

Admitted patient care 2022–23

Appendix information

Last updated: 13 May 2024 to include updates (if applicable) from states and territories on 'Quality of Indigenous status data' and 'Quality of coded clinical data'. These changes are on pages 4 to 5 and 5 to 7 respectively.

Appendix A: Data Quality Statements – National Hospital Morbidity Database

This section includes a data quality summary and additional detailed information relevant to interpretation of the National Hospital Morbidity Database (NHMD).

It also contains information on other changes that may affect interpretation of the data presented.

Information relevant to interpretation of the National Elective Surgery Waiting Times Data Collection is available [here](#).

Information relevant to interpretation of the ABS' *Patient experiences in Australia: summary of findings, 2022–23* (ABS 2024) is available [here](#)

National Hospital Morbidity Database

The National Hospital Morbidity Database (NHMD) is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian hospitals. It has records for all separations of admitted patients from essentially all public and private hospitals in Australia.

The data supplied are based on the National minimum data set (NMDS) for Admitted Patient Care and include demographic, administrative and length of stay data, as well as data on the diagnoses of the patients, the procedures they underwent in hospital and external causes of injury and poisoning.

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 offshore territories are not in scope but some are included.

The reference period for this data set is 2022–23. The data set includes records for admitted patient separations between 1 July 2022 and 30 June 2023.

Data for the 2022–23 Admitted subacute and non-acute hospital care National Best Endeavours Data Set (ASNHC NBEDS) were provided by the states and territories for inclusion in the AIHW's NHMD. A summary of the data provided for the ASNHC NBEDS is included later in this appendix.

Summary of key issues

- A record is included for each separation, not for each patient, so patients who separated more than once in the year have more than one record in the NHMD.
- There is some variation between jurisdictions as to whether hospitals that predominantly provide public hospital services, but are privately owned and/or operated, are reported as public or private hospitals. In addition, hospitals may be re-categorised as public or private between or within years.
- Data on state or territory of hospitalisation should be interpreted with caution because of cross-border flows of patients. This is particularly the case for the Australian Capital

Territory. In 2022–23, 17% of separations for Australian Capital Territory public hospitals were for patients who lived in New South Wales (Table S2.2).

- Although there are national standards for data on hospital services, there are some variations in how hospital services are defined and counted, between public and private hospitals, among the states and territories and over time. For example, there is variation in admission practices for some services, such as chemotherapy and endoscopy. As a result, people receiving the same type of service may be counted as same-day admitted patients in some hospitals and as non-admitted patients in other hospitals. In addition, some services are provided by hospitals in some jurisdictions and by non-hospital health services in other jurisdictions. The national data on hospital care does not include care provided by non-hospital providers, such as community health centres. For more information, see the AIHW report [Variation in hospital admission policies and practices: Australian hospital statistics](#) (AIHW 2017).
- For the Australian Capital Territory, prior to 2019–20 data were not available for some private hospitals, in 2019–20 this data was provided for the first time.
- Caution should be used in comparing diagnosis, intervention, and external cause data over time, as the classifications and coding standards for those data can change over time.
- The Indigenous status data in the NHMD for all states and territories are of sufficient quality for statistical reporting. In 2011–12, an estimated 88% of First Nations patients were correctly identified in public hospitals (AIHW 2013). The overall quality of the data provided for Indigenous status needs some improvement and varied between states and territories. It is unknown to what extent First Nations people might be under-identified in private hospital admissions data.
- In 2018–19 and 2022–23, data for the Northern Territory elective surgery waiting times cluster was not available at the time of publication. Data for waiting times and public hospital elective surgery waiting lists should be interpreted with caution.

Other factors affecting interpretation of the NHMD data

This section presents other information about the quality of the data provided for the NHMD and factors that may affect interpretation of the information presented in this report.

Quality of Indigenous status data

Indigenous identification in hospital separations data: 2013 quality report

The 2013 AIHW report [Indigenous identification in hospital separations data—quality report](#), (AIHW 2013) presented findings on the quality of Indigenous identification in hospital separations data in Australia, based on studies conducted in public hospitals during 2011–12. Private hospitals were not included in the assessment.

The report estimated that, in the 2011–12 study period, about 88% of Indigenous Australians were identified correctly in public hospital admissions data. It is unknown to what extent Indigenous Australians might be under-identified in private hospital admissions data.

The report also produced correction factors to estimate the ‘true’ number of separations for Indigenous Australians. The national correction factor of 1.09 suggested that the ‘true’ number of separations should be about 9% higher than reported for Indigenous Australians.

Quality of Indigenous status data

The following information was supplied by the states and territories to provide some additional insight into the quality of Indigenous status data in the NHMD.

New South Wales

The New South Wales Ministry of Health noted that the state had achieved compliant status for Indigenous identification in 2011–12. The low level of completeness for some hospitals in *Major cities* revealed that education in Indigenous status data collection should be focused on hospital staff in urban areas. New South Wales's Data Quality Audit and Assurance Program has identified that individual Local Health Districts have initiated, and are delivering, their own comprehensive mandatory training programs for staff on cultural sensitivity and innovative methods of Indigenous data collection.

Victoria

The Victorian Department of Health reports that Indigenous status data for 2022–23 is of an adequate standard for reporting but should still be considered to undercount the number of Aboriginal and Torres Strait Islander patients. There is a continued effort to improve the quality of this data element through data validation processes and communication channels.

Queensland

The Queensland Department of Health noted that for 2022–23, Indigenous status was reported as 'not stated' for 3.0% of admitted patient separations, including separations for unqualified newborns (0.3% of public hospital separations and 6.8% for private hospital separations). When separations for unqualified newborns are excluded 0.3% of public hospital separations and 6.8% of private hospital separations are coded with 'Unknown' Indigenous status. The level of non-reporting of Indigenous status has remained stable for both public and private hospitals.

Western Australia

The Western Australian Department of Health considers its Indigenous status data as being of good quality, with Indigenous status reported for all cases in 2022–23. A sample survey conducted in 2011 concluded that Western Australia was collecting Indigenous status with a high degree of accuracy. The Western Australian Department of Health continues to improve the quality of this data element through enhancement to Patient Administration System to improve data capture, data validation processes and consultation with key stakeholders, including Aboriginal Health Policy.

South Australia

The South Australian Department of Health and Wellbeing advised that Indigenous status identification, across public hospital information collections, is of high quality—sufficient for publication. While the number of 'Not stated' responses has decreased over recent years, it is still considered too high and work is planned to develop targeted training packages aimed at improving the recording and quality of Indigenous status data across hospital settings.

Tasmania

The Tasmanian Department of Health advised that the quality and the level of Indigenous status identification, across public hospital information collections, are of a high standard. However, as with all data collections, there is constant and continued work on maintaining and improving, where needed, the collection of this data element.

Australian Capital Territory

The Australian Capital Territory Health Directorate is continuing to undertake initiatives aligned with local and national developments to improve the quality of collection and reporting of Indigenous status data.

Northern Territory

The Northern Territory Department of Health considers the quality of its Indigenous status data to be of high quality. The Department retains historical reporting of Indigenous status and all reporting is based on the person's reported Indigenous status at the time of the event.

Quality of the coded clinical data

The comparability of the coded diagnosis, intervention and external cause data can be affected by variations in the quality of the coding, and the numbers of diagnoses and/or interventions reported. Comparability can also be influenced by state-specific coding standards.

The quality of these data can be assessed using coding audits in which, in general terms, selected records are independently re-coded, and the resulting codes compared with the codes originally assigned for the separation. There are no national standards for this auditing, so it is not possible to use information on coding audits to make quantitative assessments of data quality on a national basis.

The quality and comparability of the coded data can, however, be gauged by information provided by the states and territories on the quality of the data, and by assessing apparent variation in the reporting of additional diagnoses (see 'Apparent variation in reporting of additional diagnoses').

