National Healthcare Agreement: P64a-Indigenous Australians in the health workforce, 2010 QS

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Identifying and definitional attributes

Metadata item type: Data Quality Statement

METEOR identifier: 393092

Registration status: Health, Superseded 04/12/2012
Indigenous, Superseded 04/12/2012

Data quality

Data quality statement summary:

- The Australian Institute of Health and Welfare (AIHW) Labour Force Surveys, which are the data source for the indicator, were conducted with a focus on the overall professions, rather than Indigenous people.
- Data are presented on medical practitioners, nurses and midwives only. These professions are only a part of the health workforce and exclude Aboriginal Health Workers, a large segment of the Indigenous health workforce.
- For the indicator, data are limited because of the small numbers of Indigenous people identified in the surveys. Small numbers are a result of:
  - small Indigenous representation in the Australian population overall;
  - smaller Indigenous representation in the health workforce than Australian population overall;
  - the fact that in the survey, the Indigenous workers are self-identified and the supply of this information is voluntary.
- Considerable caution is advised with state and territory comparisons due to the interaction of these small numbers with the low response rates in some jurisdictions.

Institutional environment: The 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 authorities, with the questionnaire administered by the relevant registration board in each jurisdiction as part of the registration renewal process. Under agreement with the Australian Health Ministers Advisory Council's (AHMAC) Health Workforce Principal Committee, the AIHW cleans, collates, manipulates 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 period for the data in the indicator is the 2007 calendar year, except for New South Wales medical practitioner data which are based on responses to the 2006 survey.

In both medical and nursing surveys, the questionnaires were sent out with registration renewal papers by the respective registration boards for the professions and the timing depended on the registration practices for each profession within each jurisdiction.

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.
- Adhoc data are available on request (cost recovery charges apply).

Interpretability:

Extensive explanatory information for the medical and nursing and midwifery 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, and limitations on utility of estimates for Indigenous Australians. These are available via the AIHW web site and readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator.

For more information comparing data sources of Indigenous health labour force statistics, see the AIHW publication *Aboriginal and Torres Islander health labour force statistics* and data quality assessment.

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.

Data are presented on medical practitioners, nurses and midwives only. These professions are only a part of the health workforce and exclude Aboriginal Health Workers, a large segment of the Indigenous health workforce.

The estimates for this indicator are based on the weighted responses from the Medical Labour Force Survey and the Nursing and Midwifery Labour Force Survey. The two surveys have been conducted using very similar methods and measures similar concepts. The survey populations have been drawn from the medical register and the nursing and midwifery register maintained in each state and territory. 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 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 format of the questionnaire. Where necessary and possible, the AIHW has mapped responses to provide nationally comparable estimates from each survey dataset. The Australian Bureau of Statistics (ABS) standard question was used in the survey to identify Aboriginal and Torres Strait Islander people working in the two health professions, although Victoria and Western Australia combined the response categories. This has not affected the aggregate figures for 'Indigenous'.

The focus of the surveys was the overall profession, rather than Indigenous people and for the indicator, data are limited because the numbers of Indigenous people identified in the surveys were small. Small numbers are a result of:

- small Indigenous representation in the Australian population overall;
- smaller Indigenous representation in the health workforce than Australian population overall;
- the fact that in the survey, the Indigenous workers are self-identified and the supply of this information is voluntary.

The indicators are disaggregated by state/territory information primarily sourced from the registration boards. It should be noted that, in both surveys, response varied considerably across jurisdictions. This, coupled with small numbers resulted in some variation in the reliability of the estimates across jurisdictions. Care should be taken when drawing conclusions about the size of the differences between estimates. Note that, because of data processing problems, the 2007 indicator data for New South Wales are based on estimates produced from 2006 raw survey data.

Estimates were produced from the survey data, after weighting to adjust for non-response. The estimation process for non-response produces numbers of workers in fractions, but these were rounded to whole numbers for publication. For this indicator, data are presented as a percentage which is calculated excluding any records for which Indigenous status was not reported. Percentages for this indicator are calculated on the rounded figures.

Postcode information was collected in the survey although, for the indicator reporting, the quality of data and small numbers of Indigenous workers prevent disaggregation by variables based on postcode (for example, ASGC Remoteness Areas).

Accuracy:

Data capture and initial processing for the surveys were conducted 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, which means people registering as a medical practitioner, nurse or midwife for the first time in the reference year were not sent a questionnaire. In addition, for the medical survey, 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 in 2007 for the medical survey was 69.9% and for the nursing and midwifery survey it was 49.6% in 2007. 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 or nurses/midwives 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 medical board annual reports. Where available, benchmark data relate to the time the survey was conducted.

When comparing the 2007 AIHW Medical Labour Force Survey estimates of Indigenous medical practitioners across states and territories, note that:

- New South Wales data are based on responses to the 2006 Medical Labour Force Survey. Data from the 2007 survey were not used due to the estimate of employed Indigenous medical practitioners being much larger than that estimated in 2006, indicating a difference of reporting or coding is likely to have occurred.
- The number of medical practitioners in New South Wales, Queensland and Tasmania are slightly underestimated, as the benchmark figures did not include all registered medical practitioners. New South Wales only sent questionnaires to financial registrants holding general, conditional specialist, limited prescribing or non-practising registration. Only medical practitioners holding general, specialist or non-practising registration were surveyed in Queensland. In Tasmania, only general registrants, conditionally registered specialists and non-practising practitioners received a questionnaire.
- Northern Territory data are based on responses to the 2007 Medical Labour Force Survey weighted to 2007 number of registered practitioners by age group and sex (derived by applying 2008 age group by sex proportions to the 2007 total practitioner number), resulting in a response rate equivalent to 27.1%. Care should be taken when interpreting these figures.

