

# Appendix 3: Technical notes

## Definitions

If not otherwise indicated, data elements were defined according to the 2001–02 definitions in the *National Health Data Dictionary* version 10.0 (NHDC 2001) (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, 6.8 and 6.9.

## 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, 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 2001 were used for the observed rates (Table A3.1 accompanying this report on the Internet). The exceptions were Tables 4.7, 4.9, 7.7, 7.8, 7.10, 7.12, 8.18 and 9.19, and Figures 4 and 7.7, for which the 30 June 2001 population estimates (by Indigenous status, selected countries/regions of birth and Remoteness Areas, as appropriate) were used for the observed rates (Tables A3.2, A3.3 and A3.4 accompanying this report on the Internet). Crude population rates in Chapters 5, 8, 9 and 11 were calculated using the population estimates for 31 December 2001.

## 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 x 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.

Tasmania and the Northern Territory did not use this *Newborn* definition in 2001–02; therefore, for these jurisdictions, there are no *Newborn* separations with a mixture of qualified and unqualified days reported (see Table 6.10). They reported a new episode of care for patients aged less than 10 days at admission with each change in qualification status. The reporting method used in Tasmania and the Northern Territory may mean that there were more separations for patients under the age of 10 days for these jurisdictions, relative to others, and that they had a lower average length of stay.

Information on reporting practices for *Newborn* episodes prior to 2001–02 is available in *Australian Hospital Statistics 2000–01* (AIHW 2002a).

## Hospital boarders and posthumous organ procurement

For some states and territories, the data provided for the National Hospital Morbidity Database include records for hospital boarders and for posthumous organ procurement activity (see Glossary). The records for boarders were excluded from this report, as they are not admitted patients. Similarly, posthumous organ procurement activity was excluded from this report.

## Hospital in the home care

Most states and territories have hospital in the home programs in which admitted patients are provided with hospital care. This care has been defined in the *National Health Data Dictionary* version 10 (NHDC 2001) as occurring in the patient's (permanent or temporary) place of residence as a substitute for hospital accommodation, and within an episode of care for an admitted patient.

Data on hospital in the home care was reported by five jurisdictions to the National Hospital Morbidity Database for 2001–02. For Victoria, Queensland, the Australian Capital Territory and the Northern Territory, data on hospital in the home care were provided as defined in the *National Health Data Dictionary*, and separations including this care were included in the National Hospital Morbidity Database. In the Australian Capital Territory, hospital in the home care data were provided by only one hospital. In South Australia, hospital in the home episodes are reported as separate episodes of care. This variation may have had the effect of slightly increasing the relative numbers of separations and reducing the average lengths of stay reported by South Australia compared with other states and territories.

In New South Wales in 2001–02, data on hospital in the home care was not provided, as it had been collected inconsistently. Western Australia operated some hospital in the home programs in 2001–02 but did not collect data on these programs; collection of data related to hospital in the home commenced on 1 July 2002. Tasmania did not report hospital in the home care data for 2001–02.

## ICD-10-AM coded data

Diagnosis, procedure and external cause data for 2001–02 were reported to the National Hospital Morbidity Database by most states and territories using the second edition of the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification* (ICD-10-AM) (NCCH 2000). For South Australia these data were reported to the National Hospital Morbidity Database using the third edition of the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification* (ICD-10-AM) (NCCH 2002).

## Data mapping for South Australia

South Australia mapped the data collected using the second edition of ICD-10-AM forward to codes of the third edition of ICD-10-AM (NCCH 2002) before providing them to the Institute. Where mapped codes could be identified, the Institute mapped the South Australian data backward to the second edition codes so that national data could be

presented in a single classification in this report. The mapped data are not completely equivalent to unmapped data, so this means that the South Australian data should be interpreted with these mappings in mind. In this report, 'mapping' refers to the process of finding an 'equivalent' code between two classifications to enable national data to be presented in a single classification.

South Australia forward mapped by selecting the most clinically appropriate code in third edition ICD-10-AM based on the description of the code in the second edition of ICD-10-AM. There were no many-to-one maps where multiple second edition codes would be mapped to one third edition code. All diagnosis code maps were one-to-one maps, meaning that a diagnosis code in second edition ICD-10-AM was mapped to one diagnosis code only in third edition ICD-10-AM. Procedure code maps were mainly one-to-one maps. There were 22 one-to-many maps, where one second edition code was mapped to many third edition codes.

Where the third edition code was invalid as a second edition code, the South Australian forward map was reversed by the Institute, using the standard backward maps in the version 4.2 AR-DRG grouper.

Backward maps for external causes were developed by the Institute and are available with the Internet version of this report. The changes for external cause codes between the second and third editions of ICD-10-AM were mainly to place and activity codes. In many of these cases the ICD-10-AM third edition codes provided more detail than the second edition codes, so the Institute's reversal of the maps would have resulted in a loss of detail.

## **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.

There was no formal statewide audit of ICD-10-AM coded data in New South Wales for 2001–02. However, there were no major quality issues in coded data detected in routine input processing and output editing of data. An inaugural statewide coding audit is to be performed in mid-2003. This will encompass 5% of the state's acute care records and selected records for Department of Veterans' Affairs patients.

Audits of ICD-10-AM coded data in Victoria have indicated that the data were of high quality. The most recent audit, covering data for 2000–01, indicated further improvement over earlier years.

In the most recent clinical coding audit Queensland Health examined 2000–01 morbidity data from selected public hospitals throughout the state. Sample selection for the audit focused on pre-determined target AR-DRGs that were varied depending on the hospital concerned. In common with previous audits, the findings highlighted the need for providing continual clinical coder education and support, for sites to ensure that they are applying the most current Australian Coding Standards, and for ensuring that clinicians are asked to confirm information contained within the medical record when necessary. Queensland Health is currently addressing the major recommendations from the audit.

