9 Summary

Introduction

This chapter presents details of the major changes noted in the data between this and the first edition, as well as some summary measures of the health differentials calculated from the health status and health service utilisation data mapped in Chapters 5 and 6.

Changes in data rates between editions

The reference period for the data in the first and this second edition varies according to the dataset. In general, the Census data in this edition are ten years on from the first edition (Chapter 3: 1986 Census and 1996 Census); and the income support (Chapter 4: 1989 and 1996) and health status (Chapter 5: 1985-89 and 1992-95) datasets are seven years later. The data for hospital admissions (see *Differences in data treatment between editions*, Chapter 6) and services and facilities are not discussed in this chapter because of difficulties in comparing the available series over time.

Readers should note that some variables are not discussed below because the data were available only for the latest period.

Changes in socioeconomic status variables

Marked variations were recorded between 1986 and 1996 for a majority of the socioeconomic status variables mapped for Australia (**Table 9.1**). For the capital cities, the largest increases were for the population of Aboriginal and Torres Strait Islander people (an increase of 79.0 per cent over this ten year period); the occupational grouping of managers and administrators, and professionals (42.2 per cent); low income families (41.1 per cent); single parent families (39.5 per cent); people born overseas in predominantly non-English speaking countries (an increase of 33.1 per cent for those resident for five years or more, of 26.1 per cent for those resident for less than five years, and of 24.5 per cent for those with poor proficiency in English); and people aged 65 years and over (27.0 per cent). The largest decreases recorded over this ten year period were for the variables for unemployment among 15 to 19 year olds (down by 14.7 per cent) and early school leavers (down by 13.3 per cent).

Variations of this order were also recorded in the non-metropolitan areas of Australia. The major differences from the changes noted for the capital cities were the larger increases in the number of single parent families and the population of people aged 65 years and over; smaller increases for Indigenous people, the occupations of managers and administrators and professionals, low income families and people born overseas in predominantly non-English speaking countries who have been resident for five years or more; and decreases for the remaining two variables for people born overseas in predominantly non-English speaking countries.

Changes over this period for the other major urban centres were relatively consistent with those recorded in the capital cities, although with much larger increases recorded for the population aged from 0 to 4 years, people aged 65 years and over, single parent families and people born in predominantly non-English speaking countries who had been resident for five years or more.

Table 9.1: Changes in demographic and socioeconomic status variables, by Section of Australia
Per cent change

Variable	Capital cities	Other major urban centres	Rest of Australia	Australia
1986 to 1996				
0 to 4 year olds	8.6	21.5	1.0	6.4
65 years & over	27.0	57.0	36.6	31.4
Single parent families	39.5	63.6	43.3	42.0
Low income families	41.1	44.5	30.2	36.7
Unemployed people	21.4	24.0	7.0	16.4
Unemployed people aged 15 to 19 years	-14.7	-15.9	-26.1	-19.0
Female labour force participation (20 to 54 years)	8.4	16.9	12.4	10.0
Early school leavers	-13.3	-7.1	-5.0	-10.1
Unskilled & semi-skilled workers	-12.4	-6.8	-4.8	-9.7
Managers & administrators, & professionals	42.2	61.3	9.0	31.8
Aboriginal & Torres Strait Islander people	79.0	80.4	44.4	55.1
People[1] born overseas & resident for less than 5years	26.1	59.9	-13.0	23.8
People[1] born overseas & resident for 5 years or more	33.1	27.0	11.8	30.3
People[1] born overseas: speaks English not well/not at all	24.5	11.4	-15.2	21.5
Housing authority rented dwellings	20.3	31.7	10.7	18.4
Dwellings without a motor vehicle	10.5	25.9	23.6	14.3
1989 to 1996				
Age pensioners	0.6	20.5	1.3	2.4
Disability support pensioners	56.5	76.1	49.6	55.1
Female sole parent pensioners	42.7	66.9	35.9	42.4
Unemployment beneficiaries	142.9	127.7	85.5	118.5
Dependent children of selected pensioners & beneficiaries	75.3	99.3	50.1	66.7

[1]Includes people who were born in a predominantly non-English speaking country.

Substantial variations were recorded in income support payments to residents of the capital cities for all of the payment types analysed, other than the Age Pension, for which there was a small increase (an increase of 0.6 per cent). The number of recipients for each of the other payment types increased substantially, with the number of unemployment beneficiaries more than doubling (an increase of 142.9 per cent) (**Table 9.1**). Similar, although smaller increases were recorded in the non-metropolitan areas of Australia for all of these income support payments other than the Age Pension, for which there was a larger increase (1.3 per cent). The increases in the other major urban centres were more in line with those recorded for the capital cities than with those in the non-metropolitan areas.

Changes in health status variables

As noted in Chapter 5 (see *Background*), death rates in Australia have declined for the majority of causes, with lower rates for all of the major causes of death mapped in the atlas: percentage changes between the two periods (from 1985 to 1989 and 1992 to 1995) are shown in **Table 9.2**.

