## Data quality information — Public hospitals, chapter 10

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| Data quality information |
| DQI provides information against the seven ABS data quality framework dimensions, for a selection of performance indicators in the Public hospitals chapter. DQI for additional indicators will be progressively introduced in future reports.  Where RoGS indicators align with National Agreement indicators, DQI has been sourced from the Steering Committee’s reports on National Agreements to the COAG Reform Council.  Technical DQI has been supplied or agreed by relevant data providers. Additional Steering Committee commentary does not necessarily reflect the views of data providers. |
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### Emergency department waiting times

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness — access |
| **Indicator** | Emergency department waiting times |
| **Measure**  **(computation)** | The national benchmark waiting times are:   * Triage category 1: seen within seconds, calculated as less than or equal to 2 minutes * Triage category 2: seen within 10 minutes * Triage category 3: seen within 30 minutes * Triage category 4: seen within 60 minutes * Triage category 5: seen within 120 minutes   The proportion of patients seen on time is calculated as:  Numerator—Number of patients seen within the cut-off point, by triage category.  Denominator—Number of patients by triage category.  Inclusions: records with a type of visit of Emergency presentation.  Restricted to hospitals that were classified as either peer group A (Principal referral and Specialist women’s and children’s hospital) or peer group B (Large hospitals).  Exclusions: records with an episode end status of Did not wait to be attended by a health care professional or Dead on arrival, not treated in emergency department. Records are also excluded if the waiting time was missing or otherwise invalid. |
| **Data source/s** | This indicator is calculated using data from the AIHW’s NNAPEDCD, based on the National Minimum Data Set (NMDS) for Non-admitted patient emergency department care (NAPEDC).  For data by socioeconomic status: calculated by AIHW using the Australian Bureau of Statistics (ABS) Socio-Economic Indexes For Areas (SEIFA), Index of Relative Socio-Economic Disadvantage (IRSD) 2011 and Estimated Resident Population (ERP) by Statistical Local Area (SLA) as at 30 June 2011 (2011–12) or 30 June 2012 (2012–13). Each SLA in Australia is ranked and divided into quintiles and deciles in a population-based manner, such that each quintile has approximately 20 per cent of the population and each decile has approximately 10 per cent of the population.  For data by remoteness: ABS ERP as at 30 June 2011 (2011–12) or 30 June 2012 (2012–13), by remoteness areas, as specified in the Australian Standard Geographical Classification. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The *Australian Institute of Health and Welfare Act 1987*, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NNAPEDCD were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation. |
| **Relevance** | The purpose of the NNAPEDCD is to collect information on the characteristics of emergency department care (including waiting times for care) for non-admitted patients registered for care in emergency departments in selected public hospitals classified as either peer group A (Principal referral and Specialist women’s and children’s hospitals) or B (Large hospitals). In 2012–13, hospitals in peer groups A and B provided over 86 per cent of all public hospital emergency presentations.  The data presented here are not necessarily representative of the hospitals not included in the NNAPEDCD. Hospitals not included do not necessarily have emergency departments that are equivalent to those in hospitals in peer groups A and B.  The analyses by remoteness and socioeconomic status are based on the statistical local area (SLA) of usual residence of the patient. However, data are reported by jurisdiction of presentation, regardless of the jurisdiction of usual residence. Hence, data represent the proportion of patients living in each remoteness area or Socio-Economic Indexes for Areas (SEIFA) population group (regardless of their jurisdiction of residence) seen within the benchmark time in the reporting jurisdiction. This is relevant if significant numbers of one jurisdiction’s residents are treated in another jurisdiction.  The SEIFA categories for socioeconomic status represent approximately the same proportion of the national population, but do not necessarily represent that proportion of the population in each state or territory (each SEIFA decile or quintile represents 10 per cent and 20 per cent respectively of the national population). For 2011–12, the SEIFA scores for each SLA are derived from 2011 Census data and represent the attributes of the population in that SLA in 2011. For 2012–13, the SEIFA scores for each Statistical Area level 2 (SA2) are derived from 2011 Census data and represent the attributes of the population in that SA2 in 2011.  Other Australians includes separations for non-Indigenous people and those for whom Indigenous status was not stated. |
| **Timeliness** | The reference period for these data is 2011–12 and 2012–13. |
| **Accuracy** | For 2011–12, the coverage of the NNAPEDCD was 100 per cent in all jurisdictions for public hospitals in peer groups A and B. For 2012–13, the preliminary estimate of the proportion of emergency occasions of service reported to the NNAPEDCD was 100 per cent for public hospitals in peer groups A and B.  In the baseline year (2007–08), the Tasmanian North West Regional Hospital comprised the combined activity of its Burnie Campus and its Mersey Campus. This hospital was a Peer Group B hospital. There was then a change in administrative arrangements for Mersey and it became the only hospital in the country owned and funded by the Australian Government and, by arrangement, operated by the Tasmanian Government. This administrative change necessitated reporting of these campuses as separate hospitals from 2008-09 onwards. On its own the North West Regional Hospital (Burnie Campus only) is a Peer Group B hospital, whilst, on its own the Mersey Community Hospital is a Peer Group C hospital. Burnie and Mersey did not substantially change their activity, rather, it is simply a case that activity is now spread across two hospitals. For National Healthcare Agreement purposes, although it is a Peer Group C hospital, the Mersey Community Hospital continues to be included in reporting for Peer Group B hospitals to ensure comparability over time for Tasmania.  From 2009–10, the data for the Albury Base Hospital (previously reported in NSW hospital statistics) was reported in Victorian hospital statistics. This change in reporting arrangements should be factored into any analysis of data for NSW and Victoria.  States and territories are primarily responsible for the quality of the data they provide. However, the AIHW undertakes extensive validations on data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked against data from other data sets. Potential errors (including waiting time outliers) are queried with jurisdictions, and corrections and resubmissions may be made in response to these queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values.  The quality of Indigenous status data in the NNAPEDCD has not been formally assessed for completeness; therefore caution should be exercised when interpreting these data.  As this indicator is limited to public hospitals classified in peer groups A and B, most of the data relates to hospitals within major cities. Consequently, the data may not cover areas where the proportion of Indigenous Australians (compared with other Australians) is higher than average. Similarly, disaggregation by socioeconomic status and remoteness should be interpreted with caution.  Comparability across jurisdictions may be impacted by variation in the assignment of triage categories. |
| **Coherence** | The data reported for 2011–12 and 2012–13 are consistent with data reported for the NNAPEDCD for previous years for individual hospitals.  In addition, the data reported to the NNAPEDCD in previous years has been consistent with the numbers of emergency occasions of services reported to the National Hospital Establishments Database (NPHED) for each hospital for the same reference year.  Time series presentations may be affected by changes in the number of hospitals reported to the collection and changes in coverage.  The information presented for this indicator are calculated using the same methodology as data published in Australian hospital statistics 2011–12, Australian hospital statistics: emergency department care (report series) and the National Healthcare Agreement: performance report 2011–12.  However, 2011–12 data reported previously in these publications are different from the equivalent data published here because the hospitals classified as peer groups A and B were based on 2010–11, rather than 2011–12 peer groups.  Caution should be used in comparing data across reference years, as the number of hospitals classified as peer group A or B, or the peer group of a hospital, may vary over time.  Methodological variations also exist in the application of SEIFA to various data sets and performance indicators. Any comparisons of the SEIFA analysis for this indicator with other related SEIFA analysis should be undertaken with careful consideration of the methods used, in particular the SEIFA Census year, the SEIFA index used and the approach taken to derive quintiles and deciles.  National level data disaggregated by Indigenous status for 2007–08 included data from NSW, Queensland, WA, SA and NT. National level data disaggregated by Indigenous status for 2008–09, 2009–10 and 2010–11 included data from NSW, Victoria, Queensland, WA, SA and NT. National level data disaggregated by Indigenous status for 2011–12 and subsequent years includes data from all eight states and territories. Therefore, data disaggregated by Indigenous status from 2007–08 is not comparable to 2008–09, 2009–10 and 2010–11, and data for 2011–12 and subsequent years are not comparable with data for 2010–11 and prior years.  In 2011, the ABS updated the standard geography used in Australia for most data collections from the Australian Standard Geographical Classification (ASGC) to the Australian Statistical Geography Standard (ASGS). Also updated at this time were remoteness areas and the Socio-Economic Indices for Areas (SEIFA), based on the 2011 ABS Census of Population and Housing. The new remoteness areas will be referred to as RA 2011, and the previous remoteness areas as RA 2006. The new SEIFA will be referred to as SEIFA 2011, and the previous SEIFA as SEIFA 2006.  Data for 2007-08 through to 2011-12 reported by remoteness are reported for RA 2006. Data for 2012-13 are reported for RA 2011. The AIHW considers the change from RA 2006 to RA 2011 to be a series break when applied to data supplied for this indicator, therefore remoteness data for 2011-12 and previous years are not directly comparable to remoteness data for 2012-13 and subsequent years.  Data for 2007-08 through to 2010-11 reported for SEIFA quintiles and deciles are reported using SEIFA 2006 at the Statistical Local Area (SLA) level. Data for 2011-12 are reported using SEIFA 2011 at the SLA level. Data for 2012-13 are reported using SEIFA 2011 at the Statistical Area (SA) 2 level. The AIHW considers the change from SEIFA 2006 to SEIFA 2011, and the change from SLA to SA2 to be series breaks when applied to data supplied for this indicator. Therefore, SEIFA data for 2010-11 and previous years are not directly comparable with SEIFA data for 2011-12, and SEIFA data for 2011-12 and previous years are not directly comparable with SEIFA data for 2012-13 and subsequent years. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NNAPEDCD. Published products available on the AIHW website are: Australian hospital statistics suite of products with associated Excel tables. These products may be accessed on the AIHW website at: www.aihw.gov.au/hospitals/. |
| **Interpretability** | Metadata information for the Non-Admitted Patient Emergency Department Care (NAPEDC) National Minimum Data Set (NMDS) and the NAPEDC Data Set Specification (DSS) are published in the AIHW’s online metadata repository, METeOR, and the National health data dictionary.  The National health data dictionary can be accessed online at:  www.aihw.gov.au/publication-detail/?id=10737422826  The Data Quality Statement for the 2011–12 NNAPEDCD can be accessed on the AIHW website at:  www.meteor.aihw.gov.au/content/index.phtml/itemId/529471 |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following key data gaps/issues:  The comparability of emergency department waiting times data across jurisdictions can be influenced by differences in data coverage and clinical practices — in particular, the allocation of cases to urgency categories. The proportion of patients in each triage category who were subsequently admitted can indicate the comparability of triage categorisations across jurisdictions and thus the comparability of the waiting times data.  For 2011-12, the coverage of the National Non-admitted Patient Emergency Department Care Database (NNAPEDCD) collection is complete for public hospitals in peer groups A and B. It is estimated that 2012-13 has similar coverage, although final coverage cannot be calculated until the 2012-13 National Public Hospital Establishments Database (NPHED) data are available.  The quality of Indigenous status data in the NNAPEDCD has not been formally assessed for completeness; therefore caution should be exercised when interpreting these data.  Caution should be used in comparing these data with earlier years as the number of hospitals classified as peer groups A or B, and the peer group for a hospital, may vary over time.  Remoteness data for 2011-12 and previous years are not directly comparable to remoteness data for 2012-13 and subsequent years.  SEIFA data for 2010-11 and previous years are not directly comparable with SEIFA data for 2011-12, and SEIFA data for 2011-12 and previous years are not directly comparable with SEIFA data for 2012-13 and subsequent years. |

