

Appendix 3: Technical notes

Definitions

If not otherwise indicated, data elements were defined according to the 2002–03 definitions in the *National Health Data Dictionary* version 11.0 (AIHW 2002b) (summarised in the Glossary).

Data presented by state or territory refer to the state or territory of the hospital, not to the state or territory of the usual residence of the patient. The exceptions are Tables 4.6 to 4.9, 7.11 and 7.12, 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 in Tables 6.6, 6.7 and 6.8.

Data presentation

Except as noted, where totals are provided in the tables, they include data only for those states and territories for which data were available, as indicated in the tables. The exceptions relate to tables in which data for some jurisdictions were not published, for confidentiality reasons (private hospitals), or because only one public hospital was represented in the cell, or because a proportion related to a small number of events and was therefore not very meaningful. The abbreviation 'n.p.' has been used in these tables to denote this. Information for selected diagnoses, procedures and AR-DRGs was suppressed if there were fewer than 50 private hospital separations reported for the selected code and fewer than three reporting units (hospitals, or states or territories where the hospitals were not individually identified), or there were three reporting units and one contributed more than 85% of the total separations, or two contributed more than 90% of the separations for the selected diagnoses, procedures or AR-DRGs. Data on elective surgery waiting times have been suppressed if there were fewer than 10 elective surgery admissions in the category being considered.

Throughout the publication, percentages may not add up to 100.0 due to rounding. Percentages and population rates printed as 0.0 or 0 may denote less than 0.05 or 0.5, respectively.

Population rates

Population rates presented in Chapters 2, 4, 6 and 7 are age-standardised, calculated using the direct standardisation method and 5-year age groups. The total Australian population for 30 June 2001 was used as the population for which expected rates were calculated. The Australian Bureau of Statistics' population estimates for 31 December 2002 were used for the observed rates (Table A3.1 accompanying this report on the website). The exceptions were Tables 4.7, 4.9, 7.10, 7.12, 8.18 and 9.19, and Figures 7 and 8 for which the 30 June 2002 population estimates (by selected countries/regions of birth and Remoteness Areas, as appropriate) were used for the observed rates and Figure 7.7 for which the estimated resident population for 30 June 2001 was used for Indigenous population data (Tables A3.2,

A3.3 and A3.4 accompanying this report on the website). Crude population rates in Chapters 2, 3, 5, 8, 9 and 11 were calculated using the population estimates for 31 December 2002.

Standardised separation rate ratios

For some tables reporting comparative separation rates (Tables 4.6, 4.7, 4.8, 4.9, 7.11 and 7.12), standardised separation rate ratios (SRRs) are presented. The ratios 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). In these tables a 95% confidence interval for the SRR has also been presented. The calculations are as follows:

Standardised separation rate ratio = observed rate/expected rate

Standard error (SRR) = $\sqrt{\text{observed rate/expected rate}}$

95% confidence interval (SRR) = SRR \pm 1.96 \times Standard error (SRR)

A confidence interval for the separation rate can be obtained by multiplying the upper and lower 95% confidence levels for the SRR by the crude rate for the population.

Thus a standardised separation ratio of 1 indicates that the population of interest (for example, Indigenous peoples) 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. If the 95% confidence interval of the SRR contains 1, the rate for the population of interest is not significantly different (at the 95% confidence level) from that of the comparison population. Similarly, if the 95% confidence interval does not contain 1, then there is a significant difference (at the 95% confidence level).

Newborn episodes of care

The *Newborn* care type was introduced in 1998–99 for the hospital morbidity data to report a single episode of care for all patients aged 9 days or less at admission, regardless of their qualification status and whether they changed qualification status during their hospital stay. Thus these episodes can include qualified days only, a mixture of qualified days and unqualified days, or only unqualified days. Qualified days are considered to be the equivalent of acute care days and *Newborn* episodes with qualified days only are considered to be equivalent to *Acute care* episodes. *Newborn* episodes with no qualified days are considered to be equivalent to the previous category, *Unqualified neonate*. In this report, *Newborn* episodes with at least one qualified day have been included in all the tables reporting separations. Records for *Newborn* episodes with no qualified days do not meet admission criteria for all purposes, so they have been excluded from this report, except as specified in Chapter 6.

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.

Tasmanian public hospitals and private hospitals in Victoria and South Australia did not report any newborn episodes with a mixture of qualified and unqualified days (Table 6.9). For Tasmania, where a newborn's qualification status was considered qualified at any point during their episode of care, the entire episode was reported as qualified days. As a consequence of the reporting method used the number of *Newborns* with qualified days only

will include newborns that may have had an unqualified component in their stay. For this reason the average length of stay for *Newborns* with qualified days only in Tasmanian public hospitals is not directly comparable to that in other states.

The Northern Territory did not use this *Newborn* definition in 2002–03 but reported a new episode of care for patients aged less than 10 days at admission with each change in qualification status. The reporting method may mean that there were more separations for patients under the age of 10 days for this jurisdiction, relative to others, and the Northern Territory are currently reviewing the calculation of qualified days for newborns.

Information on reporting practices for *Newborn* episodes prior to 2002–03 is available in *Australian Hospital Statistics 2001–02* (AIHW 2003a).

Hospital boarders and posthumous organ procurement

For some states and territories, the data provided to the National Hospital Morbidity Database included records for *Hospital boarders* and for *Posthumous organ procurement* activity (see Glossary). These records are provided on an optional basis as they do not represent admitted patient care.

The records for *Hospital boarders* were excluded from this report, as this activity is not admitted patient care. There were 32,650 records for *Hospital boarders* reported to the National Hospital Morbidity Database in 2002–03, mainly from Western Australia, Queensland and the Northern Territory, with some records from New South Wales and Tasmania (Table A3.12).

Similarly, records for *Posthumous organ procurement* activity were excluded from this report, as this activity is also not admitted patient care. There were 67 records of *Posthumous organ procurement* reported to the National Hospital Morbidity Database in 2002–03. Most of these records were from Queensland and Western Australia, with small numbers from the Northern Territory, Tasmania and New South Wales. No records were provided by Victoria, South Australia and the Australian Capital Territory (public hospitals). The number of records for *Posthumous organ procurement* for Queensland, Western Australia, Tasmania and the Northern Territory were similar to the figures reported to the Australia and New Zealand Organ Donation Registry for organ donation in those states/territories during the year ending December 2002. However, the numbers of records for New South Wales were lower than those reported to the registry and may indicate that not all of this activity is able to be identified in the National Hospital Morbidity Database. Information on the number of organ donations collated by the Australia and New Zealand Organ Donation Registry is at <http://www.anzdata.org.au/>.

ICD-10-AM coded data

Diagnosis, procedure and external cause data for 2002–03 were reported to the National Hospital Morbidity Database by all states and territories using the third edition of the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification* (ICD-10-AM) (NCCH 2002).

Introduction of the third edition of ICD-10-AM

The following is a summary of the major changes between the second and third editions of ICD-10-AM (NCCH 2001). These and other changes should be considered when comparing data in this report with data reported previously using the second edition of ICD-10-AM.

Diseases

A significant number of disease codes were expanded at fourth or fifth character level to provide more detail. These included P07 *Disorders related to short gestation and low birth weight, not elsewhere classified*, F32 *Depressive episode*, and Z06 *Infection with drug-resistant microorganism*. Chapter XVI *Certain conditions originating in the perinatal period* (P00–P96) and Chapter XVII *Congenital malformations, deformations and chromosomal abnormalities* (Q00–Q99) were expanded to update the classification in line with the British Paediatrics Association version of ICD-10. These changes are not likely to have significantly affected the statistics included in this report.

The requirement to report the ICD-10-AM code for the ‘underlying cause of disease’ (aetiology), followed by the ICD-10-AM code for the ‘manifestation’ of the disease has been removed from 68 codes (where this resulted in a duplication of information). This is likely to have had the effect of reducing the number of separations reported for some codes describing the aetiology of conditions.

Morphology

Cancer morphology codes were reviewed in light of the release of International Classification of Diseases for Oncology, Third Edition (ICD-O-3). ICD-O-2 was published in the late 1980s and, following that, significant changes to the classification of morphology occurred. This was particularly important in the lymphoproliferative disorders (leukaemia and lymphoma) where knowledge about their classification progressed quickly and made ICD-O-2 inappropriate. Morphology codes are optionally reported to the National Hospital Morbidity Database but are not presented in *Australian Hospital Statistics 2002–03*.

External causes

The ICD-10-AM codes within the Chapter XX *External causes of morbidity and mortality* (V01–Y98) were expanded to improve the detail in reporting on cause of injuries. Many of the changes were made with direct reference to the International Classification of External Causes of Injury. Categories which were expanded include X20–X29 *Contact with venomous animals and plants*, X85–Y09 *Assault*, V90–V94 *Water transport accidents* and W00–W19 *Falls*. These changes have not affected the statistics in this report.

