National Indigenous Reform Agreement: PI 09—Antenatal care, 2016

Exported from METEOR (AIHW's Metadata Online Registry)

© Australian Institute of Health and Welfare 2024

This product, excluding the AIHW logo, Commonwealth Coat of Arms and any material owned by a third party or protected by a trademark, has been released under a Creative Commons BY 4.0 (CC BY 4.0) licence. Excluded material owned by third parties may include, for example, design and layout, images obtained under licence from third parties and signatures. We have made all reasonable efforts to identify and label material owned by third parties.

You may distribute, remix and build on this website's material but must attribute the AIHW as the copyright holder, in line with our attribution policy. The full terms and conditions of this licence are available at https://creativecommons.org/licenses/by/4.0/.

Enquiries relating to copyright should be addressed to info@aihw.gov.au.

Enquiries or comments on the METEOR metadata or download should be directed to the METEOR team at meteor@aihw.gov.au.

National Indigenous Reform Agreement: PI 09—Antenatal care, 2016

Identifying and definitional attributes

Metadata item type:	Indicator
Indicator type:	Indicator
Short name:	PI 09—Antenatal care, 2016
METEOR identifier:	611182
Registration status:	Indigenous, Superseded 01/07/2016
Description:	There are two measures for this indicator, both to be reported by Indigenous status: a) Number of women who gave birth, where an antenatal visit was reported in the first trimester, as a proportion of women who gave birth b) Number of women who gave birth, where five or more antenatal visits were reported, as a proportion of women who gave birth.
Rationale:	The primary care needs of all Australians are met effectively through timely and quality care in the community. Good antenatal care is associated with positive health outcomes for mothers and babies.
Indicator set:	National Indigenous Reform Agreement (2016) Indigenous, Superseded 01/07/2016
Outcome area:	Indigenous children are born and remain healthy Indigenous, Standard 21/07/2010

Collection and usage attributes

Computation description: Crude rates are calculated for Indigenous Australians.

Age-standardised rates are calculated for Indigenous and non-Indigenous Australians.

Rate ratios and rate differences are calculated for comparisons between Indigenous and non-Indigenous Australians.

For variability bands: Variability bands are to be calculated for rates using the standard method (see definition below).

For trends: percentage change and statistical significance of change is to be calculated (required for assessing progress over time).

Presentation:

Number, rate per 100 (percentage), rate ratios, rate differences and variability bands.

First trimester is defined as up to and including 13 weeks of pregnancy.

Excludes non-residents of external territories and where the state/territory of residence was not stated.

Excludes records with missing data for gestation at first antenatal visit.

Definitions:

Standard method for variability band computation:

Rates derived from administrative data counts are not subject to sampling error but may still be subject to natural random variation, especially for small counts. A 95% confidence interval for an estimate is a range of values which is very likely (95 times out of 100) to contain the true unknown value. Where the 95% confidence intervals of two estimates do not overlap it can be concluded that there is a statistically significant difference between the two estimates. This is the standard method used in Australian Institute of Health and Welfare (AIHW) publications for which formulas can be sourced from Breslow and Day (1987) in the publication 'Statistical methods in cancer research'. Typically in the standard method, the observed rate is assumed to have natural variability in the numerator count (for example, deaths, hospital visits) but not in the population denominator count. Also, the rate is assumed to have been generated from a normal distribution ("Bell curve"). Random variation in the numerator count is assumed to be centred around the true value, that is, there is no systematic bias.

Computation: Crude rate: 100 x (Numerator ÷ Denominator).

Age-standardised rate: calculated using the direct method, using five-year age groups from 15–19 years to 40–44 years with the 30 June 2001 Australian female estimated resident population (ERP) based on the 2001 Census as the standard population. Age-standardisation should be done in accordance with the NIRAPIMG agreed principles for direct age-standardisation (see Comments section. Note that Principle 4 is not applicable for this indicator).

Rate ratio: Indigenous rate divided by non-Indigenous rate.

Rate difference: Indigenous rate minus non-Indigenous rate.

Variability band: to be calculated using the standard method for estimating 95% confidence intervals as follows:

Crude rate:

$$CI(CR)_{95\%} = CR \pm 100 \times 1.96 \times \sqrt{\frac{\frac{CR}{100}\left(1 - \frac{CR}{100}\right)}{n}}$$

Where CI = confidence interval for either Measure 1a or Measure 1b

CR = crude rate for either Measure 1a or Measure 1b

n = crude rate denominator for either Measure 1a or Measure 1b.