When comparing estimates from the 2007 Nursing and Midwifery Labour Force Survey data, state and territory estimates should be treated as indicative only because of low response rates in some jurisdictions, particularly Queensland (33.9%), Western Australia (36.7%) and the Northern Territory (28.7%).

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:

Estimates of Indigenous medical practitioners from the 2006 Medical Labour Force Survey have been compared with the ABS 2006 Census of Population and Housing estimates and the AIHW figures were noticeably higher than those from the Census. There are complex reasons for the difference.

The approach to actually identifying Indigenous Australians has been very similar in

the two data collections. Both have used the same self-identification question to collect Indigenous status, and both have used a self-enumeration questionnaire. However, it is also possible in both collections for another person to complete the form on behalf of the respondent. Further, there has been investigative work done which shows that a person's propensity to identify as Indigenous can change in different settings. Both these factors can result in different information being collected about Indigenous people.

In addition, a range of significant differences in collection methods exists between the two data sources and, to varying degrees, these contribute to the differences in the figures between the two sources. The following information relates only to the main factors which need to be taken into account when comparing data used for the two components of Indicator 64.

The main factor of concern regarding the estimates of health workers from the Census is undercounting within occupations. For the AIHW health labour force surveys, concerns are low response rates combined with inadequate medical and nursing registration data. Reference should be made to the Data Quality Statement for Indicator 64b when comparing data from the two sources.

The Census

The Census method of open-response coding to assign 'occupation' is known to result in some undercounting of workers in individual occupations.

In the Census, health workers overall, are defined by the ANZSCO using the respondent's hand-written response to the occupation questions. They are then identified in the data file by filtering on ANZSCO codes. As a means of measuring the health workforce, the Census method results in some undercount because the ability to assign an accurate code, or any code at all, is dependent on the level of detail provided by respondents and the legibility of their responses.

Overall in the 2006 Census, there were some 74,913 employed people who did not provide occupation details which could be coded to the ANZSCO and although this is very low overall (less than 1% of all employed people), an unknown number were health workers, and a proportion of those will have been Indigenous Australians. For example, 1,111 of all those who were not assigned an occupation were known to be employed in health related industries (for example, hospitals, general/specialist practice, ambulance services and residential care facilities).

When comparing figures between the two data sources it should be noted that the scope for health workers is different. In the Census, occupation information is collected about a person's main job, only, and the ANZSCO assigns a health occupation to clinicians, but not to non-clinicians. Therefore, some health workers are excluded from the Census figures.

The AIHW health Labour Force Surveys (AIHW surveys)

Response

Unlike the Census, the AIHW surveys are voluntary and in recent surveys, low response has been a growing problem in some jurisdictions, particularly in the Northern Territory, and this has affected the reliability of estimates of Indigenous medical practitioners and nurses.

In the AIHW health labour force surveys, health workers are identified first, by their registration in a health profession (from administrative records) and then, by being employed in that profession (from the surveys), since they must have registration to enable work in the profession. With this approach, problems can exist if updates of the administrative records lag and if people with registration in more than one jurisdiction cannot be assigned to just one in order to obtain national estimates.

Information is collected via the survey to resolve these problems. People with lapsed registration (for example, retired etc) can be identified and people with multi-registration can be assigned to a single jurisdiction. However, a high level of response to the survey is required so that the responding group of health workers is as close a representation as possible of the health labour force as a whole and that estimation procedures which are applied to account for non-response have a sound statistical basis.

In the two most recent medical surveys and nursing surveys response levels were approximately 70% for medical registrants and 50% for nursing registrants. Of particular note for estimates of Indigenous Australians is that the 2007 nursing survey response in the Queensland, Western Australia and Northern Territory was 34%, 37% and 27% respectively.

Given the size of these responding populations, it is likely their characteristics were different from the health labour force as a whole, introducing some bias with the non-response adjustments applied to survey data. The result is skewness in the distribution of characteristics, such as Indigenous status, whether employed and whether retired from the profession. The overall totals also will have been affected if the adjustments for multiple registrations were subject to bias. However it is not known whether the final survey estimates were underestimates or overestimates.

Registration data

To account for non-response to the AIHW survey, estimates of the total number of health workers are derived from survey responses weighted to registration numbers provided by state and territory medical boards (known as benchmarks). This process relies on quality registration data and correct administration of the survey by the registration boards. Both of these have been quite variable over time and across jurisdictions.

One of the main problems has been that in some surveys and jurisdictions the surveyed population has been different from the benchmark population. This has resulted in the estimates health workers being either artificially low, or artificially high, depending whether registrants were inadvertently omitted or included in the estimation process. This problem is exacerbated as response to the surveys decline.

Reference should be made to the cautions which are included in the Data Quality Statement for Indicator 64b.

Source and reference attributes

Submitting organisation: Australian Bureau of Statistics

Relational attributes

Related metadata references: Has been superseded by National Healthcare Agreement: PI 64a: Indigenous Australians in the health workforce (for selected professions of medical practitioners and nurses/midwives), 2011 QS
Health, Superseded 12/03/2015
Indigenous, Standard 11/09/2012

Indicators linked to this Data Quality statement: National Healthcare Agreement: P64a-Indigenous Australians in the health workforce, 2010
Health, Superseded 08/06/2011
Indigenous, Superseded 08/06/2011