

Appendix 1: Data quality and technical notes

Data quality and technical information 2016–17

The Juvenile Justice National Minimum Data Set (JJ NMDS) contains information on all children and young people in Australia who were supervised by youth justice agencies in the community and in detention.

Data are extracted from the administrative systems of the state and territory departments responsible for youth justice in Australia.

Data quality and coverage

Overall, the levels of missing data in the JJ NMDS are low. Less than 7% of all young people in the JJ NMDS since 2000–01 have an unknown Indigenous status, and similar proportions of records in each of the order (7%) and detention (6%) files have unknown or missing information for the postcode and suburb of the young person's usual residence. For all other variables in the JJ NMDS, the proportion of missing data is 1% or less.

However, the Northern Territory did not provide data to the JJ NMDS standard from 2008–09 to 2016–17. The Northern Territory provided non-standard data for the period 2011–12 to 2016–17. Therefore, many data tables contain two totals:

- 'Aust excl NT'—only states and territories with JJ NMDS data are included in these totals (that is, all except the Northern Territory).
- 'Aust incl NT'—an approximate national total derived, where possible, non-standard data for the Northern Territory for 2011–12 to 2016–17, and existing 2007–08 JJ NMDS data for 2008–09 to 2010–11.

In addition, not all participating states and territories were able to provide JJ NMDS data in the current format for all years of the JJ NMDS (2000–01 to 2016–17). Some trend analyses exclude those states and territories with incomplete data in the new format due to comparability issues.

States and territories

New South Wales

In New South Wales, responsibility for the Kariong Juvenile Justice Centre was transferred from the NSW Department of Juvenile Justice to the NSW Department of Corrective Services on 10 November 2004, and it was renamed the Kariong Juvenile Correctional Centre. As the JJ NMDS includes only young people who are supervised by youth justice agencies in Australia, information about young people in custody in the Kariong Centre after 10 November 2004 is not included. In 2012–13 there were 28 young people on an average day in the Kariong Centre, and therefore they formed only a small proportion (around 8%) of young people in detention in New South Wales.

Kariong Juvenile Correctional Centre was closed in early 2015. During April and May 2015, 23 young people were transferred out of the Kariong Centre to another youth detention centre under the supervision of Juvenile Justice NSW. All young people under the age of 18

who were transferred out of the Kariiong Centre, and who entered the supervision of Juvenile Justice NSW, entered the JJ NMDS data collection on the date they were transferred.

Western Australia

The 2016–17 reporting period is the second year to include JJ NMDS data from Western Australia since 2007–08. For the 2016–17 collection, the Western Australian data supply included only the sentenced detention period, where a young person was both sentenced and unsentenced at the same time. As a result, there may be an undercount of young people on unsentenced detention orders.

South Australia

South Australian data reported in 2016–17 may vary from that reported in previous years due to improvements in data quality and assurance.

Tasmania

For Tasmania, complete data on detention periods and orders are available only for 2006–07 onwards. Because data on length of detention is used to derive the time spent under community-based supervision, information on periods of community-based supervision before 2006–07 may therefore be incomplete and are not reported.

Australian Capital Territory

For the Australian Capital Territory, data for 2000–01 to 2002–03 are not available and data for 2003–04 to 2007–08 are available only in JJ NMDS 2007 format. Some trend analyses therefore exclude the Australian Capital Territory.

In the Australian Capital Territory, both police-referred pre-court detention and remand (court-referred detention) are recorded as remand.

The end reasons for orders are not available for the Australian Capital Territory.

Northern Territory

The Northern Territory did not supply JJ NMDS data for the period 2008–09 to 2016–17. This bulletin therefore uses the following data sources for the Northern Territory:

- non-standard youth justice data for the period 2011–12 to 2016–17
- estimates (based on 2007–08 JJ NMDS data) for 2008–09 to 2010–11.

Comparisons between JJ NMDS and non-standard data in this bulletin should be made with caution due to potential differences in data format, specifications, definitions and/or quality.

Estimates for the Northern Territory for 2008–09 to 2010–11 are not published in tables or figures, but are included in national totals where appropriate. The Northern Territory is excluded from analyses where the data are not available or inclusion of non-standard data is not possible.

Indigenous status

Less than 7% of all young people in the JJ NMDS since 2000–01 have an unknown Indigenous status. In 2016–17, less than 3% of all young people under supervision during the year had an unknown Indigenous status. Among the states and territories, this ranged from less than 1% in Victoria, Western Australia, and South Australia, to 7% in New South Wales.

