5. Principal diagnoses of admitted patients

Introduction

The principal diagnosis is defined as the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital. A principal diagnosis should be recorded for each episode of patient care.

The tables and figures in this chapter use the information on the principal diagnosis reported for each separation using ICD-9-CM codes. The tables include the numerical codes and abbreviated descriptions of the categories. Full descriptions are available from the Australian edition of ICD-9-CM, implemented in July 1995 (National Coding Centre 1995).

Information in this chapter is presented using three methods of grouping records based on the ICD-9-CM principal diagnosis code. Tables and figures using the first two methods incorporate all separations, while those using the third do not:

- ICD-9-CM chapters—these 18 groups provide information aggregated at the ICD-9-CM chapter level (Figures 5.1 and 5.2);
- ICD-9-CM diagnosis groups—these groupings were chosen to provide more detailed information than ICD-9-CM chapter headings, but still at a manageable level (Tables 5.1 to 5.8, 5.10 and 5.11). Note that these groups vary slightly from those used in previous *Hospital Utilisation and Costs Study* reports (for example, Cook 1996);
- 3-digit ICD-9-CM codes that accounted for the highest numbers of separations in the public and private sectors—this method provides information at a level enabling analysis of more specific diagnoses rather than groups of diagnoses (Tables 5.13 to 5.20 and Tables D1 and D2 on the diskette). Information in the National Hospital Morbidity Database includes even finer detail (that is, at the 4- or 5-digit code level as detailed in ICD-9-CM).

Tables are presented with summary national separation, patient day and length of stay statistics for public and private hospitals. In addition, the data are presented by State and Territory and by age group and sex. Also, Table 5.9 presents summary statistics for groups of diagnoses in the National Health Priority Areas. Table 5.12 presents data on the number of diagnoses reported for each separation, and thus on the data supplied on additional diagnoses as well as the principal diagnosis.

Although a principal diagnosis is expected to be reported for every separation, in practice it is missing for a small number of records (indicated as *Not reported* in the tables). The majority of records without a principal diagnosis were reported by Victoria, predominantly for private hospitals or public psychiatric hospitals.

Highlights

National

Figures 5.1 and 5.2 provide a summary by principal diagnosis (using ICD-9-CM chapters) of separations from Australian hospitals during 1995–96. Comparing males and females in the public sector, males had higher proportions of separations for *Diseases of the circulatory system*, and *Injury and poisoning*. Females dominated *Diseases of the genitourinary system* and, of course, the obstetric group (*Complications of pregnancy, childbirth, and the puerperium*). In the private sector, males again had higher proportions of separations for *Diseases of the circulatory system*, while females quite markedly dominated *Diseases of the genitourinary system*.

Ignoring the diverse categories that make up the *Other reasons for contact* group, the group with the highest number of separations in the public sector was *Diseases of the digestive system*, followed by the obstetric group and *Injury and poisoning*. In the private sector, *Diseases of the digestive system* had the largest number of separations, followed by *Diseases of the musculoskeletal system and connective tissue* and *Neoplasms*.

For the public and private sectors combined, the two groups with the most separations mirrored those in the public system (*Diseases of the digestive system* and the obstetric group). *Diseases of the circulatory system* had the third largest number of separations overall.

Sector

Tables 5.1 and 5.2 summarise the results presented in this chapter. In the public sector (Table 5.1), *Mental disorders* (290–319) stands out as a high volume group (7.9 separations per 1,000 population), for its high use of beds (128 patient days per 1,000 population) and for the longest average length of stay of these groups (17 days). Care must be taken when comparing these results to those presented in *Australian Hospital Statistics, 1993–95: An Overview* (Australian Institute of Health and Welfare 1997a) because public psychiatric hospitals are included in the scope of the 1995–96 report for the first time.

Other high utilisation diagnosis groups included *Ischaemic heart disease* (410–414), *Other indications regarding pregnancy, labour and delivery* (650–669) and *Diseases of the musculoskeletal system and connective tissue* (710–739). It should be noted, however, that the rankings of these disease groups do depend to some degree on the chosen groups of diagnosis codes.

The groups with the highest proportion of Australian hospital admissions occurring in the public sector were *Poisonings and toxic effects* (960–989) and *Human immunodeficiency virus infection* (042) (derived from Tables 5.1 and 5.2). The groups with the highest proportion of Australian hospital admissions occurring in the private sector were *Disorders of the oral cavity, salivary glands and jaws* (520–529) and *Disorders of the eye and adnexa* (360–379).

States and Territories

Tables 5.3 to 5.6 contain extensive detail on the pattern of hospital use in the States and Territories for the diagnosis groups, in both the public and private sector. These tables enable State by State comparisons of overall hospital use for the different diagnosis groups, and the share of admissions between the private and public sector, for example.