State-specific coding standards

The Australian Coding Standards (ACS) were developed for use in both public and private hospitals with the aim of satisfying sound coding convention according to the ICD-10-AM/ACHI. Although all states and territories instruct their coders to follow the ACS, some jurisdictions also apply state-specific coding standards to deal with state-specific reporting requirements. These standards may be in addition to, or instead of, the relevant ACS and may affect the comparability of ICD-10-AM/ACHI coded data.

State and territory comments on the quality of the data

The following information has been provided by the states and territories to provide some insight into the quality of the coded data in the NHMD.

New South Wales

For New South Wales, hospitals perform formal audits on ICD-10-AM coded data at a local level. Data edits are monitored regularly, and consistent errors are identified and rectified by individual hospitals.

All New South Wales public hospital coded data is routinely processed, monitored, and validated using Performance Indicators for Coding Quality (PICQ™) by the Ministry of Health and disseminated back to the Local Health Districts and individual hospitals. The data from PICQ™ is also used to benchmark Local Health District's/Network's performance.

Victoria

The Victorian Department of Health convenes the Victorian ICD Coding Committee (jurisdictional coding advisory committee) which promotes the consistent use of the ICD-10-AM/ACHI/ACS through the resolution of coding queries received from Victorian clinical coders. Resolved queries are made publicly available so that the advice is applied consistently by both the public and private sectors. At times the committee will also publish education documents to support and educate the Victorian clinical coding workforce. This advice complements national coding advice.

The committee also ratifies the Victorian Additions to the Australian Coding Standards; the Victorian Additions provide state specific reporting instruction where an Australian Coding Standard directs the clinical coder to their state/territory policy or to supplement advice in a standard.

Validations on ICD-10-AM/ACHI codes are automatically executed as part of the general processing of morbidity data when hospitals submit data to the Victorian Department of Health.

The Victorian Department of Health also conducts state-wide external audits of admitted patient data submitted by Victorian public health services. The annual audits review approximately 11,000 acute and mental health records annually. The audits assess the accuracy of ICD-10-AM/ACHI coding, and the application of Australian Coding Standards (ACS), along with key demographic and administrative data. The state-wide rate of AR-DRG change for audited records has been approximately 5%, indicating a high quality of coded data.

Queensland

Queensland Health undertakes continual clinical coding quality improvement activities at the state and facility level. Internal audits on the ICD-10-AM/ACHI data are performed first at the facility level and is further supported by quality assurance activities and data validations processed by the Queensland Department of Health. The Queensland Department of Health also supports various working groups to gain a greater understanding of the issues and factors impacting statewide clinical coding consistency and quality, as well as to foster appropriate education and development.

Western Australia

The Western Australian Department of Health conducts in-house data quality activities and regular comprehensive external audits of hospital medical records and admitted patient data reporting processes. The Edit Protocol for Hospital Morbidity Data System and the Clinical Information Audit Program aims to provide assurances of data quality and integrity, promoting confidence in the use of health information by hospitals and throughout the system.

South Australia

The South Australian Department for Health and Ageing completed a major audit of coding practices in 2011. The rate of AR-DRG change for metropolitan hospitals was marginally above 10%. A result of less than 10% is generally regarded as an indication of high-quality coding.

The Department conducts various coding improvement activities, to improve compliance with national and state coding standards. PICQ™ has been implemented in South Australia, hospitals are provided with monthly reports and asked to review all critical errors and

correct where necessary. A coding educator has been appointed to assist hospitals in further developing their coding knowledge.

Tasmania

Tasmania focuses on materiality of coded data error, over error rates alone, and quality evaluation and assurance activities are carried out accordingly. Improvements have been noted in the quality of the coded data in recent years, but the state continues to develop improvements as necessary. For example, accurate representation of the impact of some chronic comorbidities on the care provided to a patient during their hospital stay, and over representation of conditions that had onset during a given episode of admitted care.

Australian Capital Territory

The Australian Capital Territory conducts regular coding data quality improvement and integrity activities including internal audits on the ICD-10-AM/ACHI coded data, and analysis using the PICQ™ tool to ensure a high standard of coding quality. Data validations at the hospital and corporate level are automatically undertaken as part of processing the data flow, further education and training supports these quality improvement activities.

Northern Territory

The Northern Territory Department of Health is committed to the continual improvement of clinical coding across Northern Territory hospitals and continues to conduct coding quality improvement activities. Clinical coding audits at each hospital are performed by the Northern Territory Manager Coding Audit and Education, and follow-up includes focussed education sessions for clinical coders. The larger hospitals perform coding audits at a local level. The PICQ™ tool is also used to validate coded data and provide feedback to individual coders. Data validation checks are routinely performed by the department and results returned to the hospitals for follow-up to ensure data quality. The Northern Territory Coders Forum is also an inclusive committee that provides peer support and is an Northern Territory wide forum for discussion of coding issues and referral of queries to national clinical advisory bodies for resolution, to foster coding quality and consistency.

Apparent variation in reporting of additional diagnoses

The proportion of separations in the lowest resource split for adjacent AR-DRGs can be used as a measure of apparent variation among Australian states and territories in the reporting and coding of additional diagnoses. The proportion is standardised to the national distribution of adjacent AR-DRGs to consider differing casemixes (Coory & Cornes 2005).

Method

An adjacent AR-DRG is a set of AR-DRGs that is split on a basis supplementary to the principal diagnoses and interventions that are used to define the adjacent AR-DRG grouping.

Adjacent AR-DRGs are signified in the AR-DRG classification by having the first 3 characters in common. The allocation of a 4th character code is hierarchical, with the highest resource use level being assigned an A and the lowest resource use level being assigned the last letter in the sequence.

For AR-DRG version 10.0, most adjacent AR-DRGs are split by 'complexity' which is determined by the inclusion of significant additional diagnoses, also known as complications or comorbidities (CCs).

This analysis concentrates on differences in the reporting of additional diagnoses that are significant in AR-DRG assignment within the adjacent AR-DRG groupings. The analysis covers 2 categories of adjacent AR-DRGs (category 2 is a subset of category 1):

1. all applicable adjacent AR-DRGs (that is, excluding adjacent AR-DRGs with other factors affecting partitioning)
2. vaginal and caesarean deliveries.

The category *Vaginal and caesarean deliveries* is included as it represents a sub-group of patients for which there is limited scope for differences in the admission threshold. Therefore, it is expected that differences in the proportions in the lowest resource AR-DRGs for this group are likely to reflect variation in reporting additional diagnoses.

Standardised proportion

The underlying assumption of this analysis is that variation in the proportions of separations assigned to individual AR-DRGs within an adjacent AR-DRG is caused by variation in the reporting and coding of additional diagnoses that are relevant to the split of the adjacent AR-DRG. This assumption is less likely to be valid when comparing hospital sectors which have differing casemixes, or the smaller jurisdictions, because of differing population profiles and the limitations of the standardisation method.

The data were directly standardised by scaling the distribution of adjacent AR-DRGs in each jurisdiction/sector to the same distribution as the national total. The resulting proportions of separations in the lowest resource AR-DRG within the adjacent AR-DRG are considered comparable.

See tables accompanying this report online for additional detail on this analysis and the list of AR-DRGs included.

Results 2022–23

Table A1 shows that the proportion of separations grouped to the lowest resource split for adjacent AR-DRGs varies among jurisdictions, and by sector.

Overall, for public hospitals, proportion of separations allocated to the lowest resource split for adjacent AR-DRGs for all states and territories ranged between 66% (New South Wales) and 72% (Victoria).

For private hospitals, proportion of separations allocated to the lowest resource split for adjacent AR-DRGs for all states and territories ranged between 73% (Western Australia) and 77% (Victoria, Queensland and South Australia).

For *Vaginal and caesarean deliveries*, the proportion allocated to the lowest resource split was 37% for public hospitals, and 49% for private hospitals. There was some variation among jurisdictions, with public hospital proportions ranging from 32% in the Northern Territory to 45% in Tasmania. The proportions in private hospitals ranged from 41% in Western Australia to 52% in New South Wales.