The category Y93 *Activity* was deleted and the codes for Activity-when-injured were expanded in the new category U50–U73 *Activity* (as summarised in Table 10.6). Most of the expansion has occurred in the section U50–U72 *While engaged in sports and leisure*. Many sporting activities previously bundled under Y93.08 *While engaged in sports, other* now have specific codes, for example: U61.32 *Karate*, U53.1 *Jet skiing* and U56.1 *Jogging and running*.

Procedures

In the third edition of ICD-10-AM, the procedure classification (Volumes 3 and 4) was renamed the Australian Classification of Health Interventions (ACHI). Modifications based

on changes to the Medicare Benefits Schedule (MBS) from November 1999, May 2000, November 2000 and May 2001 were included.

The first edition of ACHI (then known as MBS-Extended) was closely aligned with MBS, both in the numbering system and terminology. The MBS uses diagnostic information to describe many item numbers and this feature was maintained in MBS-Extended. However, in the third edition of ICD-10-AM, a number of diagnostic terms were deleted from code titles, in line with the principle that a procedure classification should describe only the procedure performed.

The anaesthetic codes were reviewed to provide a more concise and user-friendly code structure, and impact on the statistics in this report. The patient's American Society of Anesthesiologists (ASA) Physical Status Classification is included in the new code structure as the last two characters of the anaesthetic code.

Significant changes were also made in the classification of spinal procedures (fusion, laminectomy, discectomy), colorectal surgery, urinary diversions, spinal angiography and allied health interventions. These changes may have impacted on the statistics in this report.

Australian Coding Standards

Fourteen new Standards were included in the third edition of ICD-10-AM and a further 68 Standards were amended. A further 18 Standards were deleted as a result of new codes, index improvements or amalgamation with other Standards. Some of these changes may have affected the statistics in this report.

Australian Coding Standard 0002 *Additional diagnoses* contains additional guidelines to further clarify the application of this standard. The specific criteria for defining an additional diagnosis were not altered. Australian Coding Standard 0020 *Multiple/bilateral* procedures was revised with increased emphasis on coding procedures as often as they are performed. For example, the excision of skin lesions under anaesthesia should be coded as often as performed for multiple skin lesions.

Quality of ICD-10-AM coded data

The quality of coded diagnosis, procedure and external cause data can be assessed using coding audits in which, in general terms, selected records are independently recoded, 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 following information has, however, been provided by the states and territories to provide some insight into the quality of the coded data in the National Hospital Morbidity Database.

An inaugural statewide coding audit was performed on public hospitals in New South Wales in 2003. The audit was performed on 85 hospitals and approximately 0.5% of public hospital separations. The overall result was that 15.9% of records across the state wide audit sample changed AR-DRG; this figure varied between hospitals and Area Health Services. It was determined that this change rate was impacted by many factors, and is not solely a reflection of clinical coder competency. The impact of the changed AR-DRGs on weighted separations was negligible; the statewide change was close to 0%.

No audit of 2002–03 ICD-10-AM coded data was conducted in Victoria but the previous audit of 2000–01 indicated that the data were of high quality.

Coding quality checks are regularly conducted by source hospitals in Queensland, and ICD-10-AM validations are automatically conducted as part of the general processing of morbidity data. In addition, comprehensive statewide audits of coding quality are conducted periodically, with the next of these organised for 2004–05. As well as providing general information on coding quality, the findings of the forthcoming audit will also aid in the development of an educational program for clinical coders in Queensland.

For the year 2002–03 the Western Australian Department of Health performed audits on random samples of general records from teaching, non-teaching and rural hospitals as well as targeted samples of cases with high risk of error (based on previously compiled error profiles). The audits aimed to assess the accuracy of ICD-10-AM coding and to check compliance with other recording requirements. The clinical codes sent to the Western Australian Department of Health were also checked using the NCCH's Performance Indicators for Coding Quality (PICQ) software and in-house routines. These checks led to an improvement in the coded information.

In 2002–03, South Australia continued its coding data quality program, which is overseen by the South Australia Coding Committee in conjunction with individual coding managers and regional health information management advisory services. Following the external audit findings conducted on 2001–02 data, there has been a significant review of all site-specific coding standards and work processes to ensure compliance with national standards and promotion of consistency in interpretation of conventions between sites. Coding workforce competency is also being assessed at a statewide level through an advanced level re-assessment of coding skills.

In Tasmania, individual hospitals continue to conduct in-house audits using the NCCH's Australian Coding Benchmark Audit method. The results of these audits have shown a minimal error rate. PICQ is also used to assist in the identification of potential areas of poor coding quality. The Tasmanian Department of Health and Human Services also conducted a statewide coding data audit. This included public hospitals and private hospitals that provided services to public patients under contractual arrangements.

In November 2003, Australian Capital Territory Health undertook an external coding audit of medical records at its two public hospitals. This measure is part of a continuous process to drive improvements in the quality of coded data by measuring shifts in AR-DRGs and changes in cost weights. The findings are used as a tool for coder education and training.

The Northern Territory Coders' Forum continued monthly mini-audits throughout the year. These audits involved each hospital coder coding the same specific case, with the answers being reviewed by forum members. In addition to the mini-audits, the hospitals regularly run reports on AR-DRGs and review of these reports can result in coding being checked and revised.

ICD-10-AM codes used for selected analyses

A number of tables in this report use ICD-10-AM codes to define diagnoses and procedures. The codes are presented in Table A3.13 (accompanying this report on the website) and relate to:

- Figures 6, 10, 11, 12 and 13 in the *Hospitals at a glance* section
- Tables 4.6 and 4.7, which present statistics on selected procedures

- Tables 4.8 and 4.9, which present statistics on selected potentially preventable hospitalisations
- Table 4.14 which presents statistics indicating adverse events associated with hospitalisations.

Data on geographical location

Data on geographical location are collected on hospitals in the National Public Hospital Establishments Database and on the area of usual residence of patients in the National Hospital Morbidity Database. These data have been provided as Statistical Local Area (SLA - a small unit within the Australian Bureau of Statistics' Australian Standard Geographic Classification) and/or postcode, and have been aggregated to Statistical Divisions and Remoteness Areas. The classification's remoteness structure categorises geographical areas into Remoteness Areas, described in detail on the Australian Bureau of Statistics' website site at <http://www.abs.gov.au>.

The classification is as follows:

- major cities of Australia
- inner regional
- outer regional
- remote
- very remote.

Geographical location of hospital

The Remoteness Area of each public hospital was determined by the AIHW in cooperation with the states, territories, the Department of Health and Ageing (DoHA) and the Australian Bureau of Statistics. DoHA provided geo-coded data (with latitude and longitude) for each hospital that was recorded on the Health Insurance Commission Database as having provided services to private patients. The geo-coded data were checked by states and territories and were then allocated to the Remoteness Area in which they were located. For a very small number of public hospitals, geo-coded data were not available. The Remoteness Area for these was assigned on the basis of their SLA, or actual location. The AIHW and the states and territories then reviewed the Remoteness Area allocation against SLA-based information.

Data on the Remoteness Area of hospitals are presented in Chapter 2 (Table 2.6) and Chapter 3 (Table 3.2).

Geographical location of usual residence

Data on the Remoteness Area of usual residence of admitted patients are presented in Figure 8 in *Hospitals at a glance* section, Table 4.7 and Table 4.9, and in Table 7.12. Data on the state or territory of usual residence are reported in Chapter 4 (Tables 4.6 and 4.8), Chapter 6 (Tables 6.6, 6.7 and 6.8), and data on the Statistical Division of usual residence of admitted patients are presented in maps in Chapter 7 (Figures 7.8 and 7.9). Data for the two Statistical

Divisions in the Australian Capital Territory were combined for mapping purposes because of the very small population of one of the Statistical Divisions.

The data used for these maps and tables were derived from data supplied for each separation by the states and territories for the National Hospital Morbidity Database on the area of usual residence of the patients. The *National Health Data Dictionary* specifies that these data should be provided as the state or territory and the SLA of usual residence. Although most separations included data on the state or territory of usual residence, not all states and territories were able to provide information on the area of usual residence in the form of an SLA code, using the 2002 edition of the ASGC. New South Wales, Victoria, Tasmania, the Australian Capital Territory and the Northern Territory were able to provide SLA codes for both patients usually resident in the jurisdiction and patients not usually resident in the jurisdiction. Queensland and South Australia provided SLA codes for patients usually resident in the jurisdiction and postcodes for patients not usually resident in the jurisdiction. Western Australia provided postcodes both for patients usually resident in the jurisdiction and for patients usually resident elsewhere.