For the year 2001–02 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. Some significant misconceptions regarding Australian Coding Standards were uncovered that had resulted primarily in abstracting errors rather than technical coding errors. The assignment of principal diagnosis emerged as the aspect of clinical coding most frequently associated with abstracting error. The clinical codes sent to the Western Australian Department of Health were 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 South Australia, from 1 July 2001, a number of coding standards were clarified to improve consistency of data captured across hospital sites. In addition a small number of new data edits were added to the central morbidity data processing in an effort to improve the consistency and quality of data. A formal external recoding audit was conducted on data from the eight metropolitan hospitals in Adelaide for the 1 July 2001 to 31 March 2002 period. Relatively small random samples targeting short stay and same day admissions were selected. Quality was measured as percentage of AR-DRG change using version 4.2 AR-DRGs. The proportion of AR-DRGs that changed by site ranged from 3.2% to 18.8%.

In Tasmania, individual hospitals continue to conduct in-house audits using the NCCH's Australian Coding Benchmark Audit method. The results of these edits have shown a minimal error rate. PICQ is also used to assist in the identification of potential areas of poor coding quality.

The Australian Capital Territory has continued to undertake quality improvements in its coded data. An external coding audit of data is planned for 2003 and will include coder education to address coding matters.

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. ICD-9-CM codes are also used for data for 1997–98 and earlier years, as applicable. The codes are presented in Table A3.5 (accompanying this report on the Internet) and relate to

- Figures 4, 6, 7, 8 and 9 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 potentially preventable 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; ASGC) and/or postcode, and have been aggregated to Statistical Divisions and Rural, Remote or Metropolitan Areas (RRMA) (DPIE & DSHS 1994) for previous reports in this series. For this report, the ASGC's Remoteness Structure has been used in place of the RRMA classification. It categorises geographical areas into Remoteness Areas, described in detail on the Australian Bureau of Statistics' internet site at

<http://www.abs.gov.au/ausstats/abs@.nsf/0/689CE49486DC6BACCA256AD4007F680F?Open&Highlight=0,remoteness>

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 Institute in cooperation with the states, territories, the Commonwealth Department of Health and Ageing (DHA) and the Australian Bureau of Statistics (ABS). DHA provided geocoded data (with latitude and longitude) for each hospital that was recorded on the Health Insurance Commission Database as having provided private hospital services. The data were checked by states and territories and some jurisdictions made corrections to the latitudes and longitudes. The geocoded data were then linked by the ABS to a set of Remoteness Area boundaries and the hospitals were allocated to the Remoteness Area in which they were located. A very small number of public hospitals were identified on the National Public Hospital Establishments Database that were not included in the list from DHA. The Remoteness Area for these was assigned by the ABS on the basis of their SLA, or actual location. The Institute 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). Previously, these data have been presented by RRMA, so the change to using Remoteness Areas means that the presented data are not comparable between 2000–01 and 2001–02. Table A3.7 presents the number of hospitals and available beds by Remoteness Area and by RRMA for 2001–02, and therefore provides an indication of the effect of this change.

## **Geographical location of usual residence**

Data on the Remoteness Area of usual residence of admitted patients are presented in Table 7.12, Table 4.7 and Table 4.10 and in Figure 5 in *Hospitals at a glance* section. Data on the state or territory of usual residence are reported in Chapter 6 (Tables 6.6, 6.7, 6.8 and 6.9), 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 2001 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 Institute mapped the supplied area of residence data for each separation to 2001 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 (2001 and previous years). The mapping process identified missing, invalid and superseded codes, but resulted in 99.4% of records being assigned 2001 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.

Previously, data on the area of usual residence of the patient have been presented by RRMA, so the change to using Remoteness Areas means that the presented data are not comparable between 2000-01 and 2001-02. Table A3.6 presents the number of separations by Remoteness Area and by RRMA for all hospitals for 2001-02, and therefore provides an indication of the effect of this change.

## 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 relative complexity of the patient’s clinical condition and for the hospital services provided. A synopsis of the methods used in this analysis are 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 Newborns 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 costliness of 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 Institute 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 method 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 A3.8), 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 A3.8 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 2001–02, 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 2000–01 version 4.2 cost weights were applied to 2001–02 data as the National Hospital Cost Data Collection 2001–02 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 complexity of cases treated 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.

The complexity of cases treated as admitted patients can also differ regionally. Some jurisdictions admit patients who might be treated as non-admitted patients in other jurisdictions.

### **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.

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 Tasmania 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 A3.9). Separations were included only if their care type was acute, or was not reported, or was *Newborn* and had qualified days.

For Tasmania and New South Wales acute care IFRACs were available for all hospitals included in the cost per casemix adjusted separation analysis. For Victoria and Western 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. This meant that 17 hospitals were excluded from the analysis for Victoria (representing 39% of separations): four principal referral hospitals, one specialist women's and children's hospital, one large hospital, six medium hospitals and five small rural acute hospitals. For Western Australia, there were 6 hospitals excluded (15% of separations): one principal referral hospital and five medium hospitals.

The estimated cost per acute care casemix-adjusted separation for the selected hospitals was \$2,890 in New South Wales, \$3,058 in Victoria, \$3,033 in Western Australia and \$3,000 in Tasmania. The cost per casemix-adjusted separation for all separations in these hospitals was \$ 3,010, \$3,287, \$3,090 and \$3,118 respectively, so the effect of restricting the analysis to acute care admitted patients was to decrease the estimated cost by 4.0%, 7.0%, 1.8% and 3.8% respectively.

The estimated cost per acute non-psychiatric casemix-adjusted separation for the selected hospitals was \$2,887 in New South Wales, \$2,962 in Victoria and \$3,028 in Western Australia. The effect of restricting the analysis to acute non-psychiatric admitted patients was to decrease the estimated cost by 4.1%, 9.9% and 2.0% 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 Institute 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.