Changes to ICD-10-AM/ACHI classifications

Information presented over time may be affected by changes to ICD-10-AM/ACHI codes and coding standards.

Supplementary codes for chronic conditions

From 1 July 2015, 29 supplementary codes for chronic conditions were introduced. These codes represent a selection of clinically important chronic conditions—which are part of the

patient's current health status on admission that do not meet criteria for inclusion as additional diagnoses, but may impact on clinical care.

The supplementary codes were not considered in the allocation of diagnosis related groups.

The AIHW examined the coded data provided for 2015–16 and found that there were some decreases in additional diagnoses reported for some of the conditions compared with past years (for example, obesity, hypertension and chronic kidney disease, stages 3–5). This may reflect that some chronic disorders that did not strictly meet the definition for additional diagnoses were already being reported as additional diagnoses in some jurisdictions in 2014–15 and earlier.

For 2022–23, 6.7 million supplementary codes were reported, with at least 1 reported for 33.2% of separations in public hospitals and 32.2% in private hospitals (Table A2). In comparison, for 2021–22, 6.3 million supplementary codes were reported, with at least 1 supplementary code reported for 32.8% of separations in public hospitals and 31.7% in private hospitals.

Table A1: Standardised proportion of separations^(a) in lowest resource level AR-DRG for selected adjacent AR-DRGs version 10.0, public and private hospitals, states and territories, 2022–23

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
All adjacent AR-DRGs split by complexity only									
Public hospitals									
Separations	1,137,559	1,168,496	1,113,966	407,230	289,627	100,110	84,892	74,118	4,375,998
Standardised proportion in lowest resource level	0.66	0.72	0.67	0.68	0.66	0.70	0.70	0.67	0.70
Private hospitals									
Separations	738,710	677,660	666,637	270,238	207,915	n.p.	n.p.	n.p.	2,669,775
Standardised proportion in lowest resource level	0.76	0.77	0.77	0.73	0.77	n.p.	n.p.	n.p.	0.77
Adjacent AR-DRGs for vaginal and caesarean deliveries									
Public hospitals									
Separations	66,834	56,224	44,697	22,757	14,833	4,488	4,919	3,082	217,834
Standardised proportion in lowest resource level	0.40	0.34	0.35	0.39	0.39	0.45	0.36	0.32	0.37
Private hospitals									
Separations	20,016	16,736	12,934	7,538	3,633	n.p.	n.p.	n.p.	64,199
Standardised proportion in lowest resource level	0.52	0.50	0.51	0.41	0.45	n.p.	n.p.	n.p.	0.49

(a) Separations for which the care type was reported as Acute or Newborn (with qualified days), or was not reported.

Source: National Hospital Morbidity Database.

Table A2: Separations with supplementary codes reported, public and private hospitals, states and territories, 2022–23

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals									
Separations	1,861,350	1,938,594	1,730,260	639,728	480,588	165,276	129,467	182,742	7,128,005
Separations with supplementary codes	656,705	642,482	522,318	245,441	171,338	57,118	46,231	28,189	2,369,822
Proportion with supplementary codes	35.3	33.1	30.2	38.4	35.7	34.6	35.7	15.4	33.2
Supplementary codes	1,182,681	1,130,160	947,795	436,704	314,479	102,809	83,626	43,779	4,242,033
Average number of codes	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.8
Private hospitals									
Separations	1,484,198	1,131,735	1,254,223	557,134	368,492	n.p.	n.p.	n.p.	4,993,777
Separations with supplementary codes	547,085	333,082	398,572	137,178	128,205	n.p.	n.p.	n.p.	1,606,924
Proportion with supplementary codes	36.9	29.4	31.8	24.6	34.8	n.p.	n.p.	n.p.	32.2
Supplementary codes	834,172	497,211	629,876	199,920	195,478	n.p.	n.p.	n.p.	2,446,322
Average number of codes	1.5	1.5	1.6	1.5	1.5	n.p.	n.p.	n.p.	1.5

Source: National Hospital Morbidity Database.

Condition onset flag data

Condition onset flag (COF) information is included in [Admitted patient safety and quality of the health system](#).

Quality of the condition onset flag data for 2022–23

In 2022–23, the coverage of COF data was 100.0% for public and 99% for private hospitals. The coverage was similar across all states and territories except for the Australian Capital Territory, which was lower at 88% overall (89% for public hospitals, 86% for private hospitals).

Table A3: Proportion of separations with condition onset flag reported^(a) (%), public and private hospitals, states and territories, 2022–23

	Public hospitals	Private hospitals	All hospitals
New South Wales	100	98	99
Victoria	100	100	100
Queensland	100	100	100
Western Australia	100	100	100
South Australia	100	100	100
Tasmania	100	100	100
Australian Capital Territory	89	86	88
Northern Territory	100	100	100
Australia	100	99	100

(a) The proportion of separations for which the condition onset flag was reported may include records where the flag was provided for some diagnoses and not for others.

AR-DRG versions used in this report

In this report, AR-DRG version 9.0 was used for time series presentations of average cost weights, relative stay indexes, and presentations by MDCs or AR-DRGs. AR-DRG version 10.0 was used for 2022–23 presentations of average cost weights, relative stay indexes, and presentations by MDCs or AR-DRGs.

Summary of quality of data provided for the Admitted subacute and non-acute hospital care National Best Endeavours Data Set

Additional information based on the ASNHC NBEDS (2018–19 to 2022–23) has been provided to the AIHW as part of the annual submission of admitted patient care data for the NHMD.

The ASNHC NBEDS aims to collect information about care provided to subacute and non-acute admitted public and private patients in activity-based funded public hospitals.

The scope of the NBEDS (METeOR identifier: [727327](#)) is:

- same-day and overnight admitted subacute and non-acute care episodes
- admitted public patients provided on a contracted basis by private hospitals
- admitted patients in rehabilitation care, palliative care, geriatric evaluation and management, psychogeriatric and maintenance care treated in the hospital-in-the-home.

For the purpose of analysing the subset of separations in the NHMD that are considered in scope for reporting to the ASNHC NBEDS, the AIHW has defined the subset as all subacute and non-acute care episodes in activity based-funded public hospitals (that is, not listed as block-funded hospitals for 2022–23), and subacute and non-acute care episodes for public patients with a funding source of *Other hospital or public authority* provided by private hospitals.

For 2022–23, 212,483 episodes (accounting for 35% of all subacute and non-acute separations in public and private hospitals) were in scope for the ASNHC NBEDS (Table A4). Table A4 also presents the numbers of subacute and non-acute activity-based funded episodes by care type.

Primary impairment type

Primary impairment type should be reported for all *Rehabilitation care* separations in scope for the ASNHC NBEDS.

For 2022–23, 85% of the 91,000 separations in scope for reporting, provided a valid primary impairment type (Table A5).

The 3 most common primary impairments reported were *Re-conditioning/restorative* (21,500 separations), *Orthopaedic conditions—fractures (includes dislocation)* (12,700) and *Stroke—ischæmic* (11,600). (Table A6).

Functional independence measure scores

Functional independence measure scores should be reported for all *Rehabilitation care* and *Geriatric evaluation and management* separations in scope for the ASNHC NBEDS for patients aged 18 years and older.

For 2022–23, 79% of the 125,000 separations in scope for reporting, provided valid functional independence measure scores (Table A5).

Resource Utilisation Groups—activities of daily living scores

Resource Utilisation Groups—activities of daily living scores should be reported for all *Palliative care* and *Maintenance care* separations in scope for the ASNHC DSS for patients aged 18 years and older.

For 2022–23, 75% of the 83,800 separations in scope for reporting, provided valid Resource Utilisation Groups—activities of daily living scores (Table A5).