Age and sex

In Tables 5.7 and 5.8, information on the number of separations by age group and diagnosis groups is presented. Due to sex-specific differences in the age group distributions, results are

presented for males and females separately. These tables show a number of different patterns in the age structure of separations for the various disease groups. For example, patients admitted for *Intestinal infectious diseases* (001–009) were mostly in the younger age groups, while the opposite was the case for cancers. Other groups of diseases had large numbers of admissions for both the very young and the very old—for example, *Acute respiratory infections* (460–466); and others had a peak in the middle age groups—*Poisonings and toxic effects* (960–989) and the obstetric cases (630–677).

National Health Priority Areas

The National Health Priority Areas initiative, run jointly by the Commonwealth and the State and Territory governments, focuses on the areas that contribute most significantly to Australia's burden of illness (Australian Institute of Health and Welfare and Commonwealth Department of Health and Family Services 1997). Particular attention is on those areas where there is potential for the level of illness to be significantly reduced. The priority areas are cardiovascular health, cancer control, injury prevention and control, mental health and diabetes.

Table 5.9 provides information on hospital separations relevant to these priority areas. The priority areas are not defined using ICD-9-CM codes, so diagnoses encompassing broad definitions of cardiovascular disease, cancer, injury and poisoning, mental disorders and diabetes are included in the table. Detail is also provided to enable more specifically defined diagnoses to be distinguished.

A number of the priority area diseases are risk factors for hospitalisation for many other conditions. However, only separations for which the principal diagnosis corresponded with one of the priority areas have been included in the table. The Database also includes separations for patients with these conditions reported only as additional diagnoses—these cases are not included in this table.

Given the focus on prevention, the information for the injury prevention and control area is presented by the cause of the injury and poisoning (external cause). Individual records were selected for inclusion in this group if the principal diagnosis fell into the injury and poisoning category (ICD-9-CM codes 800–999). These records were then grouped together based on the reported external cause. There is overlap with the injury and poisoning information presented in this table and the information presented in chapter 7, where records are included if an external cause code was supplied (regardless of whether it corresponded to a principal or other diagnosis). A large proportion of the separations in chapter 7 which are not included in this chapter is accounted for by events that may occur as a result of the hospital stay, for example, *Misadventure during or due to medical care* (E870–E878). Only 50% of separations with a recorded external cause in this group had a principal diagnosis of injury or poisoning.

The separations included in this table accounted for 24% of the total for 1995–96. *Cardiovascular disease* accounted for the majority of these separations, followed closely by *Injury and poisoning*.

Public patients

In public hospitals during 1995–96, around 83% of separations were for public patients (Table 5.10). The remainder were mainly private patients and Department of Veterans' Affairs patients. Separations for patients with a principal diagnosis of *Human immunodeficiency virus infection* (042) were most frequently reported to be for public patients. The lowest proportions of public patients were reported for *Disorders of eye and adnexa* (360–379). Among the States and Territories, the Northern Territory had the highest overall proportion of public patient separations in public hospitals (95%), while New South Wales had the lowest (80%).

Table 5.11 provides information on patient days in public hospitals by principal diagnosis and State and Territory. A similar pattern was found for the proportion of public patient days as was observed for separations. However, Tasmania had the lowest proportion of public patient days in public hospitals.

Number of diagnosis codes

The National Hospital Morbidity Database contains data items for principal diagnosis and additional diagnoses. Additional diagnoses include comorbidities (co-existing conditions) and/or complications. These factors may result in longer lengths of stay, more intensive treatment or the use of greater resources. Ideally, the number of additional diagnoses recorded for a patient should be related to the person's clinical condition, and not be restricted by administrative or technical limitations.

Table 5.12 presents information on the number of diagnosis codes (principal and additional) contained in the National Hospital Morbidity Database. Although there are differences among the States and Territories in the number of diagnosis codes supplied to the Institute, it is not known whether these differences are due to differing clinical patterns or differing administrative systems. However, as there are marked differences between the States and Territories in the maximum number of diagnoses supplied (for example, in the public sector, 10 diagnoses in New South Wales and 21 diagnoses in South Australia), it is reasonable to assume that there are some limitations imposed on the number of diagnosis codes supplied to the Institute which may be restricting the level of detail available in some records.

Of interest is the differences between the public and private sectors in the number of supplied diagnoses—in the public sector there was an average of 2.8 diagnosis codes per case, while in the private sector this figure was 2.2. There were also differences between the sectors in the proportion of cases with a particular number of diagnoses. For example, in the public sector over 16% of records had five or more diagnosis codes, but in the private sector only 8% of records fell into this category. This may have been due to more complicated cases being treated in public hospitals, or differences in coding practices between the public and private sectors.