### Elective surgery waiting times

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness — access |
| **Indicator** | Elective surgery waiting times |
| **Measure**  **(computation)** | Median and 90th percentile waiting times for elective surgery  The number of days’ waiting time is calculated by subtracting the listing date for care from the removal date, minus any days when the patient was not ready for care and minus any days the patient was waiting with a less urgent clinical urgency category than their clinical urgency category at removal.  The 50th percentile (median) represents the number of days within which 50 per cent of patients were admitted; half the waiting times will be shorter than the median and half the waiting times longer. The 90th percentile data represent the number of days within which 90 per cent of patients were admitted.  Elective surgery waiting times by clinical urgency category  Elective surgery waiting times by clinical urgency category reports the proportion of patients who were admitted from waiting lists after an extended wait. The three generally accepted clinical urgency categories for elective surgery are:   * category 1 — admission is desirable within 30 days for a condition that has the potential to deteriorate quickly to the point that it may become an emergency. * category 2 — admission is desirable within 90 days for a condition causing some pain, dysfunction or disability but which is not likely to deteriorate quickly or become an emergency. * category 3 — admission at some time in the future acceptable for a condition causing minimal or no pain, dysfunction or disability, which is unlikely to deteriorate quickly and which does not have the potential to become an emergency. Desirable timeframe for this category is admission within 365 days. |
| **Data source/s** | Median and 90th percentile waiting times for elective surgery  For 2011–12 and 2012–13, this indicator is calculated using data from the NESWTDC, based on the National Minimum Data Set (NMDS) for Elective surgery waiting times (removals data).  For 2011–12, the NESWTDC was linked to the NHMD, based on the NMDS for Admitted patient care, to allow disaggregation by remoteness of area of usual residence and SEIFA of usual residence (all jurisdictions).  For data by socioeconomic status: calculated by AIHW using the Australian Bureau of Statistics (ABS) Socio-Economic Indexes For Areas (SEIFA), Index of Relative Socio-Economic Disadvantage (IRSD) 2011 and Estimated Resident Population (ERP) by Statistical Local Area (SLA) as at 30 June 2011 (2011–12). Each SLA in Australia is ranked and divided into quintiles and deciles in a population-based manner, such that each quintile has approximately 20 per cent of the population and each decile has approximately 10 per cent of the population.  For data by remoteness: ABS ERP as at 30 June 2011 (2011–12), by remoteness areas, as specified in the Australian Standard Geographical Classification.  Elective surgery waiting times by clinical urgency category  Elective surgery waiting times by clinical urgency category are sourced from state and territory health departments as part of the annual Report on Government Services data collection. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | Median and 90th percentile waiting times for elective surgery  The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NESWTDC were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation.  Elective surgery waiting times by clinical urgency category  The Secretariat for the Review of Government Service Provision has calculated the Elective surgery waiting times by clinical urgency category.  The data were supplied by State and Territory health authorities. The State and Territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | Median and 90th percentile waiting times for elective surgery  The purpose of the NMDS for Elective surgery waiting times (removals data) is to collect information about patients waiting for elective surgery in public hospitals. The scope of this NMDS is patients removed from waiting lists for elective surgery which are managed by public acute hospitals. This includes private patients treated in public hospitals and may include public patients treated in private hospitals.  The purpose of the NMDS for Admitted patient care is to collect information about care provided to admitted patients in Australian hospitals. The scope of the NMDS is episodes of care for admitted patients in essentially all hospitals in Australia, including public and private acute and psychiatric hospitals, free-standing day hospital facilities, alcohol and drug treatment hospitals and dental hospitals. Hospitals operated by the Australian Defence Force, corrections authorities and in Australia's off-shore territories are not included. Hospitals specialising in ophthalmic aids and other specialised acute medical or surgical care are included.  Analyses by remoteness and socioeconomic status are based on the Statistical Local Area of usual residence of the patient.  The SEIFA categories for socioeconomic status represent approximately the same proportion of the national population, but do not necessarily represent that proportion of the population in each state or territory (each SEIFA decile or quintile represents 10 per cent and 20 per cent respectively of the national population). The SEIFA scores for each SLA are derived from 2011 Census data and represent the attributes of the population in that SLA in 2011.  Separations are reported by jurisdiction of hospitalisation, regardless of the jurisdiction of usual residence. Hence, data represent the waiting time for patients living in each remoteness area or SEIFA population group (regardless of their jurisdiction of residence) for the reporting jurisdiction. This is relevant if significant numbers of one jurisdiction’s residents are treated in another jurisdiction.  Other Australians includes separations for non-Indigenous people and those for whom Indigenous status was not stated.  Elective surgery waiting times by clinical urgency category  ‘Elective surgery waiting times by urgency category’ data provide an indication of the extent to which patients are seen within a clinically desirable time and also draw attention to the variation in the way in which patients are classified across jurisdictions.  The system of urgency categorisation for elective surgery in public hospitals is important to ensure that priority is given to patients according to their needs. While elective surgery waiting times by urgency category are not comparable across jurisdictions, this measure has the advantage over other measures in that it provides an indication of the extent to which patients are seen within a clinically desirable time period according to the urgency category to which they have been assigned. |
| **Timeliness** | The reference period for these data is 2011–20121 and 2012–13. |
| **Accuracy** | Median and 90th percentile waiting times for elective surgery  For 2011–12 and 2012–13:   * Coverage of the NESWTDC was over 90 per cent. Coverage was 100 per cent for the Principal referral and Specialist women’s and children’s hospitals peer group (peer group A) and was progressively lower for the large hospitals group (peer group B) and the medium hospitals group (peer group C). In 2011–12, coverage also varied by jurisdiction, ranging from 100 per cent in NSW, WA, Tasmania, the ACT and the NT, to 77 per cent in Victoria. For 2012–13, the preliminary estimate of the proportion of public elective surgery that was also reported to the NESWTDC was 93 per cent * Almost all public hospitals provided data for the NHMD in 2011–12, with the exception of all separations for a mothercraft hospital in the ACT. * Records from the NESWTDC and the NHMD were linked to assign remoteness areas and SEIFA categories from the admitted patient record to the corresponding elective surgery waiting times record. In 2011–12 approximately 97 per cent of NESWTDC records for removals were linked to the NHMD. * There is apparent variation in the assignment of clinical urgency categories, both among and within jurisdictions, and for individual surgical specialties and indicator procedures, as well as overall. Interpretation of waiting times for jurisdictions should take into consideration these differences. * The Indigenous status data were sourced from the NESWTDC for all jurisdictions. * For 2009–10, the data for Albury Base Hospital (previously reported in NSW hospital statistics) was reported by the Victorian Department of Health as part of the Albury Wodonga Health Service. From 2010–11, the data for Albury Base Hospital have not been available. * For 2011–12, SA and WA provided data for a large number of smaller hospitals (32 and 22 respectively) that were not included in the data for previous years. * For 2011–12, Queensland was not able to provide data for 3 hospitals that had reported almost 10,000 admissions in 2010–11. * The increase in admissions for the NT between 2010–11 and 2011–12 was, in part, due to the inclusion of certain surgical procedures from 2011–12 that had previously been incorrectly excluded from the NESWTDC by the NT.   Interpretation of waiting times for jurisdictions should take into consideration cross-border flows, particularly for the ACT.  States and territories are primarily responsible for the quality of the data they provide. However, the AIHW undertakes extensive validations on data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual datasets are checked against data from other datasets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values.  Cells have been suppressed to protect confidentiality where the presentation could identify a patient or a service provider or where rates are likely to be highly volatile, for example, where the denominator is very small. The following rules were applied:   * Cells based on fewer than 10 elective surgery admissions were suppressed. * Cells based on data from one public hospital only were suppressed   Elective surgery waiting times by clinical urgency category  Caution should be used when interpreting data as they as they have not been subjected to the usual level of confirmation with patient‑level data in the NHMD.  There is apparent variation in the assignment of clinical urgency categories, both among and within jurisdictions, and for individual surgical specialties and indicator procedures, as well as overall. Interpretation of waiting times for jurisdictions should take into consideration these differences. |
| **Coherence** | Median and 90th percentile waiting times for elective surgery  Caution should be exercised when comparing waiting times data between jurisdictions due to differences in the assignment of clinical urgency categories (see Australian hospital statistics 2012–13: elective surgery waiting times, Appendix A p 40 www.aihw.gov.au/publication-detail/?id=60129544692  The data can be meaningfully compared across reference periods, except for the Indigenous disaggregation. Caution should be used in comparing data by peer groups across reference years, as the number of hospitals classified as peer group A or B, or the peer group of a hospital, may vary over time.  Methodological variations also exist in the application of SEIFA to various data sets and performance indicators. Any comparisons of the SEIFA analysis for this indicator with other related SEIFA analysis should be undertaken with careful consideration of the methods used, in particular the SEIFA Census year, the SEIFA index used and the approach taken to derive quintiles and deciles.  The information presented for this indicator is based on the same data as published in, Australian hospital statistics 2011–12, Australian hospital statistics: elective surgery waiting times (report series) and the National Healthcare Agreement: performance report 2011–12.  The data reported for the 2011–12 and 2012–13 NEWSTDC are consistent with data reported for previous years for individual hospitals.  In addition, some 2011–12 data reported previously in these publications are different from the equivalent data published here because the hospitals classified as peer groups A and B were based on 2010–11, rather than 2011–12 peer groups. Caution should be exercised when interpreting the 2012–13 data as potential revisions to the 2012–13 NESWTDC data could occur following linking to the 2012–13 NHMD.  Analyses presented in Australian hospital statistics and previous National Healthcare Agreement performance reports may also differ slightly depending on whether the NESWTDC or linked NESWTDC/NHMD was used.  National level data disaggregated by Indigenous status for 2007–08 included data from NSW, Queensland, WA, SA and NT. National level data disaggregated by Indigenous status for 2008–09, 2009–10 and 2010–11 included data from NSW, Victoria, Queensland, WA, SA and NT. National level data disaggregated by Indigenous status for 2011–12 and subsequent years includes data from all eight states and territories. Therefore, data disaggregated by Indigenous status from 2007–08 is not comparable to 2008–09, 2009–10 and 2010–11, and data for 2011–12 and subsequent years are not comparable with data for 2010–11 and prior years.  When comparing data over time, linked data should not be compared with unlinked data. For example, the 2011–12 linked data supplied cannot be directly compared to the 2012–13 unlinked data supplied in this reporting cycle.  In 2011, the ABS updated the Socio-Economic Indices for Areas (SEIFA), based on the 2011 ABS Census of Population and Housing. The new SEIFA will be referred to as SEIFA 2011, and the previous SEIFA as SEIFA 2006. Data for 2007-08 through to 2010-11 reported for SEIFA quintiles and deciles are reported using SEIFA 2006 at the Statistical Local Area (SLA) level. Data for 2011-12 are reported using SEIFA 2011 at the SLA level. The AIHW consider the change from SEIFA 2006 to SEIFA 2011 to be a series break when applied to data supplied for this indicator, therefore SEIFA data for 2011-12 are not directly comparable with SEIFA data from previous reporting cycles.  Elective surgery waiting times by clinical urgency category  Caution should be exercised when comparing waiting times data between jurisdictions due to differences in the assignment of clinical urgency categories (see *Australian hospital statistics 2011–12: elective surgery waiting times*, Box 3.1 pp 10–11 Text Box 3.1 www.aihw.gov.au/publication-detail/?id=10737423188). |
| **Accessibility** | Median and 90th percentile waiting times for elective surgery  The AIHW provides a variety of products that draw upon the NESWTDC. Published products available on the AIHW website are the Australian hospital statistics suite of products with associated Excel tables.  These products may be accessed on the AIHW website www.aihw.gov.au/hospitals/  Elective surgery waiting times by clinical urgency category  The COAG Reform Council reported Elective surgery waiting times by clinical urgency category as part of reporting on the National Partnership Agreement on the Elective Surgery Waiting List Reduction Plan. |
| **Interpretability** | Median and 90th percentile waiting times for elective surgery  Metadata information for the Elective Surgery Waiting Times (ESWT) National Minimum Data Set (NMDS) and ESWT Data Set Specification (DSS) are published in the AIHW’s online metadata repository, METeOR, and the National health data dictionary.  The National health data dictionary can be accessed online at:  www.aihw.gov.au/publication-detail/?id=10737422826  The Data Quality Statement for the NNAPEDCD can be accessed on the AIHW website at:  www.meteor.aihw.gov.au/content/index.phtml/itemId/543809  Elective surgery waiting times by clinical urgency category  Variation in the way patients are classified to urgency categories should be taken into account. Rather than comparing jurisdictions, the results for individual jurisdictions should be viewed in the context of the proportions of patients assigned to each of the three urgency categories. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following key data gaps/issues:  Comparisons across jurisdictions should be made with caution, due to differences in clinical practices and classification of patients across Australia. The measures are also affected by variations across jurisdictions in the method used to calculate waiting times for patients who transferred from a waiting list managed by one hospital to a waiting list managed by another hospital. For patients who were transferred from a waiting list managed by one hospital to that managed by another, the time waited on the first list is included in the waiting time reported in NSW, SA and the NT. This approach can have the effect of increasing the apparent waiting times for admissions in these jurisdictions compared with other jurisdictions.  There is apparent variation in the assignment of clinical urgency categories, both among and within jurisdictions, for individual surgical specialties and indicator procedures, influencing the overall total. For example, the proportion of patients admitted from waiting lists who were assigned to Category 3 treatment clinically recommended within 365 days) was 44 per cent for NSW and 16 per cent for Queensland (Table A.1 from Australian hospital statistics 2012–13: elective surgery waiting times, Appendix A p 40 www.aihw.gov.au/publication-detail/?id=60129544692  Interpretation of waiting times for jurisdictions should take into consideration these differences. For example, a state could report relatively long median waiting times in association with a relatively high proportion of patients assessed by clinicians in the state as being in Category 3. Conversely, a state in which a relatively high proportion of patients are assessed by clinicians as being in Category 1 or 2 (treatment clinically recommended within 30 days and 90 days, respectively) could have relatively short median waiting times.  Analyses for remoteness and socioeconomic status are based on the reported area of usual residence of the patient, regardless of the jurisdiction of the hospital. This is relevant if significant numbers of one jurisdiction’s residents are treated in another jurisdiction.  The quality of Indigenous status data in the NESWTDC has not been formally assessed for completeness: caution should be exercised when interpreting these data.  Interpretation of waiting times for jurisdictions should take into consideration cross-border flows, particularly for the ACT.  SEIFA data for 2011-12 are not directly comparable with SEIFA data from previous reporting cycles. |

### Separation rates for selected procedures

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness—appropriateness |
| **Indicator** | Separation rates for selected procedures |
| **Measure**  **(computation)** | The *numerator* is the number of hospital separations involving the procedures: cataract extraction, cholecystectomy, coronary artery bypass graft, coronary angioplasty, cystoscopy, haemorrhoidectomy, hip replacement, inguinal herniorrhaphy, knee replacement, myringotomy, tonsillectomy, varicose veins stripping and ligation, septoplasty, prostatectomy and hysterectomy.  The *denominator* is the Estimated Resident Population (ERP), with the exception of prostatectomy, where only the male ERP is used, and hysterectomy, where only the female ERP aged 15–69 years is used.  A separation is an episode of care for an admitted patient, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute care to rehabilitation).  *Calculation* is 1000 × (numerator ÷ denominator), presented as a number per 1000 and age-standardised to the Australian population as at 30 June 2001 using 5-year age groups to 84 years, with ages over 84 combined. Indigenous population data are not available for all states and territories for 5-year age groups beyond 64 years, so the Indigenous disaggregation was standardised to 64 years, with ages over 64 combined.  For hysterectomy only: Total population data were age-standardised using 5 year age groups between 15–69 years. Indigenous disaggregation for the ACT and Tasmania was age-standardised using 5-year age groups from 15–64, with ages over 64 combined. Indigenous disaggregation for all other jurisdictions was standardised using 5-year age groups between 15–69 years as data on the Indigenous population aged 65–69 years were available for these jurisdictions. |
| **Data source/s** | *Numerator*:  This indicator is calculated using data from the NHMD, based on the National Minimum Data Set for Admitted patient care.  *Denominator*:  For total population: Australian Bureau of Statistics (ABS) ERP as at 30 June 2011. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NESWTDC were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation. |
| **Relevance** | The purpose of the NMDS for Admitted patient care is to collect information about care provided to admitted patients in Australian hospitals. The scope of the NMDS is episodes of care for admitted patients in essentially all hospitals in Australia, including public and private acute and psychiatric hospitals, free-standing day hospital facilities, alcohol and drug treatment hospitals and dental hospitals. Hospitals operated by the Australian Defence Force, corrections authorities and in Australia's off-shore territories are not included. Hospitals specialising in ophthalmic aids and other specialised acute medical or surgical care are included.  The hospital separations data do not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments.  Separations are reported by jurisdiction of hospitalisation, regardless of the jurisdiction of usual residence. This is relevant if significant numbers of one jurisdiction’s residents are treated in another jurisdiction.  Other Australians includes separations for non‑Indigenous people and those for whom Indigenous status was not stated.  Indigenous and Other Australians’ rates of hysterectomy in Tasmania and the ACT may underestimate rates of hysterectomy for women aged 15–69 years due to the age-standardisation method used (see above). |
| **Timeliness** | The reference period for these data is 2011–12. |
| **Accuracy** | For 2011–12 almost all public hospitals provided data for the NHMD, with the exception of all separations for a mothercraft hospital in the ACT.  The majority of private hospitals provided data, with the exception of the private free-standing day hospitals in the ACT and the NT.  Coronary artery bypass graft and coronary angioplasty are not performed in NT hospitals. Residents of the NT requiring these procedures receive treatment interstate.  States and territories are primarily responsible for the quality of the data they provide. However, the AIHW undertakes extensive validations on data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked against data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values.  Data on procedures are recorded uniformly using the Australian Classification of Health Interventions.  Variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions.  Cells have been suppressed to protect confidentiality where the presentation could identify a patient or a service provider or where rates are likely to be highly volatile, for example, where the denominator is very small. The following rules were applied:   * Rates were suppressed where the numerator was less than 5 and/or the denominator was less than 1000. * Data for private hospitals in Tasmania, the ACT and the NT were suppressed. * Rates which appear misleading (for example, because of cross border flows) were also suppressed. |
| **Coherence** | The information presented for this indicator is calculated using the same methodology as data published in *Australian hospital statistics 2010–11* and the *National healthcare agreement: performance report 2010–11*.  The data can be meaningfully compared across reference periods for all jurisdictions except Tasmania. 2008–09 data for Tasmania does not include two private hospitals that were included in 2007–08 and 2009–10 data reported in National Healthcare Agreement performance reports. In 2009-10, WA was missing 2400 separations for one public hospital and was not able to provide about 10 600 separations for one private hospital. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NHMD. Published products available on the AIHW website are:   * *Australian hospital statistics* with associated Excel tables * interactive data cubes for Admitted patient care (for Principal diagnoses, Procedures and Diagnosis Related Groups). * Data are also included on the MyHospitals website. |
| **Interpretability** | Supporting information on the quality and use of the NHMD are published annually in *Australian hospital statistics* (technical appendixes), available in hard copy or on the AIHW website. Readers are advised to note caveat information to ensure appropriate interpretation of the performance indicator. Supporting information includes discussion of coverage, completeness of coding, the quality of Indigenous data, and changes in service delivery that might affect interpretation of the published data. Metadata information for the NMDS for Admitted patient care is published in the AIHW’s online metadata repositoryMETeOR and the *National health data dictionary*. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following key data gaps/issues:  Higher/lower rates are not necessarily associated with inappropriate care. However, large jurisdictional variations in rates for particular procedures can require investigation to determine whether service levels are appropriate.  Care needs to be taken when interpreting the differences in the separation rates for the selected procedures. Variations in rates can be attributable to variations in the prevalence of the conditions being treated, or to differences in clinical practice across states and territories. Higher rates can be acceptable for certain conditions and not for others. Higher rates of angioplasties, for example, can represent appropriate levels of care, whereas higher rates of hysterectomies or tonsillectomies can represent an over-reliance on procedures. Some of the selected procedures, such as angioplasty and coronary artery bypass graft, are alternative treatment options for people diagnosed with similar conditions. |