Health of the Nation Outcome Scale 65+ scores

Health of the Nation Outcome Scale 65+ scores (HoNOS65+) should be reported for all *Psychogeriatric care* separations in scope for the ASNHC NBEDS.

For 2022–23, 83% of the 1,500 separations in scope for reporting, provided valid HoNOS65+ scores (Table A5).

Standardised mini-mental state examination scores

Standardised mini-mental state examination scores (SMMSEs) should be reported for all *Geriatric evaluation and management* separations in scope for the ASNHC NBEDS.

For 2022–23, 94% of the 35,600 separations in scope for reporting, provided valid SMMSEs scores (Table A5).

Palliative care phase

Over 90,800 records were provided for palliative care phase data. Nationally, for 35% of palliative care phases, the patient's palliative care phase type was reported as *Deteriorating* (Table A7).

Table A4: Subacute and non-acute separations, public and private hospitals, and activity-based funded episodes^(a), states and territories, 2022–23

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals	67,764	41,708	64,005	14,478	18,432	3,761	5,768	1,268	217,184
Private hospitals	243,004	33,387	73,526	5,905	14,729	n.p.	n.p.	n.p.	383,044
Total subacute and non-acute separations	310,768	75,095	137,531	20,383	33,161	n.p.	n.p.	n.p.	600,228
Subacute and non-acute hospital care—in-scope separations									
Rehabilitation care	27,065	17,863	29,875	7,878	5,977	900	1,176	308	91,042
Palliative care	15,474	8,488	12,366	3,577	2,341	838	1,068	478	44,630
Geriatric evaluation and management	4,808	17,330	7,808	840	4,028	20	565	195	35,594
Psychogeriatric care	369	36	518	456	77	3	44	0	1,503
Maintenance care	15,131	583	12,767	2,753	5,462	1,200	1,577	241	39,714
Total in-scope subacute and non-acute care	62,847	44,300	63,334	15,504	17,885	2,961	4,430	1,222	212,483

(a) Subacute and non-acute care episodes in activity-based funded public hospitals, and for Public patients with a funding source of Other hospital or public authority provided by private hospitals.

Table A5: Subacute and non-acute activity based funded episodes^(a)—provision of data elements, states and territories, 2022–23

Data element	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Primary impairment type									
Number of in-scope episodes ^(b)	27,065	17,863	29,875	7,878	5,977	900	1,176	308	91,042
In-scope episodes with valid values	17,677	15,092	29,848	7,149	5,913	655	440	307	77,081
Invalid/not reported/unknown values (%)	34.7	15.5	0.1	9.3	1.1	27.2	62.6	0.3	15.3
Functional independence measure scores									
Number of in-scope episodes ^(c)	31,590	35,000	36,537	8,672	9,981	914	1,737	499	124,930
In-scope episodes with valid values	21,508	32,223	24,931	7,790	9,539	650	1,559	496	98,696
Invalid/not reported/unknown values (%)	31.9	7.9	31.8	10.2	4.4	28.9	10.2	0.6	21.0
Resource Utilisation Groups - activities of daily living scores									
Number of in-scope episodes ^(d)	30,335	9,067	24,859	6,314	7,800	2,038	2,640	719	83,772
In-scope episodes with valid values	14,946	9,035	23,806	4,469	7,074	324	2,321	668	62,643
Invalid/not reported/unknown values (%)	50.7	0.4	4.2	29.2	9.3	84.1	12.1	7.1	25.2
Health of the Nation Outcome Scale 65+ scores									
Number of in-scope episodes ^(e)	369	36	518	456	77	22	44	0	1,522
In-scope episodes with valid values	366	0	496	331	77	0	0	0	1,270
Invalid/not reported/unknown values (%)	0.8	100.0	4.2	27.4	0.0	100.0	100.0	..	16.6
Standardised Mini-Mental State Examination									
Number of in-scope episodes ^(f)	4,808	17,330	7,808	840	4,028	20	565	195	35,594
In-scope episodes with valid values	4,808	17,330	7,808	840	1,761	20	565	195	33,327
Invalid/not reported/unknown values (%)	0.0	0.0	0.0	0.0	56.3	0.0	0.0	0.0	6.4

(b) Subacute and non-acute care episodes in activity-based funded public hospitals, and for Public patients with a funding source of Other hospital or public authority provided by private hospitals.

(c) Rehabilitation care episodes.

(d) Rehabilitation care and Geriatric evaluation and management episodes for patients aged 18 or over.

(e) Palliative care and Maintenance care episodes for patients aged 18 or over.

(f) Psychogeriatric care episodes.

(g) Geriatric evaluation and management episodes for which the Clinical assessment only indicator was reported as 'No'.

Table A6: Rehabilitation care separations by type of impairment, activity-based funded episodes^(a), states and territories, 2022–23

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Stroke—haemorrhagic	989	830	1,804	227	208	32	11	21	4,122
Stroke—ischæmic	1,977	1,856	5,767	762	988	108	48	68	11,574
Brain dysfunction—non-traumatic	310	513	1,397	209	162	34	9	18	2,652
Brain dysfunction—traumatic	270	287	1,427	152	109	16	6	15	2,282
Neurological conditions	619	997	1,952	227	321	33	15	16	4,180
Non traumatic spinal cord dysfunction	253	265	491	102	75	3	4	12	1,205
Traumatic spinal cord dysfunction	164	131	353	75	23	5	0	3	754
Amputation of limb—not resulting from trauma	391	532	464	236	219	34	1	18	1,895
Amputation of limb—resulting from trauma	29	18	72	14	6	4	0	3	146
Arthritis	44	55	71	32	18	3	0	1	224
Pain syndromes	366	389	157	79	29	3	10	0	1,033
Orthopaedic conditions—fractures (includes dislocation)	3,578	2,445	3,574	1,795	982	118	148	48	12,688
Post-orthopaedic surgery	1,690	1,756	1,522	368	395	49	23	13	5,816
Soft tissue injury	96	101	485	107	19	4	3	3	818
Cardiac	362	253	229	118	125	8	3	5	1,103
Pulmonary	235	187	195	119	134	5	11	5	891
Burns	16	30	36	7	5	1	0	3	98
Congenital deformities	3	54	4	0	1	0	0	0	62
Other disabling impairments	32	200	2,690	21	129	3	1	1	3,077
Major multiple trauma	146	128	500	119	64	10	6	11	984
Developmental disabilities	7	3	4	1	0	0	0	0	15
Re-conditioning/restorative	6,100	4,062	6,654	2,379	1,901	174	141	43	21,454
Not stated/inadequately described	9,388	2,771	27	729	64	253	736	1	13,969
Total	27,065	17,863	29,875	7,878	5,977	900	1,176	308	91,042

(a) Rehabilitation care episodes in activity-based funded public hospitals, and for Public patients with a funding source of Other hospital or public authority provided by private hospitals.

Table A7: Palliative care phase type, activity-based funded episodes^(a), states and territories, 2022–23

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Stable	9,205	3,369	2,091	3,204	460	73	376	313	19,091
Unstable	6,070	2,365	1,766	1,248	356	48	105	244	12,202
Deteriorating	13,441	6,036	5,391	3,428	1,482	303	1,009	308	31,398
Terminal	9,480	4,732	7,835	3,072	1,226	309	680	284	27,618
Not reported	341	0	0	5	141	0	0	9	496
Total	38,537	16,502	17,083	10,957	3,665	733	2,170	1,158	90,805

(a) Palliative care phase data were also provided for records not in scope for the ASNHC NBEDS.

Appendix B: Technical appendix

This appendix covers:

- definitions and classifications used
- the presentation of data in this report
- analysis methods.

Definitions and classifications

If not otherwise indicated, data elements were defined according to the definitions in the National health data dictionary, versions 16, 16.1 and 16.2 (AIHW 2012, 2015a, 2015b), summarised in the Glossary.