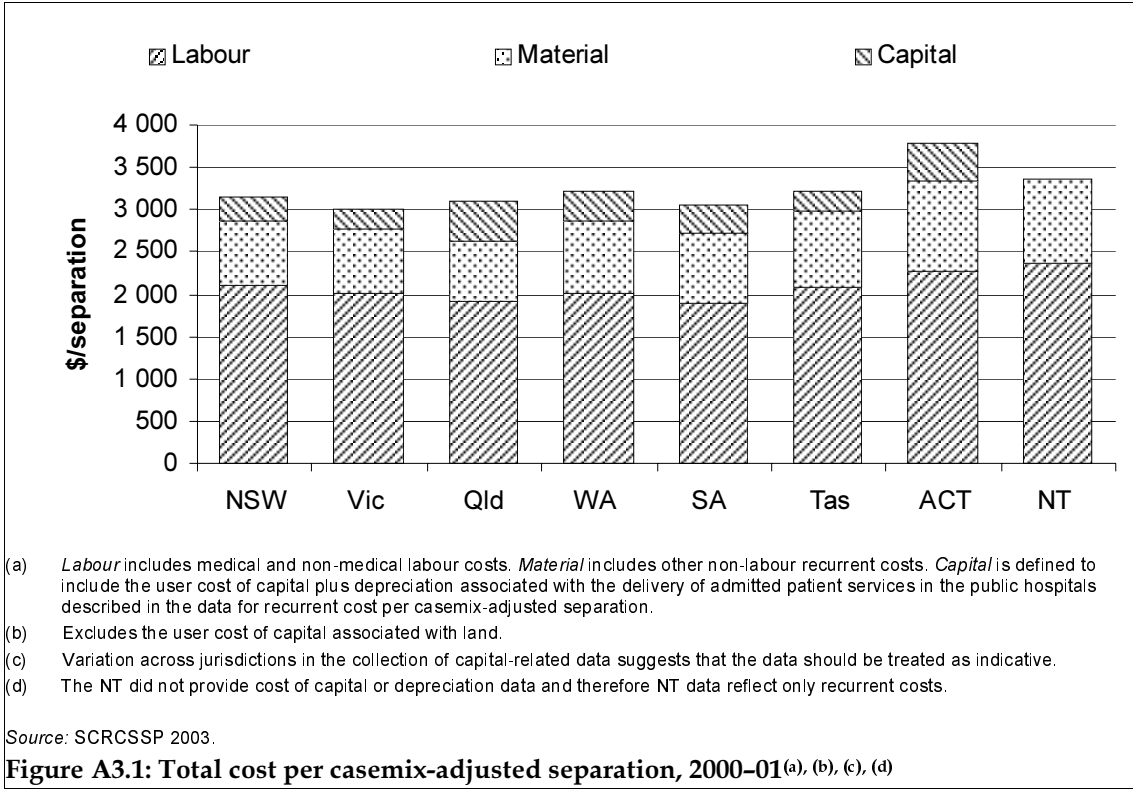
The SCRCSSP reported total costs per casemix-adjusted separation by state and territory for 2000–01 (SCRCSSP 2003). It was defined as the recurrent cost per casemix-adjusted

separation plus the capital costs (depreciation and the user cost of capital of buildings and equipment) per casemix-adjusted separation.

The SCRCSSP 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 SCRCSSP for 2000–01, 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 \$3,007 in Victoria to \$3,785 in the Australian Capital Territory (SCRCSSP 2003).

Further details about the SCRCSSP calculation of total cost per casemix-adjusted separation are available in the *Report on Government Services 2003* (SCRCSSP 2003).



## Relative stay index

Relative stay indexes (RSIs) have been identified as indicators of efficiency and are presented in Tables 4.1, 4.2, 4.3, 4.11 and 4.12. They are calculated as the actual number of patient days for separations in selected 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:

**Standardisation on the basis of:**

- AR-DRG and
- Age as a cubic regression within each AR-DRG.

**Included and excluded separations:**

- include only acute care type
- exclude AR-DRGs which are overwhelmingly same day: R63Z Chemotherapy and L61Z Admit for renal dialysis
- exclude AR-DRGs with a length of stay component in the definition
- exclude 'rehabilitation' AR-DRGs
- exclude error AR-DRGs 960Z, 961Z, 962Z and 963Z
- exclude separations for patients who died or were transferred within two days of admission
- exclude episodes 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 and in *Australian Hospital Statistics 2000–01* is analogous to indirect standardisation where the national rates (ALOS) for each AR-DRG 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 private sector in Tasmania and the Australian Capital Territory and the public sector in the Northern Territory are suppressed in Table 4.12. In these cells, fewer than 600 of the 639 DRGs used in the national RSI analysis are delivered so their results are likely to have been affected by estimation of the missing ALOS data.

Table A3.11 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.

## Error AR-DRGs

Error DRGs are the groups 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, 962Z 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 (DHAC 1998).

Table A3.12 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 A3.13 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 A3.12 and A3.13 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 (54.3%, 5,830) than for private hospitals (45.7%, 4,897), while a lower number was assigned to Group 2 Error DRGs for public hospitals (43.1%, 497) than for private hospitals (56.9% 657).

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 Victoria and Tasmania where Group 3 Error DRGs had the highest proportion. In all states and territories, except for New South Wales, Group 2 Error DRGs accounted for the lowest proportion of separations assigned to Error DRGs.

## Medicare eligibility status

Data on Medicare eligibility status for admitted patients is presented in Table A3.14. These data have previously been presented with data on patient election status and funding source. For 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 (where its removal means that the data by funding source can be presented more meaningfully), but is presented in this appendix instead. It has, however, been included in Table 6.5, to allow comparison of data on Medicare eligibility status, patient election status and funding source over time, as far as is possible (see Chapter 6 for further information).

## 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.

The method of identifying subsequently admitted patients differed marginally for the emergency department waiting times data compared to the data provided for the National Public Hospital Establishments Database. For the emergency department waiting times data, the Australian Capital Territory was the only jurisdiction that matched the emergency department data with the admissions data to identify these patients. For the National Public Hospital Establishments Database data, Victoria, Western Australia and the Australian Capital Territory used this method.