High volume diagnoses

The remaining tables present information on the most common principal diagnoses (at the 3-digit level of ICD-9-CM codes) in Australian hospitals. Tables 5.13 and 5.14 contain summary results for the 30 diagnoses with the most separations in public and private hospitals. Similar information for the top 200 diagnosis groups is supplied on the diskette accompanying this report (Tables D1 and D2).

In the public sector, the most common principal diagnosis groups were *Encounter for dialysis* (V56) and *Encounter for other and unspecified procedures and aftercare* (V58—84% of which were for chemotherapy). For both of these, the corresponding average length of stay was relatively short. In contrast, the third most common diagnosis group—*Care involving use of rehabilitation procedures* (V57)—had a much longer average length of stay. In fact this group accounted for the largest number of patient days in the public sector (see rankings in the final column of Table 5.13). The next most common reason for admission in the public sector was for *Asthma* (493).

In contrast, the most frequent principal diagnosis in the private sector was *Cataract* (366), with the second most frequent again being *Encounter for other and unspecified procedures and aftercare* (V58—86% of which were for chemotherapy). Again the principal diagnosis with the largest number of patient days was *Care involving use of rehabilitation procedures* (V57).

There was some variation between the States and Territories in the relative number of separations for the most common diagnoses (Tables 5.15 and 5.16). Notably, in the public

sector, Queensland had a high number of separations with a principal diagnosis of *Follow-up examination* (V67) and Western Australia had a relatively large number of separations for *Affective psychoses* (296).

Information on the age and sex distribution of these separations is presented in Tables 5.19 and 5.20.