The AIHW mapped the supplied area of residence data for each separation to 2002 SLA codes and to Remoteness Area categories. This was undertaken on a probabilistic basis as necessary, using ABS concordance information describing the distribution of the population by postcode, Remoteness Areas and SLAs (2002 and previous years). The mapping process identified missing, invalid and superseded codes, but resulted in 99.3% of records being assigned 2002 SLA codes. Due to the probabilistic nature of this mapping, the SLA and Remoteness Area data for individual separations may not be accurate, however, the overall distribution of separations by geographical areas is considered useful.

Cost per casemix-adjusted separation

The cost per casemix-adjusted separation (Tables 4.1, 4.2, 4.3) is an indicator of the efficiency of public acute care hospitals. It is a measure of the average recurrent expenditure for each admitted patient, adjusted using AR-DRG cost weights for the resources expected to be used for the separation. Expenditure data for New South Wales are preliminary and tables relating to these data will be updated on the AIHW website when the data have been finalised (Tables A3.6 and A3.7). A synopsis of the methods used in this analysis is presented below, and more detail is available in *Australian Hospital Statistics 2000–01* (AIHW 2002a).

Definition

The formula used to calculate the cost per casemix-adjusted separation is:

$$\frac{\text{Recurrent expenditure} \times \text{IFRAC}}{\text{Total separations} \times \text{Average cost weight}}$$

where:

- Recurrent expenditure is as defined by the recurrent expenditure data elements in the *National Health Data Dictionary* (with depreciation excluded)
- IFRAC (admitted patient cost proportion) is the estimated proportion of total hospital expenditure that related to admitted patients

- Total separations includes all care types, including those other than acute. It excludes *Newborn* care with no qualified days, as defined in the Glossary, and records that do not relate to admitted patients (boarders and posthumous organ procurement)
- Average cost weight is a single number representing the relative expected resource use for the separations.

Recurrent expenditure

For the medical labour cost category, data are available only for public patients, as private patients are charged directly by their doctor for medical services, and these charges are not included in the recurrent expenditure figures. The proportion of patients other than public patients can vary so, to take this into account, medical costs for these patients are estimated, and expenditure increased to resemble what it would be if all patients had been public patients. The estimation is based on the salary/sessional and VMO expenditure per patient day for public patients, applied to all patients.

Admitted patient cost proportion

To determine the costs associated with admitted patients, an admitted patient cost proportion (or inpatient fraction, IFRAC) is used. The IFRAC is the proportion of total hospital expenditure that related to the provision of care for admitted patients, provided to the AIHW for most hospitals by the states and territories. For a few small hospitals where the IFRAC was not available, the admitted patient costs were estimated using the Health and Allied Services Advisory Council (HASAC) ratio.

Total separations

The formula used to calculate the cost per casemix-adjusted separation includes all admitted patient separations and their associated costs. It is appropriate to include the acute care separations, which comprise 97% of the total for the hospitals included in the analysis (Table A3.5), as cost weights are available for them. However, the 3% of separations that are not acute care are also included and, as there are no cost weights for these separations, the average cost weight for the acute separations for each hospital is used. This means, however, that the estimates of cost-weighted separations (see below) are affected for each state and territory, and the extent to which they are affected depends on the proportion of non-acute separations in that state or territory. The non-acute admitted patients (including rehabilitation care patients) will generally have higher costs per separation than acute care patients because, although their daily costs are lower, these patients typically have longer lengths of stay. (See below for examples relating to hospitals in some states.)

Comparisons between the states and territories should therefore take into consideration the uncertainty introduced by these episodes for which the cost weights were unavailable. Table A3.5 shows that there is significant variation in the number and length of stay for these separations between jurisdictions.

There is also some variation between states and territories in the ways in which periods of hospitalisation are split into episodes of care (see above in relation to *Newborn* care, for example). In states or territories where there is a clear delineation in funding arrangements between acute and non-acute services, splitting episodes into acute and other components may be different from where there is no such funding delineation.

To refine the method to remove this anomaly would require estimates of expenditure for acute care for admitted patients (acute care IFRACs). For 2002–03, such estimates were available for some jurisdictions, as presented below.

Average cost weights

Hospital morbidity data provided to the National Hospital Morbidity Database were used to estimate average cost weights for the groups of hospitals reported in this analysis. The 2001–02 version 4.2 cost weights were applied to 2002–03 version 4.2 AR-DRGs as the National Hospital Cost Data Collection 2002–03 weights were not available at the time of publication.

As noted above, because cost weights are only available for acute care separations, the cost per casemix-adjusted separation analysis applies these cost weights to all separations.

The average cost weight for a hospital or group of hospitals (Table 4.2, for example) is calculated as the number of casemix-adjusted separations divided by the number of separations. It represents in a single number the overall relative expected use of resources by a hospital. For example, a hospital with an average cost weight of 1.08 has an 8% more costly casemix than the national average (by design equal to 1.00).

The average cost weight for a group of hospitals is multiplied by the total number of separations for that group to produce the number of casemix-adjusted separations (the denominator for the cost per casemix-adjusted separation analysis). The term ‘cost per casemix-adjusted separation’ derives from this use of the number of separations adjusted by relative costliness.

The validity of comparisons of average cost weights is limited by differences in the extent to which each jurisdiction’s psychiatric services are integrated into its public hospital system. For example, in Victoria, almost all public psychiatric hospitals are mainstreamed into acute hospital services and psychiatric patient data are therefore included in the acute hospital reports. Cost weights are not as useful as measures of resource requirements for acute psychiatric services because the relevant AR-DRGs are less homogeneous than for other acute services.

Cost per acute care and non-psychiatric acute care casemix-adjusted separation

Because cost weights are only available for acute care separations, the cost per casemix-adjusted separation analysis applies these cost weights to all separations. Thus, the methodology would be refined if cost weights became available for other care types, or if the analysis were to be restricted to acute care activity and expenditure. As AR-DRG cost weights are likely to be less useful as measures of resource requirements for psychiatric acute care than for other acute care, a further refinement would be to restrict the analysis to non-psychiatric acute care activity and expenditure. Expenditure data for New South Wales are preliminary and tables relating to these data will be updated on the AIHW website when the data have been finalised (Tables A3.6 and A3.7).

Restriction to acute care activity requires estimates to be made by the states and territories of expenditure on acute care admitted patients (supplied as acute care IFRACs), and for separations relating to non-acute care patients to be excluded from the analysis. Restriction to non-psychiatric acute care activity requires estimates to be made by the states and territories of expenditure on non-psychiatric acute care admitted patients (supplied as non-

psychiatric acute care IFRACs), and for separations relating to non-acute care patients and to psychiatric acute care patients to be excluded from the analysis. The exclusion of psychiatric acute care activity is done by excluding separations if one or more psychiatric care day (indicating care provided in a specialised psychiatric unit) is reported for the separation.

This methodology is still under development, and issues to be resolved include the consistency of counting separations that are not acute and the method used to identify psychiatric separations.

New South Wales, Victoria, Western Australia and South Australia provided estimates of expenditure on acute care admitted patients, so estimates of the cost per casemix-adjusted acute care separation are presented for these jurisdictions (Table A3.6). Separations were included only if their care type was acute, or was not reported, or was *Newborn* and had qualified days.

For Victoria, Western Australia and South Australia, reported acute care and non-psychiatric acute care IFRACs were the same as the IFRACs for all care types combined for some hospitals that nevertheless reported non-acute admitted patient care activity. Those hospitals were excluded from the analysis if they reported more than 1,000 patient days for non-acute separations. For Victoria 13 hospitals were excluded from the analysis (representing 27% of separations): four principal referral hospitals, one specialist women's and children's hospital, one large hospital, four medium hospitals and two small rural acute hospitals. For Western Australia, there were 7 hospitals excluded (43% of separations): two principal referral hospitals, one large and four medium hospitals. For South Australia, there were 2 hospitals excluded (19% of separations): one principal referral and one large hospital.

For New South Wales acute care IFRACs were reported for several hospitals that gave an estimated cost per day of over \$1,000, which was considered an unreasonably high estimate for non-acute care types. Five hospitals with over 1,000 patient days estimated to cost more than \$1,000 per day were omitted (representing 12% of separations): three principal referral and two medium hospitals.

The estimated cost per acute care casemix-adjusted separation for the selected hospitals was \$ 3,104 in New South Wales, \$3,070 in Victoria, \$3,324 in Western Australia and \$2,897 in South Australia. The cost per casemix-adjusted separation for all separations in these hospitals was \$ 3,215, \$3,321, \$3,419 and \$2,905 respectively, so the effect of restricting the analysis to acute care admitted patients was to decrease the estimated cost by 3.5%, 7.6%, 2.8% and 0.3% respectively.