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 A3.6: Number of separations, by Remoteness Area and RRMA of usual residence, by hospital sector, Australia, 2001–02**

Region	Major cities of Australia	Inner regional	Outer regional	Total regional	Remote	Very remote	Total remote	Total all regions
<b>Public hospitals</b>								
Capital cities	2,204,859	103,733	23,623	127,356	661	33	694	2,332,909
Other metropolitan centres	218,466	28,122	24,119	52,241	0	0	0	270,707
<i>Total metropolitan</i>	<i>2,423,325</i>	<i>131,855</i>	<i>47,742</i>	<i>179,597</i>	<i>661</i>	<i>33</i>	<i>694</i>	<i>2,603,616</i>
Large rural centres	0	184,613	48,139	232,752	0	0	0	232,752
Small rural centres	11	207,493	78,065	285,558	5,343	0	5,343	290,912
Other rural areas	2,574	323,638	294,064	617,702	17,677	182	17,859	638,135
<i>Total rural</i>	<i>2,585</i>	<i>715,744</i>	<i>420,268</i>	<i>1,136,012</i>	<i>23,020</i>	<i>182</i>	<i>23,202</i>	<i>1,161,799</i>
Remote centres	0	0	23,970	23,970	33,602	4,324	37,926	61,897
Other remote areas	0	8	19,399	19,407	36,949	60,396	97,345	116,762
<i>Total remote</i>	<i>0</i>	<i>8</i>	<i>43,369</i>	<i>43,377</i>	<i>70,551</i>	<i>64,720</i>	<i>135,271</i>	<i>178,659</i>
<b>Total<sup>(a)</sup></b>	<b>2,426,001</b>	<b>847,716</b>	<b>511,439</b>	<b>1,359,155</b>	<b>94,421</b>	<b>65,030</b>	<b>159,451</b>	<b>3,968,303</b>
<b>Private hospitals</b>								
Capital cities	1,543,580	84,033	2,429	86,462	331	23	354	1,630,396
Other metropolitan centres	180,958	15,744	18,062	33,806	0	0	0	214,764
<i>Total metropolitan</i>	<i>1,724,538</i>	<i>99,777</i>	<i>20,491</i>	<i>120,268</i>	<i>331</i>	<i>23</i>	<i>354</i>	<i>1,845,160</i>
Large rural centres	0	135,437	26,960	162,397	0	0	0	162,397
Small rural centres	3	98,418	16,959	115,377	464	0	464	115,845
Other rural areas	8,881	152,040	89,359	241,399	5,293	52	5,345	255,628
<i>Total rural</i>	<i>8,884</i>	<i>385,895</i>	<i>133,278</i>	<i>519,173</i>	<i>5,757</i>	<i>52</i>	<i>5,809</i>	<i>533,870</i>
Remote centres	0	0	6,469	6,469	3,576	441	4,017	10,486
Other remote areas	0	4	5,517	5,521	8,837	5,117	13,954	19,489
<i>Total remote</i>	<i>0</i>	<i>4</i>	<i>11,986</i>	<i>11,990</i>	<i>12,413</i>	<i>5,558</i>	<i>17,971</i>	<i>29,975</i>
<b>Total<sup>(a)</sup></b>	<b>1,733,505</b>	<b>485,743</b>	<b>165,788</b>	<b>651,531</b>	<b>18,520</b>	<b>5,663</b>	<b>24,183</b>	<b>2,426,189</b>

(a) The totals include 40,672 separations for which a Remoteness Area could not be assigned due to invalid or missing geographical information or for overseas residents

**Table A3.7: Hospitals<sup>(a)</sup> and available beds by Remoteness Area and RRMA of the hospital, public acute and psychiatric hospitals, Australia, 2001–02**

	Remoteness area							Total all regions
	Major cities of Australia	Inner regional	Outer regional	Total regional	Remote	Very remote	Total remote	
<b>Hospitals</b>								
Capital cities	148	10	1	11	1	n.a.	1	160
Other metropolitan centres	17	5	3	8	n.a.	n.a.	n.a.	25
<i>Total metropolitan</i>	165	15	4	19	1	n.a.	1	185
Large rural centres	1	24	5	29	n.a.	n.a.	n.a.	30
Small rural centres	1	34	11	45	1	n.a.	1	47
Other rural areas	0	119	177	296	27	1	28	324
<i>Total rural</i>	2	177	193	370	28	1	29	401
Remote centres	n.a.	n.a.	11	11	14	2	16	27
Other remote areas	n.a.	n.a.	17	17	49	67	116	133
<i>Total remote</i>	n.a.	n.a.	28	28	63	69	132	160
<b>Total all regions</b>	<b>167</b>	<b>192</b>	<b>225</b>	<b>417</b>	<b>29</b>	<b>70</b>	<b>99</b>	<b>683</b>
<b>Beds</b>								
Capital cities	28,429	792	297	1,089	2	n.a.	2	29,520
Other metropolitan centres	2,831	303	444	747	n.a.	n.a.	n.a.	3,578
<i>Total metropolitan</i>	31,260	1,095	741	1,836	2	n.a.	2	33,098
Large rural centres	14	3,710	522	4,232	n.a.	n.a.	n.a.	4,246
Small rural centres	36	2,565	1,012	3,577	50	n.a.	50	3,663
Other rural areas	0	3,200	4,133	7,333	422	6	428	7,761
<i>Total rural</i>	50	9,475	5,667	15,142	472	6	478	15,670
Remote centres	n.a.	n.a.	327	327	613	11	624	951
Other remote areas	n.a.	n.a.	260	260	709	771	1,480	1,740
<i>Total remote</i>	n.a.	n.a.	587	587	1,322	782	2,104	2,691
<b>Total all regions</b>	<b>31,310</b>	<b>10,570</b>	<b>6,995</b>	<b>17,565</b>	<b>1,796</b>	<b>788</b>	<b>2,584</b>	<b>51,459</b>

(a) Apparent differences in the number of hospitals reported are, in many instances, caused by changes in administrative or reporting arrangements rather than by actual differences in the number of buildings. See Appendix 4 for further information.

n.a. not applicable

**Table A3.8: Summary of separations in public acute hospitals selected for the cost per casemix-adjusted separation analysis<sup>(a)</sup> and data for excluded hospitals, states and territories, 2001–02**

