1 Introduction

Australian Hospital Statistics 2002–03 continues the Australian Institute of Health and Welfare's (AIHW) series of summary reports describing the characteristics and activity of Australia's hospitals. It completes a decade of continuous reporting, following previous reports for the financial years 1993–94 to 2001–02 (AIHW 1997a, 1997b, 1998, 1999, 2000, 2001, 2002a, 2003a).

This series of reports has been based on data supplied to the AIHW by the state and territory health authorities. Data are provided for the AIHW's National Public Hospital Establishments Database and cover resources, expenditure and revenue for public hospitals, and a summary of the services they provided to non-admitted patients. Data are also provided for public hospitals for the AIHW's National Elective Surgery Waiting Times Data Collection and on emergency department waiting times. Data are provided relating to separations of patients from both public and private hospitals for the AIHW's National Hospital Morbidity Database (see Box 1.1). Included are data on the diagnoses and other characteristics of admitted patients, and on the care they receive.

The collection and reporting of the data in this report were undertaken by the AIHW under the auspices of the Australian Health Ministers' Advisory Council through the National Health Information Agreement. Most of the data collected were as specified in the National Minimum Data Sets for Admitted Patient Care, Public Hospital Establishments, Elective Surgery Waiting Times and Emergency Department Waiting Times. The data element definitions are detailed in the Glossary. They are as specified in the *National Health Data Dictionary* version 11 (AIHW 2002b) for 2002–03 for the National Minimum Data Sets for Public Hospital Establishments, Elective Surgery Waiting Times, Emergency Department Waiting Times and Admitted Patient Care.

This report

This chapter describes the major data sources and briefly discusses their overall limitations.

Chapter 2 presents an overview of hospitals and hospital activity in Australia. This includes a summary of the numbers of hospitals and beds and of non-admitted patient care. It also includes statistics on separations, patient days and length of stay for admitted patients, based on the state or territory of the hospital, and whether it was in the public or private sector. The data are sourced from the National Public Hospital Establishments Database, the National Hospital Morbidity Database and the Australian Bureau of Statistics' (ABS) Private Health Establishments Collection.

Chapter 3 presents further data on public hospitals from the National Public Hospital Establishments Database. Data are presented on the number and type of hospitals, available beds, staff employed, specialised services, expenditure and revenue.

Box 1.1: Summary of terms and data sources relating to the use of hospitals

Admitted patients

*Statistics on admitted patients are compiled when an **admitted patient** (a patient who undergoes a hospital's formal admission process) completes an episode of care and 'separates' from the hospital. This is because most of the data on the use of hospitals by admitted patients are based on information provided at the end of patients' episodes of care, rather than at the beginning. The length of stay and the procedures carried out are then known and the diagnostic information is more accurate.*

***Separation** is the term used to refer to the episode of care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). 'Separation' also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing type of care.*

*For each separation, patients are assigned a **principal diagnosis**, which is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted patient care (see Chapter 8). The principal diagnosis recorded for each separation is usually a disease, injury or poisoning, but can also be specific treatment of an already diagnosed condition, such as dialysis for renal disease, or other reasons for hospitalisation. If applicable, **procedures** are also reported (see Chapter 9). These can be surgical or non-surgical, and therapeutic, diagnostic or of a patient-support nature (for example, anaesthesia).*

***Patient day** means the occupancy of a hospital bed (or chair in the case of some same day patients) by an admitted patient for all or part of a day.*

The state and territory health authorities compile information on patients admitted to hospitals and supply it to the AIHW for collation into the National Hospital Morbidity Database.

Although hospital separation data are a valuable source of valuable information about hospital care, they have limitations as indicators of ill health. Sick people who are not admitted to hospital are not counted and those who are admitted more than once are counted on each occasion. Hospital separation data are also affected by variations in admission practices, and in the availability of and access to hospitals.

Non-admitted patients

Hospitals provide services to non-admitted patients through emergency departments, outpatient clinics and a range of other specialised services (see Chapter 2). Summary information on these services is collated nationally for public hospitals by the AIHW and for private hospitals by the ABS.