### Unplanned hospital readmission rates

Data quality information for this indicator has been sourced from the Steering Committee’s report to the COAG Reform Council on the National Healthcare Agreement (data supplied by the AIHW) with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness — quality/safety |
| **Indicator** | Unplanned/unexpected readmissions within 28 days of selected surgical admissions.  For the 2013 report, the National Health Information Standards and Statistics Committee (NHISSC), on behalf of Australian Health Ministers’ Conference, amended the title of this indicator in the NHISSC specifications to: Unplanned hospital readmission rates to better reflect how the indicator is calculated. Readmissions for this indicator are defined within 28 days from the end of the patient’s surgical episode of care. |
| **Measure (computation)** | Numerator: the number of separations for public hospitals which meet all of the following criteria:   * the separation is a readmission to the same hospital following a separation in which one of the following procedures was performed: knee replacement; hip replacement; tonsillectomy and adenoidectomy; hysterectomy; prostatectomy; cataract surgery; appendicectomy * the readmission occurs within 28 days of the previous date of separation * the principal diagnosis for the readmission is a post-operative complication.   Denominator: the number of separations in which one of the following surgical procedures was undertaken: knee replacement; hip replacement; tonsillectomy and adenoidectomy; hysterectomy; prostatectomy; cataract surgery; appendicectomy.  The denominator is limited to separations with a separation date between 1 July and 19 May in the reference year. |
| **Data source/s** | For all jurisdictions except WA, this indicator is calculated by the Australian Institute of Health and Welfare (AIHW) using data from the NHMD, based on the national minimum data set (NMDS) for Admitted patient care.  For WA, the indicator was calculated and supplied by WA Health and was not independently verified by the AIHW.  For data by socioeconomic status: calculated by AIHW using the Australian Bureau of Statistics (ABS) Socio-Economic Indexes For Areas (SEIFA), Index of Relative Socio-Economic Disadvantage (IRSD) 2011 and Estimated Resident Population (ERP) by Statistical Local Area (SLA) as at 30 June 2011. Each SLA in Australia is ranked and divided into quintiles and deciles in a population-based manner, such that each quintile has approximately 20 per cent of the population and each decile has approximately 10 per cent of the population.  For data by remoteness: each separation is allocated an ABS remoteness area, as specified in the Australian Standard Geographical Classification, based on the SLA of usual residence of the patient. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NESWTDC were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation. |
| **Relevance** | The purpose of the NMDS for Admitted patient care is to collect information about care provided to admitted patients in Australian hospitals. The scope of the NMDS is episodes of care for admitted patients in essentially all hospitals in Australia, including public and private acute and psychiatric hospitals, free-standing day hospital facilities, alcohol and drug treatment hospitals and dental hospitals. Hospitals operated by the Australian Defence Force, corrections authorities and in Australia's off-shore territories are not included. Hospitals specialising in ophthalmic aids and other specialised acute medical or surgical care are included.  The hospital separations data do not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments.  The analyses by remoteness and socioeconomic status are based on the Statistical Local Area (SLA) of usual residence of the patient. The Socio-Economic Indexes for Areas (SEIFA) categories for socioeconomic status represent approximately the same proportion of the national population, but do not necessarily represent that proportion of the population in each state or territory (each SEIFA decile or quintile represents 10 per cent and 20 per cent respectively of the national population). The SEIFA scores for each SLA are derived from 2011 Census data and represent the attributes of the population in that SLA in 2011.  Separations are reported by jurisdiction of hospitalisation, regardless of the jurisdiction of usual residence. Hence, rates represent the number of separations for patients living in each remoteness area or SEIFA population group (regardless of their jurisdiction of residence) divided by the total number of separations for people living in that remoteness area or SEIFA population group and hospitalised in the reporting jurisdiction. This is relevant if significant numbers of one jurisdiction’s residents are treated in another jurisdiction.  The unplanned and/or unexpected readmissions counted in the computation for this indicator have been limited to those having a principal diagnosis of a post-operative adverse event for which a specified ICD-10-AM diagnosis code has been assigned. Unplanned and/or unexpected readmissions attributable to other causes have not been included.  With regard to hysterectomy, there are three related procedures that are not defined for the indicator, and therefore have not been included in any National Healthcare Agreement (NHA) reporting (all years). These are (in ICD-10-AM 7th edition), 35750-00—Laparoscopically assisted vaginal hysterectomy; 35753-02—Laprascopically assisted vaginal hysterectomy with removal of adnexa; and 35653-00—Subtotal abdominal hysterectomy. For public hospitals, there were 1743 separations in 2011–12 and 1627 separations in 2010–11 that involved one of these procedures.  The calculation of the indicator is limited to public hospitals and to readmissions to the same hospital.  Other Australians includes separations for non-Indigenous people and those for whom Indigenous status was not stated. |
| **Timeliness** | The reference period for this data set is 2011–12. |
| **Accuracy** | The exception was a mothercraft hospital in the ACT.  The majority of private hospitals provided data, with the exception of the private day hospital facilities in the ACT and the NT.  States and territories are primarily responsible for the quality of the data they provide. However, the AIHW undertakes extensive validations on receipt of data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked against data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these edit queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values.  The AIHW report Indigenous identification in hospital separations data: quality report (AIHW 2013) found that nationally, about 88 per cent of Indigenous Australians were identified correctly in hospital admissions data in the 2011–12 study period, and the ‘true’ number of separations for Indigenous Australians was about 9 per cent higher than reported. The report recommended that the data for all jurisdictions are used in analysis of Indigenous hospitalisation rates, for hospitalisations in total in national analyses of Indigenous admitted patient care. However, these data should be interpreted with caution as there is variation among jurisdictions in the quality of the Indigenous status data.  For this indicator, the linkage of separations records is based on the patient identifiers which are reported for public hospitals. As a consequence, only readmissions to the same public hospital are in scope; and readmissions to different public hospitals and readmissions involving private hospitals are not included.  For WA the indicator was calculated and supplied by WA Health.  To calculate this indicator, readmissions within the 2011–12 financial year had to be linked to an initial separation (which involved the specified surgery) that occurred within the 2011–12 financial year. The 19 May was specified as the cut-off date for the initial separation to exclude initial separations from the denominator for which a readmission may occur in the following financial year. The use of the cut-off date ensures that the numerator and denominator for this indicator are consistent.  Data on procedures are recorded uniformly using the Australian Classification of Health Interventions. Data on diagnoses are recorded uniformly using the ICD-10-AM.  Cells have been suppressed to protect confidentiality where the presentation could identify a patient or a service provider or where rates are likely to be highly volatile, for example where the denominator is very small. The following rules were applied:   * Rates were suppressed where the numerator was less than 5 and/or the denominator was less than 200. * Rates were suppressed where the numerator was zero and the denominator was less than 200. * Counts were suppressed when the number was less than 5. * Data for private hospitals in Tasmania, ACT and the NT were suppressed. |
| **Coherence** | The information presented for this indicator is calculated using the same methodology as data published in Australian hospital statistics 2011–12 and the National healthcare agreement: performance report 2011–12.  The data can be meaningfully compared across reference periods for all jurisdictions.  However, caution is required when analysing SEIFA over time for the reasons outlined above (see Relevance section). Methodological variations also exist in the application of SEIFA to various data sets and performance indicators. Any comparisons of the SEIFA analysis for this indicator with other related SEIFA analysis should be undertaken with careful consideration of the methods used, in particular the SEIFA Census year, the SEIFA index used and the approach taken to derive quintiles and deciles.  National level data disaggregated by Indigenous status for 2007–08 included data from NSW, Queensland, WA, SA and NT. National level data disaggregated by Indigenous status for 2008–09, 2009–10 and 2010–11 included data from NSW, Victoria, Queensland, WA, SA and NT. National level data disaggregated by Indigenous status for 2011–12 and subsequent years includes data from all eight states and territories. Therefore, data disaggregated by Indigenous status from 2007–08 is not comparable to 2008–09, 2009–10 and 2010–11, and data for 2011–12 and subsequent years are not comparable with data for 2010–11 and prior years.  In 2011, the ABS updated the Socio-Economic Indices for Areas (SEIFA), based on the 2011 ABS Census of Population and Housing. The new SEIFA will be referred to as SEIFA 2011, and the previous SEIFA as SEIFA 2006. Data for 2007-08 through to 2010-11 reported for SEIFA quintiles are reported using SEIFA 2006 at the Statistical Local Area (SLA) level. Data for 2011-12 are reported using SEIFA 2011 at the SLA level. The AIHW consider the change from SEIFA 2006 to SEIFA 2011 to be a series break when applied to data supplied for this indicator, therefore SEIFA data for 2011-12 are not directly comparable with SEIFA data from previous reporting cycles. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NHMD. Published products available on the AIHW website are:   * Australian hospital statistics with associated Excel tables * interactive data cubes for Admitted patient care (for Principal diagnoses, Procedures and Diagnosis Related Groups).   These products may be accessed on the AIHW website at: www.aihw.gov.au/hospitals/ |
| **Interpretability** | Supporting information on the quality and use of the NHMD are published annually in Australian hospital statistics (technical appendixes), available in hard copy or on the AIHW website. Readers are advised to note caveat information to ensure appropriate interpretation of the performance indicator. Supporting information includes discussion of coverage, completeness of coding, the quality of Indigenous data, and changes in service delivery that might affect interpretation of the published data. Metadata information for the National Minimum Data Set (NMDS) for Admitted patient care is published in the AIHW’s online metadata repository, METeOR, and the National health data dictionary.  The National health data dictionary can be accessed online at:   * www.aihw.gov.au/publication-detail/?id=10737422826 * The Data Quality Statement for the National Hospital Morbidity Database can be accessed on the AIHW website at: * www.meteor.aihw.gov.au/content/index.phtml/itemId/529483 |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:  The National Hospital Morbidity Database (NHMD) is a comprehensive data set that has records for all separations of admitted patients from essentially all public and private hospitals in Australia.  The indicator is an underestimate of all possible unplanned/unexpected readmissions because:   * it could only be calculated for public hospitals and for readmissions to the same hospital. * episodes of non-admitted patient care provided in outpatient clinics or emergency departments which may have been related to a previous admission are not included. * the unplanned and/or unexpected readmissions are limited to those having a principal diagnosis of a post-operative adverse event for which a specified International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) diagnosis code has been assigned. This does not include all possible unplanned/unexpected readmissions.   Calculation of the indicator for WA was not possible using data from the NHMD. Data for WA were supplied by WA Health. The Australian rates and numbers do not include WA.  Variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions.  SEIFA data for 2011-12 are not directly comparable with SEIFA data from previous reporting cycles. |

### Accreditation

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness — quality/safety |
| **Indicator** | Accreditation |
| **Measure**  **(computation)** | Accreditation’ is defined as the number of beds in accredited hospitals as a percentage of total beds.  Accreditation is awarded to a hospital based on meeting a defined set of standards.  Public hospitals can seek accreditation through a number of agencies. These agencies are accredited through the Joint Accreditation System of Australia and New Zealand or the International Society for Quality in Healthcare. Jurisdictions apply specific criteria to determine which accreditation programs are suitable. Quality programs require hospitals to demonstrate continual adherence to quality improvement standards to gain and retain accreditation. |
| **Data source/s** | This indicator is calculated using data from the NPHED. The NPHED contains information on public hospital expenditure and estimates of the proportion of recurrent expenditure attributed to admitted patient care. The NPHED is based on the National Minimum Data Set (NMDS) for Public hospital establishments. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NESWTDC were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation. |
| **Relevance** | The purpose of the NMDS for Public hospital establishments is to collect information on the characteristics of public hospitals and summary information on non-admitted services provided by them. The scope is public hospitals in Australia, including public acute and psychiatric hospitals, including hospitals operated for or by the Department of Veterans Affairs, and drug and alcohol treatment centres. Hospitals specialising in dental, ophthalmic aids and other specialised acute medical or surgical care are included. The collection covers hospitals within the jurisdiction of the State and Territory health authorities. Hence, public hospitals not administered by the State and Territory health authorities (hospitals operated by correctional authorities or the Australian Defence Force for example, and hospitals located in offshore territories) are not included. The collection does not include data for private hospitals. |
| **Timeliness** | The reference period for this data set is 2011-12. |
| **Accuracy** | For 2011‑12, coverage of the NPHED was essentially complete.  States and territories are primarily responsible for the quality of the data they provide. However, the Institute undertakes extensive validation on receipt of data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked with data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these edit queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values.  Although there are national standards for public hospital establishments data, differences in financial accounting, counting and classification practices across jurisdictions may affect the comparability of these data.  The number of hospitals reported can be affected by administrative and/or reporting arrangements and is not necessarily a measure of the number of physical hospital buildings or campuses.  There was variation between states and territories in the reporting of expenditure, depreciation, available beds, staffing categories and outpatient occasions of service.  Comparability of bed numbers can be affected by the range and types of patients treated by a hospital (casemix), with, for example, different proportions of beds being available for special and more general purposes.  States and territories may differ in the extent to which non-admitted services are provided in non-hospital settings that are beyond the scope of the NPHED.  The comparability of accreditation data among states and territories is limited because of the voluntary nature of participation in award schemes for hospitals in some jurisdictions. As accreditation for public hospitals was counted as at 30 June 2011, hospitals that were accredited for the majority of the financial year, but had their accreditation status lapse shortly before this date, would have been counted as non-accredited. |
| **Coherence** | The NPHED includes data for each year from 1993–94 to 2011–12.  The data reported for 2011–12 are consistent with data reported for the NPHED for previous years for individual hospitals.  Time series presentations may be affected by changes in the number of hospitals reported to the collection and changes in admission practices.  Changes in administrative and/or reporting practices for hospitals, changes in accounting practices for financial data, and changes in counting practices can affect comparisons over time. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NHMD and the NPHED. Published products available on the AIHW website include:   * Australian hospital statistics with associated Excel tables * Interactive data cubes for Public hospital establishments. |
| **Interpretability** | Supporting information on the quality and use of the NPHED are published annually in *Australian hospital statistics* (technical appendixes), available in hard copy or on the AIHW website. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. Supporting information includes discussion of coverage, completeness of coding, changes in accounting methods and changes in service delivery that might affect interpretation of the published data. Metadata information for the NMDS for Public hospital establishments and Admitted patient care are published in the AIHW’s online metadata repository — METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following key data gaps/issues:  The comparability of accreditation data among states and territories is limited because of the voluntary nature of participation in award schemes for hospitals in some jurisdictions. As accreditation for public hospitals was counted as at 30 June 2011, hospitals that were accredited for the majority of the financial year, but had their accreditation status lapse shortly before this date, would have been counted as non-accredited.  It is not possible to draw conclusions about the quality of care in those hospitals that do not have ‘accreditation’. Public hospital accreditation is voluntary in all jurisdictions except Victoria, where it is mandatory for all public hospitals (excluding those that provide only dental or mothercraft services). |