The estimated cost per acute non-psychiatric casemix-adjusted separation for the selected hospitals was \$3,120 in New South Wales, \$3,099 in Victoria and \$3,346 in Western Australia (Table A3.7). The effect of restricting the analysis to acute non-psychiatric admitted patients was to decrease the estimated cost by 3.8%, 6.7% and 2.1% respectively.

These analyses would be further improved if all jurisdictions increased their capacity to separate costs for psychiatric services, other acute services, sub-acute services (e.g. rehabilitation) and non-acute services.

Total cost per casemix-adjusted separation

The cost per casemix-adjusted separation analysis includes only recurrent expenditure, and does not include capital expenditure of any type. There are concerns about the quality and comparability of available capital expenditure data, and they are not provided to the AIHW by all states and territories. The concerns about the comparability of the data include

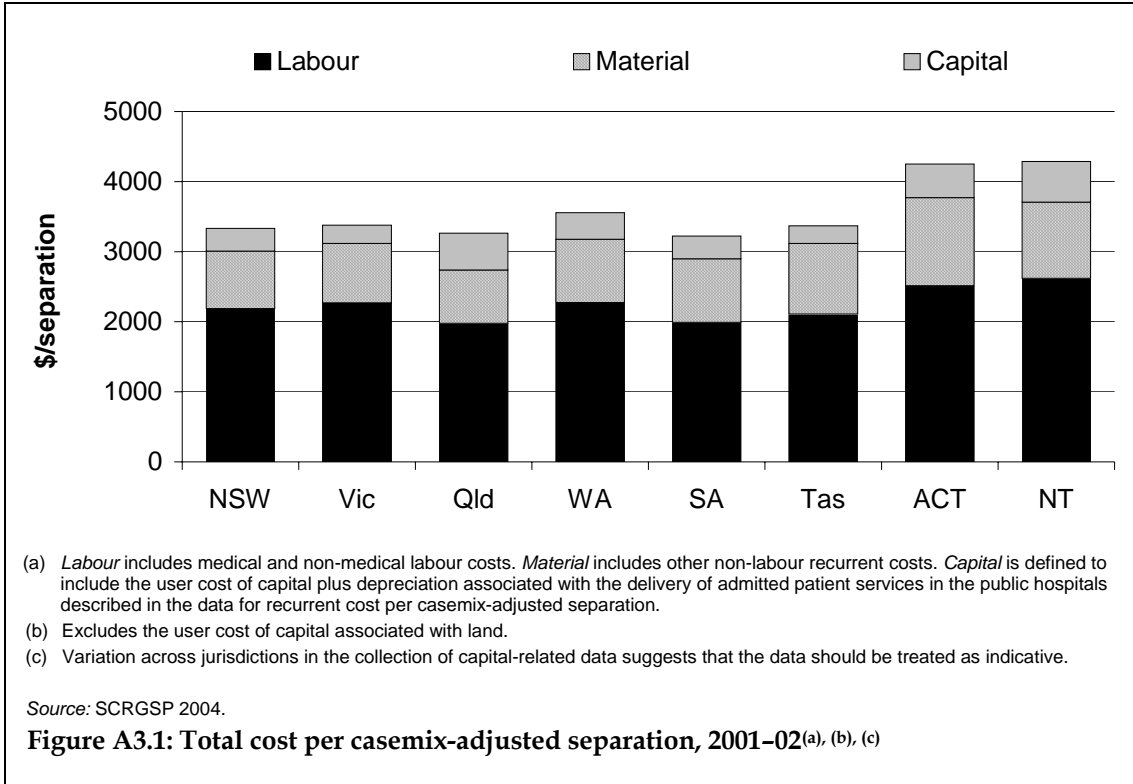
variation among the jurisdictions in the type of expenditure that is defined as recurrent and capital, respectively.

The SCRGSP reported total costs per casemix-adjusted separation by state and territory for 2001–02 (SCRGSP 2004). It was defined as the recurrent cost per casemix-adjusted separation plus the capital costs (depreciation and the user cost of capital of buildings and equipment) per casemix-adjusted separation.

The Steering Committee for the Review of Government Service Provision (SCRGSP) notes that ‘depreciation is defined as the cost of consuming an asset’s services, and 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 and is equivalent to the return forgone from not using the funds to deliver other government services or to retire debt. Interest payments represent a user cost of capital and so should be excluded from recurrent expenditure where user costs of capital are calculated separately and added to recurrent costs. Interest expenses were deducted directly from capital costs in all jurisdictions to avoid double counting.’

Total cost per casemix-adjusted separation by jurisdiction (including capital costs), as published by SCRGSP for 2001–02, is presented in Figure A3.1. The data exclude the user cost of capital associated with land. Excluding the users cost of capital for land, the total cost per casemix-adjusted separation ranged from \$4,289 in the Northern Territory to \$3,224 in South Australia (SCRGSP 2004).

Further details about the SCRGSP calculation of total cost per casemix-adjusted separation are available in the *Report on Government Services 2004* (SCRGSP 2004).



Relative stay index

Relative stay indexes (RSIs) have been identified as indicators of efficiency and are presented in Tables 2.3, 4.1, 4.2, 4.3, 4.11, 4.12, 11.1 and 11.2. They are calculated as the actual number of patient days for separations in selected version 4.2 AR-DRGs, divided by the number of patient days expected (based on national figures) standardised for casemix. An RSI greater than 1 indicates that an average patient's length of stay is higher than would be expected given the casemix for the group of separations of interest. An RSI of less than 1 indicates that the length of stay was less than would have been expected.

The standardisation for casemix (based on the AR-DRG and age of the patient for each separation) allows comparisons to be made that take into account variation in types of services provided, but does not take into account other influences on length of stay, such as Indigenous status.

The method used is to standardise on the basis of the AR-DRG and age (as a cubic regression). Acute care separations only are included. Excluded from the analysis are:

- AR-DRGs which are overwhelmingly same day: R63Z Chemotherapy and L61Z Admit for renal dialysis
- AR-DRGs with a length of stay component in the definition
- 'rehabilitation' AR-DRGs
- error AR-DRGs 960Z, 961Z, 962Z and 963Z
- separations for patients who died or were transferred within two days of admission
- separations with length of stay greater than 120 days.

These inclusions and exclusions are further detailed in Appendix 4 of *Australian Hospital Statistics 2000–01* (AIHW 2002a).

Standardisation methods

Two methods are used for standardisation of the length of stay data, and are analogous to direct and indirect age-standardisation methods. The method used generally in this report is analogous to indirect standardisation where the national rates (ALOS) for each AR-DRG (version 4.2) are applied to the relevant population of interest (number of separations for each AR-DRG in the hospital group) to derive the expected number of patient days. Indirect standardisation methods are generally used when rate information for the population of interest (ALOS for each AR-DRG in this analysis) is unknown or subject to fluctuation due to small population sizes. This method provides a measure of efficiency for a hospital, or group of hospitals, based on their actual activity. However, an indirectly standardised rate compares a group with a 'standard population rate' so, using this method, rates for different groups are not strictly comparable because each group has a different casemix to which the national ALOS data have been applied. Hence, technically, the indirectly standardised data for hospital groups should be compared with the national average of 1.00.

The second method is analogous to direct standardisation where the rate (ALOS) of each AR-DRG for the group of interest is multiplied by the national population (total number of separations in each AR-DRG) to derive the expected number of patient days. This method provides a measure of efficiency for a hospital, or group of hospitals, and is suitable if all or most AR-DRGs are represented in hospital group. Direct standardisation methods are

generally used where the populations and their characteristics are stable and reasonably similar, for example for total separations for New South Wales and Victoria.

Groups can be compared using directly standardised rates as the activity of each group is weighted using the same set of weights, namely the national casemix. However, the ALOS data for missing AR-DRGs need to be estimated. The method used in this report uses an assumption that the missing AR-DRGs for the hospital group had a relative length of stay that was the same as that for the reported AR-DRGs for the hospital group, weighted by the national distribution of the reported AR-DRGs in the group. Another weakness of direct standardisation is that this method can scale up AR-DRGs to have an impact that does not reflect their relative volume in a hospital group. This weakness can be particularly problematic if the low-volume AR-DRGs are atypical.

The indirectly standardised method has been mainly used in this report, because of the weaknesses of the directly standardised method. However, the directly standardised methodology has been used (in addition to the indirect standardisation) in Table 4.12. This allows comparison between the two methods and more direct comparison for those jurisdictions and sectors for which the data are presented. Given the problems with using direct standardisation for hospital groups that reported a limited range of AR-DRGs, data for the directly standardised method in the public sector in the Northern Territory are suppressed in Table 4.12. For public hospitals in the Northern Territory, fewer than 600 of the 639 DRGs used in the national RSI analysis are represented so results are likely to have been affected by estimation of the missing ALOS data.

