveys.

The Medical Labour Force Survey:

- In 2007, New South Wales registration numbers were based on financial general registrants, conditionally registered specialists, limited prescribing and non-practising medical practitioners only, resulting in an underestimate of the total number of practitioners in that state.
- In 2007, the Queensland registration numbers did not include all conditionally registered medical practitioners and for 2005 and 2006, registration numbers were based on general registrants (including specialists) and conditionally registered specialists only, resulting in an underestimate of the total number of practitioners in that state.
- In 2005, the Western Australia survey was administered to both general and conditional registrants but benchmark figures were for general registrants only, resulting in an underestimate of the total number of practitioners in that state.
- In 2005, 2006 and 2007, Tasmania registration numbers were based on general registrants, conditionally registered specialists and non-practising practitioners only, resulting in an underestimate of the total number of practitioners in that state.
- The 2007 Northern Territory estimates were based on the 2007 registration total figure which was prorated to the 2008 age by sex distribution of registrations, resulting in some bias in the survey estimates for that territory. In 2006 estimates were based on 2007 survey data weighted to 2006 benchmarks. In 2005 estimates were based on 2004 survey data weighted to 2005 benchmarks.

The Nursing and Midwifery Labour Force Survey:

- For 2007, state and territory estimates should be treated with caution due to low response rates in some jurisdictions, particularly Victoria (39.9%), Queensland (33.9%), Western Australia (36.7%) and the Northern Territory (28.7%).
- For 2005, the nursing and midwifery survey data for Victoria were not available, and in order to produce national estimates, the 2006 Victorian survey responses were weighted to 2005 benchmarks, resulting in some bias in the distribution of workforce data for that state.
- For 2005, estimates for Western Australia should be treated with caution due to the low response rate (26.9%).
- For 2005, estimates for the Northern Territory were not shown separately in the published survey report due to the very low response rate to the survey in that jurisdiction (13.7%).

As a result of the estimation process used for non-response, numbers of medical practitioners, nurses/midwives or dentists may be in fractions, but were rounded to whole numbers for publication. The FTE calculation for medical practitioners and nurses/midwives is based on rounded numbers and the FTE calculation for dentists is based on unrounded numbers.

Cells have been suppressed to protect confidentiality (where the presentation could identify a patient or a single service provider), where rates are likely to be highly volatile (for example, the denominator is very small), or data quality is known to be of insufficient quality (for example, where Indigenous identification rates are low).

Coherence:

Comparability of estimates for the medical workforce between 2005, 2006 and 2007 is limited by differences in coverage of the available benchmark across years (see Accuracy, dimension six, above). Care should be taken when drawing conclusions about the size of the differences between estimates across these years.

Currently there is no information available about the effect of these differences on the indicator data.

Some broad level comparisons of workforce percentage growth have been made between the Medical Labour Force Surveys, the ABS Census of Population and Housing and the Medicare administrative data. All sources showed upward trends although comparisons have been greatly limited by the significant differences in collection method, scope, coverage and definitions between the data sources.

Relational attributes

Related metadata references:

Has been superseded by National Healthcare Agreement: PI65-Net growth in health workforce, 2011 QS
Health, Superseded 04/12/2012

Indicators linked to this Data Quality statement:

National Healthcare Agreement: P65-Net growth in health workforce, 2010
Health, Superseded 08/06/2011