### Healthcare associated infections

Data quality information for this indicator has been sourced from the Steering Committee’s report to the COAG Reform Council on the National Healthcare Agreement (data supplied by the AIHW) with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness — quality/safety |
| **Indicator** | Healthcare-associated *infections*. |
| **Measure (computation)** | SAB patient episodes (as defined below) associated with acute care public hospitals.  Patient episodes associated with care provided by private hospitals and non-hospital healthcare are excluded.  The definition of an acute public hospital is ‘all public hospitals including those hospitals defined as public psychiatric hospitals in the Public Hospital Establishments NMDS’.  All types of public hospitals are included, both those focusing on acute care, and those focusing on non-acute or sub-acute care, including psychiatric, rehabilitation and palliative care.  Unqualified newborns are included in the indicator. Hospital boarders and posthumous organ procurement are excluded from the indicator.  A patient episode of SAB is defined as a positive blood culture for *Staphylococcus aureus*. For surveillance purposes, only the first isolate per patient is counted, unless at least 14 days has passed without a positive blood culture, after which an additional episode is recorded.  A *Staphylococcus aureus* bacteraemia will be considered to be healthcare-associated if: the first positive blood culture is collected more than 48 hours after hospital admission or less than 48 hours after discharge, OR, if the first positive blood culture is collected 48 hours or less after admission and one or more of the following key clinical criteria was met for the patient-episode of SAB:  1. SAB is a complication of the presence of an indwelling medical device (e.g. intravascular line, haemodialysis vascular access, CSF shunt, urinary catheter)  2. SAB occurs within 30 days of a surgical procedure where the SAB is related to the surgical site  3. An invasive instrumentation or incision related to the SAB was performed within 48 hours  4. SAB is associated with neutropenia (<1 x 109) contributed to by cytotoxic therapy  This definition of a patient episode of SAB was agreed by all states and territories and used by all states and territories for reporting for the 2010-11 and subsequent years.  The *denominator* is number of patient days for public acute care hospitals (only for hospitals included in the surveillance arrangements).Calculation is 10 000 × (Numerator ÷ Denominator), presented as a number per 10 000 and number only.  Coverage: Denominator ÷ Number of patient days for all public hospitals in the State or Territory. |
| **Data source/s** | *Numerator*: State and Territory healthcare-associated infection surveillance data.  *Denominator*: State and Territory admitted patient data. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NESWTDC were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation. |
| **Relevance** | This indicator is for patient episodes of SAB acquired, diagnosed and treated in public acute care hospitals. The definition of a public acute care hospital is ‘all public hospitals including those hospitals defined as public psychiatric hospitals in the Public Hospital Establishments NMDS’. All types of public hospitals are included, both those focusing on acute care, and those focusing on non-acute or sub-acute care, including psychiatric, rehabilitation and palliative care. The provision of ‘acute’ services varies among jurisdictions, so it is not possible to exclude ‘non-acute’ hospitals from the indicator in a way that would be uniform among the states and territories. Therefore all public hospitals have been included in the scope of the indicator so that the same approach is taken for each State and Territory, except for WA where mental health beds are not included in 2010-11 or 2011-12 data.  The SAB patient episodes reported were associated with both admitted patient care and with non-admitted patient care (including emergency departments and outpatient clinics). No denominator is available to describe the total admitted and non-admitted patient activity of public hospitals. However, the number of patient days for admitted patient activity is used as the denominator to take into account the large differences between the sizes of the public hospital sectors among the jurisdictions. The accuracy and comparability of the SAB rates among jurisdictions and over time is limited because the count of patient days reflects the amount of admitted patient activity, but does not reflect the amount of non-admitted patient activity. The amount of hospital activity that patient days reflect varies among jurisdictions and over time because of variation in admission practices.  In 2012, the scope of the indicator was revised to include unqualified newborns. Data reported for 2010-11 and subsequent years include unqualified newborns, except for WA where unqualified newborns are not included in 2010-11 or 2011-12 data. It is not possible to backcast the data for earlier years.  Only patient episodes associated with public acute care hospitals in each jurisdiction are counted. If a case is associated with care provided in another jurisdiction then it may be reported (where known) by the jurisdiction where the care associated with the SAB occurred.  Almost all patient episodes of SAB will be diagnosed when the patient is an admitted patient. However, the intention is that patient episodes are reported whether they were determined to be associated with admitted patient care or non-admitted patient care in public acute care hospitals.  The data presented have not been adjusted for any differences in case-mix between the states and territories.  Analysis by state/territory is based on the location of the hospital. |
| **Timeliness** | The reference period for this data is 2012-13, with revised data provided for 2011-12. |
| **Accuracy** | For some states and territories there is less than 100 per cent coverage of public hospitals. For those jurisdictions with incomplete coverage of public hospitals (in the numerator), only patient days for those hospitals (or parts of hospitals) that contribute data are included (in the denominator). Differences in the types of hospitals not included may impact on the accuracy and comparability of rates.  For 2010-11 and previous years, data for Queensland include only patients aged 14 years and over.  Sometimes it is difficult to determine if a case of SAB is associated with care provided by a particular hospital. Counts therefore may not be precise where cases are incorrectly included or excluded. However, it is likely that the number of cases incorrectly included or excluded would be small.  It is possible that there will be less risk of SAB in hospitals not included in the SAB surveillance arrangements, especially if such hospitals undertake fewer invasive procedures than those hospitals which are included.  There may be imprecise exclusion of private hospital and non-hospital patient episodes due to the inherent difficulties in determining the origins of SAB episodes.  For 2010-11 and subsequent years, all states and territories used the definition of SAB patient episodes associated with acute care public hospitals as defined above.  The patient day data may be preliminary for some hospitals/jurisdictions.  Some states and territories have provided revised data for 2011-12, thus a revised table for 2011-12 is provided. |
| **Coherence** | National data for this indicator were first presented in the 2010 COAG Reform Council report. Since that report further work has been undertaken on data development for this indicator, including the definition of an episode of SAB and a suitable denominator, as well as the coverage of public hospitals. The most recent work in 2012 was to revise the scope of the indicator to include unqualified newborns. Data reported for 2010-11 and subsequent years include unqualified newborns, except for WA where unqualified newborns are not included in 2010-11 and 2011-12 data. It is not possible to backcast the data for earlier years. Data for 2012-13, 2011-12 and 2010-11 are therefore not comparable with data for previous years.  Data for 2010-11 and 2011-12 are comparable, except for Queensland, where the 2010-11 data do not include patients aged 13 years and under, whereas the 2011-12 data include patients of all ages. Furthermore, for 2010-11 and 2011-12, WA data do not include unqualified newborns or mental health beds, therefore WA data are not comparable with data from other jurisdictions for these two years.  Data for 2011-12 and 2012-13 are comparable, except for WA, where data for 2011-12 do not include unqualified newborns or mental health beds, whereas WA data for 2012-13 include both unqualified newborns and mental health beds.  WA data for 2012-13 are comparable with 2012-13 data from other jurisdictions.  WA data is included in Australian totals for 2010-11 and 2011-12. Technically, the differing scope for 2010-11 and 2011-12 WA data result in Australian totals for 2010-11 and 2011-12 data which are not comparable with 2012-13 data, however, AIHW investigations indicate that the effect is minimal, and thus consider that Australian data are comparable over 2010-11, 2011-12 and 2012-13.  As 2008-09 data were provided prior to the development of agreed national definitions, by only five jurisdictions, and was limited to principal referral and large hospitals, these data are not comparable with 2009-10 data, except for Tasmania.  Some jurisdictions have previously published related data (see Accessibility above). |
| **Accessibility** | The following states and territories publish data relating to healthcare-associated SAB in various report formats on their websites:  NSW: Your Health Service public website reports SAB by individual hospital.  www.health.nsw.gov.au/hospitals/search.asp  NSW: Healthcare associated infections reporting for 8 infection indicators by state.  www.health.nsw.gov.au/quality/hai/index.asp  Queensland: Queensland Health Hospital Performance website:  www.health.Queensland.gov.au/performance/default.asp  WA: Healthcare Associated Infection Unit - Annual Report and aggregate reports.  www.public.health.wa.gov.au/3/455/3/reports\_\_healthcare\_associated\_infection\_unit.pm  SA: Healthcare Associated Bloodstream Infection Report.  www.health.sa.gov.au/INFECTIONCONTROL/Default.aspx?PageContentID=18&tabid=147  Tasmania: Acute public hospitals healthcare associated infection surveillance report.  www.dhhs.tas.gov.au/peh/tasmanian\_infection\_prevention\_and\_control\_unit/publications\_and\_guidelines |
| **Interpretability** | Jurisdictional manuals should be referred to for full details of the definitions used in healthcare-associated infection surveillance.  Definitions for this indicator are published in the performance indicator specifications. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:   * There may be imprecise exclusion of private hospital and non-hospital patient episodes due to the inherent difficulties in determining the origins of SAB episodes. * For some states and territories there is less than 100 per cent coverage of public hospitals. For those jurisdictions with incomplete coverage of public hospitals (in the numerator), only patient days for those hospitals that contribute data are included (in the denominator). Differences in the types of hospitals not included may impact on the accuracy and comparability of rates. * The accuracy and comparability of the rates of SAB among jurisdictions and over time is also limited because the count of patient days (denominator) reflects the amount of admitted patient activity, but does not reflect the amount of non-admitted patient activity. * The data for 2012-13 are comparable with those from 2011-12 except for WA. * The data for 2011-12 are comparable with those from 2010-11 except for Queensland. * WA data for 2010-11 and 2011-12 are not comparable with data from other jurisdictions. * The patient day data may be preliminary for some hospitals/jurisdictions. |