Data element definitions for the following NMDS are also available online for:

- Admitted patient care NMDS 2022–23 – link [here](#)
- Admitted subacute and non-acute hospital care NBEDS 2022–23 – link [here](#)
- Elective surgery waiting times NMDS 2022–23 – link [here](#)

Geographical classifications

Remoteness areas

Data on geographical location of the patient's usual residence and of the hospital location are defined using the ABS' Australian Statistical Geography Standard (ASGS).

For 2022–23, data on remoteness area of usual residence are defined using the ABS' ASGS Remoteness Structure 2021 (ABS 2021). The ASGS Remoteness Structure 2021 categorises geographical areas in Australia into remoteness areas, in detail on the ABS website [Australian Statistical Geography Standard \(ASGS\) | Australian Bureau of Statistics](#), which includes detail of the nature of the changes between the ASGS 2016 and ASGS 2021.

The classification is as follows:

- Major cities—for example; Sydney, Melbourne, Brisbane, Adelaide, Perth, Canberra and Newcastle
- Inner regional—for example; Hobart, Launceston, Wagga Wagga, Bendigo and Murray Bridge
- Outer regional—for example; Darwin, Moree, Mildura, Cairns, Charters Towers, Whyalla and Albany
- Remote—for example; Port Lincoln, Esperance, Queenstown and Alice Springs
- Very remote—for example; Mount Isa, Cobar, Coober Pedy, Port Hedland, Tennant Creek and Norfolk Island.

For years reporting data before 2022–23, Australian Statistical Geography Standard (ASGS) Remoteness Structure 2016 was used.

Reporting data on geographical location of usual residence of the patient

Data on geographical location are collected on the area of usual residence of patients in the NHMD. These data are specified in the NMDS as state or territory of residence and Statistical Area level 2 (SA2), a small area unit within the ABS's ASGS. For 2022–23, the

area of usual residence was voluntarily provided by some jurisdictions in the form of a Statistical Area level 1 (SA1).

Where SA1 data were available, remoteness areas were allocated by the AIHW based on the SA1 information. If SA1 data were not available, the SA2 data were used to allocate remoteness areas.

The AIHW mapped the SA2 of area of usual residence for each separation to remoteness area categories based on the ASGS Remoteness Structure 2016 for the years 2018–19 to 2021–22, and the ASGS Remoteness Structure 2021 for 2022–23. These mappings were undertaken on a probabilistic basis as necessary, using ABS correspondence information describing the distribution of the population by remoteness areas and SA2s. Because of the probabilistic nature of this mapping, the SA2 and remoteness area data for individual records may not be accurate; however, the overall distribution of records by geographical areas is considered useful.

Socioeconomic area of patient's usual residence

Data on a patient's socioeconomic area of usual residence are defined using the ABS's Socio-Economic Indexes for Areas (SEIFA) 2016 (ABS 2018) for 2018–19 to 2021–22 and the Socio-Economic Indexes for Areas 2021 (ABS 2021) for 2022–23.

The ABS generate the SEIFA 2021 data using a combination of 2021 Census data such as income, education, health problems/disability, access to internet, occupation/unemployment, wealth and living conditions, dwellings without motor vehicles, rent paid, mortgage repayments, and dwelling size. Composite scores are averaged across all people living in areas and defined for areas based on the Census collection districts and are also compiled for higher levels of aggregation. The SEIFAs are described in detail at [Socio-Economic Indexes for Areas \(SEIFA\), Australia, 2021 | Australian Bureau of Statistics \(abs.gov.au\)](https://www.abs.gov.au/australian-bureau-of-statistics/publications/collections/127100/seifa).

The SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) is one of the ABS' SEIFA indexes. The relative disadvantage scores indicate the collective SES of the people living in an area, with reference to the situation and standards applying in the wider community at a given point in time. A relatively disadvantaged area is likely to have a high proportion of relatively disadvantaged people. However, such an area is also likely to contain people who are not disadvantaged, as well as people who are relatively advantaged.

The AIHW generated separation rates by socioeconomic area using the IRSD scores for the SA2 of usual residence of the patient reported for each separation. The '1—Lowest' group represents the areas containing the 20% of the national population with the most disadvantage, and the '5—Highest' group represents the areas containing the 20% of the national population with the least disadvantage. These groups do not necessarily represent 20% of the population in each state or territory. Disaggregation by socioeconomic area is based on the area of usual residence of the patient, not the location of the hospital.

Public hospital peer groups

This report uses a public hospital peer group classification, developed by the AIHW and available in [Australian hospital peer groups](https://www.aihw.gov.au/reports-and-publications/publications/australian-hospital-peer-groups) (AIHW 2015c).

Classifications of clinical data

ICD-10-AM/ACHI

Diagnosis, intervention and external cause data for 2022–23 were reported to the NHMD by all states and territories using the 12th edition of the *International statistical classification of*

diseases and related health problems, 10th revision, Australian modification (ICD-10-AM) (ACCD 2016), incorporating the Australian classification of health interventions (ACHI).

In tables and figures presenting information on diagnoses, external causes and interventions, the codes and abbreviated descriptions of the ICD-10-AM/ACHI classification are used. Full descriptions of the categories are available in ICD-10-AM/ACHI publications on the Independent Health and Aged Care Pricing Authority website - [IHACPA](#).

Diagnoses

One or more diagnoses can be reported for each separation. The principal diagnosis is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted patient care. An additional diagnosis is a condition or complaint that either co-exists with the principal diagnosis or arises during the episode of care. An additional diagnosis is reported if the condition affects patient management.

The ICD-10-AM comprises classifications of diseases and external causes of injuries and poisoning, based on the World Health Organization's version of ICD-10.

The disease classification is hierarchical, with 20 summary disease chapters that are divided into many more specific disease groupings (represented by 3-character codes). Most of the 3-character disease groupings can be divided into an even larger number of very specific disease categories represented by 4-character and 5-character codes.

Most of the information about principal diagnoses in this report is presented using 2 methods of grouping records based on the ICD-10-AM disease classification:

- ICD-10-AM disease chapters—these 20 groups provide information combined at the ICD-10-AM chapter level
- 3-character ICD-10-AM groupings—describe the diseases at a specific level; detailed information is presented for the 20 groupings with the highest number of separations.

External causes

The external cause classification (Chapter 20 of ICD-10-AM) is hierarchical, consisting of 397 3-character categories (including place of occurrence and activity when injured). Some of the information is presented by categorising the ICD-10-AM external cause codes into 16 groups to provide an overview of the reported external causes.

Interventions

One or more interventions can be reported for each separation, but interventions are not undertaken for all hospital admissions, so only some of the separation records include intervention data.

The ACHI classification is divided into 20 chapters by anatomical site, and within each chapter by a 'superior' to 'inferior' (head to toe) approach. These subchapters are further divided into more specific 'procedure' blocks, ordered from the least invasive to the most invasive. The blocks, which are numbered sequentially, group the very specific intervention information.

The intervention information is presented using 3 methods of grouping interventions based on the ACHI intervention classification:

- ACHI chapters—these 20 groups provide information aggregated at the ACHI chapter level

- ACHI procedure blocks—these 2,140 categories describe interventions at a specific level. Detailed information is presented for the 20 procedure blocks with the highest number of separations and summary information is provided for all the groups (for which separations were reported) [here](#).
- ACHI interventions—individual interventions for selected care types.

Australian Refined Diagnosis Related Groups

Australian Refined Diagnosis Related Groups (AR-DRG) is an Australian admitted patient classification system that provides a clinically meaningful way of relating the number and type of patients treated in a hospital (that is, its casemix) to the resources expected to be used by the hospital. This system categorises acute admitted patient episodes of care into groups with similar conditions and similar expected use of hospital resources, based on information in the hospital morbidity record.

The AR-DRG classification is partly hierarchical, with 23 MDCs, divided into *General Intervention* (previously *Surgical*), *Medical* and *Specific Interventions* (previously *Other*) partitions, and then into 807 individual AR-DRGs (version 10.0).