Table A3.8 shows the number of AR-DRGs represented in each cell in Table 4.12, so that the number of AR-DRGs for which ALOS was estimated can be derived. For those jurisdictions and sectors for which RSI statistics are presented in Table 4.12, there were between 601 and 639 AR-DRGs represented, meaning that ALOS data was estimated for up to 38 AR-DRGs.

Introduction of version 5.0 AR-DRGs

Previous publications in the Australian Hospital Statistics series have presented information on Diagnosis Related Groups using AR-DRGs version 4.2. This report uses AR-DRGs version 5.0 (DHAC 2002) to classify separations in most analyses. AR-DRGs version 4.2 (DHAC 2000) is used when data based on cost weights or estimated costs of separation are presented, because cost weight information was not available for AR-DRGs version 5.0 (see Chapters 2, 4 and 6).

AR-DRG version 5.0 is the result of a comprehensive review of AR-DRG version 4.2 using ICD-10-AM patient-level cost data (DoHA 2002). It incorporates ICD-10-AM third edition within the same basic structure as AR-DRG version 4.2. The number of AR-DRGs has increased to 665 within 23 Major Diagnostic Categories. New features of AR-DRG version 5.0 are summarised below and should be taken into consideration when comparing data in this report with data published using AR-DRGs version 4.2.

- New DRGs were created for *Respiratory system diagnosis with non-invasive ventilation* (E41), *Knee reconstruction or revision* (I29) and *Major breast reconstruction* (J14)
- Same day DRGs were introduced for *Glaucoma and complex cataract procedures* (C15), *Lens procedures* (C16), *Oral and dental disorders* (D67), *Skin ulcers* (J60), *Major skin disorders* (J68), *Minor skin disorders* (J67), *Non-surgical spinal disorders* (I68), *Cystourethroscopy* in MDC 11 (L41), *Antenatal and other obstetric admission* (O66) and *Other factors influencing health status* (Z64)

- *Renal transplant* (L01) has moved from MDC 11 to Pre-MDC (A09)
- *Multiple organ transplant* (A02) has been removed from the classification
- Several DRGs have been combined: glaucoma procedure DRGs (C06 and C07) and lens procedure DRGs (C08 and C09) in MDC 02 appear as two DRGs (C15 and C16 respectively); DRGs for *Salivary gland procedures* (D07) and *Mouth procedures* (D08) in MDC 03 appear as one DRG (D14); DRGs for overnight HIV episodes have been combined into one DRG (S65); *Complex gastroscopy* incorporates a test for gastroscopy and colonoscopy performed in one admission (G46 replaces G40 and G41)
- Two DRGs for *Allogeneic bone marrow transplant procedures* (A07) and *Autologous bone marrow transplant procedures* (A08) have replaced DRG A04, and Fractures of pelvis and femoral neck now appear as two DRGs (I77 and I78 replace I62)
- Cholecystectomy DRGs in version 5.0 distinguish between open and laparoscopic cholecystectomy (H07 and H08 replace H03 and H04)
- Lower limb surgical DRGs in MDC 09 have been restructured (J12 and J13 replace J02 to J05)
- MDC 14 has been restructured. DRG 962Z *Unacceptable obstetric diagnosis combination* has been removed from the classification, and outcome of delivery codes (Z37.-) now have a central role in grouping episodes to delivery DRGs. The new structure includes a DRG for uncomplicated delivery to assist in obstetric benchmarking and a same day DRG for antenatal admissions.

Error AR-DRGs

Error DRGs are the AR-DRGs to which records containing clinically inconsistent or invalid information are assigned. Group 1 Error DRGs (901Z, 902Z and 903Z) are assigned when all the operating room procedures are unrelated to the MDC of the patient's principal diagnosis. Group 2 Error DRGs (961Z and 963Z) are assigned when a principal diagnosis is coded which will not allow the patient to be assigned to a clinically coherent DRG. Group 3 Error DRG (960Z) is assigned when the principal diagnosis is invalid, or when other necessary information is incorrect or missing.

Table A3.9 provides information on Group 1 Error DRGs for the 10 operating room procedures with the highest number of separations, by hospital sector and state and territory. Table A3.10 provides information on Group 2 Error DRGs, for the 10 principal diagnoses with the highest number of separations, by hospital sector and state and territory. The procedures and principal diagnoses listed in Tables A3.9 and A3.10 are those which caused the separations to be assigned to a Group 1 Error DRG or Group 2 Error DRG respectively. A higher number of separations was assigned to Group 1 Error DRGs for public hospitals (51.7%, 5,223) than for private hospitals (48.3%, 4,878), while a lower number was assigned to Group 2 Error DRGs for public hospitals (38.8%, 349) than for private hospitals (61.2%, 550).

Figure A3.2 shows Error DRGs as a percentage of all separations, by state and territory. Group 1 Error DRGs accounted for the highest proportion of separations assigned to Error DRGs for all jurisdictions except for the Northern Territory where Group 3 Error DRGs had the highest proportion. In all states and territories, except for New South Wales and Western Australia, Group 2 Error DRGs accounted for the lowest proportion of separations assigned to Error DRGs.

Medicare eligibility status

For *Australian Hospital Statistics 1999–00* (AIHW 2001a) and previous publications, Tables 6.1 to 6.5 in Chapter 6 (previously Chapter 5) were based on the data element ‘Patient accommodation eligibility status’ which incorporated a distinction between patients who were or were not eligible for treatment in accordance with the Australian Health Care Agreements (previously known as the Medicare Agreements) and included a category for Department of Veterans’ Affairs patients. For *Australian Hospital Statistics 2000–01* (AIHW 2002a), these tables were compiled using four different data elements from version 9.0 of the *National Health Data Dictionary* (NHDC 2000) – ‘Admitted patient election status’, ‘Department of Veterans’ Affairs patient’, ‘Medicare eligibility status’ and ‘Compensable status’. From 2001–02, data on Medicare eligibility, patient election status and funding source were provided as separate data elements. This allowed the comparability of these data to be assessed in more detail than previously possible, and highlighted apparent inconsistencies in the way Medicare eligibility was reported among states and territories, in particular in relation to the funding source and patient election status data. Hence, the data on Medicare eligibility status has not been included in Tables 6.1 to 6.4 and 4.11, so that data by funding source can be presented more meaningfully. As these data are not included in Tables 6.1 to 6.4 for this publication, a summary of these data is presented in Table A3.11.

Patient election status and funding source categories

For *Australian Hospital Statistics 2001–02* and this publication, Tables 6.1 to 6.4 were based on the data elements ‘Patient election status’ and ‘Funding source for hospital patient’. For the purpose of reporting these data in 2001–02 and 2002–03, the ‘Patient election status’ for patients whose funding source was reported as *Australian Health Care Agreements* and *Reciprocal health care agreements* was categorised as public (public psychiatric hospital patients were also categorised as public unless another funding source was reported for them). The ‘Patient election status’ for patients whose funding source was reported as *Private health insurance*, *Self-funded*, *Workers compensation*, *Motor vehicle third party personal claim*, *Other compensation*, *Department of Veterans’ Affairs*, *Department of Defence* or *Correctional facility* was categorised as private. Patients whose funding source was reported as *Other hospital or public authority*, *Other* or *Not reported* were categorised according to the ‘Admitted patient election status’ recorded at the time of admission.

Tables in Chapters 8, 9 and 11 that present data for public patient separations used ‘Patient election status’, determined as described above, as the basis for this category.

To facilitate time series comparisons and to provide some continuity between *Australian Hospital Statistics 1999–00*, *Australian Hospital Statistics 2000–01*, *Australian Hospital Statistics 2001–02* and this publication, the presentation of information for 2001–02 and 2002–03 in Table 6.5 has combined selected funding source categories and included Medicare eligibility status data. In Table 6.5 for 2001–02 and 2002–03, the category *Compensable* includes patients whose funding source was *Workers compensation*, *Motor vehicle third party personal claim* and *Other compensation*, while the category *Other private* includes private patients whose funding source was not *Department of Veterans’ Affairs* or *Compensable*. However, caution should be taken when making comparisons over time (Tables 6.5 and 11.18) as the categories presented are not directly comparable. In previous years there was some variation between jurisdictions in the application of the data element ‘Admitted patient election status’, with

some states and territories using this element to reflect the patient's choice of room or doctor and others to reflect the funding source. Hence, discontinuities may exist because patients with the funding source reported as *Department of Defence* and *Correctional facility* have been categorised as 'private patients' for 2001–02 and 2002–03, whereas they may previously have been reported as 'public patients', for example.