Variable	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
<b>Total separations ('000)</b>	1,201	1,061	667	319	336	76	62	63	3,786
<b>Total patient days ('000)</b>	4,499	3,871	2,253	1,123	1,224	289	214	206	13,681
<b>Acute separations<sup>(b)</sup></b>									
Separations ('000)	1,175	1,028	641	314	328	75	61	63	3,685
Patient days ('000)	4,133	3,165	1,967	999	1,060	260	198	196	11,978
<b>Acute care psychiatric separations<sup>(c)</sup></b>									
Separations ('000)	23	18	21	6	6	3	1	1	80
Average cost weight <sup>(d)</sup>	1.50	2.24	1.78	1.86	1.96	1.53	1.88	1.65	1.81
Patient days ('000)	222	277	199	76	72	24	15	7	892
<b>Acute care non-psychiatric separations</b>									
Separations ('000)	1,152	1,010	620	307	322	72	59	62	3,605
Patient days ('000)	3,911	2,888	1,768	923	988	236	183	190	11,086
<b>Separations other than acute</b>									
Rehabilitation separations ('000)	17.4	21.6	17.5	2.5	1.9	0.6	0.6	0.6	62.7
Patient days ('000)	231.8	381.5	124.0	63.3	26.0	15.6	10.0	4.1	856.3
Palliative care separations ('000)	3.5	3.0	3.3	0.6	1.2	0.0	0.0	0.0	11.5
Patient days ('000)	33.7	44.1	26.8	6.2	14.1	0.2	0.2	0.4	125.6
Geriatric evaluation and management separations ('000)	0.7	6.5	0.4	0.0	0.0	0.0	0.0	0.0	7.6
Patient days ('000)	9.1	198.3	4.7	0.1	0.1	0.0	0.7	0.0	213.1
Psychogeriatric separations	0.2	0.0	0.2	0.5	0.1	0.0	0.0	0.0	1.1
Patient days ('000)	4.1	0.0	4.7	20.1	74.4	0.0	0.0	0.0	103.4
Maintenance separations ('000)	4.1	0.0	4.1	1.3	0.9	0.4	0.2	0.3	11.3
Patient days ('000)	82.9	0.0	124.5	35.1	29.7	13.5	5.5	4.5	295.8
Other separations ('000)	0.5	2.0	0.2	0.0	4.0	0.0	0.0	0.1	6.8
Patient days ('000)	4.5	82.5	0.8	0.0	20.0	0.0	0.1	0.6	108.6
<b>Total separations other than acute</b>									
<b>Separations ('000)</b>	<b>26.4</b>	<b>33.1</b>	<b>25.6</b>	<b>4.9</b>	<b>8.1</b>	<b>1.1</b>	<b>0.8</b>	<b>1.0</b>	<b>100.9</b>
<b>Patient days</b>	<b>366.1</b>	<b>706.4</b>	<b>285.5</b>	<b>124.8</b>	<b>164.3</b>	<b>29.4</b>	<b>16.6</b>	<b>9.7</b>	<b>1,702.6</b>
<b>Psychiatric separations<sup>(c)</sup></b>									
Separations ('000)	23	18	22	7	6	3	1	1	82
Patient days ('000)	227	277	226	100	89	24	15	7	965
<b>Data for excluded hospitals<sup>(e)</sup></b>									
Separations for excluded hospitals ('000) <sup>(b)</sup>	59	28	28	34	26	3	2	0	180
Per cent of all separations (%)	4.7	2.6	4.0	9.6	7.3	4.0	2.5	n.a.	4.5
Expenditure for excluded hospitals (\$m)	570	211	201	206	179	32	2	n.a.	1,401
Inpatient fraction for excluded hospitals	0.77	0.58	0.72	0.77	0.91	0.65	1.00	n.a.	0.75
Unadjusted cost per separation	7,520	4,270	5,191	4,731	6,205	6,724	1,042	n.a.	5,850

(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

(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 2000–01 AR-DRG v 4.1 cost weights (DHA 2002). An updated version of this table based on 2001–02 AR-DRG v 4.2 cost weights will be

(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.

n.a. not applicable.

**Table A3.9: Cost per acute casemix-adjusted separation, subset of selected public acute hospitals,<sup>(a)</sup> New South Wales, Victoria, Western Australia and Tasmania 2001–02**

Variable	NSW	Vic	WA	Tas
Total separations ('000)	1,201	650	272	76
Total patient days ('000)	4,499	2,351	922	289
Acute separations ('000) <sup>(b)</sup>	1,175	631	270	75
Acute patient days ('000) <sup>(b)</sup>	4,133	1,888	862	260
Proportion of separations acute	97.8%	97.1%	99.0%	98.6%
Proportion of patient days acute	91.9%	80.3%	93.5%	89.8%
<b>Total recurrent expenditure (\$m)</b>				
Subset hospitals	5,287	2,598	1,210	340
Hospitals in Table 4.1	5,287	4,307	1,399	340
Proportion	100%	60%	86%	100%
<b>Total admitted patient expenditure (\$m)</b>				
Subset hospitals	3,629	1,897	821	245
Hospitals in Table 4.1	3,629	3,097	970	245
Proportion	100.0%	61.3%	84.7%	100.0%
<b>Total separations ('000)</b>				
Subset hospitals	1,201	650	272	76
Hospitals in Table 4.1	1,201	1,061	319	76
Proportion	100.0%	61.2%	85.3%	100.0%
<b>Costs relating to acute care separations</b>				
Average cost weight <sup>(e)</sup>	1.050	0.913	1.003	1.064
Casemix-adjusted acute separations ('000)	1,234	576	270	80
Acute IFRAC <sup>(d)</sup>	0.645	0.661	0.660	0.685
Total acute patient recurrent expenditure (\$m)	3,412	1,716	799	233
<b>Cost per casemix-adjusted acute separation<sup>(f)</sup></b>	<b>2,890</b>	<b>3,058</b>	<b>3,033</b>	<b>3,000</b>
Cost per total casemix-adjusted separation (from Table 4.1)	3,010	3,117	3,180	3,118
Cost per total casemix-adjusted separation on subset of hospitals	3,010	3,287	3,090	3,118
Percentage this exceeds cost per acute separation for subset hospitals	4.0%	7.0%	1.8%	3.8%
<b>Cost of not acute separations in subset (\$m)</b>				
Per separation (\$)	217	181	23	12
Per patient day (\$)	8,244	9,578	8,715	11,823
Per patient day (\$)	594	391	385	424

(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 1000 not acute patient days were recorded.