The MDCs are mostly defined by body system or disease type and correspond with medical specialties. In general, episodes are allocated to MDCs based on the principal diagnosis. Some episodes involving interventions that are particularly resource intensive may be assigned to the *Pre-MDC* category (AR-DRGs A01Z–A41B), irrespective of the principal diagnosis (including most organ and bone marrow transplants).

Episodes are allocated to AR-DRGs within MDCs, mainly based on the intervention codes (in the *Surgical DRG* partition), or the diagnosis codes (in the *Medical DRG* partition). Additional variables are also used for AR-DRG assignment, including the patient's age, complicating diagnoses/interventions and/or patient clinical complexity level, the length of stay, and the mode of separation.

Episodes that contain clinically atypical or invalid information are assigned *Error DRGs* (AR-DRGs 801A–801C and 960Z–963Z) even if they were assigned to an MDC (*Error DRGs* are included within the *Other DRGs* in the General Intervention/Medical/Specific Intervention DRG partition).

AR-DRG versions

Following receipt of the data from states and territories, the AIHW regrouped the data (using the mapping facility in the DRGroup™ software) to ensure that the same grouping method was used for all data. The AR-DRGs that resulted from this regrouping are presented in this report and may differ slightly from those derived by the states and territories.

For 2022–23, each separation in the NHMD was classified to AR-DRG version 9.0 and 10.0 on the basis of demographic and clinical characteristics of the patient.

Each AR-DRG version is based on a specific edition of the ICD-10-AM/ACHI (Table B1). However, AR-DRGs can be mapped from other ICD-10-AM/ACHI editions.

Table B1: ICD-10-AM and AR-DRG versions, 2013–14 to 2022–23

Year	ICD-10-AM edition	Relevant AR-DRG version	AR-DRG version reported in Australian hospital statistics
2013–14 ^(a)	8th edition	Version 7.0	Version 7.0
2014–15 ^(b)	8th edition	Version 7.0	Version 7.0
2015–16 ^(c)	9th edition	Version 8.0	Version 7.0

2016–17 ^(d)	9th edition	Version 8.0	Version 8.0
2017–18 ^(e)	10th edition	Version 8.0	Version 8.0
2018–19 ^(f)	10th edition	Version 9.0	Version 8.0
2019–20 ^(g)	10th edition	Version 9.0	Version 9.0
2020–21 ^(h)	11th edition	Version 10.0	Version 10.0
2021–22 ⁽ⁱ⁾	11th edition	Version 10.0	Version 10.0
2022–23 ⁽ⁱ⁾	12th edition	Version 10.0	Version 10.0

- (a) For *Admitted patient care 2013–14: Australian hospital statistics* in analyses where cost weights were required, AR-DRG version 6.0x Round 16 cost weights (2011–12) were applied to AR-DRG version 6.0x.
- (b) For *Admitted patient care 2014–15: Australian hospital statistics* in analyses where cost weights were required, AR-DRG version 6.0x Round 17 cost weights (2012–13) were applied to AR-DRG version 6.0x.
- (c) For *Admitted patient care 2015–16: Australian hospital statistics*, AR-DRG version 7.0 Round 18 cost weights (2013–14) were applied to AR-DRG version 7.0 for 2015–16 cost weight analyses and AR-DRG version 6.0x Round 17 cost weights (2012–13) were applied to AR-DRG version 6.0x for time series cost weight analyses.
- (d) For *Admitted patient care 2016–17: Australian hospital statistics*, AR-DRG version 8.0 Round 19 cost weights (2014–15) were applied to AR-DRG version 8.0 for 2016–17 cost weights analyses, and AR-DRG version 6.0x Round 17 cost weights (2012–13) were applied to AR-DRG version 6.0x for time series cost weight analyses.
- (e) For *Admitted patient care 2017–18: Australian hospital statistics*, AR-DRG version 8.0 Round 20 cost weights (2015–16) were applied to AR-DRG version 8.0 for 2017–18 cost weights analyses, and AR-DRG version 7.0 Round 18 cost weights (2013–14) were applied to AR-DRG version 7.0 for time series cost weight analyses.
- (f) For *Admitted patient care 2018–19: Australian hospital statistics*, AR-DRG version 9.0 Round 21 cost weights (2016–17) were applied to AR-DRG version 9.0 for 2018–19 cost weights analyses, and AR-DRG version 8.0 Round 19 cost weights (2014–15) were applied to AR-DRG version 7.0 for time series cost weight analyses.
- (g) For *Admitted patient care 2019–20: Australian hospital statistics*, AR-DRG version 9.0 Round 21 cost weights (2016–17) were applied to AR-DRG version 9.0 for 2019–20 cost weights analyses, and AR-DRG version 8.0 Round 20 cost weights (2015–16) were applied to AR-DRG version 8.0 for time series cost weight analyses.
- (h) For *Admitted patient care 2020–21: Australian hospital statistics*, AR-DRG version 9.0 Round 21 cost weights (2016–17) were applied to AR-DRG version 9.0 for 2020–21 cost weights analyses, and AR-DRG version 8.0 Round 20 cost weights (2016–17) were applied to AR-DRG version 8.0 for time series cost weight analyses.
- (i) For *Admitted patient care 2021–22: Australian hospital statistics*, AR-DRG version 10.0 Round 24 cost weights (2019–20) were applied to AR-DRG version 10.0 for 2021–22 cost weights analyses, and AR-DRG version 10.0 Round 24 cost weights (2019–20) were applied to AR-DRG version 9.0 for time series cost weight analyses.
- (j) For *Admitted patient care 2022–23: Australian hospital statistics*, AR-DRG version 10.0 Round 24 cost weights (2019–20) were applied to AR-DRG version 10.0 for 2022–23 cost weights analyses, and AR-DRG version 10.0 Round 24 cost weights (2019–20) were applied to AR-DRG version 9.0 for time series cost weight analyses.

Presentation of data

For most tables in this report, data are presented by the state or territory of the hospital, not by the state or territory of usual residence of the patient. The exceptions are for tables presenting information on potentially preventable hospitalisations, which are based on data on the state or territory of usual residence. In addition, the state or territory of usual residence of the patient is reported against the state or territory of hospitalisation.

For tables presented by the state or territory of usual residence of the patient, the totals include unknown residence area (within a known state), overseas residents and unknown state of residence.

Except as noted in the 'Suppression of data' section, the totals in tables include data only for those states and territories for which data were available, as indicated.

Throughout the publication, percentages may not add up to 100.0 because of rounding. Percentages and rates printed as 0.0 or 0 generally indicate a zero. The symbol '<0.1' has been used to denote less than 0.05 but greater than 0.

Suppression of data

The AIHW operates under a strict privacy regime which has its basis in *Section 29* of the *Australian Institute of Health and Welfare Act 1987* (AIHW Act). *Section 29* requires that confidentiality of data relating to persons (living and deceased) and organisations be maintained. The *Privacy Act* governs confidentiality of information about living individuals.

The AIHW is committed to reporting that maximises the value of information released for users while being statistically reliable and meeting legislative requirements described in the *AIHW Act* and the *Privacy Act*.

Data (cells) in tables may be suppressed to maintain the privacy or confidentiality of a person or organisation, or because a proportion or other measure related to a small number of events (and may therefore not be reliable).

Data may also be suppressed to avoid attribute disclosure. Some measures were suppressed if there were fewer than 100 separations in the category being presented (for example, for length of stay, separations rates and elective surgery waiting times). The abbreviation 'n.p.' has been used in tables to denote these suppressions. In these tables, the suppressed information is included in the totals.

The data for private hospitals in Tasmania, the Australian Capital Territory and the Northern Territory were not published for confidentiality reasons. It should be noted that there are no confidentiality concerns about the Tasmanian private hospital data, and that Tasmania would support the release of their private hospital information.