Emergency occasions of service

There are a number of differences in the scope of the emergency occasions of service data between Chapter 2 (Tables 2.5 and 2.6), as reported to the National Public Hospital Establishments Database and in Chapter 4 (Table 4.13), as reported for the emergency department waiting times data collection.

For the National Public Hospital Establishments Database, patients who did not wait for treatment after having been registered and/or triaged are included by Victoria, Queensland, Western Australia, Tasmania and the Northern Territory, but not by other jurisdictions. For the emergency department waiting times data, patients who do not wait for treatment are excluded from the waiting times data for all states and territories but are included in the data on the number of patients seen for Queensland and the Australian Capital Territory.

In Victoria, people who present directly as emergency patients to Psychiatric Units and Alcohol and Drug Units were reported to the National Public Hospital Establishments Database as emergency occasions of service but were not reported to the emergency department waiting times data collection, as the scope of that collection is emergency departments.

New South Wales, South Australia and Queensland include patients who are not assigned a triage category in the data reported to the National Public Hospital Establishments Database. These are not included in the emergency department waiting times data.

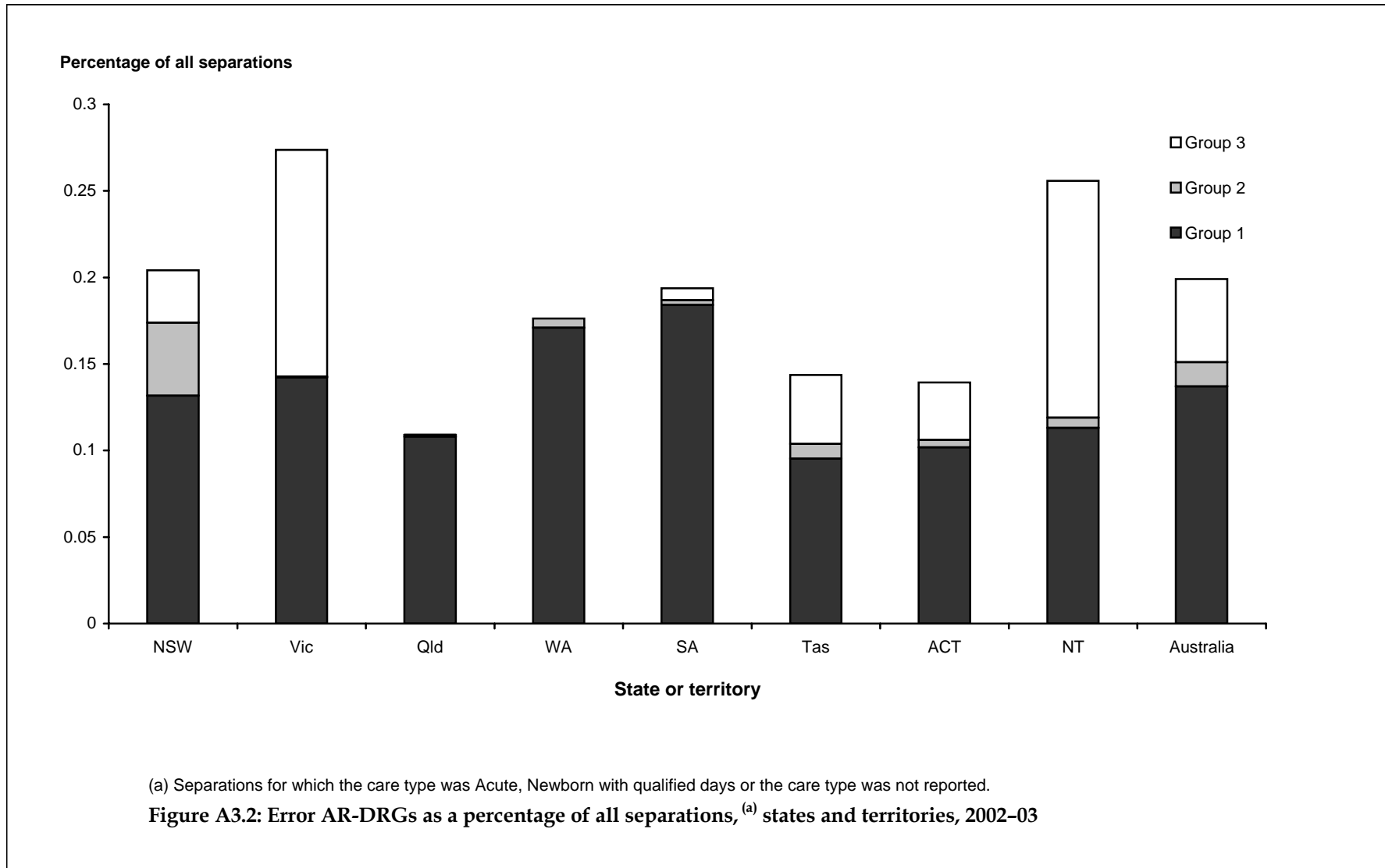


Table A3.5: Summary of separations in public acute hospitals selected for the cost per casemix-adjusted separation analysis^(a) and data for excluded hospitals, states and territories, 2002–03

Variable	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Total separations ('000)	1,221	1,124	672	330	343	76	64	68	3,899
Total patient days ('000)	4,556	3,991	2,255	1,148	1,160	303	219	206	13,838
Acute separations^(b)									
Separations ('000)	1,195	1,088	648	325	334	75	62	67	3,795
Patient days ('000)	4,155	3,244	1,959	1,029	1,052	263	194	196	12,092
Acute care psychiatric separations^(c)									
Separations ('000)	26	18	22	6	6	3	1	1	83
Average cost weight ^(d)	1.74	2.67	1.99	2.03	2.17	1.75	2.06	2.02	2.07
Patient days ('000)	256	293	204	76	62	26	14	9	941
Acute care non-psychiatric separations									
Separations ('000)	1,168	1,070	626	319	329	72	61	66	3,712
Patient days ('000)	3,899	2,951	1,754	953	990	237	180	187	11,151
Separations other than acute									
Rehabilitation separations ('000)	16.5	22.7	15.3	3.0	1.8	0.6	0.7	0.7	61.1
Patient days ('000)	241.1	387.6	131.2	67.6	29.5	18.9	12.7	3.9	892.5
Palliative care separations ('000)	3.7	3.0	3.1	0.4	1.3	0.1	0.4	0.0	12.1
Patient days ('000)	37.1	46.4	27.6	5.5	15.9	0.4	5.1	0.8	138.7
Geriatric evaluation and management separations ('000)	0.9	6.7	0.4	0.5	0.0	0.0	0.0	0.0	8.5
Patient days ('000)	11.9	185.8	8.1	4.1	0.0	0.1	0.2	0.4	210.4
Psychogeriatric separations	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.5
Patient days ('000)	11.8	0.0	7.3	0.6	0.1	0.0	0.0	0.2	20.0
Maintenance separations ('000)	5.2	0.0	4.4	1.4	0.9	0.4	0.2	0.2	12.7
Patient days ('000)	93.3	0.0	120.4	41.0	34.0	20.8	7.0	4.4	320.8
Other separations ('000)	0.3	3.6	0.2	0.0	5.0	0.0	0.0	0.0	9.1
Patient days ('000)	6.5	127.0	1.1	0.0	29.1	0.0	0.1	0.1	164.0
Total separations other than acute									
Separations ('000)	26.7	36.0	23.5	5.4	9.0	1.1	1.3	0.9	104.0
Patient days	401.6	746.7	295.7	118.7	108.6	40.3	25.1	9.7	1,746.4
Psychiatric separations^(e)									
Separations ('000)	27	18	23	6	6	3	1	1	85
Patient days ('000)	269	293	240	76	70	26	14	9	997
Data for excluded hospitals^(e)									
Separations for excluded hospitals ('000) ^(b)	66	25	31	38	25	3	2	0	189
Per cent of all separations (%)	5.1	2.2	4.3	10.3	6.7	3.4	2.4	..	4.6
Expenditure for excluded hospitals (\$m)	680	243	218	255	177	26	2	..	1,601
Inpatient fraction for excluded hospitals	0.75	0.56	0.68	0.78	0.94	0.76	1.00	..	0.74
Unadjusted cost per separation	7,670	5,378	4,850	5,280	6,768	7,546	1,160	..	6,245

(a) Psychiatric hospitals, drug and alcohol services, mothercraft hospitals, unpeered and other hospitals, hospices, rehabilitation facilities, small non-acute and multi-purpose services are excluded from this table, as are some small hospitals with incomplete expenditure information. See Appendix 4 for further information.

(b) Includes same day separations, acute and unspecified care type separations and episodes of newborn care with qualified days.

(c) Separations with total days of psychiatric care equal to the total length of stay.

