# National Indigenous Reform Agreement: PI 03-Hospitalisation rates by principal diagnosis, 2012

## Exported from METEOR (AIHW's Metadata Online Registry)

# National Indigenous Reform Agreement: PI 03-Hospitalisation rates by principal diagnosis, 2012

## Identifying and definitional attributes

| | |
|---|---|
| **Metadata item type:** | Indicator |
| **Indicator type:** | Indicator |
| **Short name:** | PI 03-Hospitalisation rates by principal diagnosis, 2012 |
| **METEOR identifier:** | 438499 |
| **Registration status:** | Indigenous, Superseded 13/06/2013 |
| **Description:** | Hospital separation rates for leading principal diagnoses for Australians, by Indigenous status. |
| **Rationale:** | Monitoring hospitalisation rates for different diseases so that it is understood which diseases are major contributors to morbidity among Indigenous Australians and where programs are succeeding and where they are not will assist in achieving the closing the gap targets. |
| **Indicator set:** | National Indigenous Reform Agreement (2012)<br>Indigenous, Superseded 13/06/2013 |
| **Outcome area:** | Indigenous Australians achieve health outcomes comparable to the broader population<br>Indigenous, Superseded 25/02/2024 |
| **Data quality statement:** | National Indigenous Reform Agreement: PI 03-Hospitalisation rates by principal diagnosis, 2012 QS<br>Indigenous, Superseded 13/06/2013 |

## Collection and usage attributes

**Computation description:**    Crude rates are calculated for Indigenous Australians.

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

Rate ratios and rate differences are calculated for Indigenous:Other Australians.

Principal diagnoses to be listed from highest to lowest Indigenous percentage for the most recent period (2 years combined).

For variability bands: More work is to be undertaken by the AIHW regarding the use of variability bands for hospitalisation data for COAG reporting.

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

Presentation: Number, rate per 1,000 persons; percentage; rate ratios, rate differences.

Excludes care types of:

- newborn-unqualified days only;
- organ procurement-posthumous
- hospital boarder.

Definitions:

Other Australians includes non-Indigenous and 'not stated' Indigenous status.

Leading principal diagnoses (ICD-10-AM codes) are those used in Aboriginal and Torres Strait Islander Health Performance Framework:

- Injury and poisoning and certain other consequences of external causes (S00-T98)
- Diseases of the respiratory system (J00-J99)
- Diseases of the digestive system (K00-K93)
- Pregnancy, childbirth and the puerperium (O00-O99)
- Diseases of the circulatory system (I00-I99)
- Symptoms, signs and abnormal clinical and laboratory findings (R00-R99)
- Mental and behavioural disorders (F00-F99)
- Endocrine, nutritional and metabolic diseases (E00-E90)
- Diseases of the genitourinary system (N00-N99)
- Diseases of the skin and subcutaneous tissue (L00-L99)
- Certain infectious and parasitic diseases (A00-B99)
- Other
- Total (excluding care involving dialysis)
- Care involving dialysis (Z49)
- Total

| **Computation:** | Crude percentage: number of separations by principal diagnosis divided by total separations. |
|---|---|

Crude rate: 1,000 x (Numerator ÷ Denominator).

Age-standardised rate: calculated using the direct method using five year age groups from 0-4 to 65 years and over (due to availability of Indigenous population estimates for Tas and ACT) and the Australian population as at 30 June 2001 as the standard. Age-standardisation should be done in accordance with the NIRAPIMG agreed principles for direct age-standardisation (see Comments section).

Rate ratio: Indigenous age-standardised rate divided by Other Australian age-standardised rate.

Rate difference: Indigenous age standardised rate minus Other Australian age-standardised rate.

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, $Y = a + bX$, 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).

Statistical significance of change:  More work to be undertaken by the AIHW regarding the use and methodology for statistical significance of change for hospitalisation data.