In addition, private hospital data may be suppressed for a particular diagnosis, intervention, or AR DRG where:

- there are fewer than 3 reporting units
- there are 3 or more reporting units and 1 of them contributed more than 85% of the total separations, or
- there are 3 or more reporting units and 2 of them contributed more than 90% of the total separations.

Analysis methods

Admitted patient care data analyses

Records for 2022–23 are for hospital separations (discharges, transfers, deaths, or changes in care type) in the period 1 July 2022 to 30 June 2023. Data on patients who were admitted on any date before 1 July 2022 are included if they also separated between 1 July 2022 and 30 June 2023. A record is included for each separation, not for each patient, so patients who separated more than once in the year will have more than 1 record in the NHMD.

Patient day statistics can be used to provide information on hospital activity that, unlike separation statistics, account for differences in length of stay. As the database contains records for patients separating from hospital during the reporting period (1 July 2022 to 30 June 2023) including patients admitted before 1 July 2022, this means that not all patient days reported will have occurred in that year.

It is expected, however, that patient days for patients who separated in 2022–23, but who were admitted before 1 July 2022, will be counterbalanced overall by the patient days for patients in hospital on 30 June 2023, who will separate in future reporting periods.

The numbers of separations and patient days can be a less accurate measure of the activity for establishments such as public psychiatric hospitals, and for patients receiving subacute or non-acute care, for which more variable lengths of stay are reported.

Unless otherwise noted in footnotes, records for *Hospital boarders* and *Posthumous organ procurement* have been excluded from statistics on separations.

Newborn episodes of care

Newborn care episodes can include 'qualified days' which are the equivalent of acute care days. A newborn patient day is 'qualified' if the infant meets at least one of the following criteria:

- is the second or subsequent live born infant of a multiple birth, whose mother is currently an admitted patient
- is admitted to an intensive care facility in a hospital, being a facility approved by the Commonwealth Minister for the purpose of the provision of special care
- is admitted to or remains in hospital without its mother.

(METeOR identifier: 327254).

In this report, newborn episodes with at least 1 qualified day (qualified newborns) have been included in all tables reporting separations, except as specified in tables reporting newborn care (without qualified days).

The number of patient days reported in this publication for newborn episodes is equal to the number of qualified days, so for newborns with a mixture of qualified and unqualified days, the number of patient days reported is less than the actual length of stay for the episode.

Age and sex of patient

The patient's age is calculated at the date of admission. In tables by age group and sex, separations for which age and/or sex were not reported are included in the totals.

For Tasmania, the gender data item has been reported instead of sex.

Estimated resident populations

All populations are based on the estimated resident population as at 30 June of the start of the reference period (that is, for the reporting period 2022–23, the estimated resident population as at 30 June 2022 was used). The exception is the estimated resident population for the socioeconomic index, which was 30 June 2021 because the 30 June 2022 estimates were unavailable.

Age-standardised rates

Unless noted otherwise, population rates (separation rates and patient day rates) presented in this report are age-standardised, calculated using the direct standardisation method and 5 year age groups.

For time series tables in this report, the age-standardised separation (and patient day) rates (per 1,000 population) have been calculated using estimated resident populations relevant to the reporting period.

The total Australian population for 30 June 2001 was used as the standard population against which expected rates were calculated.

There was some variation in the age group used for age-standardising. For example:

- separation rates (by hospital state, residence state, remoteness areas and by quintiles of socioeconomic advantage/disadvantage) were directly age-standardised, using the estimated resident populations that had the highest age group of 85 and over
- separation rates by Indigenous status were directly age-standardised, using the projected Indigenous population estimates that had the highest age group of 65 and

over. Hence standardised rates calculated for analyses by Indigenous status are not directly comparable with other standardised rates presented which used the highest age group of 85 and over.

Standardised separation rate ratios

For some tables reporting comparative separation rates, standardised separation rate ratios (SRRs) are presented. The SRRs are calculated by dividing the age-standardised separation rate for a population of interest (an observed rate) by the age-standardised separation rate for a comparison population (the expected rate). The calculation is as follows:

$$\text{Standardised separation rate ratio (SRR)} = \text{observed rate/expected rate}$$

An SSR of 1.0 indicates that the population of interest (for example, First Nations people) had a separation rate similar to that of the comparison group (for example, other Australians). An SRR of 1.2 indicates that the population of interest had a rate that was 20% greater than that of the comparison population and an SRR of 0.8 indicates a rate 20% smaller.

The populations used for the observed and expected rates vary in this report, for example:

- Indigenous status, the SRR is equal to the separation rate for First Nations people divided by the separation rate for other Australians (other Australians includes Indigenous status not reported)
- analyses by state or territory of residence, remoteness areas and socioeconomic area of usual residence, the SRR is equal to the separation rate for the state or territory of residence, remoteness area, or SES group, divided by the separation rate for Australia.

Counts of separations by groups of diagnoses, interventions, and external causes

For tables with counts of separations by groups of diagnoses, interventions or external causes, a separation is counted once for the group if it has at least one diagnosis, intervention or external cause reported within the group. As more than one diagnosis, intervention or external cause can be reported for each separation, the totals in the tables may not equal the sum of counts in the rows (or columns).

Limitations of counts of interventions

Tables with numbers of interventions are counts of ACHI intervention codes. It is possible for a single intervention code to represent multiple interventions or for a specific intervention to require the reporting of more than 1 code (for example, for some laparoscopic interventions and for cataract extraction/insertion of lens). Therefore, the count of intervention codes reported does not precisely reflect the number of separate interventions performed.

ICD-10-AM codes used for selected analyses

Some tables in this report use ICD-10-AM/ACHI codes to define diagnoses and interventions. The codes are presented in tables accompanying this report online and relate to:

- potentially preventable hospitalisations and adverse event codes (see tables 'Information related to safety and quality of the health system?')
- differential access codes, OECD indicator codes and Neoplasm codes (see tables 'What procedures were performed?')

Broad categories of service

Separations have been categorised as *Childbirth*, *Intervention*, *Medical*, *Mental health*, and *Subacute and non-acute care* based on the care type reported and/or the AR-DRG version 10.0 recorded for the separation:

- **Childbirth:** separations for which the AR-DRG was associated with childbirth:
 - O01A Caesarean delivery, major complexity
 - O01B Caesarean delivery, intermediate complexity
 - O01C Caesarean delivery, minor complexity
 - O02A Vaginal delivery with operating room procedure, major complexity
 - O02B Vaginal delivery with operating room procedure, minor complexity
 - O60A Vaginal delivery, major complexity
 - O60B Vaginal delivery, intermediate complexity
 - O60C Vaginal delivery, minor complexity.Does not include newborn care.
- **Intervention:** separations for which the care type was reported as *Acute care*, *Newborn care* (with at least one qualified day) or was not reported, excluding separations for *Childbirth*. Intervention partition is split into
 - General Interventions (OR procedures) for which the AR-DRG belonged to the *Surgical* partition (involving an operating room intervention)
 - Specific Interventions (Non OR procedures). for which the AR-DRG did not belong to the *Surgical* or *Medical* partitions (involving a non-operating room intervention, such as endoscopy), excluding separations for *Childbirth*
- **Medical:** separations for which the care type was reported as *Acute care*, *Newborn care* (with at least one qualified day) or was not reported, for which the AR-DRG belonged to the *Medical* partition (not involving an operating room intervention), excluding separations for *Childbirth*.
- **Mental health:** separations for which the care type was reported as *Mental health care*. Excludes separations for *Childbirth*.
- **Subacute and non-acute care:** separations for which the care type was reported as *Rehabilitation*, *Palliative care*, *Psychogeriatric care*, *Geriatric evaluation and management* or *Maintenance care*. Excludes separations for *Childbirth*.

National elective surgery waiting times data analyses

Elective surgery waiting times

The waiting times data presented in this report are for patients who complete their wait and are admitted for their surgery as either an elective or emergency admission.