(d) Average cost weight from the National Hospital Morbidity Database, based on acute and unspecified separations and episodes of newborn care with qualified days, using the 2001–02 AR-DRG v 4.2 cost weights (DHA 2003). An updated version of this table based on 2002–03 AR-DRG v 4.2 cost weights will be made available on the website when available.

(e) Psychiatric hospitals, drug and alcohol services, mothercraft hospitals, unpeered and other hospitals, hospices, rehabilitation facilities, small non-acute and multi-purpose services. See Appendix 4 for further information.

.. Not applicable.

Table A3.6: Cost per acute casemix-adjusted separation, subset of selected public acute hospitals ^(a), New South Wales, Victoria, Western Australia and South Australia 2002-03

Variable	NSW ^(b)	Vic	WA	SA
Total separations ('000) ^(c)	1,078	816	188	278
Total patient days ('000) ^(c)	3,997	2,930	604	935
Acute separations ('000) ^(d)	1,053	787	186	271
Acute patient days ('000) ^(d)	3,625	2,321	551	843
Proportion of separations acute	97.7%	96.4%	98.8%	97.6%
Proportion of patient days acute	90.7%	79.2%	91.3%	90.1%
Total recurrent expenditure (\$m)				
Subset hospitals	4,926	3,415	812	995
Hospitals in Table 4.1	5,756	4,762	1,493	1,248
Proportion	86%	72%	54%	80%
Total admitted patient expenditure (\$m)				
Subset hospitals	3,433	2,504	559	766
Hospitals in Table 4.1	4,006	3,482	1,042	947
Proportion	85.7%	71.9%	53.7%	80.9%
Total separations ('000)				
Subset hospitals	1,078	816	188	278
Hospitals in Table 4.1	1,221	1,124	330	343
Proportion	88.3%	72.6%	57.0%	81.1%
Costs relating to acute care separations				
Average cost weight ^(e)	1.034	0.948	0.890	0.982
Casemix-adjusted acute separations ('000)	1,089	746	166	267
Acute IFRAC ^(f)	0.658	0.654	0.662	0.750
Total acute patient recurrent expenditure (\$m)	3,239	2,235	538	746
Cost per casemix-adjusted acute separation^(g)	3,104	3,070	3,330	2,897
Cost per total casemix-adjusted separation (from Table 4.1)	3,283	3,285	3,284	2,796
Cost per total casemix-adjusted separation on subset of hospitals	3,215	3,321	3,424	2,905
Percentage this exceeds cost per acute separation for subset hospitals	3.5%	7.6%	2.7%	0.3%
Cost of not acute separations in subset (\$m)	194	269	22	19
Per separation (\$)	7,696	9,059	9,851	2,850
Per patient day (\$)	520	442	412	208

(a) Excludes psychiatric, mothercraft, hospices, small non-acute, un-peered and other hospitals, rehabilitation facilities, and multi-purpose services. This subset excludes hospitals where the IFRAC was equal to the acute IFRAC and more than 1,000 not acute patient days were recorded. Also excludes hospitals where the apparent cost of not acute patients exceeded \$1,000 per day and more than 1,000 not acute patient days were recorded.

(b) Expenditure data for New South Wales are preliminary. An updated version of this table will be published on the AIHW website when finalised data become available.

(c) From the National Hospital Morbidity Database. Separations for which the care type was reported as *Newborn* with no qualified days, and records for *Hospital boarders* or *Posthumous organ procurement* have been excluded. Details of acute separations and patient days and non-acute separations and patient are presented in Table A3.5.

(d) Acute separations are separations where the care type is *Acute*, *Newborn* with qualified days, or *Not reported*.

(e) Average cost weight from the National Hospital Morbidity Database, based on acute and unspecified separations and episodes of newborn care with qualified days, using the 2001-02 AR-DRG version 4.2 cost weights (DoHA 2003). An updated version of this table based on 2002-03 AR-DRG v 4.2 cost weights will be made available on the website when available.

(f) The acute IFRAC is that portion of recurrent costs which are for acute admitted patients.

(g) Includes adjustment for private patient medical costs: \$130 for New South Wales, \$73 for Victoria, \$81 for Western Australia and \$97 for South Australia.

Table A3.7: Cost per acute non-psychiatric casemix-adjusted separation, subset of selected public acute hospitals ^(a), New South Wales, Victoria and Western Australia 2002–03

Variable	NSW ^(b)	Vic	WA
Total separations ('000) ^(c)	1,078	816	188
Total patient days ('000) ^(c)	3,997	2,930	604
Acute non psychiatric separations ('000) ^(d)	1,029	773	184
Acute non psychiatric patient days ('000) ^(d)	3,397	2,102	529
Proportion of separations acute	95.4%	94.6%	97.9%
Proportion of patient days acute	85.0%	71.7%	87.6%
Total recurrent expenditure (\$m)			
Subset hospitals	4,926	3,415	812
Hospitals in Table 4.1	5,756	4,762	1,493
Proportion	86%	72%	54%
Total admitted patient expenditure (\$m)			
Subset hospitals	3,433	2,504	559
Hospitals in Table 4.1	4,006	3,482	1,042
Proportion	85.7%	71.9%	53.7%
Total separations ('000) ^(c)			
Subset hospitals	1,078	816	188
Hospitals in Table 4.1	1,221	1,124	330
Proportion	88.3%	72.6%	57.0%
Costs relating to acute non-psychiatric separations			
Average cost weight ^(e)	1.034	0.948	0.890
Casemix-adjusted acute non-psychiatric separations ('000)	1,065	733	164
Acute non-psychiatric IFRAC ^(f)	0.635	0.627	0.653
Total acute non-psychiatric patient recurrent expenditure (\$m)	3,127	2,141	530
Cost per casemix-adjusted acute non-psychiatric separation^(g)	3,120	3,099	3,351
Cost per total casemix-adjusted separation (from Table 4.1)	3,283	3,285	3,284
Cost per total casemix-adjusted separation on subset of hospitals	3,215	3,321	3,424
Percentage this exceeds cost per acute non-psychiatric separation for subset hospitals	3.0%	6.7%	2.1%
Cost of not acute non-psychiatric separations in subset (\$m)	305	364	29
Per separation (\$)	6,220	8,314	7,455
Per patient day (\$)	509	439	388

(a) Excludes psychiatric, mothercraft, hospices, small non-acute, un-peered and other hospitals, rehabilitation facilities, and multi-purpose services. This subset excludes hospitals where the IFRAC was equal to the acute IFRAC and more than 1,000 not acute patient days were recorded. Also excludes hospitals where the apparent cost of not acute patients exceeded \$1,000 per day and more than 1,000 not acute patient days were recorded.

(b) Expenditure data for New South Wales are preliminary. An updated version of this table will be published on the AIHW website when finalised data become available.

(c) From the National Hospital Morbidity Database. Separations for which the care type was reported as *Newborn* with no qualified days, and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded. Details of acute separations and patient days and non-acute separations and patient are presented in Table A3.5.

(d) Acute separations are separations where the care type is *Acute*, *Newborn* with qualified days, or *Not reported*. Psychiatric separations are those with psychiatric care days.

(e) Average cost weight from the National Hospital Morbidity Database, based on acute and unspecified separations and episodes of newborn care with qualified days, using the 2001–02 AR-DRG version 4.2 cost weights (DoHA 2003). An updated version of this table based on 2002–03 AR-DRG v 4.2 cost weights will be made available on the website when available.

(d) The acute non-psychiatric IFRAC is that portion of recurrent costs which are for acute non-psychiatric admitted patients.

(f) Includes adjustment for private patient medical costs: \$139 for New South Wales, \$80 for Victoria and \$85 for Western Australia.

Table A3.8: Count of AR-DRGs v 5.0 contributing to the relative stay index, by sector, and medical/surgical/other type of AR-DRG, states and territories, 2002-03

Type of hospital	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals	639	639	636	634	635	627	625	588	639
Medical	333	333	331	331	333	332	330	326	333
Surgical	275	275	275	273	272	265	265	234	275
Other	31	31	30	30	30	30	30	28	31
Private hospitals	618	620	625	612	602	n.p.	n.p.	n.p.	632
Medical	327	324	328	321	316	n.p.	n.p.	n.p.	332
Surgical	262	266	267	264	259	n.p.	n.p.	n.p.	269
Other	29	30	30	27	27	n.p.	n.p.	n.p.	31
All hospitals	639	639	636	634	635	n.p.	n.p.	n.p.	639
Medical	333	333	331	331	333	n.p.	n.p.	n.p.	333
Surgical	275	275	275	273	272	n.p.	n.p.	n.p.	275
Other	31	31	30	30	30	n.p.	n.p.	n.p.	31

Note: Count of AR-DRGs for separations where the care type was reported as *Acute*, *Newborn* with qualified days, or was *Not reported*.

n.p. Not published.