(b) From the National Hospital Morbidity Database. Details of acute separations and patient days and non-acute separations and patient are presented in Table A4.1.

(c) Acute separations are separations where the care type is acute, newborn with qualified days, or unspecified.

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

(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 2000–01 AR-DRG version 4.1 cost weights (DHA 2002). An updated version of this table based on 2001–02 AR-DRG v 4.2 cost weights will be made available on the Internet when available.

(f) Includes adjustment for private patient medical costs: \$125 for New South Wales, \$77 for Victoria, \$76 for Western Australia and \$79 for Tasmania.

**Table A3.10: Cost per acute non-psychiatric casemix-adjusted separation, subset of selected public acute hospitals, <sup>(a)</sup> New South Wales, Victoria and Western Australia 2001–02**

Variable	NSW	Vic	WA
Total separations ('000)	1,201	650	272
Total patient days ('000)	4,499	2,351	922
Acute non psychiatric separations ('000) <sup>(b)</sup>	1,152	619	265
Acute non psychiatric patient days ('000) <sup>(b)</sup>	3,911	1,720	819
Proportion of separations acute	95.9%	95.3%	97.5%
Proportion of patient days acute	86.9%	73.1%	88.8%
<b>Total recurrent expenditure (\$m)</b>			
Subset hospitals	5,287	2,598	1,210
Hospitals in Table 4.1	5,287	4,307	1,399
Proportion	100%	60%	86%
<b>Total admitted patient expenditure (\$m)</b>			
Subset hospitals	3,629	1,897	821
Hospitals in Table 4.1	3,629	3,097	970
Proportion	100.0%	61.3%	84.7%
<b>Total separations ('000)</b>			
Subset hospitals	1,201	650	272
Hospitals in Table 4.1	1,201	1,061	319
Proportion	100.0%	61.2%	85.3%
<b>Costs relating to acute non-psychiatric separations</b>			
Average cost weight <sup>(e)</sup>	1.050	0.913	1.003
Casemix-adjusted acute non-psychiatric separations ('000)	1,210	565	266
Acute non-psychiatric IFRAC <sup>(d)</sup>	0.625	0.610	0.641
Total acute non-psychiatric patient recurrent expenditure (\$m)	3,305	1,586	775
<b>Cost per casemix-adjusted acute non-psychiatric separation<sup>(f)</sup></b>	<b>2,887</b>	<b>2,962</b>	<b>3,028</b>
Cost per total casemix-adjusted separation (from Table 4.1)	3,010	3,117	3,180
Cost per total casemix-adjusted separation on subset of hospitals	3,010	3,287	3,090
Percentage this exceeds cost per acute non-psychiatric separation for subset hospitals	4.1%	9.9%	2.0%
<b>Cost of not acute non-psychiatric separations in subset (\$m)</b>	<b>324</b>	<b>312</b>	<b>46</b>
Per separation (\$)	6,566	10,153	6,866
Per patient day (\$)	551	493	449

(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 1,200 acute separation patient days were

(b) From the National Hospital Morbidity Database. Details of acute separations and patient days and non-acute separations and patient are presented in Table A4.1.

(c) Acute separations are separations where the care type is acute, newborn with qualified days, or unspecified. Psychiatric separations are those with psychiatric care days.

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

(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 2000–01 AR-DRG version 4.1 cost weights (DHA 2002). An updated version of this table based on 2001–02 AR-DRG v 4.2 cost weights will be made available on the Internet when available.

(f) Includes adjustment for private patient medical costs: \$131 for New South Wales, \$81 for Victoria and \$80 for Western Australia.

**Table A3.11: Count of AR-DRGs v 4.2 contributing to Relative stay index, by sector, and medical/surgical/other type of AR-DRG, states and territories, 2001-02**

Type of hospital	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
<b>Public hospitals</b>	<b>638</b>	<b>639</b>	<b>637</b>	<b>635</b>	<b>635</b>	<b>625</b>	<b>619</b>	<b>575</b>	<b>639</b>
Medical	332	333	332	332	332	330	328	317	333
Surgical	275	275	275	273	272	265	262	233	275
Other	31	31	30	30	31	30	29	25	31
<b>Private hospitals</b>	<b>617</b>	<b>624</b>	<b>625</b>	<b>612</b>	<b>610</b>	<b>595</b>	<b>535</b>	<b>..</b>	<b>632</b>
Medical	324	326	327	320	321	321	286	..	332
Surgical	263	269	268	265	262	246	225	..	270
Other	30	29	30	27	27	28	24	..	30
<b>All hospitals</b>	<b>638</b>	<b>639</b>	<b>637</b>	<b>635</b>	<b>635</b>	<b>625</b>	<b>619</b>	<b>575</b>	<b>639</b>
Medical	332	333	332	332	332	330	328	317	333
Surgical	275	275	275	273	272	265	262	233	275
Other	31	31	30	30	31	30	29	25	31

.. not available

**Table A3.12: Separations for Group 1 Error AR-DRGs for the 10 procedures<sup>(a)</sup> with the highest number of separations,<sup>(b)</sup> by hospital sector, states and territories, 2001–02**