In *Youth justice in Australia* reports, young people with 'not stated' Indigenous status are excluded from analyses of Indigenous status data.

In 2011, an AIHW review of Indigenous data quality in the JJ NMDS found that there were variations among the states and territories in the use of the Australian Bureau of Statistics standard for collecting and recording Indigenous status data. See the report *Aboriginal and Torres Strait Islander identification in community services data collections: an updated data quality report* for more information.

Technical information

Age

Numbers of young people under supervision include young people of all ages (as well as those aged 18 and over), unless otherwise specified. Rates refer to young people aged 10–17 only, in order to enable meaningful comparisons (see 'Rates' below).

Age is calculated as at the start of the first relevant period of supervision unless that period of supervision began before the financial year, in which case age is calculated as at the start of the financial year. A young person's age can therefore vary across tables as age is calculated in respect to the type of supervision being analysed.

For example, a young person enters supervised bail aged 17 on 1 August and leaves on 30 August. They turn 18 on 15 September, enter sentenced detention on 1 December and are released on 1 January on parole, which ends on 30 January. They have no other periods of community-based supervision during the financial year.

- In the supervised bail analysis, they will appear as a 17-year-old.
- In the parole analysis, they will appear as an 18-year-old.
- In the sentenced detention analysis, they will appear as an 18-year-old.

This means that for a particular age group, the total number of young people under supervision may not be the sum of the number of young people under particular types of supervision.

Age range for treatment as a young person

Across Australia, young people may be charged with a criminal offence if they are aged 10 or older. The upper age limit for treatment as a young person is 17 (at the time an offence was allegedly committed) in all states and territories except Queensland, where the age limit is 16. Young people aged 18 and older (17 or older in Queensland) at the time an offence was allegedly committed are dealt with under the criminal legislation relating to adults.

However, it is possible for young people aged 18 and older to be under youth justice supervision. Reasons for this include the offence being committed when the young person was aged 17 or younger, the continuation of supervision once they turn 18, or their vulnerability or immaturity. In addition, in Victoria, some young people aged 18–20 may be sentenced to detention in a youth facility (known as the 'dual track' system).

Average and median

Two measures of central tendency are reported using data from Juvenile Justice National Minimum Data Set (JJ NMDS):

- Average (mean)—the average, or mean, is calculated by summing all of the values and dividing by the number of observations. In JJ NMDS data, averages are used in the

reporting of 'average day' numbers (see below) and the total amount of time spent under supervision during the year.

- Median—the middle value of a set of observations, when arranged in order of value. Medians are often reported where data are not normally distributed, or include extreme values that would distort the average. In JJ NMDS data, median is used in the reporting of the duration of completed periods of supervision, due to the skewed distribution of the data. The duration of completed periods of supervision ranges from 1 day to over 10 years.

Community-based supervision

The JJ NMDS contains information on the start and end of supervised orders that youth justice agencies administer and on the start and end of detention periods. As the start and end dates in the JJ NMDS do not include time stamps, a young person is counted as being under community-based supervision for any day that is covered by a community-based supervised order and is not covered by a detention period. In some circumstances, the young person is considered to have moved between community-based supervision and detention on the same day and is counted as having both types of supervision:

- When a detention period starts on a particular day (and the previous detention period ended before that day) and a community-based supervision order starts on or before that day and ends on or after that day, the young person is counted as having both community-based supervision and detention on that day.
- When a detention period ends on a particular day (and the next detention period starts after that day) and a community-based supervision order starts on or before that day and ends on or after that day, the young person is counted as having both community-based supervision and detention on that day.
- When a detention period ends on a particular day and another detention period starts on the same day and a community-based supervision order starts on or before that day and ends on or after that day, the young person is counted as having only detention on that day.
- Where any detention periods either end before a particular day or start after that particular day and a community-based supervision order starts on or before that day and ends on or after that day, the young person is counted as having only community-based supervision on that day.

See also Supervision periods.

Duration

Duration is calculated in whole days. For example, if a young person entered supervision on 1 January and left on 5 January, this is counted as 5 days under supervision, while if a young person entered and left supervision on the same day, this is counted as 1 day under supervision.

First supervision and supervision history

The JJ NMDS contains the date on which the youth justice agency first supervised or case managed each young person under supervision. This date is used in analyses of age at first supervision.