In the capital cities, the largest decreases were recorded for the infant death rate (down by 29.5 per cent); and for deaths of people aged from 15 to 64 years from circulatory system diseases (down by 37.7 per cent), respiratory system diseases (down by 30.9 per cent), lung cancer (down by 24.3 per cent) and accidents, poisonings and violence (down by 22.9 per cent). All causes mortality was 22.6 per cent lower over this period, marginally more so for males than for females. There were reductions in the rates for every category in **Table 9.2** for the other major urban centres.

There were also reductions in premature death rates in the non-metropolitan areas for all major causes of death. However the reductions were all lower than those recorded for the capital cities, at around two thirds (65.4 per cent) for all cause mortality.

Table 9.2: Changes in selected health status variables, by Section of Australia
Per cent change[1] 1985-89 to 1992-95

Variable	Capital cities	Other major urban centres	Rest of Australia	Australia
Infant deaths	-33.0	-31.9	-26.9	-29.5
Deaths of 15 to 64 year olds				
Males	-26.8	-21.3	-18.0	-23.8
Females	-24.1	-14.0	-14.1	-20.5
Persons, by cause				
Circulatory system diseases	-42.1	-33.5	-29.1	-37.7
All cancers (malignant neoplasms)	-19.2	-7.5	-4.0	-14.2
Lung cancer	-24.3	-18.7	-17.5	-22.1
Respiratory system diseases	-35.3	-28.2	-23.2	-30.9
Accidents, poisonings & violence	-24.1	-17.4	-22.1	-22.9
Other causes	-3.9	-3.7	-5.6	-4.7
All causes	-25.7	-18.4	-16.8	-22.6

[1] 'Per cent change' represents the difference (between the reference periods) in death rates: for infants, it is the infant death rate (infant deaths per 1,000 live births); and for deaths of 15 to 64 year olds, it is the rate per 100,000 population produced by indirect age (or age-sex) standardisation

Summary of findings by socioeconomic status of area of residence

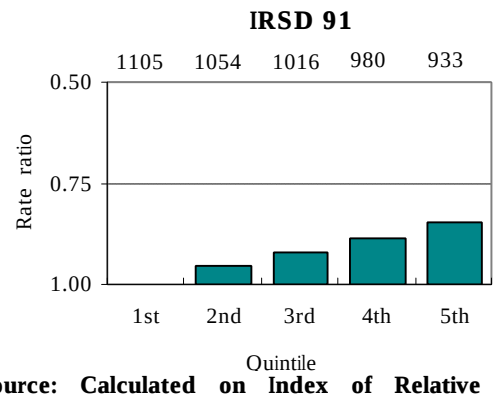
Background

In order to summarise the extent of health inequalities shown in the maps in the earlier chapters, the health status and health service utilisation data are presented in chart form on the following pages. The data have been re-cast to show the average rate (or standardised ratio or percentage) by socioeconomic status of the Statistical Local Area (SLA) of address in the records studied. To do this, each SLA in the major urban centres was allocated to one of five categories (quintiles) based on its Index of Relative Socio-Economic Disadvantage (IRSD) score (this index is described on page 17). Quintile 1 comprises the twenty per cent of SLAs in these major urban centres with the highest IRSD scores, and Quintile 5 comprises the twenty per cent of SLAs with the lowest IRSD scores. The average rate (or standardised ratio or percentage) was then calculated for each of the five quintiles. For example, the average infant death rate was calculated for the most advantaged SLAs (Quintile 1), for the most disadvantaged SLAs (Quintile 5) and for each of the intervening quintiles (Quintiles 2 to 4). These rates were then graphed, with the rate, standardised ratio or percentage for the first quintile set to 1 in order to highlight variations from the rates recorded in the most advantaged areas (**Figure 9.2**). This exercise was repeated for SLAs in the non-metropolitan areas of Australia.

As noted in Chapter 3, the ABS has calculated the IRSD so that low scores indicate greatest disadvantage. This is the reverse of the way in which other data in the atlas has been calculated, where higher rates, standardised ratios etc. indicate poorest health, highest utilisation of health services and greatest disadvantage. In order to present the graph of the IRSD in a form that is visually consistent with the other graphs in this chapter (ie. with the bars increasing in size to the right, and above the base of 1), the scales on the chart in **Figure 9.1** have been reversed.

Figure 9.1 shows that the average IRSD score in 1991 for Quintile 1 (comprising the most socioeconomically advantaged SLAs across the capital cities and other major urban centres) was 1105, decreasing for each quintile to a score of 933 in Quintile 5 (the most socioeconomically disadvantaged SLAs). The range of index scores for the non-metropolitan areas of Australia was from 1052 in Quintile 1 to 929 in Quintile 5.

Figure 9.1: Differentials in IRSD scores for SLAs in the major urban centres by quintile of socioeconomic disadvantage of area, 1991



Source: Calculated on Index of Relative Socio-Economic Disadvantage, ABS 1991 Census

The IRSD shown in this graph and used in the health status graphs (**Figure 9.2**) is from the 1991 Census, as the health status data generally relates to the period from 1992 to 1995. The IRSD used for the health service utilisation graphs (**Figure 9.3**) is from the 1996 Census, as the data is for periods close to the 1996 Census. At the 1996 Census, the IRSD scores were, for Quintile 1, 1116; Quintile 2, 1061; Quintile 3, 1028; Quintile 4, 988; Quintile 5, 939. The range of index scores for the non-metropolitan areas of Australia was from 1043 in Quintile 1 to 921 in Quintile 5.