Procedure	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	Public hospitals								
41892-00 Bronchoscopy with biopsy	92	79	58	23	33	6	2	4	297
30224-01 Percutaneous drainage of intra-abdominal abscess, haematoma or cyst	103	61	24	46	23	0	0	2	273
35309-06 Percutaneous transluminal balloon angioplasty with stenting, single stent	96	58	26	31	21	2	0	0	235
35321-00 Transcatheter embolisation of blood vessel	61	34	38	19	21	1	8	0	182
41898-01 Fiberoptic bronchoscopy with biopsy	20	59	38	5	8	0	0	6	140
35640-00 Dilatation & curettage of uterus [D&C]	48	31	9	18	13	1	0	3	124
45519-00 Revision of burn scar or burn contracture	39	17	19	15	16	10	3	0	120
35303-06 Percutaneous transluminal balloon angioplasty	56	23	12	10	7	0	0	0	112
37203-00 Transurethral resection of prostate [TURP]	37	32	1	12	10	1	0	0	97
42503-00 Ophthalmological examination under general anaesthesia	25	27	14	3	11	0	0	0	81
Other procedures	1,390	1,165	568	604	340	42	43	85	4,237
<b>Total<sup>(c)</sup></b>	<b>1,926</b>	<b>1,580</b>	<b>794</b>	<b>780</b>	<b>503</b>	<b>73</b>	<b>74</b>	<b>100</b>	<b>5,830</b>
Private hospitals									
35309-06 Percutaneous transluminal balloon angioplasty with stenting, single stent	21	76	30	46	14	1	0	..	184
41892-00 Bronchoscopy with biopsy	86	23	21	17	31	3	3	..	149
31000-00 Microscopically controlled serial excision of tumour of skin	20	0	55	0	10	0	0	..	126
30224-01 Percutaneous drainage of intra-abdominal abscess, haematoma or cyst	45	0	19	0	62	0	0	..	125
35640-00 Dilatation & curettage of uterus [D&C]	19	41	20	16	21	5	0	..	125
37203-00 Transurethral resection of prostate [TURP]	47	0	19	0	9	0	0	..	116
14215-00 Revision of gastric band	14	41	32	6	0	5	0	..	88
42702-04 Extracapsular extraction of crystalline lens by phacoemulsification and aspiration of cataract with insertion of foldable artificial lens	5	54	16	2	0	5	0	..	85
41898-01 Fiberoptic bronchoscopy with biopsy	28	23	11	9	5	9	0	..	68
35303-06 Percutaneous transluminal balloon angioplasty	4	17	27	6	0	1	0	..	67
Other procedures	1,088	921	788	552	383	70	32	..	3,834
<b>Total<sup>(c)</sup></b>	<b>1,328</b>	<b>1,211</b>	<b>1,013</b>	<b>643</b>	<b>554</b>	<b>107</b>	<b>41</b>	<b>..</b>	<b>4,897</b>

(a) These are operating room procedures which could cause the separation to be assigned to a Group 1 Error DRG.

(b) Separations for which the care type was reported as acute, or newborn with qualified patient days, or was not reported

(c) As more than one procedure can be reported for each separation, the totals are not the sums of rows of the table.  
.. not available.

Table A3.13: Separations for Group 2 Error AR-DRGs for the 10 principal diagnoses<sup>(a)</sup> with the highest number of separations,<sup>(b)</sup> by hospital sector, states and territories, 2001-02

Principal diagnosis	NSW										Total	
	Vic	Qld	WA	SA	Tas	ACT	NT					
	Public hospitals											
Z91.5 Personal history of self-harm	0	0	0	0	0	0	0	0	0	0	1	101
Z87.12 Personal history of colonic polyps	0	0	0	0	0	0	0	0	0	0	3	46
Z51.5 Palliative care	0	0	0	0	0	0	0	0	0	2	1	41
P07.3 Other preterm infants	3	2	4	7	1	2	1	2	1	2	1	39
O80 Single spontaneous delivery	0	0	0	7	0	0	0	0	0	0	2	29
S61.81 Open wound (of any part of wrist and hand) communicating with a fracture	0	10	0	0	0	0	0	0	0	0	0	21
Z85.0 Personal history of malignant neoplasm of digestive organs	0	0	0	0	0	0	0	0	0	0	0	17
S91.81 Open wound (of any part of ankle and foot) communicating with a fracture	2	11	0	0	0	0	0	0	0	0	0	13
P07.2 Extreme immaturity	4	4	1	0	0	1	0	0	0	1	0	10
S81.81 Open wound (of any part of lower leg) communicating with a fracture	3	0	0	0	0	0	0	0	0	1	0	8
Other	130	2	20	10	2	0	2	2	0	0	6	172
<b>Total</b>	<b>387</b>	<b>9</b>	<b>47</b>	<b>15</b>	<b>16</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>497</b>
	Private hospitals											
Z87.12 Personal history of colonic polyps	0	0	0	0	0	0	0	0	0	0	..	208
O09.1 Duration of pregnancy 5-13 completed weeks	0	0	0	0	0	0	0	0	0	0	..	119
Z85.0 Personal history of malignant neoplasm of digestive organs	0	0	0	0	0	0	0	0	0	0	..	80
P07.3 Other preterm infants	5	0	6	0	2	1	0	0	0	0	..	47
Z87.18 Personal history of other digestive system disease	0	0	0	0	0	0	0	0	0	0	..	30
Z87.11 Personal history of peptic ulcer disease	0	0	0	0	0	0	0	0	0	0	..	29
Z87.10 Personal history of unspecified digestive disease	0	0	0	0	0	0	0	0	0	0	..	20
O80 Single spontaneous delivery	0	0	0	0	0	0	0	0	0	1	..	19
Z51.5 Palliative care	0	0	0	0	4	0	0	0	0	0	..	12
P07.2 Extreme immaturity	9	0	1	0	0	0	0	0	0	0	..	10
Other	65	5	5	0	7	0	1	0	0	0	..	83
<b>Total</b>	<b>619</b>	<b>10</b>	<b>5</b>	<b>7</b>	<b>1</b>	<b>13</b>	<b>2</b>	<b>6</b>	<b>14</b>	<b>14</b>	<b>..</b>	<b>657</b>