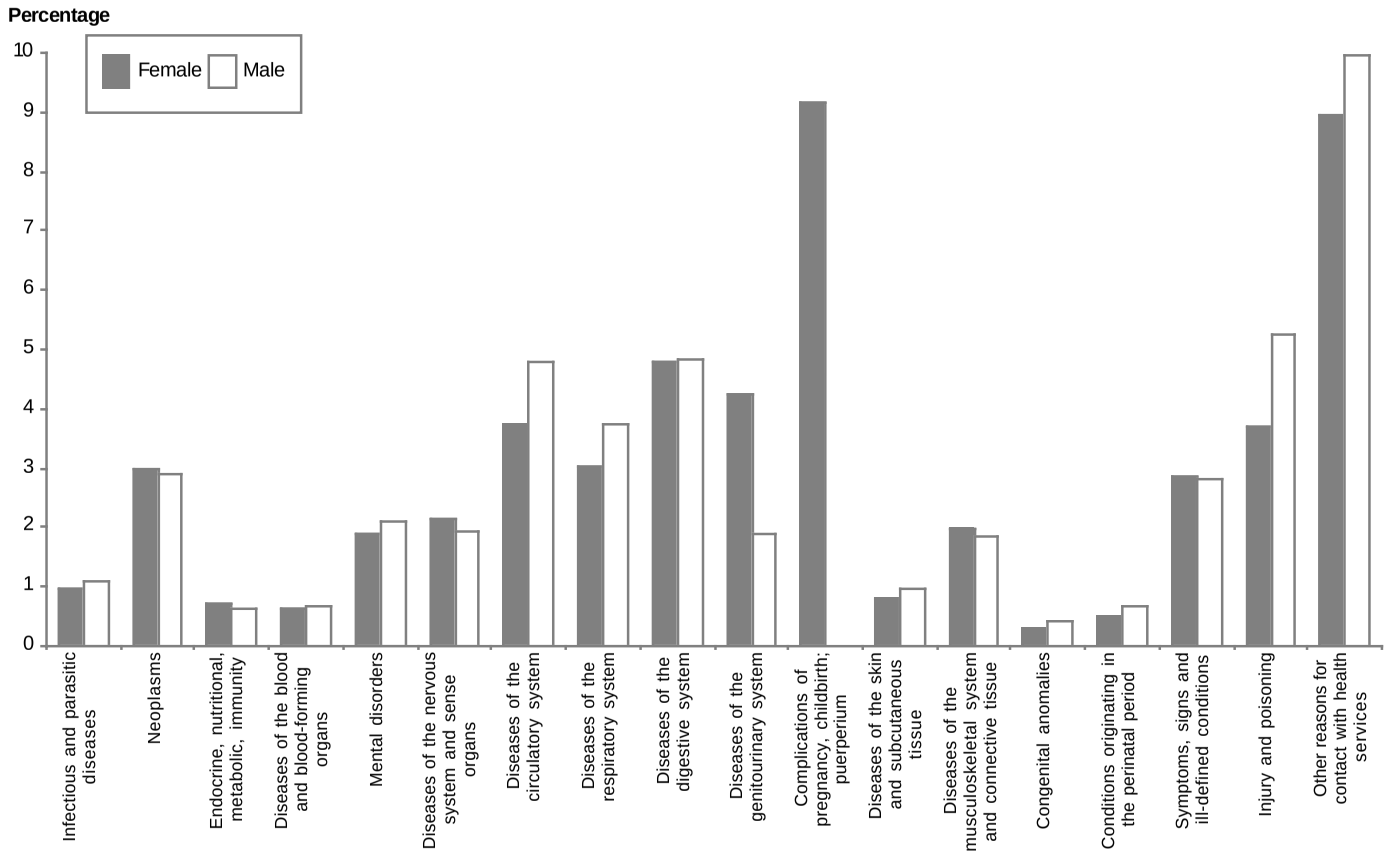

Figure 5.1: Percentage separations by principal diagnosis in ICD-9-CM chapter groupings, by sex, public hospitals, Australia, 1995–96

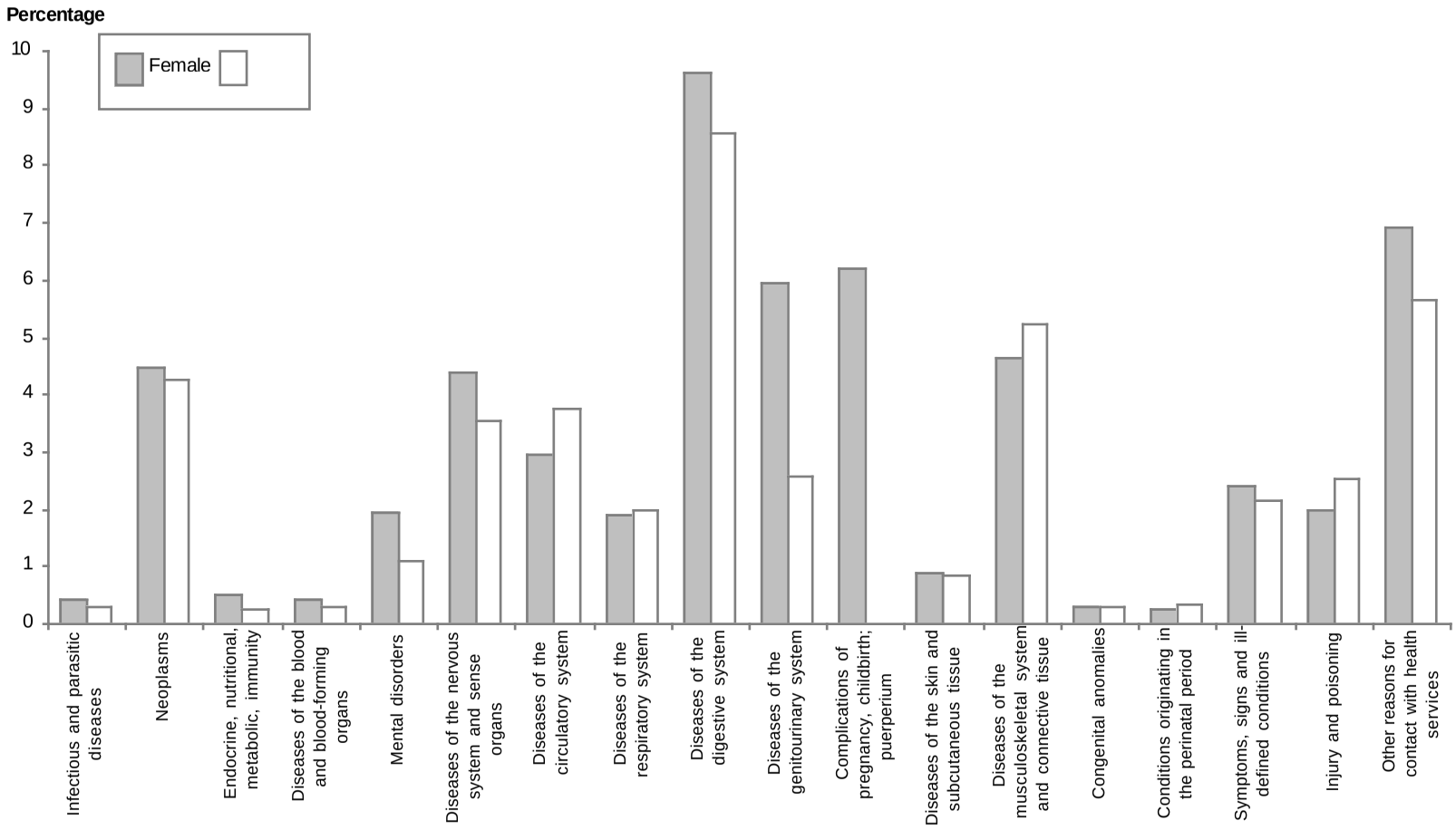

Figure 5.2: Percentage separations by principal diagnosis in ICD-9-CM chapter groupings, by sex, private hospitals, Australia, 1995–96