Results

Health status in the major urban centres

Figure 9.2 shows similar graphs (to that above) for each of the health status variables for SLAs in the major urban centres.

The bars in the graph show the rate ratio for the variable in each quintile. The rate ratio is calculated as the value (eg. the standardised ratio (SR) in each quintile divided by the SR in Quintile 1: the rate ratio for Quintile 1 is 1.0). Using the graph of years of potential life lost (YPLL) from deaths between the ages of 15 to 64 years as an example, it can be seen that the rate ratio in Quintile 5 is around 1.65 (ie. the SR is almost two thirds higher in the areas in Quintile 5 than in Quintile 1). The actual values of the SRs (shown above the bars) range from 75 in the most advantaged areas (25 per cent fewer YPLL than were expected from the Australian rates) to 121 in the most disadvantaged areas (indicating that there were 21 per cent more YPLL than were expected from the Australian rates). Large differentials were also evident for deaths of 15 to 64 year old males (from an SDR of 71 in Quintile 1 to 126 in Quintile 5) and deaths of 15 to 64 years olds from lung cancer (66 to 125), circulatory system diseases (63 to 121) and respiratory system diseases (53 to 127).

Although there is some variability across the quintiles, the pattern is generally for the highest socioeconomic status SLAs (those in Quintile 1) to have the most advantageous (ie. in the majority of cases the lowest) rates and, generally, for the most disadvantaged SLAs (those in Quintile 5) to have the highest rates. The exception is the Physical Component Summary (PCS) score, for which low scores indicate poorer health. Despite the narrow range of these mean values, there is a clear gradient evident across the quintiles of socioeconomic disadvantage of area.

Health service utilisation in the major urban centres

Figure 9.3 shows rate ratios for each of the health service utilisation variables for SLAs in the major urban centres. Although there is some variability across the quintiles, the pattern is generally for the most advantaged SLAs (those in Quintile 1) to have the lowest rates of admission, and for the most disadvantaged SLAs (those in Quintile 5) to have the highest rates. The exceptions include the variables for admissions to a private hospital and admissions for the surgical procedures of myringotomy, hip replacement, lens insertion and endoscopy. Others, including the graphs for admissions for breast cancer of females aged 40 years and over and for psychosis; neurotic, personality and other mental disorders; and admissions for a lens insertion, reveal a less consistent pattern. There are only minor variations between the quintiles in the percentages for immunisation and the SRs for same day admissions, admissions for all cancers and admissions for a surgical procedure (both all and same day admissions).

The largest differentials between Quintile 1 and Quintile 5 (with higher rates in Quintile 5) occur for admissions to public acute hospitals, for lung cancer, circulatory system diseases (as well as for ischaemic heart disease), respiratory system diseases (at all ages and for 0 to 4 year old children; as well as for bronchitis, emphysema and asthma). Variables with the largest differentials and lower rates in Quintile 5, are admissions to private hospitals and admissions for a myringotomy.

Health status in non-metropolitan areas

Figure 9.4 shows the rate ratios for each of the health status variables for SLAs in the non-metropolitan areas of Australia. The gradients are, overall, more marked than in the major urban centres. The main difference from the gradients evident for the major urban centres are for deaths of people aged 15 to 24 from the combined causes of accidents, poisonings and violence, for which the pattern is not consistent across the quintiles, although the most disadvantaged areas do have the highest rates of death.