*An **occasion of service** for a non-admitted patient is defined as any examination, consultation, treatment or other service provided to a patient in each functional unit of a health service establishment each time the service is provided. National data are categorised into broad clinic- or service-based groupings.*

Definitions used for non-admitted patient hospital care are not completely uniform among the states and territories, and have varied over time. Existing national systems for counting and classifying this care are being revised with the aim of improving consistency and comparability. For example, collection of more detailed data on non-admitted patients registered for care in emergency departments will be available for 2003–04 for selected public hospitals.

Chapter 4 presents hospital performance indicator data, drawn from the AIHW's hospitals databases and other sources. The indicators have been presented as they relate to the National Health Performance Framework (NHPC 2001). Information on emergency department waiting times is included.

Chapter 5 presents summary data on elective surgery waiting times reported to the National Elective Surgery Waiting Times Data Collection.

Chapter 6 presents separation-based administrative data from the National Hospital Morbidity Database including patient election status and funding source; area of usual residence; overall type of care received; urgency of admission, and modes of admission and separation. Summary data are also presented on hospital in the home care and on inter-hospital contracted care.

Chapter 7 presents demographic information from the National Hospital Morbidity Database, including tables of number of separations and patient days by age group, sex, Indigenous status, country of birth and area of usual residence.

Chapters 8 to 11 present a range of information from the National Hospital Morbidity Database, including information on the principal diagnoses of the patients (Chapter 8), the procedures they underwent (Chapter 9), external causes of injury and poisoning (Chapter 10) and the Australian Refined Diagnosis Related Groups (AR-DRGs) for the hospital separations (Chapter 11).

Appendixes 3 and 4 provide technical notes on the data and analyses additional to those in the chapters. In particular, Appendix 3 includes notes on the presentation of data in the tables and the population estimates used for population rate calculations, and notes on major aspects of the quality and comparability of the hospital morbidity data. Appendix 4 provides information on the hospitals covered by each of the data sources.

Information from the National Hospital Morbidity Database is presented using Service Related Groups in Appendix 5. Summary information from the Department of Health and Ageing's 2001–02 National Hospital Cost Data Collection is provided in Appendix 6. This collection is the source of AR-DRG cost weight and average cost information used in Chapters 2, 4, 6 and 11. Appendix 7 relates to the Department of Health and Ageing's *The State of Our Public Hospitals, June 2004* Report (DoHA, in press). It notes the major differences between the source databases and the analysis methods used for that report and for *Australian Hospital Statistics 2002–03*.

Throughout the report, unless otherwise specified:

- Public acute hospitals and public psychiatric hospitals are included in the public hospital (public sector) category
- All public hospitals other than public psychiatric hospitals are included in the public acute hospital category
- Private psychiatric hospitals, private free-standing day hospital facilities and other private hospitals are included in the private hospital (private sector) category
- All private hospitals other than private free-standing day hospital facilities are included in the other private hospitals category.

In addition, unless otherwise specified, statistics from the National Hospital Morbidity Database exclude separations for which the care type was reported as *Newborn* and for which no qualified days were reported (see Chapter 6) and records for *Hospital boarders* and *Posthumous organ procurement* (see Appendix 3).

Although the *National Health Data Dictionary* definitions form the basis of the databases, the actual definitions used may have varied among the data providers and from one year to another. In addition, the detail of the scope of the data collections may vary among the jurisdictions and from year to year. Comparisons between the states and territories, reporting years and hospital sectors should therefore be made with reference to the accompanying notes.

The National Public Hospital Establishments Database

The National Public Hospital Establishments Database holds a record for each public hospital in Australia. It is collated from the routine administrative collections of public acute hospitals, psychiatric hospitals, drug and alcohol hospitals and dental hospitals in all states and territories.

Essentially all public hospitals were included for 2002–03. However, the collection only covers hospitals within the jurisdiction of the state and territory health authorities. Hence, public hospitals not administered by the state and territory health authorities (for example, some hospitals run by correctional authorities in some jurisdictions and those in offshore territories) are not included. Further information about the hospitals included in the database for 2002–03 (including a list of the hospitals) is in Appendix 4.