**Numerator:** Number of hospital separations (public and private).

**Numerator data elements:**

┌─ **Data Element / Data Set** ─────────────────────────

Episode of admitted patient care—admission date, DDMMYYYY

**Data Source**

National Hospital Morbidity Database (NHMD)

**NMDS / DSS**

Admitted patient care NMDS 2009-10

**Guide for use**

Data source type: Administrative by-product data

└──────────────────────────────────────────────────

┌─ **Data Element / Data Set** ─────────────────────────

Episode of admitted patient care—separation date, DDMMYYYY

**Data Source**

National Hospital Morbidity Database (NHMD)

**NMDS / DSS**

Admitted patient care NMDS 2009-10

**Guide for use**

Data source type: Administrative by-product data

└──────────────────────────────────────────────────

**Denominator:** Total population of all people.

**Denominator data elements:**

---

**Data Element / Data Set**

[Person—estimated resident population of Australia, total people N[N(7)]](#)

**Data Source**

[ABS Estimated resident population (total population)](#)

**Guide for use**

Data source type: Census, Post-enumeration survey (PES) and estimates of fertility, mortality, net migration etc.

---

**Data Element / Data Set**

[Person—estimated resident population of Australia, total people N[N(7)]](#)

**Data Source**

[ABS Indigenous experimental estimates and projections (2001 Census-based)](#)

**Guide for use**

Data source type: Census, PES and estimates of fertility, mortality, net migration etc.

---

**Disaggregation:**

**Current period** - 2008-09 to 2009-10:

For Indigenous only (crude rates, and percentage).

- State and territory (including national total) by principal diagnosis (ICD-10-AM chapter level).

- National by sex, by principal diagnosis (ICD-10-AM chapter level).

For Indigenous and other Australians (age standardised rates, rate ratios, and rate differences).

- State and territory (including national total) by principal diagnosis (ICD-10-AM chapter level), by Indigenous status.

- State and territory (including national total) by sex by principal diagnosis (ICD-10-AM chapter level), by Indigenous status.

**Time series** – 2006-07, 2007-08, 2008-09 (previously supplied), 2009-10 (to be supplied for 2012 reporting):

For Indigenous and other Australians (age standardised rates, rate ratios, rate differences, and percent change. Variability bands and statistical significance of change to be advised by AIHW).

- State and territory (including national total) by principal diagnosis (ICD-10-AM chapter level) by Indigenous status.
- National by sex by principal diagnosis (ICD-10-1M chapter level) by Indigenous status.

---

**Disaggregation data elements:**

> **Data Element / Data Set**
>
> [Person—sex, code N](#)
>
> **Data Source**
>
> [National Hospital Morbidity Database (NHMD)](#)
>
> **NMDS / DSS**
>
> [Admitted patient care NMDS 2009-10](#)
>
> **Guide for use**
>
> Data source type: Administrative by-product data

> **Data Element / Data Set**
>
> [Person—Indigenous status, code N](#)
>
> **Data Source**
>
> [National Hospital Morbidity Database (NHMD)](#)
>
> **NMDS / DSS**
>
> [Admitted patient care NMDS 2009-10](#)
>
> **Guide for use**
>
> Data source type: Administrative by-product data

> **Data Element / Data Set**
>
> [Episode of care—principal diagnosis, code (ICD-10-AM 6th edn) ANN{.N[N]}](#)
>
> **Data Source**
>
> [National Hospital Morbidity Database (NHMD)](#)
>
> **NMDS / DSS**
>
> [Admitted patient care NMDS 2009-10](#)
>
> **Guide for use**
>
> Data source type: Administrative by-product data

> **Data Element / Data Set**
>
> [Person—area of usual residence, geographical location code (ASGC 2008) NNNNN](#)
>
> **Data Source**
>
> [National Hospital Morbidity Database (NHMD)](#)
>
> **NMDS / DSS**
>
> [Admitted patient care NMDS 2009-10](#)
>
> **Guide for use**
>
> Data source type: Administrative by-product data

**Comments:** Most recent data available for 2012 CRC report is 2009-10.

Aggregated data (2008-09 to 2009-10) will be used for the current reporting period.

