National Indigenous Reform Agreement: PI 07- Proportion of babies born of low birthweight, 2020

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National Indigenous Reform Agreement: PI 07-Proportion of babies born of low birthweight, 2020

Identifying and definitional attributes

Metadata item type:	Indicator
Indicator type:	Indicator
Short name:	PI 07-Proportion of babies born of low birthweight, 2020
METEOR identifier:	718484
Registration status:	Indigenous, Standard 23/08/2019
Description:	The incidence of low birthweight among live born singleton babies by Indigenous status of mothers, and among live born singleton babies by Indigenous status of babies.
Rationale:	Low birthweight is associated with increased risk of poor health and death during infancy and increased prevalence of a number of chronic diseases in adulthood. Low birthweight is a particular issue for Indigenous Australians.
Indicator set:	National Indigenous Reform Agreement (2020) Indigenous, Standard 23/08/2019
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 birthweight, 2020; Quality Statement Indigenous, Standard 06/02/2020

Collection and usage attributes

Computation description: Low birthweight is defined as less than 2,500 grams.

Excludes multiple births, stillbirths and births of less than 20 weeks gestation.

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

Data exclude Australian non-residents, residents of external territories and records where state/territory of residence was not stated.

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 (single year data and for total 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 reporting of progress over time).

Presentation:

Number, rate (expressed as a percentage), rate ratio, rate difference and variability bands.

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 (CI) 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% CIs 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 (expressed as a percentage): 100 x (Numerator ÷ Denominator).

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

Rate difference: Indigenous rate minus non-Indigenous rate.

Variability bands: to be calculated using the standard method for estimating 95% CIs 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

CR = crude rate (expressed as a percentage)

n=number of live born singleton babies.

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' (b) 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).

Statistical significance of change: The 95% 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% CIs 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:

Number of low birthweight live born singleton babies.

Numerator data elements:

Data Element / Data Set

Birth—birth weight, total grams NNNN

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

Guide for use

Data source type: Administrative by-product data

Data Element / Data Set

Birth—birth status, code N

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

Guide for use

Data source type: Administrative by-product data

Data Element / Data Set

Birth event—birth plurality, code N

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

Guide for use

Data source type: Administrative by-product data.

Denominator: Number of live born singleton infants.

Denominator data elements:

Data Element / Data Set

Birth—birth status, code N

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

Guide for use

Data source type: Administrative by-product data.

Data Element / Data Set

Birth event—birth plurality, code N

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

Guide for use

Data source type: Administrative by-product data.

Data Element / Data Set

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

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

Guide for use

Data source type: Administrative by-product data

Disaggregation:

Indigenous status of the mother

Current period—(2015–2017):

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

- Total and state/territory: by Indigenous status of the mother.
- Total by remoteness area: by Indigenous status of the mother.

Time series—2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016 (the data for these years have been previously supplied), 2017 (required for 2020 reporting):

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

- Total and state/territory: by Indigenous status of the mother.
- Total by remoteness area (from 2012 onwards): by Indigenous status of the mother.

Indigenous status of the baby

Current period—(2015–2017):

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

- Total and state/territory: by Indigenous status of the baby.
- Total by remoteness area: by Indigenous status of the baby.

Time series— 2013, 2014, 2015, 2016 (these data have been previously supplied), 2017 (required for 2020 reporting).

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

- Total and state/territory: by Indigenous status of the baby.
- Total by remoteness area: by Indigenous status of the baby.

Indigenous status of the baby cross-tabulated by the Indigenous status of the mother

Current period only—(2015–2017):

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

- Total and state/territory: by Indigenous status of the baby and of the mother.

Disaggregation data elements:

Data Element / Data Set

Person—Indigenous status, code N

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

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 2016) N(9)

Data Source

AIHW National Perinatal Data Collection (NPDC)

NMDS / DSS

Perinatal NMDS 2014-18

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: the Australian Statistical Geography Standard (ASGS) 2016 from 2017; the ASGS 2011 from 2012 to 2016; and the Australian Standard Geographical Classification (ASGC) prior to 2012.

Comments:

Most recent data available for the 2020 National Indigenous Reform Agreement (NIRA) Report (2018–19 reporting cycle) is 2017.

Aggregated data for a 3-year period (2015 to 2017) will be reported for the current reporting period.

Single year data (2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016 and 2017) 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 stillbirths of at least 400 grams birthweight or at least 20 weeks gestation.

Until 2011, the NPDC only included information on the Indigenous status of the mother. From 2011, the NPDC included information on the Indigenous status of the baby for selected jurisdictions—New South Wales, Victoria, Queensland, the Australian Capital Territory and the Northern Territory. The mandatory collection of this data item began from July 2012 following its inclusion in the Perinatal national minimum data set (NMDS). National data based on the NMDS data item are therefore available for the latter 6 months of 2012, and 2013 is the first full calendar year for which nationally standardised data on the Indigenous status of babies are available.

Disaggregation by Indigenous status is recommended to be reported using 3-year combined data for the current reporting period due to the relatively small number of low birthweight babies born to Indigenous mothers each year. Single year data are to be reported for time series.

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 (the AIHW).

Variability bands accompanying perinatal data should be used where there are at least 3 full calendar years of data available for the purposes of comparisons over time and for national estimates at a point in time for Indigenous/non-Indigenous comparisons.

Baseline year for the Council of Australian Governments' Closing the Gap target (Halve the gap in mortality rates for Indigenous children under 5 within a decade) is 2008; data reported for this indicator since 2007; target year is 2018.

The term ‘Aboriginal and Torres Strait Islander people’ is preferred when referring to the separate Indigenous peoples of Australia. However, the term ‘Indigenous’ is used interchangeably with ‘Aboriginal and Torres Strait Islander’ in this indicator to assist readability.

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

Source and reference attributes

Submitting organisation: Australian Institute of Health and Welfare

Steward: National Indigenous Reform Agreement Performance Information Management Group

Reference documents: Breslow NE & Day NE (eds) 1987. Statistical methods in cancer research. Volume II: The design and analysis of cohort studies. IARC Scientific Publications No. 82. Lyon, France: International Agency for Research on Cancer. Viewed 14 June 2019, http://publications.iarc.fr/Book-And-Report-Series/Iarc-Scientific-Publications/Statistical-Methods-In-Cancer-Research-Volume-II-The-Design-And-Analysis-Of-Cohort-Studies-1986

Relational attributes

Related metadata references:

Supersedes National Indigenous Reform Agreement: PI 07-Proportion of babies born of low birthweight, 2019
Indigenous, Superseded 23/08/2019

See also Australian Health Performance Framework: PI 3.1.6–Proportion of babies born with low birthweight, 2019
Health, Superseded 01/12/2020

See also Australian Health Performance Framework: PI 3.1.6–Proportion of babies born with low birthweight, 2020
Health, Standard 02/12/2020

See also National Healthcare Agreement: PI 01–Proportion of babies born of low birth weight, 2019
Health, Superseded 13/03/2020

See also National Healthcare Agreement: PI 01–Proportion of babies born of low birth weight, 2020
Health, Standard 13/03/2020

See also National Healthcare Agreement: PI 01–Proportion of babies born of low birth weight, 2021
Health, Standard 16/09/2020

See also National Healthcare Agreement: PI 01–Proportion of babies born of low birth weight, 2022
Health, Standard 24/09/2021