### **Workforce sustainability**

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Efficiency — sustainability |
| **Indicator** | Workforce sustainability |
| **Measure (computation)** | Workforce sustainability reports aged profiles for nurse and midwife, medical practitioner, dental practitioner and allied health practitioner workforces. It shows the numbers of each of these registered professions in ten year age brackets, both by jurisdiction and by region. |
| **Data source/s** | National Health Workforce Data Set: medical practitioners 2010, 2011 and 2012;  National Health Workforce Data Set: nurses and midwives 2011 and 2012;  National Health Workforce Data Set: dental practitioners 2011 and 2012;  National Health Workforce Data Set: allied health practitioners 2012. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) has calculated this indicator using estimates derived from the National Health Workforce Data Set (NHWDS). The NHWDS is developed through the collaboration of three agencies.  The Australian Health Practitioner Regulation Agency (AHPRA) is the organisation responsible for the implementation of the National Registration and Accreditation Scheme (NRAS) across Australia, including collecting registration data and administering the workforce surveys.  Health Workforce Australia is responsible for the development of the health workforce surveys.  The AIHW receives registration and survey data from the AHPRA. The registration and workforce survey data are combined, cleansed and adjusted for non-response to form NHWDS, and the findings reported by profession. AIHW is the data custodian of the NHWDS. These data are used for workforce planning, monitoring and reporting.  The AIHW is an independent statutory authority within the Health portfolio, which is accountable to the Parliament of Australia through the Minister. For further information see the AIHW website. |
| **Relevance** | Medical practitioners, dental practitioners, nurses/midwives and allied health practitioners are required by law to be registered with their relevant national board to practise in Australia. All medical practitioners, dental practitioners, nurses/midwives and nominated allied health practitioners must complete the formal registration renewal form(s) to practise in Australia. This is the compulsory component of the renewal process. The exception is Aboriginal and Torres Strait Islander health practitioners in the allied health workforce; where those who are not required by their employer to use the title 'Aboriginal and Torres Strait Islander health practitioner', 'Aboriginal health practitioner' or 'Torres Strait Islander health practitioner' are not required to be registered, and can continue to work using their current titles (e.g. 'Aboriginal health worker'. 'drug and alcohol worker' and 'mental health worker').  The health workforce surveys for each of these professions is voluntary and only practitioners who renew their registration receive a questionnaire for completion. New registrants will not receive a survey form until they renew their registration the following year, during the registration renewal period. Practitioners with limited registration are due for renewal on the anniversary of their first registration and can thus renew and complete a survey at any time through the year.  National Health Workforce Data Set: medical practitioners 2010, 2011 and 2012  The NHWDS: medical practitioners 2010, 2011 and 2012 contain registration details of all registered medical practitioners in Australia, at 30 September on the annual renewal date. Data were extracted from the AHPRA database at the end of November of the same year. The NHWDS also contains workforce data of respondents whose principal state of practice was not Queensland or WA, obtained from the Medical Workforce Survey 2010. These states were excluded from the survey because not all registrations in these states expired prior to the national registration deadline. In 2011, the NHWDS contains workforce data obtained from the Medical Workforce Survey 2011 for all states and territories.  National Health Workforce Data Set: dental practitioners 2011 and 2012  The NHWDS: dental practitioners 2011 contains registration details of all registered dental practitioners in Australia, at 30 November 2011 renewal date. Data were extracted from the AHPRA database at the end of January 2012. It also contains workforce data obtained from the Dental Workforce Survey 2011.  National Health Workforce Data Set: nurses and midwives 2011 and 2012  The NHWDS: nurses and midwives 2011 contains registration details of all registered nurses/midwives in Australia at 31 May 2011 renewal date. Data were extracted from the AHPRA database at the end of November 2011. The NHWDS also contains workforce data obtained from the Nursing and Midwifery Workforce Survey 2011.  National Health Workforce Data Set: allied health practitioners 2011 and 2012.  The NHWDS: allied health practitioners 2011 and 2012 contains registration details of all registered allied health practitioners in Australia, at 30 November on the annual renewal date. Data were extracted from the AHPRA database as at the end of January the following year. The NHWDS also contains workforce data obtained from each profession-specific health workforce survey.  Indicator data for allied health practitioners are not comparable between 2011 and 2012 due to four additional professions joining the NRAS in 2012. For 2011, data was collected for seven professions: chiropractors, optometrists, osteopaths, pharmacists, physiotherapists, psychologists and podiatrists. For 2012, in addition to the seven in 2011, data was collected for Aboriginal and Torres Strait Islander health practitioners, Chinese medicine practitioners, medical radiation practitioners and occupational therapists.  Due to transitional arrangements with the migration of data from state and territory-based systems to NRAS, in 2012, many medical radiation practitioners in Queensland, WA and Tasmania were not required to renew their registrations and, as a result did not complete a workforce survey. As a consequence, data for Queensland, WA and Tasmania for this profession are excluded from the indicator data for allied health practitioners.  Similarly, occupational therapists in Queensland, WA and SA are excluded from the indicator data for allied health practitioners in 2012. |
| **Timeliness** | National Health Workforce Data Set:  The NHWDS for each of the registered professions will be produced annually during the national registration renewal process. Each profession will also be administered a Workforce Survey as part of the registration renewal process.  *—Medical practitioners 2010, 2011 and 2012*  The NHWDS: medical practitioners is produced annually from information collected by the national registration renewal process, conducted between 1 July and 30 September each year, including the collection of the Medical Workforce Survey. The period for the 2010 renewal process was extended to the end of January 2011. Despite this extension, there were still Queensland and WA registrants with expiry dates after January. Therefore data from these states were not included in the 2010 data set. *—Nurses and midwives 2011 and 2012*  The NHWDS: nurses and midwives is produced annually from information collected by the national registration renewal process, conducted between 1 April and 31 May each year, including the collection of the Nursing and Midwifery Workforce Survey. The period for the 2011 renewal process was extended to the end of June 2011 for Queensland and end of December 2011 for WA registrants.  *—Dental practitioners 2011 and 2012*  The NHWDS: dental practitioners is produced annually from information collected by the national registration renewal process, conducted between 1 September and 30 November each year, including the collection of the Dental Workforce Survey. Practitioners with limited registration are due for renewal on the anniversary of their first registration and can thus renew and complete a survey at any time through the year.  *—Allied health practitioners 2011 and 2012*  The NHWDS: allied health practitioners is produced annually from information collected by the national registration renewal process, conducted between 1 September and 30 November each year, including the collection of the profession-specific workforce surveys. Practitioners with limited registration are due for renewal on the anniversary of their first registration and can thus renew and complete a survey at any time through the year. |
| **Accuracy** | Data manipulation and estimation processes  The registration and workforce survey data for each health profession are combined, cleansed and adjusted for non-response to form the National Health Workforce Data Set (NHWDS). The cleaning and editing procedures included range and logic checks, clerical scrutiny at unit record level, and validation of unit record and aggregate data.  The data have undergone imputation for item non response and are weighted to the total number of registered practitioners to adjust for population non response. It should be noted that both of these kinds of non-response is likely to introduce some bias in the estimates and any bias is likely to become more pronounced when response rates are low or when estimates are based on a small number of records. Care should be taken when drawing conclusions about the size of the differences between estimates.  As a result of the estimation method to adjust for non-response, numbers of medical practitioners, dental practitioners, nurses/midwives or allied health practitioners may have been in fractions, but have been rounded to whole numbers for this indicator. The full-time equivalent (FTE) rate calculations are based on rounded numbers.  Registration data from the National Registration and Accreditation Scheme (NRAS)  Registration details were migrated from the respective state and territory professional board (or council) for practitioners with registrations expiring after the official AHPRA closing date for their profession.  Some data items previously collected by the AIHW Labour Force Surveys are now collected by the NRAS. However, some data quality issues due to migrated data items from the respective state and territory health profession boards may have affected the weighting method.  Medical practitioners, dental practitioners, nurses/midwives and allied health practitioners who reside overseas have been included with practitioners whose state or territory of principal practice and state or territory of main job, respectively, could not be determined.  Health Workforce Survey  The online survey questionnaire does not include electronic sequencing of questions to automatically guide the respondent to the next appropriate question based on previous responses to questions. This resulted in a number of inconsistent responses.  The order of the response categories for some questions may have also impacted on the accuracy of the information captured. In addition, there was variation in some responses between the online and paper surveys.  NHWDS data by profession  The following should be noted when comparing state and territory indicator data:   * The data include employed professionals who did not state or adequately describe their state of principal practice and employed professionals who reside overseas. The national estimates include this group.   *National Health Workforce Data Set: medical practitioners 2010 and 2011*   * The overall response rate for 2010 (excluding Queensland and WA) was 76.6 per cent. Of these respondents, 65.4 per cent completed the survey online and 34.6 per cent used the paper form. * The overall response rate for 2011 was 85.3 per cent. Of these respondents, 84.7 per cent completed the survey online and 15.3 per cent used paper.   *National Health Workforce Data Set: nurses and midwives 2011*   * The overall response rate was 85.1 per cent. Of these respondents, 86.7 per cent completed the survey online and 13.3 per cent used paper.   *National Health Workforce Data Set: dental practitioners 2011*   * The overall response rate was 80.3 per cent. Of these respondents, 84.5 per cent completed the survey online and 15.5 per cent used paper.   *National Health Workforce Data Set: allied health practitioners 2011 and 2012*   * The overall response rate for 2011 was 61.4 per cent. Of these respondents, 91.5 per cent completed the survey online and 8.5 per cent used paper. * The overall response rate for 2012 was 68.7 per cent. Of these respondents, 92.8 per cent completed the survey online and 7.2 per cent used paper. |
| **Coherence** | Health Workforce Survey—coherence with previous surveys  Labour force data published by the AIHW before the NRAS was established in July 2010, were the result of collated jurisdiction-level occupation-specific surveys. The current Health Workforce Survey gathers similar information from each professional group through a separate questionnaire, tailored slightly to take account of profession-specific responses to certain questions, e.g. work setting of main job.  For this indicator, the workforce surveys for medical practitioners, dental practitioners, nurses/midwives and allied health practitioners collect similar data items, but the methodology differs from previous years. The AHPRA is now the single source of registered practitioner data instead of eight state and territories bodies for each profession, and there is greater consistency between jurisdictions and years in the scope of registration information.  The scope and coverage of the Health Workforce Survey is also different from that of the previous series of AIHW Labour Force Surveys as not all jurisdictions surveyed all types of registered health practitioners.  If the location of principal practice recorded in the registration data was different from the corresponding details of their main job self-reported by practitioners in the survey, the location was derived hierarchically based on main job information and then on principal practice location then place of residence.  Date of birth is one of many data items previously collected by the AIHW Labour Force Surveys, which is now collected by the NRAS.  The three employment-related questions in the new survey are now nationally consistent, but vary from the previous AIHW Labour Force Survey. Due to the differences in data collection (including survey design and questionnaire), processing and estimation methods, it is recommended that comparisons between workforce data from the NHWDS and the previous AIHW Labour Force Survey be made with caution.  AIHW Published Numbers  For this indicator, the rates are based on practitioners employed in the medical, allied health and nursing and midwifery workforces, which is consistent with data published in AIHW's workforce reports. Except dental practitioner data are restricted to persons employed in the public sector and are thus not comparable to figures published elsewhere by the AIHW.  Registration data from the NRAS—coherence with published AHPRA/Board data  The NHWDS comprises the registration data extracted at a point in time from the NRAS, while the AHPRA/Board numbers include people registered in the previous 12 months, thereby including registrants whose registration terminated during that period (including short term registrants).  For 2011, the only source of published statistics about registered health professionals is the 2010–11 AHPRA annual report. From March 2012, each Board publishes the data on a quarterly basis.  *Medical practitioners in 2010 and 2011.*  The NHWDS numbers of registered medical practitioners for 2010 and 2011 are similar to data reported in the 2010–11 AHPRA annual report. For 2010, there were 84 516 registered practitioners for 2010, compared with 88,293 registered practitioners at 30 June 2011 in the AHPRA annual report. For 2011, there were 87 790 practitioners in the NHWDS. Furthermore, the Medical Board of Australia in their quarterly data tables reported 91,354 for March 2012 and 91 645 for June 2012.  *Nurses/midwives in 2011*  The NHWDS number of registered nurses and midwives for 2011 is similar to data reported in the 2010–11 AHPRA annual report, with 330,680 registered nurses and midwives in the NHWDS, compared with 332,185 registered nurses and midwives at 30 June 2011 in the AHPRA annual report. The Nursing and Midwifery Board of Australia in their quarterly data tables reported 341 189 for March 2012 and 343 703 for June 2012.  *Dental practitioners in 2011*  The NHWDS number of registered dental practitioners for 2011 is similar to data reported in the 2010–11 AHPRA annual report, with 18 803 registered practitioners in the NHWDS, compared with 18 319 registered dental practitioners at 30 June 2011 in the AHPRA annual report. The Dental Board of Australia in their quarterly data tables reported 18 902 for March 2012 and 19 087 for June 2012.  *Allied health practitioners in 2011 and 2012*  The NHWDS number of registered allied health practitioners for 2011 and 2012 are similar to data reported in the 2010–11 AHPRA annual report. For 2011, there were 91 587 registered practitioners in the NHWDS, compared with 91 318 registrations at 30 June 2011 in the AHPRA annual report. For 2012, there were 126 788 registered practitioners in the NHWDS, compared with 128 408 reported at December 2012 in the AHPRA quarterly data tables. |
| **Accessibility** | Published products available on the AIHW website include workforce reports, survey questionnaires, user guides to the data sets and supplementary detailed tables. |
| **Interpretability** | Explanatory information for the Medical Workforce Survey, Dental Workforce Survey and the Nursing and Midwifery Workforce Survey is contained in the published reports, supplementary detailed tables and data quality statements to the data set for each. For individual allied health professions, information about their workforce surveys is available in the *Allied health workforce 2012* report and data quality statement. This includes collection method, scope and coverage, survey response, imputation and weighting procedures, and assessment of data quality (including comparison with other data sources).  These are available via the AIHW website and readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:  These measures are not a substitute for a full workforce analysis that allows for migration, trends in full-time work and expected demand increases. The indicator does not provide information on those currently in training and the intentions of those in the medical workforce to leave the workforce in the near future.  Due to the differences in data collection, processing and estimation methods, including survey design and questionnaire, it is recommended that comparisons between workforce data from the National Health Workforce Data Set (NHWDS) and the previous Australian Institute of Health and Welfare (AIHW) Labour Force Survey be made with caution.  Results for the indicator are estimates because the survey data have undergone imputation and weighting to adjust for non-response. It should be noted that any of these adjustments may have introduced some bias in the estimates and any bias is likely to become more pronounced when response rates are low or when estimates are based on a small number of survey records. Care should be taken when drawing conclusions about the size of the differences between estimates.  Data have been revised since the publication of Medical workforce 2010, Medical workforce 2011 and Nursing and midwifery workforce 2011 so these data will not match data previously published. |

### Cost per casemix-adjusted separation

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Efficiency |
| **Indicator** | Cost per casemix-adjusted separation |
| **Measure**  **(computation)** | Recurrent cost per casemix-adjusted separation  The average cost per case mix-adjusted separation in public hospitals. The formula used to calculate the cost per casemix-adjusted separation is:  (Recurrent expenditure × IFRAC) ÷ (Total separations × Average cost weight)  Where:   * Recurrent expenditure is as defined by the recurrent expenditure data elements in the National Minimum Data Set for Public Hospital Establishments. * IFRAC (admitted patient cost proportion) is the estimated proportion of total hospital expenditure that relates to admitted patient care. * Average cost weight is calculated from the National Hospital Morbidity Database, using the 2009‑10 Australian Refined Diagnosis Related Group (AR-DRG) version 6.0x cost weights published by the Department of Health.   Total cost per casemix-adjusted separation  ‘Total cost per casemix-adjusted separation’ is defined as the recurrent cost per casemix-adjusted separation plus the capital costs per casemix-adjusted separation. Recurrent costs include labour and material costs, and capital costs include depreciation and the user cost of capital for buildings and equipment. The indicator is included because it allows the full cost of hospital services to be considered in a single measure. The hospitals included in this measure are the same as for recurrent cost per casemix-adjusted separation.  Depreciation is defined as the cost of consuming an asset’s services. It is measured by the reduction in value of an asset over the financial year. The user cost of capital is the opportunity cost of the capital invested in an asset, and is equivalent to the return foregone from not using the funds to deliver other government services or to retire debt. Interest payments represent a user cost of capital, so are deducted from capital costs in all jurisdictions to avoid double counting. |
| **Data source/s** | Recurrent cost per casemix-adjusted separation  This indicator is calculated using data from the NPHED and the NHMD. The NPHED contains information on public hospital expenditure and estimates of the proportion of recurrent expenditure attributed to admitted patient care. The NPHED is based on the National Minimum Data Set (NMDS) for Public hospital establishments.  The NHMD is the source of data on casemix-adjusted separations for public hospitals. The NHMD is based on the NMDS for Admitted patient care.  Casemix-adjusted separations are calculated by the application of cost weights sourced from the Independent Hospital Pricing Authority’s National Hospital Cost Data Collection for each separation’s recorded AR-DRG.  Total cost per casemix-adjusted separation  Capital costs are sourced from state and territory health departments as part of the annual Report on Government Services data collection. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NESWTDC were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation. |
| **Relevance** | The purpose of the NMDS for Public hospital establishments is to collect information on the characteristics of public hospitals and summary information on non-admitted services provided by them. The scope is public hospitals in Australia, including public acute and psychiatric hospitals, including hospitals operated for or by the Department of Veterans Affairs, and drug and alcohol treatment centres. Hospitals specialising in dental, ophthalmic aids and other specialised acute medical or surgical care are included. The collection covers hospitals within the jurisdiction of the State and Territory health authorities. Hence, public hospitals not administered by the State and Territory health authorities (hospitals operated by correctional authorities or the Australian Defence Force for example, and hospitals located in offshore territories) are not included. The collection does not include data for private hospitals.  The purpose of the NMDS for Admitted patient care is to collect information about care provided to admitted patients in Australian hospitals. The scope of the NMDS is episodes of care for admitted patients in all public and private acute and psychiatric hospitals, free-standing day hospital facilities and alcohol and drug treatment centres in Australia. Hospitals operated by the Australian Defence Force, corrections authorities and in Australia's off-shore territories may also be included. Hospitals specialising in dental, ophthalmic aids and other specialised acute medical or surgical care are included.  The hospital separations data do not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments.  The scope of the analysis includes public hospitals that provide mainly acute care. These are the hospitals in the public hospital peer groups of Principal referral and specialist women’s and children’s hospitals, Large hospitals, Medium hospitals, and Small acute hospitals. Excluded are Small non-acute hospitals, Multi-purpose services, Hospices, Rehabilitation hospitals, Mothercraft hospitals, Other non-acute hospitals, Psychiatric hospitals, and hospitals in the Unpeered and other hospitals peer group. Also excluded are hospitals for which expenditure or admitted patient care data were incomplete, although most of these were excluded for other reasons (for example they are small non-acute hospitals).  This indicator is an efficiency indicator, in which the numerator represents the amount of resources used (expenditure) to generate outputs (measured in a standardised way, that is, as cost-weighted separations). |
| **Timeliness** | The reference period for this data set is 2011-12. |
| **Accuracy** | For 2011‑12, coverage of the NPHED was essentially complete. Almost all public hospitals provided data for the NHMD, with the exception of a mothercraft hospital in the ACT.  States and territories are primarily responsible for the quality of the data they provide. However, the Institute undertakes extensive validation on receipt of data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked with data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these edit queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values.  The data are defined in the NMDSs detailed above.  However, the comparability of the cost per casemix-adjusted separation in any one year is sensitive to a number of deficiencies in available data:   * the proportion of recurrent expenditure that relates to admitted patient care is estimated in different ways in different hospitals and is not always comparable * capital costs are not included in the numerator. While depreciation information is provided by most jurisdictions, this may vary across states and territories * only cost weights applicable to acute care separations are available, so these have been applied to all separations, including the 3 per cent that were not acute. The proportions of separations that are not acute vary across states and territories. * the proportions of patients other than public patients vary across states and territories, and the estimation of medical costs for these patients (undertaken to adjust expenditure to resemble what it would be if all patients had been public patients) is subject to error.   Cells have been suppressed to protect confidentiality (where the numerator would identify a single service provider). |
| **Coherence** | The information presented for this indicator is calculated using the same methodology as data published in *Australian hospital statistics 2011‑12.*  The denominator for the indicator is based on the reported admitted patient activity, adjusted using cost-weights to derive a ‘standard’ unit of output as an artificial construct. The estimated number of cost-weighted separations (particularly using constant AR-DRGs and AR-DRG cost weights over time) is for comparison purposes only.  Time series analysis of this indicator is not recommended. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NHMD and the NPHED. Published products available on the AIHW website include:   * *Australian hospital statistics* with associated Excel tables * Interactive data cubes for Public hospital establishments. |
| **Interpretability** | Supporting information on the quality and use of the NPHED and NHMD are published annually in *Australian hospital statistics* (technical appendixes), available in hard copy or on the AIHW website. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. Supporting information includes discussion of coverage, completeness of coding, changes in accounting methods and changes in service delivery that might affect interpretation of the published data. Metadata information for the NMDS for Public hospital establishments and Admitted patient care are published in the AIHW’s online metadata repository — METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following key data gaps/issues:   * the proportion of recurrent expenditure that relates to admitted patient care is estimated in different ways in different hospitals and is not always comparable * only cost weights applicable to acute care separations are available, so these have been applied to all separations, including the 3 per cent that were not acute. * the proportion of patients other than public patients can vary, and the estimation of medical costs for these patients (undertaken to adjust expenditure to resemble what it would be if all patients had been public patients) is subject to error. * Variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions. |