Single year data (2006-07, 2007-08, 2008-09 and 2009-10) will be used for time

series analysis; noting that previously supplied data will be used unless a resupply is provided.

National disaggregation by Indigenous status will be based on data only from jurisdictions for which the quality of Indigenous identification is considered acceptable.

At this stage, only data from selected state/territories are considered of acceptable quality for reporting hospitalisations of Indigenous persons: NSW, Vic, Qld, WA, SA and NT public hospitals. National rates should include these six states and territories only. Tas/ACT data should be reported separately with caveats.

Disaggregation by state/territory is based on the state/territory of the usual residence of the patient.

National estimates adjusted for under-identification will be reported for total hospitalisations only as adjustment by cause is not possible.

Disaggregation by Indigenous status is to be reported using 2 years combined data for the current reporting period. 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).

More work is to be undertaken by the AIHW regarding the use of variability bands for hospitalisation data for COAG reporting.

Baseline year for NIRA target (Close the life expectancy gap within a generation) is 2006; baseline year for this indicator is 2006-07; target year is 2031.

**NIRAPIMG agreed principles for reporting directly age-standardised rates for administrative data.**

**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 from the 2001 Census until population estimates from the 2011 Census become available.

The population used as the denominator for the calculation of Indigenous age-standardised rates should be SERIES B of Indigenous experimental estimates and projections 2006 to 2021 based on the 2006 Census until population estimates from the 2011 Census become available.

**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 and 4).

**Principle 3:** If the total number of Indigenous events (e.g. 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 (i.e. data are required for time series or jurisdictional comparisons), or does not result in greater than 20 events in total, 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:** Age-standardised rates should be calculated using the five year age groupings of 0-4 to 75+ (provided Principles 2 and 3 for denominator and numerator are met).

10-year age groups may be used to overcome small numbers (20 year age groups are too wide and should not be used).

**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 (e.g. deaths from a certain cause concentrate on younger ages for Indigenous  population while for non-Indigenous they may occur at older ages).

c) the age-specific rates depart from the assumption of a uniform increase in death with age (e.g. 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 (e.g. 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 (e.g. conditions originating in the perinatal period and 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:** | Rate |
| **Data type:** | Real |
| **Unit of measure:** | Person |
| **Format:** | N[NN].N |

## Indicator conceptual framework

| | |
|---|---|
| **Framework and dimensions:** | Health Conditions |

## Data source attributes

**Data sources:**

---
**Data Source**

[ABS Estimated resident population (total population)](#)

**Frequency**

Quarterly

**Data quality statement**

[ABS Estimated resident population (total population), QS](#)

**Data custodian**

Australian Bureau of Statistics

---
**Data Source**

[National Hospital Morbidity Database (NHMD)](#)

**Frequency**

Annual

**Data custodian**

Australian Institute of Health and Welfare

---
**Data Source**

[ABS Indigenous experimental estimates and projections (2001 Census-based)](#)

**Frequency**

Periodic

**Data quality statement**

[ABS Indigenous experimental estimates and projections, QS](#)

**Data custodian**

Australian Bureau of Statistics

---

## 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. |
| | Improve the quality of Indigenous identification in hospital data. |

## Source and reference attributes

| | |
|---|---|
| **Steward:** | [National Indigenous Reform Agreement Performance Information Management Group](#) |

## Relational attributes

**Related metadata references:**

Supersedes [National Indigenous Reform Agreement: PI 03-Hospitalisation rates by principal diagnosis, 2011](#)
[Indigenous](#), Superseded 01/07/2012

See also [National Healthcare Agreement: PI 22-Selected potentially preventable hospitalisations, 2012](#)
[Health](#), Superseded 25/06/2013

See also [National Healthcare Agreement: PI 62-Hospitalisation for injury and poisoning, 2012](#)
[Health](#), Retired 25/06/2013