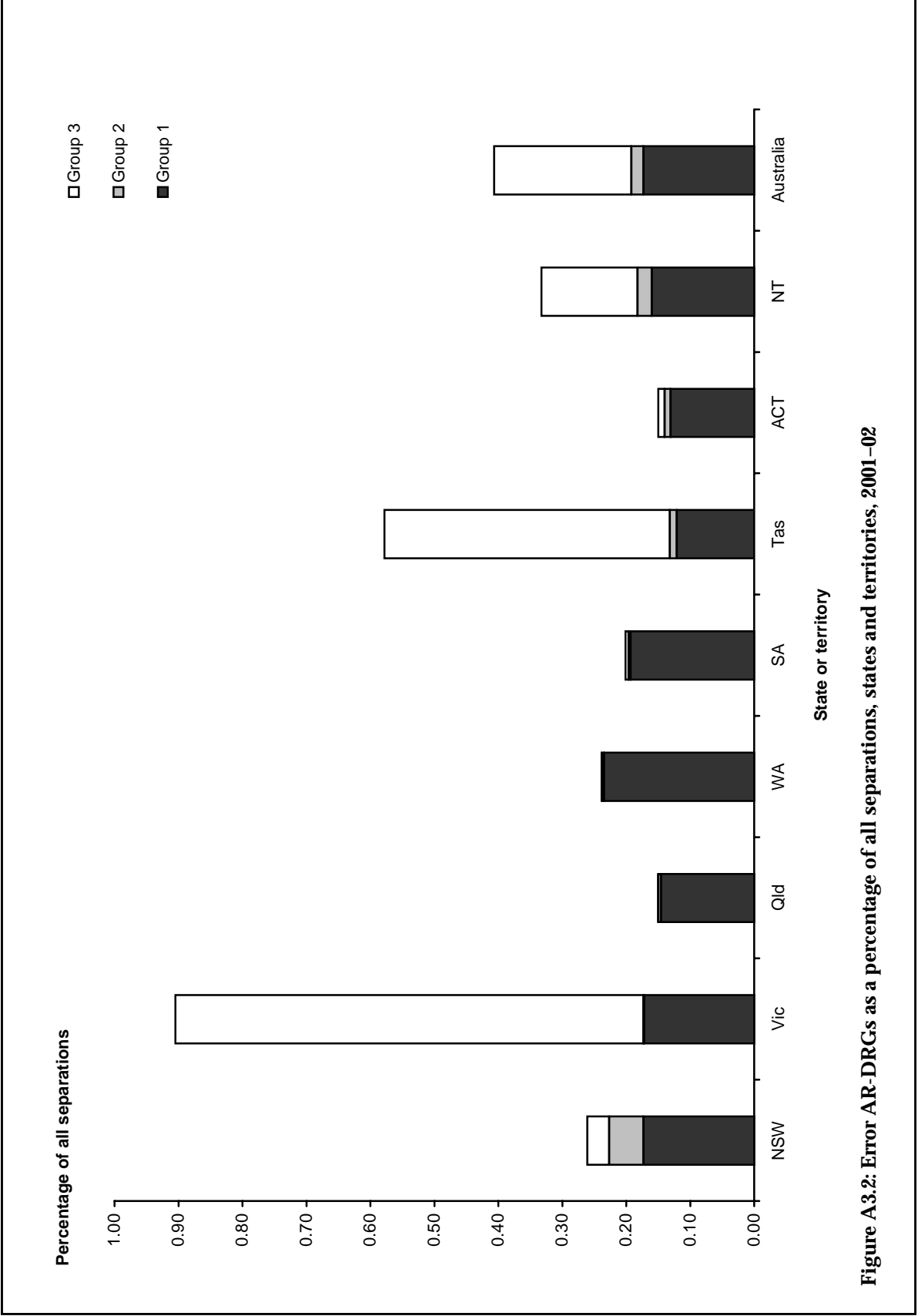
(a) These are principal diagnoses which could cause the separation to be assigned to a Group 2 Error DRG.

(b) Separations for which the care type was reported as acute, or newborn with qualified patient days, or was not reported. .. not available.

**Table A3.14: Separations, by Medicare eligibility status and hospital sector, states and territories, 2001-02**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total	
				Public hospitals						
Medicare eligible	1,255,140	1,086,017	693,747	351,514	361,913	79,386	61,532	63,090	3,952,339	
Not Medicare eligible	8,367	3,847	974	770	421	101	413	392	15,285	
Medicare eligibility not reported	210	0	0	475	0	0	0	0	685	
<b>Total</b>	<b>1,263,717</b>	<b>1,089,864</b>	<b>694,721</b>	<b>352,759</b>	<b>362,334</b>	<b>79,487</b>	<b>61,945</b>	<b>63,482</b>	<b>3,968,309</b>	
				Private hospitals						
Medicare eligible	689,699	579,417	563,330	264,459	197,705	70,649	23,193	..	2,388,452	
Not Medicare eligible	2,776	419	4,782	558	65	43	8,643	..	8,643	
Medicare eligibility not reported	67	0	24,962	115	0	0	3,950	..	29,094	
<b>Total</b>	<b>692,542</b>	<b>579,836</b>	<b>593,074</b>	<b>265,132</b>	<b>197,770</b>	<b>70,692</b>	<b>35,786</b>	<b>..</b>	<b>2,426,189</b>	
				All hospitals						
Medicare eligible	1,944,839	1,665,434	1,257,077	615,973	559,618	150,035	84,725	63,090	6,340,791	
Not Medicare eligible	11,143	4,266	5,756	1,328	486	144	9,056	392	23,928	
Medicare eligibility not reported	277	0	24,962	590	0	0	3,950	0	29,779	
<b>Total</b>	<b>1,956,259</b>	<b>1,669,700</b>	<b>1,287,795</b>	<b>617,891</b>	<b>560,104</b>	<b>150,179</b>	<b>97,731</b>	<b>63,482</b>	<b>6,394,498</b>	

Note: There is some variation between jurisdictions in the reporting of Not Medicare eligible and Medicare eligibility not reported.  
 .. not available



**Figure A3.2: Error AR-DRGs as a percentage of all separations, states and territories, 2001-02**