The collection is based on the National Minimum Data Set for Public Hospital Establishments. Information is included on hospital resources (beds, staff and specialised services), recurrent expenditure (including depreciation), non-appropriation revenue and services to non-admitted patients (Box 1.1). Data on emergency department waiting times are also included (see below).

Validation processes for 2002–03 data involved detailed consultation by the AIHW with data providers in each state and territory. Summary information on data quality and comparability is presented in Chapter 3. Expenditure and occasions of service data for New South Wales are preliminary while information on revenue and staffing is not available for New South Wales. Tables relating to these data will be updated on the AIHW website when the data have been finalised.

Emergency department waiting times data

The National Public Hospital Establishments Database is also used to collate establishment-level data on emergency department waiting times provided by the state and territory health authorities.

The emergency department waiting times data relate to public acute care hospitals. Private hospitals are not included, except for one private hospital in Tasmania and two in New South Wales that provide services to public patients under contractual arrangements. More information about the coverage of this data collection (which is more complete for larger hospitals), including a list of hospitals included for 2002–03, is presented in Appendix 4.

The AIHW works with the states and territories to validate the data. Summary information on the quality and comparability of the data is included in Chapter 4.

The National Hospital Morbidity Database

The National Hospital Morbidity Database is a compilation of summary records from admitted patient morbidity data collection systems in Australian hospitals (Box 1.1). Data relating to admitted patients in almost all hospitals are included: public acute hospitals, public psychiatric hospitals, private acute hospitals, private psychiatric hospitals and private free-standing day hospital facilities. Data for private hospitals in Tasmania, the Australian Capital Territory and the Northern Territory were not published, for confidentiality reasons, but are included in relevant totals.

All public hospitals were included for 2002–03, with minor exceptions. The great majority of private hospitals were also included, although there were a few not included. Counts of private hospital separations presented in this report are therefore likely to be underestimates of the actual counts. In 2001–02, the National Hospital Morbidity Database reported 118,064 (4.6%) fewer separations than the ABS's Private Health Establishments Collection (ABS 2003), which has wider coverage. Further information about the public and private hospitals included for 2002–03 and previous years is in Appendix 4, including lists of all the hospitals contributing to the database for 2002–03.

The data supplied include demographic, administrative and length of stay data, and data on the diagnoses of the patients, the procedures they underwent in hospital and external causes of injury and poisoning. Information on the quality of the diagnosis, procedure and external cause data, classified using the third edition of the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification,* (ICD-10-AM) (NCCH 2002) is included in Appendix 3.

A process of validation of the morbidity database was jointly undertaken by the AIHW and the data providers. Information on major aspects of the quality and comparability of the data is presented in Appendix 3. The following notes should also be used to guide interpretation of the data.

- Records for 2002–03 are for hospital separations (discharges, transfers, deaths or changes in care type) in the period 1 July 2002 to 30 June 2003. Data on patients who were admitted on any date before 1 July 2003 are included, provided that they also separated between 1 July 2002 and 30 June 2003. A record is included for each separation, not for each patient, so patients who separated more than once in the year have more than one record in the database.
- Data are not generally available on the number of patients who receive admitted patient care each year. This is because information is not generally available to determine how many admissions occur for individual patients who have multiple admissions, for example for chronic conditions.
- Separations do not always represent periods of 'hospitalisation' for patients because a new separation record follows a change in care type (which can occur with a transfer from, for example, a medical ward to a rehabilitation unit within a hospital), or a transfer from one hospital to another (for example from an acute care hospital to a rehabilitation hospital). In 2002–03, there were 66,911 separations that began with a 'statistical' admission following a change in care type (1.0% of the total) (see Chapter 6). There were also 256,984 separations that began with a transfer of an admitted patient from another hospital (3.9% of the total). If the 'hospitalisations' had not been split into more than one separation with a 'statistical admission', the average length of stay would have been calculated as about 3.6 days, instead of 3.5 days. The average length of stay would have

been calculated as about 3.7 days if they had not been split with a transfer from one hospital to another, or if they had not been split by either of these types of transfer.