Age-standardised rate:

$$CI(ASR)_{95\%} = ASR \pm 1.96 \times \sqrt{\sum_{i=1}^{I} \frac{w_i^2 d_i}{n_i^2}}$$

Where CI = confidence interval for either Measure 1a or Measure 1b

ASR = age-standardised rate for either Measure 1a or Measure 1b

w_i = the proportion of the standard population in age group i

d_i = the numerator for either Measure 1a or Measure 1b in age group i

n_i = the denominator for either Measure 1a or Measure 1b respectively (see Denominator below) in the population in age group i

Percentage change: Calculated by multiplying the average annual change over the period by the number of data points less 1. This is then divided by the rate for the first year in the series and multiplied by 100.

The average annual change in rates, rate ratios and rate differences are calculated using linear regression which uses the least squares method to calculate a straight line that best fits the data and returns an array that best describes the line. The simple linear regression line, Y = a + bX, 'slope' estimate (b) was used to determine the average annual change in the data over the period. The formula used to calculate the slope estimate and standard error of the slope in Microsoft Excel is:

LINEST (known_y's, known_x's, true) entered as an array formula (Ctrl, Shift, Enter).

Statistical significance of change: The 95% confidence intervals (CIs) for the standard error of the slope estimate (average annual change) are used to determine whether the apparent increases or decreases in the data are statistically significant at the $p<0.05$ level. The formula used to calculate the CIs for the standard error of the slope estimate is:

95% CI(x) = x ± 1.96 x SE(x)

where x is the average annual change (slope estimate). If the upper and lower 95% confidence intervals do not include zero, then it can be concluded that there is statistical evidence of an increasing or decreasing trend in the data over the study period.

Numerator:

Measure 1a) number of women who gave birth where an antenatal visit was reported in the first trimester (up to and including 13 completed weeks), to at least one live or stillborn baby.

Measure 1b) number of women who gave birth where five or more antenatal visits were reported for pregnancy of 32 or more weeks gestation, to at least one live or stillborn baby.

Numerator data elements:

Data Element / Data Set

Product of conception—gestational age, completed weeks N[N]

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Data Element / Data Set

Pregnancy—estimated duration (at the first visit for antenatal care), completed weeks N[N]

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Data Element / Data Set

Female—number of antenatal care visits, total N[N]

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Denominator:

Measure 1a) total number of women who gave birth to at least one live or stillborn baby (where gestation at first antenatal visit is known).

Measure 1b) total number of women who gave birth at 32 weeks or more gestation to at least one live or stillborn baby (where number of antenatal visits is known).

Denominator data elements:

Data Element / Data Set

Product of conception—gestational age, completed weeks N[N]

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Data Element / Data Set

Pregnancy—estimated duration (at the first visit for antenatal care), completed weeks N[N]

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Data Element / Data Set

Female—number of antenatal care visits, total N[N]

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Disaggregation:

Current period (2013):

For Indigenous women only (numbers and crude rates):

- Total and state/territory (including sub-total for jurisdictions reported for baseline year) and remoteness area.

Time series – 2007, 2008, 2009, 2010, 2011, 2012 (previously supplied), 2013 (required for 2016 reporting):

For Indigenous and non-Indigenous women (numbers, age-standardised rates, rate ratio, rate difference, percentage change, variability bands and statistical significance of change):

- Total and state/territory (including sub-total for jurisdictions reported for baseline year) and remoteness area (from 2012 onwards), by Indigenous status.

Disaggregation data elements:

Data Element / Data Set

Person—Indigenous status, code N

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Data Element / Data Set

Person—area of usual residence, statistical area level 2 (SA2) code (ASGS 2011) N(9)

Data Source

AIHW National Perinatal Data Collection (NPDC)

Guide for use

Data source type: Administrative by-product data

Used for disaggregation by state/territory and remoteness area. Classifications for remoteness area are based on ASGC prior to 2012 and ASGS from 2012.

Comments:

Most recent data available for 2016 report is 2013.

The NPDC consists of an agreed set of standardised data items as specified in the Perinatal National Minimum Data Set (NMDS), as well as additional (non-standardised) data items.

There were no data elements in the Perinatal NMDS for antenatal care prior to July 2010. A standard data item for gestation at first presentation for antenatal care was developed and included in the Perinatal NMDS from 1 July 2010, while a standard data item for number of antenatal visits was developed and included in the Perinatal NMDS from 1 July 2013.