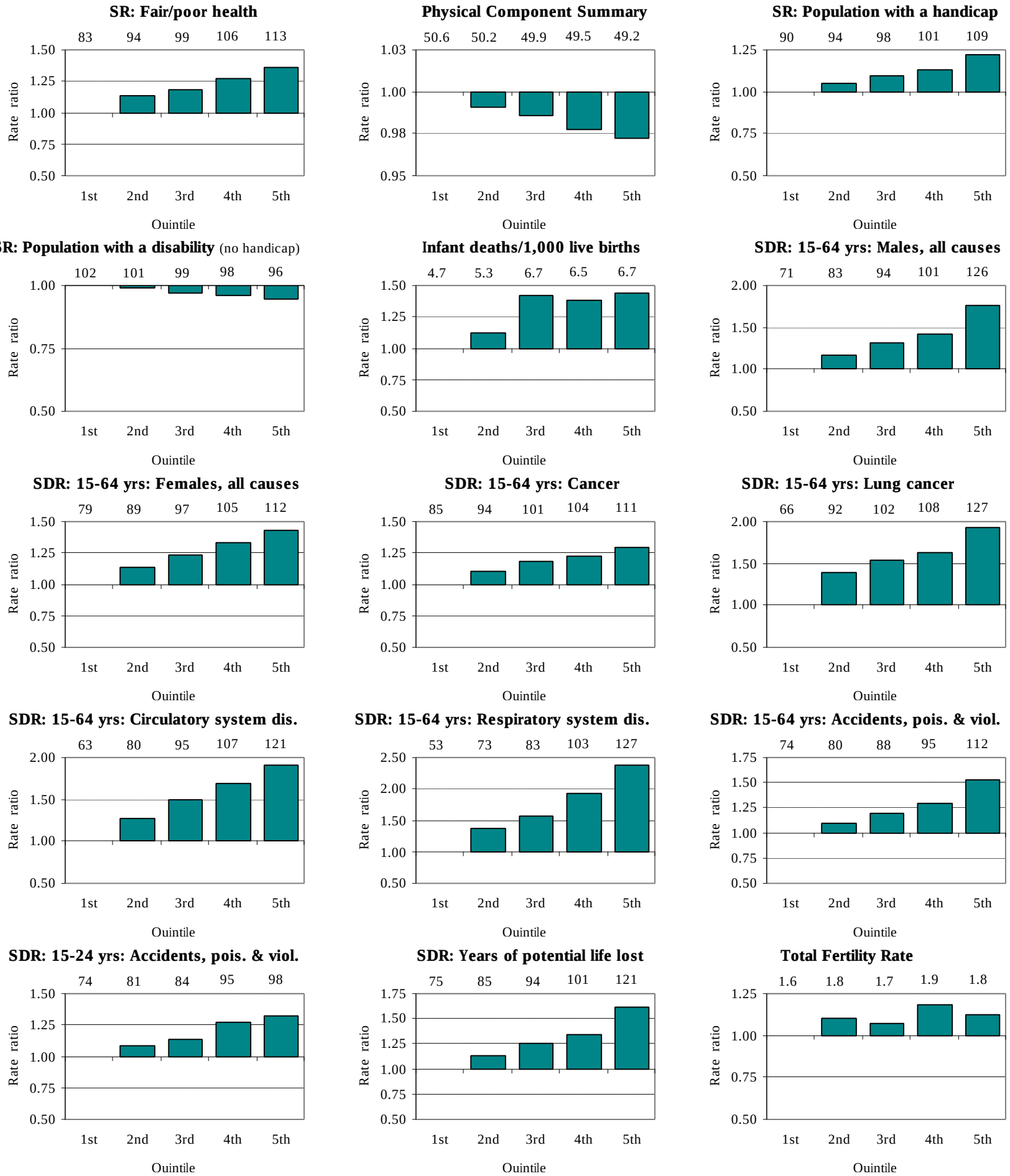
The largest differentials between Quintile 1 and Quintile 5 (with higher rates in Quintile 5) occur for the infant death rate and for deaths of males and of females aged 15 to 64 years from all causes; and for deaths of 15 to 64 year old people from lung cancer, circulatory system diseases, respiratory system diseases and accidents, poisonings and violence (the latter also for people aged from 15 to 64 years). Although not as large as some of the differentials, there is again a clear gradient in the rate of people reporting their health as fair or poor (rather than as excellent, good or very good).

As for the major urban centres, there is also a clear gradient evident in Physical Component Summary scores across the quintiles of socioeconomic disadvantage of area.

Health service utilisation in non-metropolitan areas

Figure 9.5 shows the rate ratios for each of the health service utilisation variables for SLAs in the non-metropolitan areas of Australia. Again, there are clear gradients for many of the variables, which are on the whole stronger than those in the major urban centres. The main differences from the gradients evident for the major urban centres are for private hospital admissions and admissions for cancer; breast cancer for females

Figure 9.2: Health status differentials by quintile of socioeconomic disadvantage of area, major urban centres



Note: Quintile of socioeconomic disadvantage of area is based on the ABS SEIFA Index of Relative Socio-Economic Disadvantage. Data for years of potential life lost are for the population aged from 15 to 64 years

Source: Compiled from project sources

Figure 9.3: Health service utilisation differentials by quintile of socioeconomic disadvantage of area, major urban centres