### Relative stay index

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Efficiency |
| **Indicator** | Relative Stay Index |
| **Measure (computation)** | Relative stay indexes (RSIs) are calculated as the number of observed patient days‘ for separations in selected AR-DRGs, divided by the number of expected patient days‘, standardised for casemix (based on national figures). An RSI greater than 1.0 indicates that an average patient‘s length of stay is higher than expected given the casemix for the group of separations of interest. An RSI of less than 1.0 indicates that the length of stay was less than expected.  The standardisation for casemix (based on AR-DRG version 6.0x and the age of the patient for each separation) allows comparisons to be made that take into account variation in types of services provided; however, it does not take into account other influences on length of stay, such as Indigenous status.  The RSI method includes acute care separations only, and excludes separations for patients who died or were transferred within 2 days of admission, or with a length of stay greater than 120 days. Excluded from the analysis were:   * AR-DRGs for rehabilitation (such as Z60A *Rehabilitation with catastrophic/severe complications or comorbidities*) * predominantly same-day AR-DRGs (such as R63Z *Chemotherapy* and L61Z *Admit for renal dialysis*) * AR-DRGs with a length of stay component in the definition * *Error* AR-DRGs |
| **Data source/s** | The NHMD is the source of data on casemix adjusted separations for public hospitals. The NHMD is based on the NMDS for Admitted patient care.  Casemix adjusted separations are calculated by the application of cost weights sourced from the Independent Hospital Pricing Authority’s National Hospital Cost Data Collection for each separation’s recorded AR-DRG. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of Health and Welfare Act 1987, in conjunction with compliance to the Privacy Act 1988 (Cwlth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au  Data for the NESWTDC were supplied to the AIHW by state and territory health authorities under the terms of the National Health Information Agreement (see the following links):  www.aihw.gov.au/nhissc/  www.meteor.aihw.gov.au/content/index.phtml/itemId/182135  The state and territory health authorities received these data from public hospitals. States and territories use these data for service planning, monitoring and internal and public reporting. Hospitals may be required to provide data to states and territories through a variety of administrative arrangements, contractual requirements or legislation. |
| **Relevance** | The purpose of the NMDS for Admitted patient care is to collect information about care provided to admitted patients in Australian hospitals. The scope of the NMDS is episodes of care for admitted patients in all public and private acute and psychiatric hospitals, free-standing day hospital facilities and alcohol and drug treatment centres in Australia. Hospitals operated by the Australian Defence Force, corrections authorities and in Australia's off-shore territories may also be included. Hospitals specialising in dental, ophthalmic aids and other specialised acute medical or surgical care are included.  The hospital separations data do not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments.  The scope of the analysis includes public hospitals that provide mainly acute care. These are the hospitals in the public hospital peer groups of Principal referral and specialist women’s and children’s hospitals, Large hospitals, Medium hospitals, and Small acute hospitals. Excluded are Small non-acute hospitals, Multi-purpose services, Hospices, Rehabilitation hospitals, Mothercraft hospitals, Other non-acute hospitals, Psychiatric hospitals, and hospitals in the Unpeered and other hospitals peer group. Also excluded are hospitals for which expenditure or admitted patient care data were incomplete, although most of these were excluded for other reasons (for example they are Small non-acute hospitals). |
| **Timeliness** | The reference period for this data set is 2011-12. |
| **Accuracy** | Almost all public hospitals provided data for the NHMD, with the exception of a Mothercraft hospital in the ACT.  States and territories are primarily responsible for the quality of the data they provide. However, the Institute undertakes extensive validation on receipt of data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked with data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these edit queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values.  The comparability of the RSI in any one year is sensitive to a number of deficiencies in available data:   * only cost weights applicable to acute care separations are available, so these have been applied to all separations, including the 3 per cent that were not acute. The proportions of separations that are not acute vary across states and territories. * the proportions of patients other than public patients vary across states and territories, and the estimation of medical costs for these patients (undertaken to adjust expenditure to resemble what it would be if all patients had been public patients) is subject to error.   Cells have been suppressed to protect confidentiality (where the numerator would identify a single service provider). |
| **Coherence** | The information presented for this indicator is calculated using the same methodology as data published in *Australian hospital statistics 2011‑12*.  The denominator for the indicator is based on the reported admitted patient activity, adjusted using cost-weights to derive a ‘standard’ unit of output as an artificial construct. The estimated number of cost-weighted separations (particularly using constant AR-DRGs and AR-DRG cost weights over time) is for comparison purposes only.  Comparisons with RSIs presented in *Australian hospital statistics 2003–04* (AIHW 2005) and earlier reports should be made with caution, because the indexes for earlier years were calculated using AR-DRG version 4, for reports from 2004–05 to 2009–10, the RSIs were calculated using AR-DRG versions 5.0/5.1/5.2 and for 2010-11 and 2011-12, the RSIs were calculated using AR-DRG versions 6.0/6.0x.  Time series analysis of this indicator is not recommended. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NHMD and the NPHED. Published products available on the AIHW website include:   * Australian hospital statistics with associated Excel tables * Interactive data cubes for Public hospital establishments. |
| **Interpretability** | Supporting information on the quality and use of the NHMD are published annually in *Australian hospital statistics* (technical appendixes), available in hard copy or on the AIHW website. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. Supporting information includes discussion of coverage, completeness of coding, changes in accounting methods and changes in service delivery that might affect interpretation of the published data. Metadata information for the NMDS for Public hospital establishments and Admitted patient care are published in the AIHW’s online metadata repository — METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:   * only cost weights applicable to acute care separations are available, so these have been applied to all separations, including the 3 per cent that were not acute. * the proportion of patients other than public patients can vary, and the estimation of medical costs for these patients (undertaken to adjust expenditure to resemble what it would be if all patients had been public patients) is subject to error. * Variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions. |

### Recurrent cost per non-admitted occasion of service

Data quality information for this indicator has been sourced from the Review with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Efficiency |
| **Indicator** | Recurrent cost per non-admitted occasion of service |
| **Measure**  **(computation)** | Recurrent cost per non‑admitted occasion of service’ is defined as the proportion of recurrent expenditure allocated to patients who were not admitted, divided by the total number of non‑admitted patient occasions of service in public hospitals. Occasions of service include examinations, consultations, treatments or other services provided to patients in each functional unit of a hospital. Non‑admitted occasions of service (including emergency department presentations and outpatient services) account for a significant proportion of hospital expenditure. |
| **Data source/s** | This indicator is calculated using data from states and territories collected by the Review. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | Data were supplied by State and Territory health authorities. The State and Territory health authorities receive these data from patient administrative and clinical records. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | This indicator does not adjust for the complexity of service — for example, a simple urine glucose test is treated equally with a complete biochemical analysis of all body fluids. |
| **Timeliness** | The reference period for this data set is 2011-12. |
| **Accuracy** | Inaccurate responses may occur in all data provided to the Review. The Review does not have direct access to records to determine the accuracy of the data provided. However, the Review undertakes validation on receipt of data. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The Review does not adjust data to account for possible data errors.  Errors may occur during the processing of data by the states and territories or at the Review. Processing errors prior to data supply may be found through the validation checks applied by the Review. This indicator is calculated on data that has been reported to the Review. Prior to publication, these data are referred back to jurisdictions for checking and review. The Review does not adjust the data to correct for missing values. |
| **Coherence** | Data are not available for two jurisdictions, Victoria and the NT.  These data are not comparable across jurisdictions. There is considerable variation among states and territories and between reporting years in the way in which non-admitted patient occasions of service data are collected.   * There are differing admission practices between the states and territories. * There is variation in the types of services provided for non-admitted patients and the type of facility providing these services, for example, states and territories may differ in the extent to which outpatient services are provided in non-hospital settings (such as community health services). * Reporting categories vary across jurisdictions. * Inconsistencies arising from differences in outsourcing practices. In some cases, for example, outsourced occasions of service can be included in expenditure on non-admitted services, but not in the count of occasions of service.   Statistics on emergency department presentations for non-admitted patients may be affected by variations in reporting practices across states and territories. Although there are national standards for data on non-admitted patient emergency department services there are some variations in how those services are defined and counted across states and territories and over time. For example, there is variation in:   * the point at which the commencement of clinical care is reported * the point at which the emergency department presentation is reported as completed for those patients subsequently admitted within the emergency department and/or elsewhere in the hospital.   For some jurisdictions, the reporting of outpatient clinic care varied over the periods 2010–11 and 2011–12, in order to align with the reporting requirements for Activity Based Funding. These changes included: the discontinuation of reporting for some activity; the commencement of reporting for some activity; and the re-categorisation of some clinics according to the Tier 2 clinics structure. Therefore, these data may not be comparable with data reported for previous years. |
| **Accessibility** | Cost per occasion of service data are not widely published elsewhere due to data quality issues. No nationally data collection currently exists which can produce comparable data. Data collection and reporting practices differ greatly across jurisdictions. |
| **Interpretability** | Supporting information on the quality and use of the data are not publicly available. Metadata such as concepts, classifications and counting rules are not published and are not consistent across jurisdictions.  Definitions are not well developed and could be ambiguous or confusing to the user.  There is little other information available to assist the user such as glossaries, standards, explanatory material, methodological information, user guides or classifications. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following key data gaps/issues:   * the of recurrent expenditure that relates to occasions of service is estimated in different ways in different hospitals and is not always comparable * This indicator does not adjust for the complexity of service, it is desirable for data to be casemix adjusted * Variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions * Data are not available for two jurisdictions, Victoria and the NT. |

### Patient satisfaction

Data quality information for this indicator has been sourced from the Steering Committee’s report to the COAG Reform Council on the National Healthcare Agreement (data supplied by the ABS) with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Outcome |
| **Indicator** | Patient satisfaction |
| **Measure**  **(computation)** | Patient Experience Survey  Nationally comparable information that indicates levels of patient satisfaction around key aspects of care they received.  *Numerators*:   * persons who had been to a hospital emergency department in the last 12 months reporting doctors or specialists always or often: listened carefully, showed respect, and spent enough time with them * persons who had been to a hospital emergency department in the last 12 months reporting nurses always or often: listened carefully, showed respect, and spent enough time with them * persons who had been admitted to a hospital in the last 12 months reporting doctors or specialists always or often: listened carefully, showed respect, and spent enough time with them * persons who have been admitted to a hospital in the last 12 months reporting nurses always or often: listened carefully, showed respect, and spent enough time with them   *Denominators*:   * persons who had been to a hospital emergency department in the last 12 months, excluding persons who were interviewed by proxy * persons who had been to a hospital emergency department in the last 12 months, excluding persons who were interviewed by proxy * persons who had been admitted to a hospital in the last 12 months, excluding persons who were interviewed by proxy * persons who have been admitted to a hospital in the last 12 months, excluding persons who were interviewed by proxy   State and territory based survey data  This indicator also reports information on patient surveys undertaken by states and territories. The descriptive information includes the survey time period, method, sample size, response rate and a selection of results where available. This indicator also provides information on how jurisdictions have used patient satisfaction surveys to improve public hospital quality in recent years. |
| **Data source/s** | ABS Patient Experience Survey, 2012-13.  State and territory based survey data are sourced from state and territory governments. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | Patient Experience Survey  Data Collector(s): The Patient Experience Survey is a topic on the Multipurpose Household Survey. It is collected, processed, and published by the Australian Bureau of Statistics (ABS). The ABS operates within a framework of the Census and Statistics Act 1905 and the Australian Bureau of Statistics Act 1975. These ensure the independence and impartiality from political influence of the ABS, and the confidentiality of respondents.  For more information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment  Collection authority: The Census and Statistics Act 1905 and the Australian Bureau of Statistics Act 1975.  Data Compiler(s): Data is compiled by the Health section of the Australian Bureau of Statistics (ABS).  Statistical confidentiality is guaranteed under the Census and Statistics Act 1905 and the Australian Bureau of Statistics Act 1975. The ABS notifies the public through a note on the website when an error in data has been identified. The data is withdrawn, and the publication is re-released with the correct data. Key users are also notified where possible.  State and territory based survey data  The Secretariat for the Review of Government Service Provision has collated the State and territory based survey data.  The data were supplied by State and Territory health authorities. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | Level of Geography: Data is available by State/Territory, 2011 SEIFA and 2011 Remoteness (major cities, inner and outer regional, remote and very remote Australia).  Data Completeness: All data is available for this indicator from this source.  Indigenous Statistics: Indigenous data and associated data quality statements will be provided in a separate data supply. Due to differences in survey design and collection methodology, ABS advises that data from the Patient Experience survey is not comparable to data from the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS). As such, comparisons between Indigenous and the general population are not available for this indicator.  Socioeconomic status data: Data is available by the 2011 SEIFA index of disadvantage. There has been no significant impact from transitioning from 2006 SEIFA to 2011 SEIFA. Similarly, there has been no significant impact from transitioning from the 2006 remoteness classification to the 2011 remoteness classification.  Numerator/Denominator Source: Same data source.  Data for this indicator was collected for all persons in Australia, excluding the following people:   * members of the Australian permanent defence forces * diplomatic personnel of overseas governments, customarily excluded from census and estimated population counts * overseas residents in Australia * members of non-Australian defence forces (and their dependents) * people living in non-private dwellings such as hotels, university residences, boarding schools, hospitals, retirement homes, homes for people with disabilities, and prisons * people living in discrete indigenous communities.   The 2011-12 iteration of the Patient Experience survey was the first to include households in very remote areas, (although it still excluded discrete indigenous communities). The 2012-13 iteration continues to include data from very remote areas. The inclusion of very remote areas will serve to improve the coverage of the estimates, particularly for the NT. Small differences evident in the NT estimates between 2010-11 and 2011-12 may in part be due to the inclusion of households in very remote areas.  Data was self-reported for this indicator. Persons who were interviewed by proxy were excluded. |
| **Timeliness** | Patient Experience Survey  Collection interval/s: Patient Experience data is collected annually.  Data available: The 2012-13 data used for this indicator became available from 22 November 2013.  Referenced Period: July 2012 to June 2013.  There are not likely to be revisions to this data after its release.  State and territory based survey data  Timeliness varies between jurisdictions, although most jurisdictions have undertaken some type of survey in 2010 and/or 2011. |
| **Accuracy** | Patient Experience Survey  Method of Collection: The data was collected by computer assisted telephone interview.  Data Adjustments: Data was weighted to represent the total in scope Australian population, and was adjusted to account for confidentiality and non-response.  Sample/Collection size: The sample for the 2012-13 patient experience survey was 30,749 fully-responding households. Note this is a substantial increase from the 2011-12 sample size of 26,437. This increase will improve the reliability of the data, particularly at finer levels of disaggregation.  Response rate: Response rate for the survey was 78.9 per cent  As data is drawn from a sample survey, the indicator is subject to sampling error, which occurs because a proportion of the population is used to produce estimates that represent the whole population. Rates should be considered with reference to their corresponding relative standard errors (RSEs) and 95 per cent confidence intervals. Estimates with a relative standard error between 25 per cent and 50 per cent should be used with caution, and estimates with a relative standard error over 50 per cent are considered too unreliable for general use.  This indicator generally has acceptable levels of sampling error and provides reliable data for most breakdowns. However, RSEs for remote/very remote breakdowns are mostly greater than 25 per cent and should either be used with caution or are considered too unreliable for general use. Similarly, data for the “other” remoteness category has high RSEs when cross classified by State. Caution should be used when interpreting these data.  The data for this indicator is attitudinal, as it collects whether people felt they waited too long to get an appointment with a GP or specialist, and whether the person felt the health professional in question spent enough time with them, listened carefully and showed them respect (the ‘patient satisfaction’ questions).  Data is used from personal interviews only (i.e. excluding proxy interviews).  Explanatory footnotes are provided for each table.  State and territory based survey data  Accuracy varies between jurisdictions depending on the survey method and factors such as response rates and sample sizes. |
| **Coherence** | Patient Experience Survey  Consistency over time: 2009 was the first year data was collected for this indicator.  Questions relating to acceptable waiting times for GPs were asked in 2009, 2010-11, 2011-12 and 2012-13. While the question wording itself did not change, the position in the survey (ie where the question was asked) changed in 2011-12 and again in 2012-13. There has been a noticeable contextual effect with this change in question ordering, and ABS recommends that this data item is not comparable over time. This has been footnoted in the relevant tables.  Similarly, questions relating to acceptable waiting times for Medical Specialists were asked in 2009, 2010-11, 2011-12 and 2012-13. While the question wording itself did not change, the position in the survey (ie where the question was asked) changed in 2011-12. There has been a noticeable contextual effect with this change in question ordering. As such, ABS recommends that 2012-13 data is comparable to 2011-12, but not before this (ie not comparable to 2010-11 or 2009). As a result, a time series can be started from 2011-12 onwards. This has been footnoted in the relevant tables.  Numerator/denominator: The numerator and denominator are directly comparable, one being a sub-population of the other.  The numerator and denominator are compiled from a single source.  Jurisdiction estimate calculation: Jurisdiction estimates are calculated the same way, although the exclusion of discrete indigenous communities in the sample will affect the NT more than it affects other jurisdictions.  Jurisdiction/Australia estimate calculation: All estimates are compiled the same way.  Collections across populations: Data is collected the same way across all jurisdictions.  The Patient Experience survey provides the only national data available for this indicator. At this stage, there are no other comparable data sources.  State and territory based survey data  State and territory based surveys differ in method, content, timing and scope across jurisdictions, so it is not possible to compare the results nationally. |
| **Accessibility** | Patient Experience Survey  Data publicly available. Tables showing patients experiences with health professionals are available in Health Services: Patient Experiences in Australia, 2009 (cat. no. 4839.0.55.001), Patient Experiences in Australia: Summary of Findings, 2010-11, Patient Experiences in Australia: Summary of Findings, 2011-12 and Patient Experiences in Australia: Summary of Findings, 2012-13 (cat. no. 4839.0).  Data for this indicator is shown by age, sex, SEIFA and remoteness. Jurisdictional data is not currently publicly available but may be made available in the future.  Data is not available prior to public access.  Supplementary data is available. Additional data from the Patient Experience Survey is available upon request.  Access permission/Restrictions: Customised data requests may incur a charge.  Contact Details: For more information, please call the ABS National Information and Referral Service on 1300 135 070.  State and territory based survey data  Approaches to making survey results available to the public vary between States and territories. |
| **Interpretability** | Context: This data was collected from a representative sample of the Australian population and questions were asked in context of the year prior to the survey. The data was collected over a twelve month period and therefore should minimise any seasonality effects in the data.  Other Supporting information: The ABS Patient Experience data is published in Patient Experiences in Australia: Summary of Findings, 2012-13 (cat. no. 4839.0). This publication includes explanatory and technical notes.  Socioeconomic status definition: The SEIFA Index of Relative Socio-economic Disadvantage uses a broad definition of relative socio-economic disadvantage in terms of people's access to material and social resources, and their ability to participate in society. While SEIFA represents an average of all people living in an area, it does not represent the individual situation of each person. Larger areas are more likely to have greater diversity of people and households.  Socioeconomic status derivation: The 2011 SEIFA index of relative  socio-economic disadvantage is derived from Census variables related to disadvantage, such as low income, low educational attainment, unemployment, and dwellings without motor vehicles.  Socioeconomic status deciles derivation: Deciles are based on an equal number of areas. A score for a collection district (CD) is created by adding together the weighted characteristics of that CD. The scores for all CDs are then standardised to a distribution where the average equals 1000 and roughly two-thirds of the scores lie between 900 and 1100. The CDs are ranked in order of their score, from lowest to highest. Decile 1 contains the bottom 10 per cent of CDs, Decile 2 contains the next 10 per cent of CDs and so on. Further information on SEIFA can be found in the ABS Technical paper Socio-Economic Indexes for Areas 2011 (cat. No. 2033.0.55.001).  Any ambiguous or technical terms for the data are available from the Technical Note, Glossary and Explanatory Notes in Patient Experiences in Australia: Summary of Findings, 2012-13 (cat. no. 4839.0). |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following key data gaps/issues:   * The Patient Experience Survey does not include people living in very remote areas, which affects the comparability of the NT results. * State and Territory disaggregation of this indicator by Indigenous status and SES is a priority. * Due to the requirement for sufficient data in specific age groups for the age standardisation process, remoteness disaggregation of age-standardised data by State and Territory is only available by major cities (with the other remoteness categories combined), with no State and Territory disaggregation available for SES. * State and territory based surveys differ in method, content, timing and scope across jurisdictions, so it is not possible to compare the results nationally. |