In contrast to the age at first supervision, analyses of the first type of supervision and supervision history are restricted to those young people for whom information on this first

supervision is available in the JJ NMDS. For all states and territories except Tasmania and the Australian Capital Territory, information on the first type of supervision is available for all young people whose first supervision was on or after 1 July 2000; for Tasmania, this is 1 January 2006 (as complete data on detention are available only from this date); for the Australian Capital Territory, this is 1 July 2008 (as data for 2003–04 to 2007–08 are available only in JJ NMDS 2007 format).

The first supervision type is determined for each young person with available data by selecting the records with the earliest start date. Because it is possible for young people to be under more than one type of supervision at the same time, young people may have multiple first supervision types.

A young person's supervision history is composed of all available information in the JJ NMDS, up to and including the current reporting year. Only young people with information from their first supervision are included in this analysis.

National totals

The Northern Territory provided non-standard data for the period 2011–12 to 2016–17. Therefore, many data tables contain two totals:

- 'Australia excluding the Northern Territory'—all states and territories with JJ NMDS data.
- 'Australia'—an estimated national total derived from the available JJ NMDS data, plus non-standard data supplied by the Northern Territory.

Comparisons between JJ NMDS and non-standard data should be made with caution due to potential differences in data format, specifications, definitions and/or quality.

Number under supervision

Reports based on the JJ NMDS contain information on both the number of young people under supervision on an average day and the number of young people under supervision during the year.

The average day measure reflects the number of young people under supervision on a typical day during the year, and gives an indication of the average number of young people supported by the supervision system at any one time. It is a summary measure which reflects both the number of young people supervised, and the amount of time they spent under supervision. This measure is the main focus of most JJ NMDS data.

In contrast, the 'during the year' measure is a count of the number of unique individuals who were supervised at any time during the year.

Comparing the 'average day' and 'during the year' measures provides information on the average amount of time spent under supervision during the year. For example, there could be 100 young people under community-based supervision at some time during the year, but only 50 on an average day. This tells you that the average length of time those young people were supervised during the year was 6 months ($50/100 \times 12$ months). By contrast, if you have 100 people in detention during the year and 25 on an average day, the average length of time those young people spent in detention is 3 months ($25/100 \times 12$ months).

In 2016–17, only 17% of young people under supervision were in detention on an average day, but 46% experienced detention at some time during the year. This difference reflects the fact that young people spent substantially less time in detention, overall, than under community-based supervision.

Both the average day and during the year counts are provided in most supplementary tables, where appropriate.

Average day

The number of young people under supervision on an average day is calculated by summing the number of days each young person spends under supervision during the year and dividing this total by the number of days in the financial year.

For the number on an average day, components may not sum to the total because:

- young people can experience different types of supervision on the same day
- age is calculated specific to the type of supervision being analysed
- the number on an average day is rounded to the nearest whole person.

For example, if there are 3.4 young women on an average day and 3.4 young men on an average day, the total is 6.8 young people. When these numbers are rounded, the corresponding table would show 3 young women, 3 young men and a total of 7 young people.

During the year

The number of young people under supervision during the year is calculated by counting each distinct young person under supervision during the financial year. Each young person is counted only once, even if they entered and exited supervision multiple times during the year.

For the number during the year, components may not sum to the total because:

- young people can experience different types of supervision during the year
- age is calculated specific to the type of supervision being analysed.

For example, if there were 100 young people under supervision in a particular year and each of these 100 young people had been detained and under community-based supervision at different times during the year, the relevant totals would show that there were 100 young people in detention, 100 young people under community-based supervision and a total of 100 young people under supervision.

Population rates

Population rates allow for the comparison of different groups while taking into account differences in population sizes. Because there are differences between the states and territories in the extent to which youth justice agencies can supervise young people aged 18 and older, rates compared in this bulletin are restricted to young people aged 10–17.

The calculation of rates excludes young people for whom data on particular variables are not available, and are not calculated where there are fewer than 5 young people, due to a lack of statistical reliability.

Rates are expressed as the number per 10,000 of young people in the population.

The number of young people on an average day is rounded to the nearest whole person. The rate for an average day is calculated using the number on an average day before rounding.

Rate ratios

Rate ratios are used to compare Indigenous and non-Indigenous rates and to provide a measure of the level of Indigenous over-representation. They should be interpreted with

caution where there are small denominators, rare events, or rates that converge while declining (or diverge while increasing).

Rate ratios are calculated using the rates rounded to 2 decimal places, as published in the supplementary tables.

Rate ratios are not calculated where one or both of the rates have fewer than 5 young people in the numerator.