Table A3.9: Separations for Group 1 Error DRGs for the 10 procedures with the highest number of separations, ^(a) by hospital sector, states and territories, 2002-03

Procedure	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals									
30224-01 Percutaneous drainage of intra-abdominal abscess, haematoma or cyst	65	45	16	22	9	3	6	6	172
35321-00 Transcatheter embolisation of blood vessel	54	38	14	35	19	0	3	0	163
35309-06 Percutaneous transluminal balloon angioplasty with stenting, single stent	35	42	7	30	7	7	0	0	128
45519-00 Revision of burn scar or burn contracture	38	15	13	16	13	1	1	0	97
37203-00 Transurethral resection of prostate	20	39	1	4	8	1	0	0	73
30378-00 Division of abdominal adhesions	18	20	9	7	5	1	1	2	63
30023-01 Excisional debridement of soft tissue involving bone or cartilage	21	9	16	11	2	1	0	2	62
35640-00 Dilation & curettage of uterus	13	20	7	13	4	1	0	2	60
42702-04 Extracapsular extraction of crystalline lens by phacoemulsification and aspiration of cataract with insertion of foldable artificial lens	19	12	2	16	5	0	1	2	57
30223-03 Incision and drainage of deep abscess of soft tissue	19	17	5	10	0	2	0	2	55
Other procedures	1,232	1,213	613	596	457	56	59	67	4,293
Total^(b)	1,534	1,470	703	760	529	73	71	83	5,223
Private hospitals									
35303-06 Percutaneous transluminal balloon angioplasty	22	61	51	44	19	n.p.	n.p.	n.p.	202
36836-00 Endoscopic biopsy of bladder	65	0	14	0	112	n.p.	n.p.	n.p.	191
30075-01 Biopsy of soft tissue	24	85	15	5	20	n.p.	n.p.	n.p.	152
30571-00 Appendicectomy	70	21	1	13	19	n.p.	n.p.	n.p.	125
30094-00 Percutaneous [needle] biopsy of soft tissue	15	47	19	14	11	n.p.	n.p.	n.p.	110
41632-01 Myringotomy with insertion of tube, bilateral	34	30	7	23	7	n.p.	n.p.	n.p.	110
30373-00 Exploratory laparotomy	4	88	1	2	1	n.p.	n.p.	n.p.	97
35330-00 Percutaneous insertion of inferior vena cava filter	26	21	12	5	4	n.p.	n.p.	n.p.	69
47528-01 Open reduction of fracture of femur with internal fixation	31	17	8	5	3	n.p.	n.p.	n.p.	65
30071-02 Biopsy of eyelid	9	21	9	9	6	n.p.	n.p.	n.p.	56
Other procedures	1,076	955	755	356	471	n.p.	n.p.	n.p.	3,701
Total^(b)	1,376	1,346	892	476	673	n.p.	n.p.	n.p.	4,878

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

(b) Totals report the number of separations for which a procedure was reported and are not the sums of the rows of the table.

n.p. Not published.

Table A3.10: Separations for Group 2 Error AR-DRGs for the 10 principal diagnoses ^(a) with the highest number of separations, ^(b) by hospital sector, states and territories, 2002–03

Principal diagnosis	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals									
R45.81 Suicidal ideation	59	0	0	2	0	1	0	1	63
Z91.5 Personal history of self-harm	45	0	0	0	0	0	0	0	45
Z51.5 Palliative care	24	0	0	0	0	0	1	0	25
P07.31 Other preterm infant, 28 or more completed weeks but less than 32 completed weeks	6	1	4	5	6	1	0	1	24
Z87.12 Personal history of colonic polyps	22	0	0	0	0	0	0	0	22
P07.32 Other preterm infant, 32 or more completed weeks but less than 37 completed weeks	3	0	0	3	6	0	1	0	13
P07.22 Extreme immaturity, 24 or more completed weeks but less than 28 completed weeks	8	0	3	1	0	0	0	0	12
Z85.0 Personal history of malignant neoplasm of digestive organs	6	0	0	0	0	0	0	0	6
Z98.8 Other specified posprocedural states	5	0	0	0	0	0	0	0	5
S41.82 Open wound (of any part of shoulder and upper arm) communicating with a dislocation	5	0	0	0	0	0	0	0	5
Other	100	1	3	13	4	4	2	2	129
Total	283	2	10	24	16	6	4	4	349
Private hospitals									
Z87.12 Personal history of colonic polyps	259	0	0	0	0	n.p.	n.p.	n.p.	259
Z85.0 Personal history of malignant neoplasm of digestive organs	93	0	0	0	0	n.p.	n.p.	n.p.	93
Z87.18 Personal history of other digestive system disease	45	0	0	0	0	n.p.	n.p.	n.p.	45
Z87.10 Personal history of unspecified digestive disease	23	0	0	0	0	n.p.	n.p.	n.p.	23
P07.31 Other preterm infant, 28 or more completed weeks but less than 32 completed weeks	13	0	0	4	0	n.p.	n.p.	n.p.	18
Z87.11 Personal history of peptic ulcer disease	17	0	0	0	0	n.p.	n.p.	n.p.	17
Z95.1 Presence of aortocoronary bypass graft	11	0	0	0	0	n.p.	n.p.	n.p.	11
P07.22 Extreme immaturity, 24 or more completed weeks but less than 28 completed weeks	5	1	0	0	0	n.p.	n.p.	n.p.	8
P07.32 Other preterm infant, 32 or more completed weeks but less than 37 completed weeks	2	1	0	4	0	n.p.	n.p.	n.p.	7
Z98.8 Other specified posprocedural states	7	0	0	0	0	n.p.	n.p.	n.p.	7
Other	52	3	2	2	0	n.p.	n.p.	n.p.	62
Total	527	5	2	10	0	n.p.	n.p.	n.p.	550

(a) These are principal diagnoses which could cause the separation to be assigned to a Group 2 Error DRG.

(b) Separations for which the care type was reported as *Acute*, or *Newborn* with qualified patient days, or was *Not reported*.

n.p. Not published.

Table A3.11: Separations^(a), by Medicare eligibility status and hospital sector, states and territories, 2002-03

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals									
Medicare eligible	1,282,348	1,148,961	699,889	366,560	366,854	80,107	63,387	67,860	4,075,966
Not Medicare eligible	8,564	879	2,277	716	1,005	108	356	289	14,194
Medicare eligibility not reported	262	0	0	549	0	0	0	0	811
Total	1,291,174	1,149,840	702,166	367,825	367,859	80,215	63,743	68,149	4,090,971
Private hospitals									
Medicare eligible	706,250	651,046	573,985	280,015	211,689	n.p.	n.p.	n.p.	2,519,388
Not Medicare eligible	2,665	60	2,427	541	22	n.p.	n.p.	n.p.	5,750
Medicare eligibility not reported	61	0	25,753	42	0	n.p.	n.p.	n.p.	37,663
Total	708,976	651,106	602,165	280,598	211,711	n.p.	n.p.	n.p.	2,562,801
All hospitals									
Medicare eligible	1,988,598	1,800,007	1,273,874	646,575	578,543	n.p.	n.p.	n.p.	6,595,354
Not Medicare eligible	11,229	939	4,704	1,257	1,027	n.p.	n.p.	n.p.	19,944
Medicare eligibility not reported	323	0	25,753	591	0	n.p.	n.p.	n.p.	38,474
Total	2,000,150	1,800,946	1,304,331	648,423	579,570	n.p.	n.p.	n.p.	6,653,772

(a) Separations for which the care type was reported as *Newborn* with no qualified days, and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded.

n.p. Not published.

Table A3.12: Records for posthumous organ procurement and hospital boarders, by hospital sector, states and territories, 2002–03

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals									
Posthumous organ proccurement	2	0	39	21	0	4	0	1	67
Hospital boarders	194	0	6,966	9,216	0	99	0	6,241	22,752
<i>Total</i>	196	0	7,005	9,237	0	103	0	6,242	22,819
Private hospitals									
Posthumous organ proccurement	0	0	0	0	0	n.p.	n.p.	n.p.	0
Hospital boarders	871	0	348	8,612	0	n.p.	n.p.	n.p.	9,831
<i>Total</i>	871	0	348	8,612	0	n.p.	n.p.	n.p.	9,831
All hospitals									
Posthumous organ proccurement	2	0	39	21	0	n.p.	n.p.	n.p.	67
Hospital boarders	1,065	0	7,314	17,828	0	n.p.	n.p.	n.p.	32,583
Total	1,067	0	7,353	17,849	0	n.p.	n.p.	n.p.	32,650

n.p. Not published.