National Indigenous Reform Agreement: PI 07-Proportion of babies born of low birth weight, 2013

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National Indigenous Reform Agreement: PI 07-Proportion of babies born of low birth weight, 2013

Identifying and definitional attributes

Metadata item type:	Indicator
Indicator type:	Indicator
Short name:	PI 07-Proportion of babies born of low birth weight, 2013
METEOR identifier:	484305
Registration status:	Indigenous, Superseded 13/12/2013
Description:	The incidence of low birth weight among live-born babies, of mothers by Indigenous status.
Rationale:	Low birth weight is associated with increased risk of poor health and death during infancy and increased prevalence of a number of chronic diseases in adulthood. Low birth weight is a particular issue for Indigenous Australians.
Indicator set:	National Indigenous Reform Agreement (2013) Indigenous, Superseded 13/12/2013
Outcome area:	Indigenous children are born and remain healthy Indigenous, Standard 21/07/2010
Data quality statement:	National Indigenous Reform Agreement: PI 07-Proportion of babies born of low birth weight, 2013 QS Indigenous, Superseded 25/06/2014

Collection and usage attributes

Computation description: Rates are calculated for Indigenous and non-Indigenous.

Rate ratios and rate differences are calculated for Indigenous: non-Indigenous.

For variability bands: variability bands are to be calculated for rates (single year data and for national data for 3 years combined) using the standard method (see definition below).

For trends: percentage change and statistical significance of change is to be calculated (required for CRC reporting).

Presentation:

Number, rate per 100 infants (percentage), rate ratio, rate difference and variability bands.

'Low birth weight' is defined as less than 2,500 grams.

Excludes multiple births and stillbirths.

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

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

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 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 (e.g. 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 - i.e. there is no systematic bias.

Computation:

<u>Rate</u>: 100 x (Numerator ÷ Denominator).

<u>Rate ratio</u>: Indigenous rate divided by non-Indigenous rate.

<u>Rate difference</u>: Indigenous rate minus non-Indigenous rate.

<u>Percentage change</u>: 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, or 'slope' estimate 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).

<u>Statistical significance of change</u>: 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.

<u>Variability band:</u> 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 *p* = proportion of babies born of low birth weight

q = 1-*p*

n = denominator used to calculate *p*

Numerator:

Number of low birth weight live-born singleton infants.

Numerator data elements:

┌─ **Data Element / Data Set** ──────────────────────────
│
│ [Birth—birth weight, total grams NNNN](#)
│
│ **Data Source**
│
│ [AIHW National Perinatal Data Collection (NPDC)](#)
│
│ **Guide for use**
│
│ Data source type: Administrative by-product data
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┌─ **Data Element / Data Set** ──────────────────────────
│
│ [Birth—birth status, code N](#)
│
│ **Data Source**
│
│ [AIHW National Perinatal Data Collection (NPDC)](#)
│
│ **Guide for use**
│
│ Data source type: Administrative by-product data
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┌─ **Data Element / Data Set** ──────────────────────────
│
│ [Birth event—birth plurality, code N](#)
│
│ **Data Source**
│
│ [AIHW National Perinatal Data Collection (NPDC)](#)
│
│ **Guide for use**
│
│ Data source type: Administrative by-product data
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Denominator: Number of live-born singleton infants with known birthweight

Denominator data elements:

┌─ **Data Element / Data Set** ──────────────────────────
│
│ [Birth—birth status, code N](#)
│
│ **Data Source**
│
│ [AIHW National Perinatal Data Collection (NPDC)](#)
│
│ **Guide for use**
│
│ Data source type: Administrative by-product data
│
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┌─ **Data Element / Data Set** ──────────────────────────
│
│ [Birth event—birth plurality, code N](#)
│
│ **Data Source**
│
│ [AIHW National Perinatal Data Collection (NPDC)](#)
│
│ **Guide for use**
│
│ Data source type: Administrative by-product data
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Disaggregation:	**Current Period** – (2008-2010):

For Indigenous and non-Indigenous (number, rate, rate ratio, rate difference and variability bands):

- National and state/territory by Indigenous status

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

For Indigenous and non-Indigenous (number, rate, rate ratio, rate difference, percentage change and variability bands):

- National and state/territory by Indigenous status.

Disaggregation data elements:	

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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.

Used for Indigenous status of infant which currently is based solely on the Indigenous status of the mother.

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Data Element / Data Set

[Person—area of usual residence, geographical location code (ASGC 2009) NNNNN](#)

Data Source

[AIHW National Perinatal Data Collection (NPDC)](#)

Guide for use

Data source type: Administrative by-product data

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Comments:	Most recent data available for 2013 CRC report is 2010.
	Aggregated data (2008 to 2010) will be reported for the current reporting period.
	Single year data (2007, 2008, 2009 and 2010) will be reported for time series; noting that previously supplied data will be used unless a resupply is provided.
	Information is included in the National Perinatal Data Collection (NPDC) for all live births and still births of at least 400 grams birthweight or at least 20 weeks gestation
	Currently available data on Indigenous status of infants is based solely on the Indigenous status of the mother.
	Disaggregation by Indigenous status is recommended to be reported using three-year combined data for the current reporting period due to the small number of low birthweight infants born to Indigenous mothers each year. Single year data is to be reported for time series.
	To report trends, the COAG Reform Council will 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 child mortality gap within a decade) is 2008; baseline year for this indicator is 2008; target year is 2018.

Representational attributes

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

Indicator conceptual framework

Framework and dimensions:	Health Conditions

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.
Further data development / collection required:	Specification: Long-term.
	A data item for Indigenous status of the baby will be added to the Perinatal NMDS for collection from July 2012 onwards.

Source and reference attributes

Steward: National Indigenous Reform Agreement Performance Information Management Group

Relational attributes

Related metadata references:

Supersedes National Indigenous Reform Agreement: PI 12-Proportion of babies born of low birth weight, 2012
Indigenous, Superseded 13/06/2013

Has been superseded by National Indigenous Reform Agreement: PI 07-Proportion of babies born of low birth weight, 2014
Indigenous, Superseded 24/11/2014

See also National Healthcare Agreement: PI 01-Proportion of babies born of low birth weight, 2012
Health!, Superseded 25/06/2013