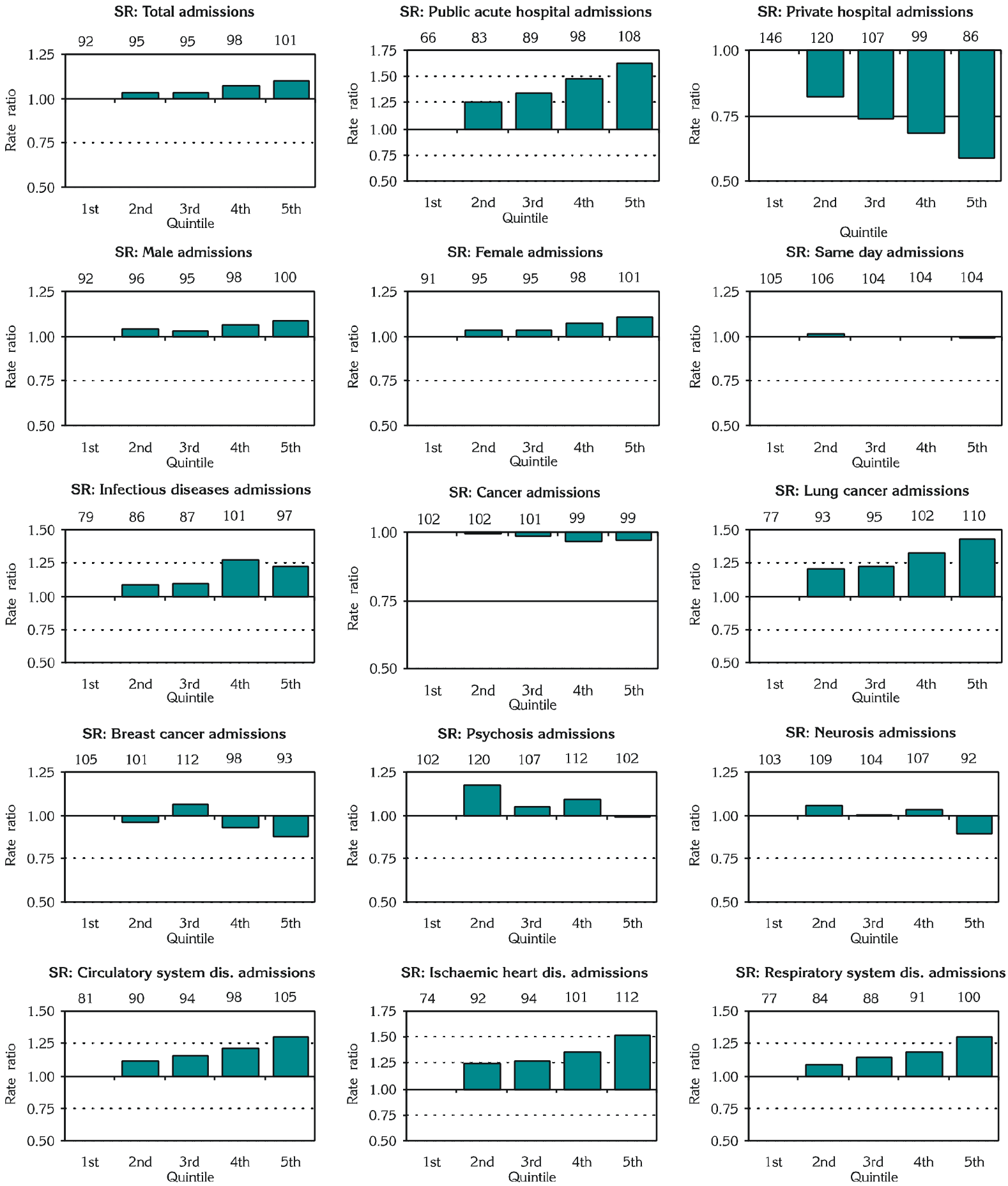
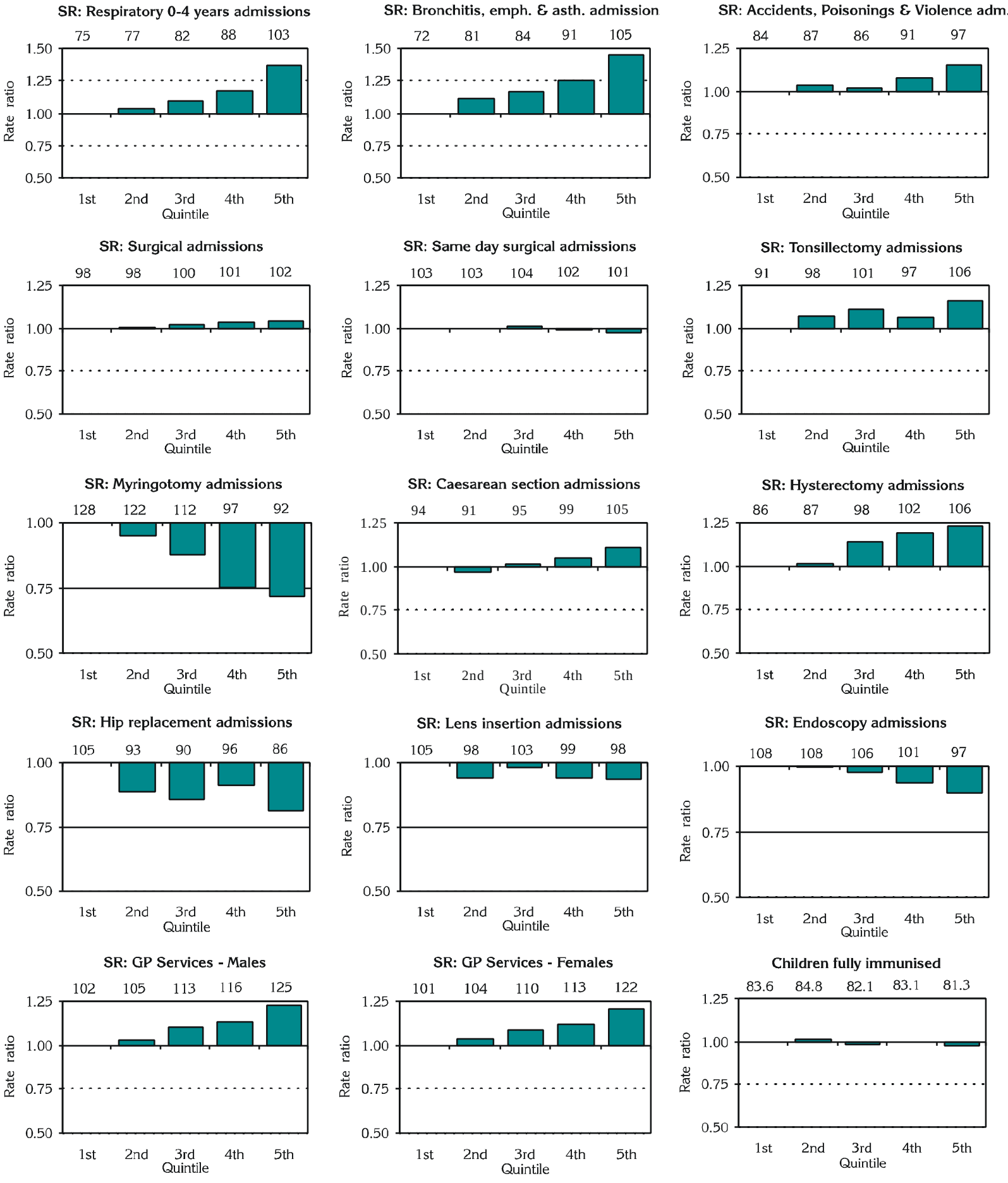