### Caesareans and inductions for selected primiparae

Data quality information for this indicator has been sourced from states and territories with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness — appropriateness |
| **Indicator** | Caesareans and inductions for selected primiparae |
| **Measure (computation)** | Caesareans and inductions for selected primiparae’ are defined as the number of inductions or caesareans for the selected primiparae divided respectively by the number of the selected primiparae who gave birth.  Rates are reported for women aged between 25 and 29 years who have had no previous deliveries, with a vertex presentation (that is, the crown of the baby’s head is at the lower segment of the mother’s uterus) and a gestation length of 37 to 41 weeks. This group is considered to be low risk parturients, so caesarean or induction rates should be low in their population.  Primiparae refers to a woman who has given birth to a liveborn or stillborn infant for the first time. Parturient means ‘about to give birth’ |
| **Data source/s** | This indicator is calculated using data from states and territories. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | Data were supplied by State and Territory health authorities. The State and Territory health authorities receive these data from patient administrative and clinical records. This information is usually collected by midwives or other birth attendants. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | High intervention rates can indicate a need for investigation, although labour inductions and birth by caesarean section are interventions that are appropriate in some circumstances, depending on the health and wellbeing of mothers and babies. |
| **Timeliness** | The reference period for the data is 2012. Collection of data is annual. |
| **Accuracy** | Inaccurate responses may occur in all data provided to the Review. The Review does not have direct access to perinatal records to determine the accuracy of the data provided. However, the Review undertakes validation on receipt of data. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The Review does not adjust data to account for possible data errors.  Errors may occur during the processing of data by the states and territories or at the Review. Processing errors prior to data supply may be found through the validation checks applied by the Review. This indicator is calculated on data that has been reported to the Review. Prior to publication, these data are referred back to jurisdictions for checking and review. The Review does not adjust the data to correct for missing values. |
| **Coherence** | Note that because of data editing and subsequent updates of State/Territory databases, numbers reported for this indicator can differ from those in reports published by the states and territories.  Changing levels of Indigenous identification over time and across jurisdictions may also affect the accuracy of compiling a consistent time series in future years. |
| **Accessibility** | Data are published by states and territories and are also collected by the AIHW as part of the National Perinatal Data Collection. Note that the AIHW data are available to the Review one year later than that available to the Review by collecting data direct from states and territories.  The AIHW provides a variety of products that draw upon the NPDC. Published products available on the AIHW website are:   * Australia’s mothers and babies annual report * Indigenous mothers and their babies, Australia 2001–2004 * METeOR – online metadata repository * National health data dictionary.   Ad-hoc data are also available on request (charges apply to recover costs). |
| **Interpretability** | Supporting information on the use and quality of the Perinatal NMDS are published annually in Australia’s mothers and babies (Chapter 1), available in hard copy or on the AIHW website. Comprehensive information on the quality of Perinatal NMDS elements are published in Perinatal National Minimum Data Set compliance evaluation 2001 to 2005. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. More detailed information on the quality of Indigenous data that might affect interpretation of the indicator was published in Indigenous mothers and their babies, Australia 2001–2004 (Chapter 1 and Chapter 5).  Metadata information for this indicator has been published in the AIHW’s online metadata repository — METeOR. Metadata information for the Perinatal NMDS are also published in METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:   * Data are collected direct from states and territories and are not reliable as they are not collected under a NMDS and have had minimal validation. The AIHW data, however, are less timely and are available to the Review one year later than that available to the Review by collecting data direct from states and territories. * Disaggregation of this indicator for Indigenous status and remoteness by State and Territory is a priority. Further development work on the current data source is required. |

### Instrument vaginal births

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness—appropriateness |
| **Indicator** | Instrument vaginal births |
| **Measure (computation)** | ‘Instrument vaginal births’ is defined as the number of instrument vaginal births as a percentage of total births. Instrument vaginal births includes forceps and vacuum extraction. The indicator is calculated for women aged 20 to 34 years, with a singleton baby positioned with head towards the cervix at the onset of labour born between 37 and 41 weeks gestation. |
| **Data source/s** | This indicator is calculated using data from the AIHW National Perinatal Data Collection (NPDC). |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) has calculated this indicator. Data were supplied by State and Territory health authorities to the National Perinatal Epidemiology and Statistics Unit (NPESU), a collaborating unit of the Institute. The State and Territory health authorities receive these data from patient administrative and clinical records. This information is usually collected by midwives or other birth attendants. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | The National Perinatal Data Collection comprises data items as specified in the Perinatal NMDS plus additional items collected by the states and territories. The purpose of the Perinatal NMDS is to collect information at birth for monitoring pregnancy, childbirth and the neonatal period for both the mother and baby(s).  The Perinatal NMDS is a specification for data collected on all births in Australia in hospitals, birth centres and the community. It includes information for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation. It includes data items relating to the mother, including demographic characteristics and factors relating to the pregnancy, labour and birth; and data items relating to the baby, including birth status (live or stillbirth), sex, gestational age at birth, birth weight, Apgar score and neonatal length of stay. |
| **Timeliness** | The reference period for the data is 2011. Collection of data for the NPDC is annual. |
| **Accuracy** | Inaccurate responses may occur in all data provided to the Institute. The Institute does not have direct access to perinatal records to determine the accuracy of the data provided. However, the Institute undertakes validation on receipt of data. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The AIHW does not adjust data to account for possible data errors.  Errors may occur during the processing of data by the states and territories or at the AIHW. Processing errors prior to data supply may be found through the validation checks applied by the Institute. This indicator is calculated on data that has been reported to the AIHW. Prior to publication, these data are referred back to jurisdictions for checking and review. The Institute does not adjust the data to correct for missing values. Note that because of data editing and subsequent updates of State/Territory databases, and because data are being reported by place of residence rather than place of birth the numbers reported for this indicator differ from those in reports published by the states and territories. The data are not rounded. |
| **Coherence** | Data for this indicator are published in the AIHW National Perinatal Epidemiology and Statistics Unit report *National core maternity indicators*. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NPDC. Published products available on the AIHW website are:   * Australia’s mothers and babies annual report * Indigenous mothers and their babies, Australia 2001–2004 * National core maternity indicators * METeOR – online metadata repository * National health data dictionary.   Ad-hoc data are also available on request (charges apply to recover costs). |
| **Interpretability** | Supporting information on the use and quality of the Perinatal NMDS are published annually in Australia’s mothers and babies (Chapter 1), available in hard copy or on the AIHW website. Comprehensive information on the quality of Perinatal NMDS elements are published in Perinatal National Minimum Data Set compliance evaluation 2006 to 2009. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. More detailed information on the quality of Indigenous data that might affect interpretation of the indicator was published in Indigenous mothers and their babies, Australia 2001–2004 (Chapter 1 and Chapter 5).  Metadata information for this indicator has been published in the AIHW’s online metadata repository — METeOR. Metadata information for the Perinatal NMDS are also published in METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:   * Data are relatively old and may not be representative of current outcomes. Further work is required to ensure availability of more timely data. * Disaggregation of this indicator for Indigenous status and remoteness by State and Territory is a priority. Further development work on the current data source is required. |

### Vaginal delivery following a previous caesarean

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness—appropriateness |
| **Indicator** | Vaginal delivery following a previous caesarean |
| **Measure (computation)** | ‘Vaginal delivery following a previous caesarean’ is defined as the percentage of multiparous mothers who have had a previous caesarean, whose current method of birth was either an instrumental or non-instrumental vaginal delivery. Multiparous means a pregnant woman who had at least one previous pregnancy resulting in a live birth or stillbirth.  For multiple births, the method of birth of the first born baby was used. |
| **Data source/s** | This indicator is calculated using data from the AIHW National Perinatal Data Collection (NPDC). |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) has calculated this indicator. Data were supplied by State and Territory health authorities to the National Perinatal Epidemiology and Statistics Unit (NPESU), a collaborating unit of the Institute. The State and Territory health authorities receive these data from patient administrative and clinical records. This information is usually collected by midwives or other birth attendants. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | The National Perinatal Data Collection comprises data items as specified in the Perinatal NMDS plus additional items collected by the states and territories. The purpose of the Perinatal NMDS is to collect information at birth for monitoring pregnancy, childbirth and the neonatal period for both the mother and baby(s).  The Perinatal NMDS is a specification for data collected on all births in Australia in hospitals, birth centres and the community. It includes information for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation. It includes data items relating to the mother, including demographic characteristics and factors relating to the pregnancy, labour and birth; and data items relating to the baby, including birth status (live or stillbirth), sex, gestational age at birth, birth weight, Apgar score and neonatal length of stay. |
| **Timeliness** | The reference period for the data is 2011. Collection of data for the NPDC is annual. |
| **Accuracy** | Inaccurate responses may occur in all data provided to the Institute. The Institute does not have direct access to perinatal records to determine the accuracy of the data provided. However, the Institute undertakes validation on receipt of data. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The AIHW does not adjust data to account for possible data errors.  Errors may occur during the processing of data by the states and territories or at the AIHW. Processing errors prior to data supply may be found through the validation checks applied by the Institute. This indicator is calculated on data that has been reported to the AIHW. Prior to publication, these data are referred back to jurisdictions for checking and review. The Institute does not adjust the data to correct for missing values. Note that because of data editing and subsequent updates of State/Territory databases, and because data are being reported by place of residence rather than place of birth the numbers reported for this indicator differ from those in reports published by the states and territories. The data are not rounded. |
| **Coherence** | Data for this indicator are published in the annual report Australia’s mothers and babies. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NPDC. Published products available on the AIHW website are:   * Australia’s mothers and babies annual report * Indigenous mothers and their babies, Australia 2001–2004 * METeOR – online metadata repository * National health data dictionary.   Ad-hoc data are also available on request (charges apply to recover costs). |
| **Interpretability** | Supporting information on the use and quality of the Perinatal NMDS are published annually in Australia’s mothers and babies (Chapter 1), available in hard copy or on the AIHW website. Comprehensive information on the quality of Perinatal NMDS elements are published in Perinatal National Minimum Data Set compliance evaluation 2006 to 2009. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. More detailed information on the quality of Indigenous data that might affect interpretation of the indicator was published in Indigenous mothers and their babies, Australia 2001–2004 (Chapter 1 and Chapter 5).  Metadata information for this indicator has been published in the AIHW’s online metadata repository — METeOR. Metadata information for the Perinatal NMDS are also published in METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:   * Interpretation of this indicator is ambiguous. There is ongoing debate about the relative risk to both mother and baby of a repeat caesarean section compared with a vaginal birth following a previous caesarean. Low rates of vaginal birth following a previous caesarean may warrant investigation, or on the other hand, they can indicate appropriate clinical caution. When interpreting this indicator, emphasis needs to be given to the potential for improvement. * Data are relatively old and may not be representative of current outcomes. Further work is required to ensure availability of more timely data. * A formal assessment of the extent of under-identification of Indigenous status in the NPDC is required. This will identify whether the data require adjustment, and contribute to improved time series reporting. * Disaggregation of this indicator for SES and remoteness by State and Territory is a priority. Further development work on the current data source is required. |