For earlier years, data from non-standard data items made available as part of the NPDC have been used; therefore these data should be interpreted with caution.

Information is included in the NPDC for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation.

Data on gestation at first visit (needed for measure (a)) are only available to report for NSW, Qld, WA, SA, ACT and the NT for births from January 2010, and for Vic and Tas for births from 1 July 2010; and data on number of antenatal visits (needed for measure (b)) are only available to report for Qld, SA and the NT.

Analysis by state/territory is based on usual residence of the mother.

Comparability between data currently collected for births before July 2010 may be limited by different definitions of first antenatal visit.

Maternal age is the age at the time of giving birth.

To report trends, the body assessing progress over time may separately request percentage change and statistical significance testing for this indicator directly from the data provider (AIHW).

Variability bands accompanying perinatal data should be used for the purposes of comparisons over time and for national estimates at a point in time for Indigenous/non-Indigenous comparisons.

Baseline year for NIRA target (Halve the gap in mortality rates for Indigenous children under 5 within a decade) is 2008; baseline year for this indicator is 2007;

target year is 2018.

NIRAPIMG agreed Principles for reporting directly age-standardised rates for administrative data. Note that Principle 4 is not applicable for this indicator.

Overarching principle: Before undertaking age-standardisation, analysts must investigate the data being used to understand the age-specific distribution and any limitations that may impact on the results.

Principle 1: The standard population used should be the Australian estimated resident population as at 30 June 2001 based on the 2001 Census [for this indicator, this is limited to females aged 15–44 years].

Principle 2: If the denominator is less than 30 in any one age group, then do not attempt to produce age-standardised rates.

Age groups may be collapsed to obtain a denominator of 30 or more (provided that this is in accordance with principle 3).

Principle 3: If the total number of Indigenous events (for example, deaths, hospital separations) is less than 20, then do not attempt to produce age-standardised rates.

Combining several years of data, or aggregating jurisdictions should be considered to obtain a total of 20 or more events.

If this does not meet the purpose (that is, data are required for time series or jurisdictional comparisons), or does not result in a total of 20 or more events, then other measures and contextual information should be reported instead of age-standardised rates which could include total number of events, crude rates, age-specific rates, age-specific rate ratios and median age at death.

Principle 4: Not applicable.

Principle 5: Additional contextual information (most importantly age-specific rates and ratios) should be provided in addition to age-standardised rates when:

a) the age-standardised rates and rate ratios lie largely outside the range of the age-specific rates and rate ratios.

b) the pattern of age-specific rates of the Indigenous and non-Indigenous populations differ substantially (for example, deaths from a certain cause concentrate on younger ages for the Indigenous population while for the non-Indigenous population they may occur at older ages).

c) the age-specific rates depart from the assumption of a uniform increase in death with age (for example, injury which peaks in the young adult to middle-ages and certain cancers amenable to treatment for some age groups).

d) the condition of interest is largely confined to a specific age range (for example, sexually transmitted infections (STIs) and women who give birth). In such instances, age-standardisation could be restricted to include the age groups within this age range only.

Principle 6: For conditions restricted to a specific age group (for example, conditions originating in the perinatal period and sudden infant death syndrome (SIDS)), it is recommended to report the age-specific rate for the age group of interest instead of the age-standardised rate.

Representational attributes

Representation class:	Percentage
Data type:	Real
Unit of measure:	Person
Format:	NN[N].N

Indicator conceptual framework

Framework and dimensions:	Effective/Appropriate/Efficient

Data source attributes

Data sources:

Data Source

AIHW National Perinatal Data Collection (NPDC)

Frequency

Calendar years ending 31 December each year

Data custodian

Australian Institute of Health and Welfare

Accountability attributes

Reporting requirements: National Indigenous Reform Agreement.

Organisation responsible for providing data: Australian Institute of Health and Welfare.

Source and reference attributes

Steward: National Indigenous Reform Agreement Performance Information Management Group

Reference documents: Breslow NE & Day NE 1987. Statistical methods in cancer research. Lyon: International Agency for Research on Cancer.

Relational attributes

Related metadata references:

Supersedes National Indigenous Reform Agreement: PI 09-Antenatal care, 2015 Indigenous, Superseded 18/11/2015

Has been superseded by National Indigenous Reform Agreement: PI 09—Antenatal care, 2017 Indigenous, Superseded 06/06/2017