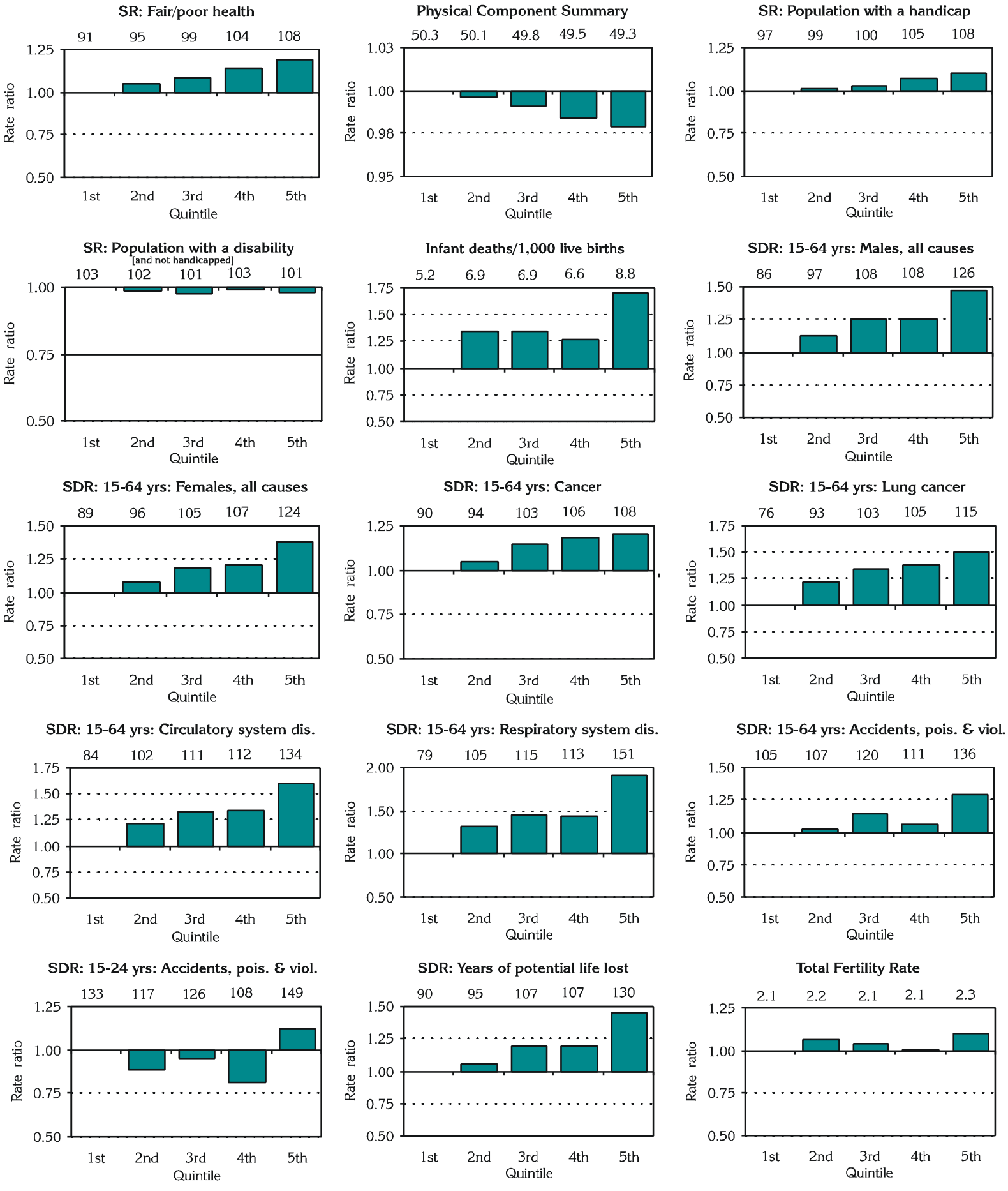