Receptions

A reception occurs when a detention period starts and the young person:

- was not in detention immediately before the start of the current detention period, or
- did not escape from detention or abscond from leave in the immediately preceding detention period.

To account for young people transported to court and returning to detention on remand or sentenced detention following a court hearing and for young people transferred between detention centres, the start of a detention period is considered a reception only when the detention period starts at least 2 full days after the end of the previous detention period.

Releases

A release from detention occurs where a detention period ends and the young person:

- was not detained immediately following the end of the current detention period, or
- did not escape from detention or abscond from leave in the current detention period.

To account for young people transported to court and returning to detention on remand or sentenced detention following a court hearing and for young people transferred between detention centres, the end of a detention period is considered a release only when the detention periods ends at least 2 full days before the start of the next detention period.

Remand periods followed by a period of sentenced supervision

All periods of sentenced supervision that start within one day of the end of a remand period are included except where there is a further remand period that starts on the same day as the period of sentenced supervision.

Remoteness

JJ NMDS reporting uses the Australian Standard Geographical Classification (ASGC) Remoteness Structure that the ABS has developed to analyse the remoteness of the usual residence of the town or suburb of young people under supervision. This structure allows areas that share common characteristics of remoteness to be classified into broad geographical regions of Australia. These areas are *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote*.

The remoteness of the young person's usual residence was determined using the most recent postcode of their last known address. Young people with invalid, missing or unknown postcodes of last known home address were excluded from the analysis.

The number of young people under supervision in each remoteness area was estimated based on each young person's most recent postcode. Some postcode areas were split between 2 or more remoteness areas. Where this was the case, the data were weighted according to the proportion of the population of the postcode area in each remoteness area.

Some young people may appear in remoteness areas for which there is no population within that state or territory. This is due to young people whose last known home address is in a different state or territory to the one in which they are under supervision.

Socioeconomic position

JJ NMDS reporting uses the Socio-Economic Indexes for Areas (SEIFA) that the ABS has developed to analyse the socioeconomic position of the usual residence of young people under supervision. The Index of Relative Socio-Economic Advantage and Disadvantage is used.

The socioeconomic position of the area of the young person's usual residence was determined by allocating the relevant SEIFA population-based (2011 population) quintile score to the most recent postcode of the last known home address. Young people with invalid, missing or unknown postcodes of last known home address were excluded from the analysis.

The number of young people under supervision in each area was estimated based on each young person's most recent postcode. Some postcode areas were split between 2 or more areas with different SEIFA scores. Where this was the case, the data were weighted according to the proportion of the population of the postcode area in each SEIFA area.

The SEIFA represents the average of all people living in the area, and not the socioeconomic position of a particular individual living in the area. Therefore, socioeconomic analyses in JJ NMDS reporting indicate the level of socioeconomic advantage and disadvantage in the area of usual residence of the young person, not the level of socioeconomic advantage and disadvantage of each individual young person or their family. Some young people may appear in socioeconomic areas for which there is no population within that state or territory. This is due to young people whose last known home address is in a different state or territory to the one in which they are under supervision.

Supervision periods

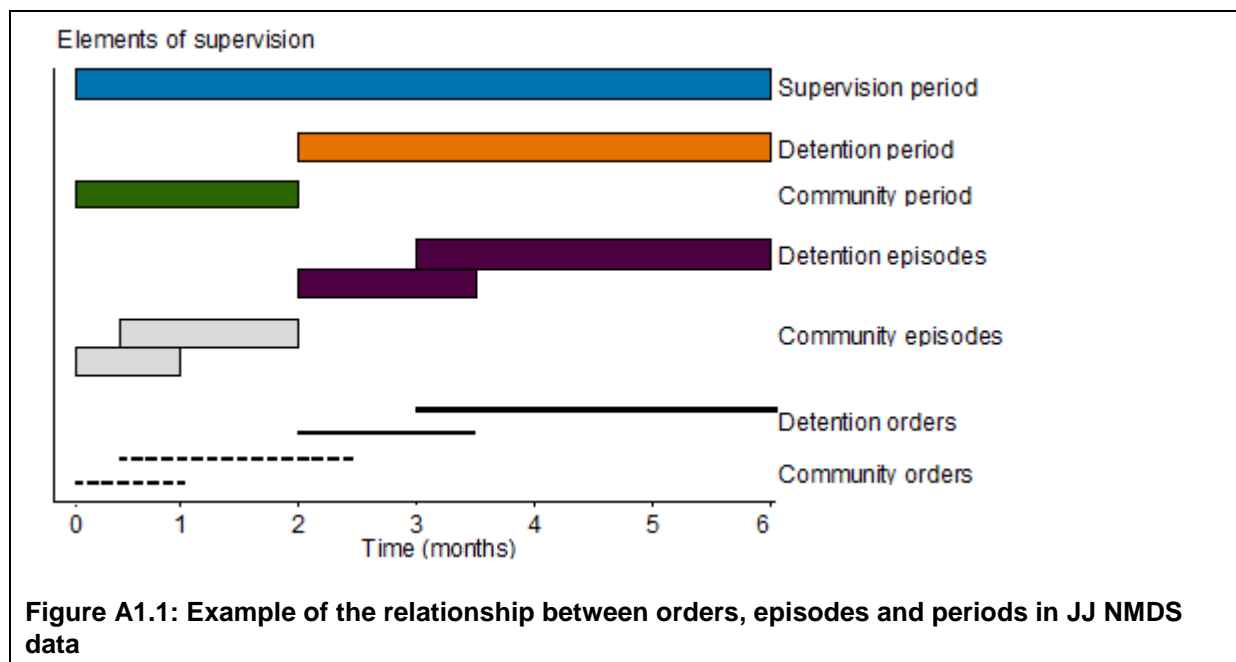
A supervision period is the period of time a young person spent under continuous youth justice supervision. It should be noted that:

- periods of youth justice supervision may be comprised of both periods under community-based supervision and periods in detention
- periods spent either under community-based supervision or in detention may consist of multiple or concurrent orders and episode types.

Young people may not serve the full duration of orders for several reasons, including:

- community orders and periods spent under community-based supervision may be interrupted by time spent in detention
- the full duration of a sentenced detention order may not be served where the young person is released on parole or supervised release.

An example of the relationship between periods, episodes and orders is shown in the figure below. In this example, a young person spent 6 continuous months under supervision, with the first 2 months under community-based supervision and the remaining 4 months in detention. The young person experienced two different types of community supervision in the first 2 months (for example, probation and bail). The young person then experienced two different types of detention (for example, remand and sentenced detention).



Supervision types

The JJ NMDS contains information on the type of supervision using the national classification of supervised legal arrangements and orders.

Table A1.1: National classification of supervised legal arrangements and orders

Legal status	Supervision type	Order type	Includes
Unsentenced	Detention	Police-referred detention	
		Remand (court-referred)	
	Community	Supervised bail	Conditional bail, Griffith remand
		Home detention bail	
		Other court-referred arrangements	Deferral of sentence
		Police-referred-other	
Sentenced	Detention	Sentenced detention	Control order, revocation of parole, youth residential order
	Community	Probation or similar with or without additional mandated requirements	Community service order, good behaviour order with supervision, good behaviour bond, intensive supervision order, youth attendance order, youth supervision order
		Home detention	
		Suspended detention	Suspended sentence, conditional release order
		Parole	Supervised release order, fixed release order
Other	Community	Not elsewhere classified	Mental health order

In JJ NMDS reporting, several of these order types are routinely combined, including other orders not elsewhere classified, probation and similar orders, supervised or conditional bail and other unsentenced community-based orders, and unsentenced detention.

Other orders not elsewhere classified

Other orders not elsewhere classified are classified as 'other' in tables disaggregated by legal status.

Probation and similar

'Probation and similar' is composed of these order types with additional mandated requirements and those without additional mandated requirements. Young people who are supervised under both types of order on the same day or during the same year are counted only once for this category.

Supervised or conditional bail and other unsentenced

This category includes young people on supervised or conditional bail, home detention bail and other unsentenced community-based supervised orders. Young people who are supervised under more than one of these types of orders on the same day or during the same year are counted only once for this category.

Unsentenced detention

This category includes young people in police-referred detention and on court-referred remand. Young people who are detained for both these types of detention on the same day or during the same year are counted only once for this category.

Trends

Where the number of young people under supervision on an average day is relatively small, the amount of random variation from year to year is more noticeable. This may affect the appearance of trends, which should therefore be interpreted with caution, particularly where they relate to small numbers. In recognition of this, percentage changes are not calculated where they relate to groups of fewer than 100 people.

Youth justice in Australia reports aim to highlight the overall or net change over a defined period (that is, comparing the start and end of the period), while taking into account the trend within the period. Where possible, changes in the interim years are explored in the text. Full details are available in the supplementary tables.

Trend data may differ from data published in previously published reports due to data revisions.