### Perineal status after vaginal birth

Data quality information for this indicator has been sourced from the AIHW with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Effectiveness — quality/safety |
| **Indicator** | Perineal status after vaginal birth |
| **Measure (computation)** | ‘Perineal status after vaginal birth’ is the percentage of mothers with third or fourth degree lacerations to their perineum after a vaginal birth.  A ‘third degree’ laceration or rupture during birth (or a tear following episiotomy) involves the anal sphincter, rectovaginal septum and sphincter NOS. A ‘fourth degree’ laceration, rupture or tear also involves the anal mucosa and rectal mucosa.  For multiple births, the perineal status after birth of the first child was used. |
| **Data source/s** | This indicator is calculated using data from the AIHW National Perinatal Data Collection (NPDC). |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | The Australian Institute of Health and Welfare (AIHW) has calculated this indicator. Data were supplied by State and Territory health authorities to the National Perinatal Epidemiology and Statistics Unit (NPESU), a collaborating unit of the Institute. The State and Territory health authorities receive these data from patient administrative and clinical records. This information is usually collected by midwives or other birth attendants. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | The National Perinatal Data Collection comprises data items as specified in the Perinatal NMDS plus additional items collected by the states and territories. The purpose of the Perinatal NMDS is to collect information at birth for monitoring pregnancy, childbirth and the neonatal period for both the mother and baby(s).  The Perinatal NMDS is a specification for data collected on all births in Australia in hospitals, birth centres and the community. It includes information for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation. It includes data items relating to the mother, including demographic characteristics and factors relating to the pregnancy, labour and birth; and data items relating to the baby, including birth status (live or stillbirth), sex, gestational age at birth, birth weight, Apgar score and neonatal length of stay. |
| **Timeliness** | The reference period for the data is 2011. Collection of data for the NPDC is annual. |
| **Accuracy** | Inaccurate responses may occur in all data provided to the Institute. The Institute does not have direct access to perinatal records to determine the accuracy of the data provided. However, the Institute undertakes validation on receipt of data. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The AIHW does not adjust data to account for possible data errors.  Errors may occur during the processing of data by the states and territories or at the AIHW. Processing errors prior to data supply may be found through the validation checks applied by the Institute. This indicator is calculated on data that has been reported to the AIHW. Prior to publication, these data are referred back to jurisdictions for checking and review. The Institute does not adjust the data to correct for missing values. Note that because of data editing and subsequent updates of State/Territory databases, and because data are being reported by place of residence rather than place of birth the numbers reported for this indicator differ from those in reports published by the states and territories. The data are not rounded. |
| **Coherence** | Data for this indicator are published in the annual report Australia’s mothers and babies. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NPDC. Published products available on the AIHW website are:   * Australia’s mothers and babies annual report * Indigenous mothers and their babies, Australia 2001–2004 * METeOR – online metadata repository * National health data dictionary.   Ad-hoc data are also available on request (charges apply to recover costs). |
| **Interpretability** | Supporting information on the use and quality of the Perinatal NMDS are published annually in Australia’s mothers and babies (Chapter 1), available in hard copy or on the AIHW website. Comprehensive information on the quality of Perinatal NMDS elements are published in Perinatal National Minimum Data Set compliance evaluation 2006 to 2009. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. More detailed information on the quality of Indigenous data that might affect interpretation of the indicator was published in Indigenous mothers and their babies, Australia 2001–2004 (Chapter 1 and Chapter 5).  Metadata information for this indicator has been published in the AIHW’s online metadata repository — METeOR. Metadata information for the Perinatal NMDS are also published in METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:   * Data include all women who gave birth vaginally, including births in public hospitals, private hospitals and outside of hospital, such as homebirths. * Data are relatively old and may not be representative of current outcomes. Further work is required to ensure availability of more timely data. * A formal assessment of the extent of under-identification of Indigenous status in the NPDC is required. This will identify whether the data require adjustment, and contribute to improved time series reporting. * Disaggregation of this indicator for SES and remoteness by State and Territory is a priority. Further development work on the current data source is required. |

### Apgar score at five minutes

Data quality information for this indicator has been sourced from states and territories with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Outcome |
| **Indicator** | Apgar score at five minutes |
| **Measure (computation)** | This indicator is defined as the number of live births with an Apgar score of 3 or less, at five minutes post-delivery, as a proportion of the total number of live births by specified birthweight categories.  The Apgar score is a numerical score that indicates a baby’s condition shortly after birth. Apgar scores are based on an assessment of the baby’s heart rate, breathing, colour, muscle tone and reflex irritability. Between 0 and 2 points are given for each of these five characteristics and the total score is between 0 and 10. The Apgar score is routinely assessed at one and five minutes after birth, and subsequently at five minute intervals if it is still low at five minutes. |
| **Data source/s** | This indicator is calculated using data from states and territories. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | Data were supplied by State and Territory health authorities. The State and Territory health authorities receive these data from patient administrative and clinical records. This information is usually collected by midwives or other birth attendants. States and territories use these data for service planning, monitoring and internal and public reporting. |
| **Relevance** | The National Perinatal Data Collection comprises data items as specified in the Perinatal NMDS plus additional items collected by the states and territories. The purpose of the Perinatal NMDS is to collect information at birth for monitoring pregnancy, childbirth and the neonatal period for both the mother and baby(s).  The Perinatal NMDS is a specification for data collected on all births in Australia in hospitals, birth centres and the community. It includes information for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation. It includes data items relating to the mother, including demographic characteristics and factors relating to the pregnancy, labour and birth; and data items relating to the baby, including birth status (live or stillbirth), sex, gestational age at birth, birth weight, Apgar score and neonatal length of stay. |
| **Timeliness** | The reference period for the data is 2011. Collection of data is annual. |
| **Accuracy** | Inaccurate responses may occur in all data provided to the Institute. The Institute does not have direct access to perinatal records to determine the accuracy of the data provided. However, the Institute undertakes validation on receipt of data. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The AIHW does not adjust data to account for possible data errors.  Errors may occur during the processing of data by the states and territories or at the AIHW. Processing errors prior to data supply may be found through the validation checks applied by the Institute. This indicator is calculated on data that has been reported to the AIHW. Prior to publication, these data are referred back to jurisdictions for checking and review. The Institute does not adjust the data to correct for missing values. Note that because of data editing and subsequent updates of State/Territory databases, and because data are being reported by place of residence rather than place of birth the numbers reported for this indicator differ from those in reports published by the states and territories. The data are not rounded.  The geographical location code for the area of usual residence of the mother is included in the Perinatal NMDS. Only 0.2 per cent of records were non-residents or could not be assigned to a state or territory of residence. There is no scope in the data element Area of usual residence of mother to discriminate temporary residence of mother for the purposes of accessing birthing services from usual residence. The former may differentially impact populations from remote and very remote areas, where services are not available locally. |
| **Coherence** | Data for this indicator are published in the annual report Australia’s mothers and babies; and biennially in reports such as the Aboriginal and Torres Strait Islander Health Performance Framework report, the Health and Welfare of Australia’s Aboriginal and Torres Strait Islander Peoples, and the Overcoming Indigenous Disadvantage report. The numbers presented in these publications will differ slightly from those presented here as this measure excludes multiple births and stillbirths.  Changing levels of Indigenous identification over time and across jurisdictions may also affect the accuracy of compiling a consistent time series in future years. |
| **Accessibility** | The AIHW provides a variety of products that draw upon the NPDC. Published products available on the AIHW website are:   * Australia’s mothers and babies annual report * Indigenous mothers and their babies, Australia 2001–2004 * METeOR – online metadata repository * National health data dictionary.   Ad-hoc data are also available on request (charges apply to recover costs). |
| **Interpretability** | Supporting information on the use and quality of the Perinatal NMDS are published annually in Australia’s mothers and babies (Chapter 1), available in hard copy or on the AIHW website. Comprehensive information on the quality of Perinatal NMDS elements are published in Perinatal National Minimum Data Set compliance evaluation 2001 to 2005. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. More detailed information on the quality of Indigenous data that might affect interpretation of the indicator was published in Indigenous mothers and their babies, Australia 2001–2004 (Chapter 1 and Chapter 5).  Metadata information for this indicator has been published in the AIHW’s online metadata repository — METeOR. Metadata information for the Perinatal NMDS are also published in METeOR, and the National health data dictionary. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:   * Data are relatively old and may not be representative of current outcomes. Further work is required to ensure availability of more timely data. * Disaggregation of this indicator for Indigenous status and remoteness by State and Territory is a priority. Further development work on the current data source is required. |

### Fetal, neonatal and perinatal deaths

Data quality information for this indicator has been sourced from the ABS with additional Steering Committee comments.

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| **Indicator definition and description** | |
| **Element** | Outcome |
| **Indicator** | Fetal, neonatal and perinatal deaths |
| **Measure (computation)** | Fetal deaths  *Numerator:* Fetal deaths (stillbirth). The birth of a child who did not at any time after delivery breathe or show any other evidence of life, such as a heartbeat. Fetal deaths by definition include only infants weighing at least 400 grams or of a gestational age of at least 20 weeks.  *Denominator:* Total number of births (live births and fetal deaths combined).  *Computation:* The ‘fetal death rate’ is calculated as the number of fetal deaths divided by the total number of births expressed per 1000 total births, by State or Territory of usual residence of the mother.  Neonatal deaths  *Numerator:* Neonatal deaths. The death of a live born infant within 28 days of birth.  *Denominator:* The number of live births registered.  *Computation:* The ‘neonatal death rate’ is calculated as the number of neonatal deaths divided by the number of live births expressed per 1000 live births, by state or territory of usual residence of the mother  Perinatal death  *Numerator:* A perinatal death is a fetal or neonatal death.  *Denominator:* The total number of births (live births and fetal deaths combined).  *Computation:* The ‘perinatal death rate’ is calculated as the number of perinatal deaths divided by the total number of births expressed per 1000 total births, by State or Territory of usual residence of the mother. |
| **Data source/s** | ABS *Perinatal deaths, Australia*, Cat. no. 3304.0 sourced from death registrations administered by the various state and territory Registrars of Births, Deaths and Marriages. |
| **Data Quality Framework Dimensions** | |
| **Institutional environment** | Statistics presented in *Perinatal Deaths, Australia, 2010* (cat. no. 3304.0) are sourced from death registrations administered by the various state and territory Registrars of Births, Deaths and Marriages. It is a legal requirement of each state and territory that all neonatal deaths and those fetal deaths of at least 20 weeks gestation or 400 grams birth weight are registered. As part of the registration process, information on the cause of death is either supplied by the medical practitioner certifying the death on a Certificate of Cause of Perinatal Death, or supplied as a result of a coronial investigation.  Death records are provided electronically and/or in paper form to the ABS by individual Registrars on a monthly basis. Each death record contains both demographic data and medical information from the Certificate of Cause of Perinatal Death where available. Information from coronial investigations are provided to the ABS through the National Coroners Information System (NCIS).  For further information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment. |
| **Relevance** | Perinatal statistics provide valuable information for the analysis of fetal, neonatal and perinatal deaths in Australia. This electronic product presents data at the national and state level on registered perinatal deaths by sex, state of usual residence, main condition in fetus/infant, main condition in mother and Indigenous status. Fetal, neonatal and perinatal death rates are also provided.  The ABS Perinatal Deaths collection includes all perinatal deaths that occurred and were registered in Australia, including deaths of persons whose usual residence is overseas. Deaths of Australian residents that occurred outside Australia may be registered by individual Registrars, but are not included in ABS deaths or perinatal deaths statistics.  From the 2006 reference year, the scope of the perinatal death statistics includes all fetal deaths of at least 20 weeks gestation or at least 400 grams birth weight, and all neonatal deaths (all live born babies who die within 28 days of birth, regardless of gestation or weight) which are:   * registered in Australia for the reference year and are received by the ABS by the end of the March quarter of the subsequent year; and * registered prior to the reference year but not previously received from the Registrar nor included in any statistics reported for an earlier period.   Data for the 1999 to 2006 reference years based on the revised scope definition of at least 20 weeks gestation or at least 400 grams birth weight was republished in Perinatal Deaths, Australia, 2007(cat. no. 3304.0).  Data in the Perinatal Deaths collection include demographic items, as well as causes of death information, which is coded according to the International Classification of Diseases (ICD). ICD is the international standard classification for epidemiological purposes and is designed to promote international comparability in the collection, processing, classification, and presentation of cause of death statistics. The classification is used to classify diseases and causes of disease or injury as recorded on many types of medical records as well as death records. The ICD has been revised periodically to incorporate changes in the medical field. The 10th revision of ICD (ICD-10) is used for the 2009 data. |
| **Timeliness** | Perinatal deaths data are published annually and released approximately 15 months after the end of the reference period. Prior to 2006, perinatal death statistics were included in the annual Causes of Death, Australia (cat. no. 3303.0) collection.  Causes of death statistics are released with a view to ensuring that they are fit for purpose when released. To meet user requirements for timely data it is often necessary to obtain information from the administrative source before all information for the reference period is available (e.g. finalisation of coronial proceedings). A balance needs to be maintained between accuracy (completeness) of data and timeliness, taking account of the different needs of users. To address the issues which arise through the publication of causes of death data for open coroners cases, these data are now subject to a revisions process. This process enables the use of additional information relating to coroner certified deaths either 12 or 24 months after initial processing. See Explanatory Notes 28-32 for further information on the revisions process. |
| **Accuracy** | Non-sample errors are the main influence on accuracy in datasets such as this which are a complete census of the population rather than a sample. Non-sample error arises from inaccuracies in collecting, recording and processing the data. The most significant of these errors are: mis-reporting of data items; deficiencies in coverage; non-response to particular questions; and processing errors. Every effort is made to minimise non-sample error by working closely with data providers, running quality checks throughout the data processing cycle, training of processing staff, and efficient data processing.  The main sources of non-sample error for perinatal deaths data are:   * completeness of an individual record at a given point in time (e.g. incomplete causes of death information due to non-finalisation of coronial proceedings) * completeness of the dataset e.g. impact of registration lags, processing lags and duplicate records * extent of coverage of the population (whilst all deaths are legally required to be registered some cases may not be registered for an extended time, if at all) * particular data items which would be useful for statistical purposes may not be collected by jurisdictions where that item is not essential for administration purposes * question and ‘interviewer’ biases given that information for death registrations are supplied about the person by someone else. For example, Indigenous origin as reported by a third party can be different from self reported responses on a form * level of specificity and completeness in coronial reports or doctor's findings on the Certificate of Cause of Perinatal Death will impact on the accuracy of coding   The ABS has implemented a new revisions process that applies to all coroner certified perinatal deaths registered after 1 January 2007. The revisions process enables the use of additional information relating to coroner certified perinatal deaths as it becomes available over time, resulting in increased specificity of the assigned ICD-10 codes. See Explanatory Notes 28-32 for further information on the revision process. |
| **Coherence** | Use of the supporting documentation released with the statistics is important for assessing coherence within the dataset and when comparing the statistics with data from other sources. Changing business rules over time and/or across data sources can affect consistency and hence interpretability of statistical output. The Explanatory Notes in each issue contains information pertinent to the particular release which may impact on comparison over time. |
| **Accessibility** | Prior to the 2006 reference year, perinatal causes of death statistics were published in Causes of Death, Australia (cat. no. 3303.0).  In addition to the information provided in the commentary, a series of data cubes are also available providing detailed breakdowns by cause of death. The ABS observes strict confidentiality protocols as required by the Census and Statistics Act (1905). This may restrict access to data at a very detailed level which is sought by some users.  If the information you require is not available from the commentary or the data cubes, then the ABS may also have other relevant data available on request. Inquiries should be made to the National Information and Referral Service on 1300 135 070 or by sending an email to client.services@abs.gov.au. |
| **Interpretability** | Information on some aspects of statistical quality may be hard to obtain as information on the source data has not been kept over time. This is related to the issue of the administrative rather than statistical purpose of the collection of the source data.  Perinatal Deaths, Australia contains detailed Explanatory Notes, an Appendix and Glossary that provide information on the data sources, terminology, classifications and other technical aspects associated with these statistics. |
| **Data Gaps/Issues Analysis** | |
| **Key data gaps/issues** | The Steering Committee notes the following issues:  ‘Fetal death rate’ is reported as an indicator because maternity services for admitted patients have some potential to reduce the likelihood of fetal deaths. However, this potential is limited and other factors (such as the health of mothers and the progress of pregnancy before hospital admission) are also important.  Hence, differences in the ‘fetal death rate’ between jurisdictions are likely to be due to factors outside the control of maternity services for admitted patients. To the extent that the health system influences fetal death rates, the health services that can have an influence include outpatient services, general practice services and maternity services.  As for fetal deaths, a range of factors contribute to neonatal deaths. However, the influence of maternity services for admitted patients is greater for neonatal deaths than for fetal deaths, through the management of labour and the care of sick and premature babies. |