- Patient day statistics can be used to provide information on hospital activity that, unlike separation statistics, account for differences in length of stay. As the database contains records for patients separating from hospital during the year, this means that not all patient days reported will have occurred in the reporting period (1 July 2002 to 30 June 2003). It is expected, however, that patient days for patients who separated in 2002–03, but who were admitted before 1 July 2002, would be counterbalanced overall by the patient days for patients in hospital on 30 June 2003 who will separate in future reporting periods. The numbers of separations and patient days can be a less accurate measure of the activity for establishments such as public psychiatric hospitals, and for patients receiving care other than acute care, for which more variable lengths of stay are reported.
- The number and pattern of hospitalisations can be affected by differing availability of other health care services. They can also be influenced by admission practices, which can vary among health service providers and over time. For example, over the past few years there has been a gradual reclassification of chemotherapy patients from admitted patients to non-admitted patients (outpatients) in New South Wales public hospitals.
- There is variation among the states and territories in features such as the demographic structure of the population. Factors such as age, geographical location and Indigenous status can have an effect on the nature of health care delivery and thus on the statistics presented in this report.
- Although data on separations from the National Hospital Morbidity Database can reflect an aspect of the burden of disease in the community, they do not usually provide measures of the incidence or prevalence of conditions. This is because not all persons with a type or severity of illness are treated in hospital, and patients can have multiple admissions for some chronic conditions.

The National Elective Surgery Waiting Times Data Collection

The state and territory health authorities have largely provided patient-level data on elective surgery waiting times to the AIHW's National Elective Surgery Waiting Times Data Collection. The data presented in this report are for patients admitted for their elective surgery between July 2002 and June 2003. Earlier data on elective surgery waiting times were reported for 1999–00 to 2001–02 (AIHW 2002, 2002b, 2003).

The National Elective Surgery Waiting Times Data Collection relates to public acute care hospitals. All public hospitals that undertake elective surgery were generally included. Private hospitals are not included, except for two hospitals in New South Wales that were funded by the New South Wales Health Department to provide services for public patients. More detail on the coverage of this collection, including a list of hospitals in the data collection for 2002–03, is included in Appendix 4.

The AIHW works with the states and territories to validate the data. Summary information on the quality and comparability of the data is included in Chapter 5.

This report and additional data on the Internet

This report is available on the AIHW website at http://www.aihw.gov.au/. The text of the report is presented in PDF format and the tables as downloadable Excel spreadsheets. This site also includes additional data, in Excel spreadsheets, from the National Hospital Morbidity Database on diagnoses, procedures and AR-DRGs for admitted patients, and the data used to generate graphs in this report. Some of the report's tables are presented with more detail, such as using 5-year age groups rather than 10-year age groups (see Chapter 7), and all the funding source categories (see Chapter 6). More information on the website tables is in Chapters 7, 8, 9 and 11 and in Appendixes 1, 3 and 4.

After this report is published, the website will also include updates for the tables in Chapters 2, 4, 6 and 11 that use AR-DRG cost weight and average cost information. At the time of publication, 2002–03 cost weights and average costs were not available, so 2001–02 data were used in this report instead. Updates will also be provided for the tables in Chapters 2 and 4 and in Appendix 4, which use data on private hospitals, collated in the ABS's Private Health Establishments Collection. These data were also not available at the time of publication of this report.

Interactive data cubes

Also included on the website are interactive cubes of data from the National Hospital Morbidity Database which allow users to specify tables and graphs as required. There are four data cubes currently available:

- Principal diagnoses for 1993–94 to 1997–98 (using ICD-9-CM to classify diagnoses)
- Principal diagnoses for 1998–99 to 2002–03 (using ICD-10-AM to classify diagnoses)
- AR-DRGs version 4.0/4.1/4.2 for 1997–98 to 2002–03
- Principal diagnoses for separations that include specialised psychiatric care for 1998–99 to 2001–02 (using ICD-10-AM to classify diagnoses).

Later in 2004, data cubes using AR-DRGs version 5.0 will be added and the cube relating to specialised psychiatric care will be updated to include 2002–03 data.

Each cube includes information on the number of separations (same day and overnight), patient days and average length of stay, by age group and sex and year of separation, for each diagnosis or AR-DRG. The cube on specialised psychiatric care also includes data on the mental health legal status of the patient for each separation.