The elective (and emergency) admissions involving surgery defined for admitted patient care data from the NHMD are not necessarily the same as elective surgery as defined for the National Elective Surgery Waiting Times Data Collection (NESWTDC). This is due to several factors including:

- the data in the NESWTDC relate to patients who were admitted from public hospital waiting lists, whereas the elective admissions involving surgery sourced from the NHMD include patients who were not placed on a waiting list, including in private hospitals

- the data in the NESWTDC can include separations for which the urgency of admission was reported as *Emergency*.

Appendix C: Hospital performance indicators

Performance indicators are defined as:

'statistics or other units of information that, directly or indirectly, reflect either the extent to which an anticipated outcome is achieved or the quality of the processes leading to that outcome' (NHPC 2001).

National reporting of performance indicators

In Australia, national public reporting of hospital performance is undertaken by several organisations under nationally agreed arrangements, including the:

- Australian Health Performance Framework (AHPF)—a conceptual framework that can be flexibly used to assess the Australian health care system for a variety of audiences, for different populations and for different sectors and tiers of the health system. It encompasses performance indicators previously included in the National Health Performance Framework (NHPF) for national reporting and the Performance and Accountability Framework (PAF) for reporting at the hospital/Local Hospital Network- level or by Primary Health Network. The AHPF has been agreed by Australian and state/territory health ministers.
- National Healthcare Agreement (NHA)—agreed performance indicators and benchmarks are reported annually. The performance indicators presented here are based on data for 2022–23 and on specifications used for reporting on the 2024 NHA performance indicators.
- The Australian Commission on Safety and Quality in Health Care (ACSQHC) also has performance reporting-related roles under the National Health Reform Agreement, reporting publicly on the state of safety and quality, including performance against national standards (ACSQHC 2013).
- Review of Government Service Provision—information on the equity, efficiency, and effectiveness of government services (including hospitals) is also reported by the Steering Committee for the Review of Government Service Provision in the annual Report on Government Services (SCRGSP 2019).

The AIHW provides data from its national hospitals databases to support this range of reporting, and reports on many of the hospitals-related performance indicators each year in the Australian hospital statistics series, under the Australian Health Performance Framework and via [MyHospitals](#), now on the AIHW website.

This appendix presents information about the hospital performance and other indicators that are based on hospital data and reported in the Australian hospital statistics reports, within the context of the AHPF.

The Australian Health Performance Framework

The AHPF was agreed by Australian and state/territory health ministers. It provides a single, enduring framework that can be used in different ways to assess the Australian health care system and its inputs, processes, and outcomes (NHIPPC 2017). It replaces the NHPF and the PAF, which had separate but interrelated purposes.

The AHPF comprises a Health System Conceptual Framework, and a Health System Performance Logic Model:

- The conceptual framework depicts the 3 indicator domains relevant to assessing the health system as a whole: ‘Health status’, ‘Determinants of health’, and ‘the health system’. The conceptual framework also identifies information that is relevant in the planning, delivery, and evaluation of health services as ‘health system context’. The dimensions of the health system that would ideally be assessed in a comprehensive performance framework are outlined in Table C1.

The principle of ‘Equity’ applies across all domains and should be reflected in appropriate reporting.

- The performance logic model presents similar domains to the conceptual model and could be used to evaluate the outcome of specific health programs, initiatives, and interventions—that is, in a performance measurement context.

Table C1: The Australian Health Performance Framework—Health System dimensions

<p>Effectiveness</p> <p>Care, intervention, or action achieves desired outcome from both the clinical and patient perspective, including as patient reported outcomes.</p> <p>Care provided is based on evidence-based standards.</p>	<p>Safety</p> <p>The avoidance or reduction to acceptable limits of actual or potential harm from health-care management or the environment in which health care is delivered.</p> <p>Includes aspects of the safety of care delivered to health care providers and patients. Including patient reported incidents.</p>
<p>Appropriateness</p> <p>Service is person centred and culturally appropriate. Consumers are treated with dignity, confidentiality and encouraged to participate in choices related to their care.</p> <p>Consumers report positive outcomes and experiences.</p>	<p>Continuity of care</p> <p>Ability to provide uninterrupted, care or service across programs, practitioners, and levels over time.</p> <p>Coordination mechanisms work for health care providers and the patient.</p>
<p>Accessibility</p> <p>People can obtain health care at the right place and right time, taking account of different population needs and the affordability of care.</p>	<p>Efficiency and sustainability</p> <p>The right care is delivered at minimum cost.</p> <p><i>and</i></p> <p>Human and physical capital and technology are maintained and renewed.</p> <p><i>while</i></p> <p>Innovation occurs to improve efficiency and respond to emerging needs.</p>

What data are reported?

This report presents 15 hospital performance indicators and 5 other indicators based on data for 2022–23 that have been included in other AIHW hospitals reports (see Table C2). These include NHPF and NHA indicators, mapped to the relevant AHPF dimensions and OECD indicators.

Indicators related to hospital performance are listed in Table C.2 against the 6 AHPF dimensions. Some indicators can be related to more than one dimension of the AHPF, even though they are presented here against only one. Table C.2 also relates each indicator to a set of nationally agreed performance indicators.

Information is also included for another three indicators that are calculated using hospitals data but do not relate to hospital performance; they are listed in Table C.3.

Table C2: National hospital performance indicators, by Australian Health Performance Framework component

Where?	Dimension/Indicator	Related national indicator set	
		NHA	AHPF
	Effectiveness		
	No indicators available for hospital performance		
	Safety		
S8.9–S8.13	Adverse events treated in hospitals		✓
AHS: SAB	Health-care associated infections	✓	✓
Table 8.7	Falls resulting in patient harm in hospitals		
	Accessibility		
Table 6.5	OECD indicator: Number of caesarean sections per 100 live births		
Table 6.5	OECD indicator: Number of coronary revascularisation procedures per 100,000 population		
Table 6.5	OECD indicator: Number of hip and knee replacement surgeries per 100,000 population		
Tables 6.7, S6.1, S6.2 and S6.3	Differential access to hospital procedures		✓
AHS: ED	Waiting time for emergency hospital care: proportion seen on time	✓	✓
AHS: ED	Waiting time for emergency hospital care: proportion of emergency department presentations completed in 4 hours or less	✓	✓
AHS: ESWT	Waiting times for elective surgery: waiting times in days	✓	✓
AHS: ESWT	Waiting times for elective surgery: proportion seen on time	✓	✓
	Efficiency & sustainability		
Table 2.11	Average length of stay for selected AR-DRGs		
Table 2.10	OECD indicator: Length of stay		
Table 6.6	OECD indicator: Proportion of appendectomies that were performed laparoscopically		
Table 6.6	OECD indicator: Proportion of cholecystectomies that were performed laparoscopically		
Table 6.6	OECD indicator: Proportion of 'hernia repair' that were performed on a same-day basis		

AHS: ED—Emergency department care: Australian hospital statistics.

AHS: ESWT—Elective surgery waiting times: Australian hospital statistics.

AHS: SAB—Staphylococcus aureus bacteraemia in Australian hospitals: Australian hospitals statistics.

AR-DRG—Australian Refined Diagnosis Related Group.

NHA—National Healthcare Agreement.

AHPF—Australian Health Performance Framework.

OECD—Organisation for Economic Cooperation and Development.

Table C.3: Other performance indicators that use hospitals data in this report

Where	Indicator	Related national indicator set	
		NHA	AHPF
Tables 8.1–8.4	Selected potentially preventable hospitalisations (a measure of the Effectiveness of primary care)	✓	✓
Tables 4.12 and 4.13	Hospitalisations for injury and poisoning (a measure in the 'Health status' domain)		✓
Table 4.16	Hospital patient days used by those eligible and waiting for residential aged care	✓ Proxy	

NHA—National Healthcare Agreement.

AHPF—National Health Performance Framework.

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