Figure 9.3: Health service utilisation differentials by quintile of socioeconomic disadvantage of area, major urban centres ... *cont*



Note: Quintile of socioeconomic disadvantage of area is based on the ABS SEIFA Index of Relative Socio-Economic Disadvantage.
Source: Compiled from project sources

Figure 9.4: Health status differentials by quintile of socioeconomic disadvantage of area, non-metropolitan Australia



Note: Quintile of socioeconomic disadvantage of area is based on the ABS SEIFA Index of Relative Socio-Economic Disadvantage. Data for years of potential life lost are for the population aged from 15 to 64 years.

Source: Compiled from project sources

Figure 9.5: Health service utilisation differentials by quintile of socioeconomic disadvantage of area, non-metropolitan Australia

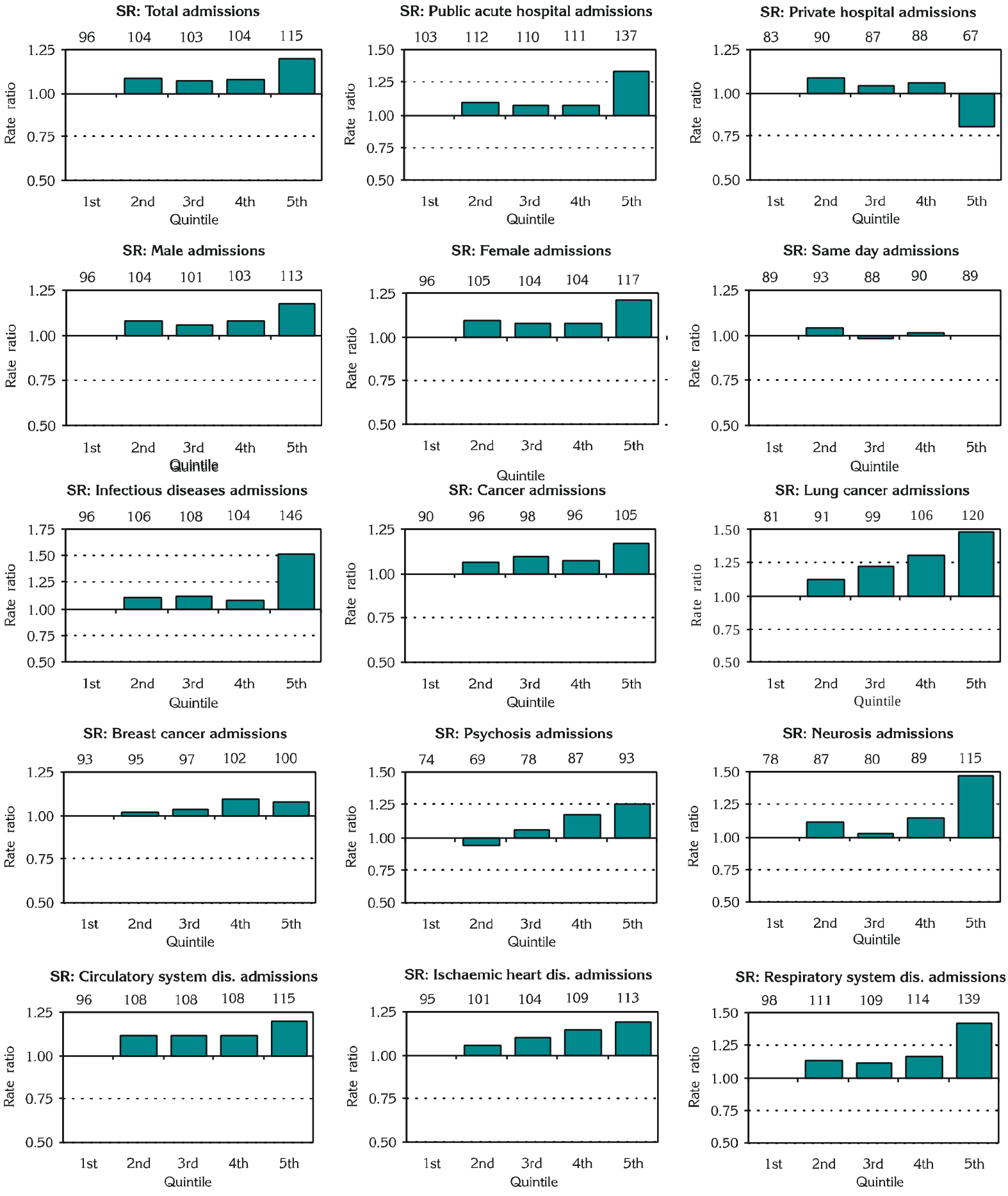
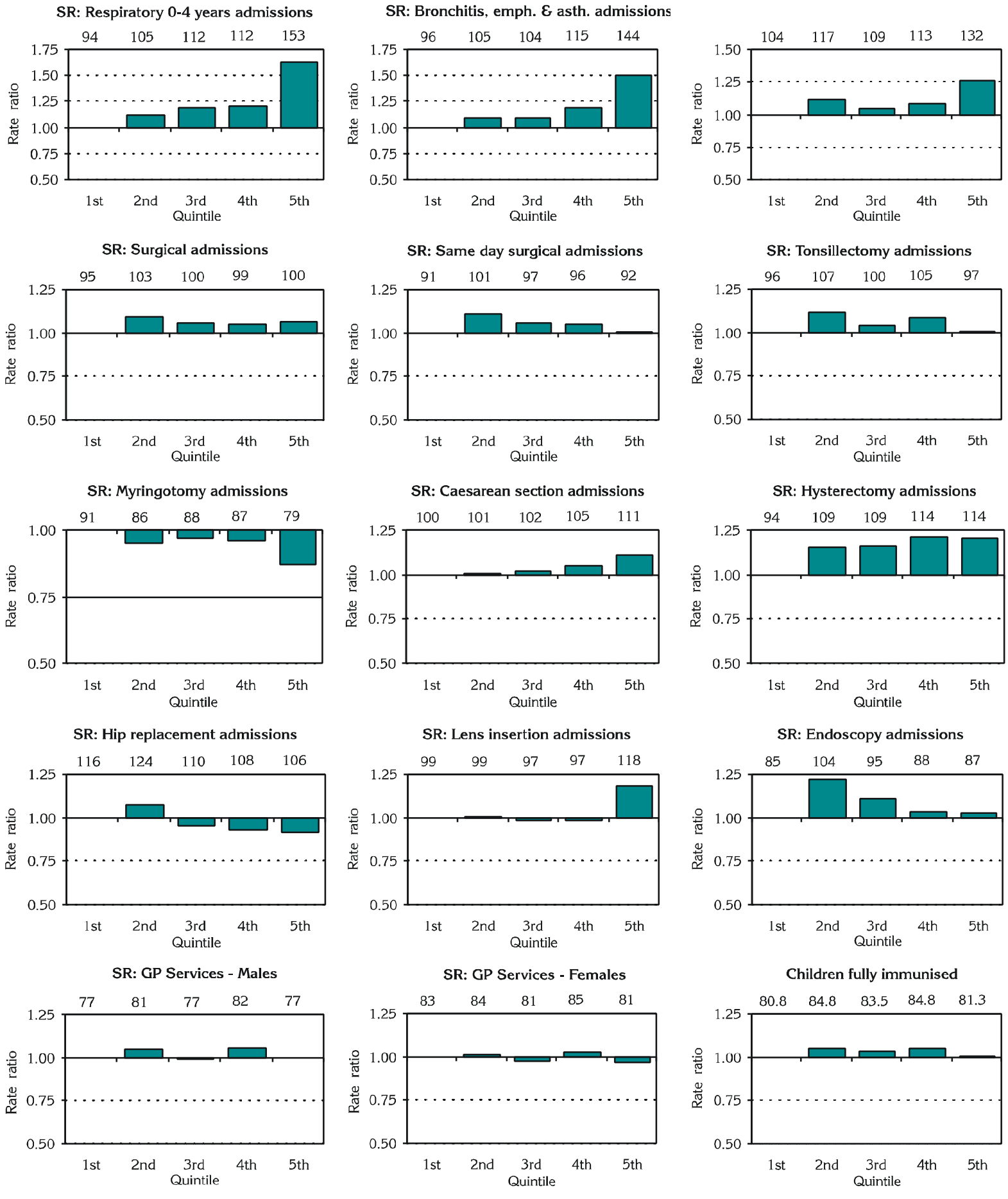


Figure 9.5: Health service utilisation differentials by quintile of socioeconomic disadvantage of area, non-metropolitan Australia *cont*



Note: Quintile of socioeconomic disadvantage of area is based on the ABS SEIFA Index of Relative Socio-Economic Disadvantage.
Source: Compiled from project sources

aged 40 years and over; psychosis; neurotic, personality and other mental disorders; accidents, poisonings and violence; and surgical procedures – all procedures, tonsillectomy, hip replacement, lens insertion and endoscopy; and GP services to males and females.

The largest differentials between Quintile 1 and Quintile 5 (with higher rates in Quintile 5) occur for admissions to public acute hospitals and admissions of females; as well as admissions for lung cancer; neurotic, personality and other mental disorders; respiratory system diseases (at all ages and for 0 to 4 year old children; as well as for bronchitis, emphysema and asthma).

Change in health status by socioeconomic status of area of residence

The two previous sections have shown the overall decrease in death rates in the capital cities and other major urban centres and in the non-metropolitan areas of Australia, and the differentials in death rates by socioeconomic status of area. In this section, the extent of the change in death rates is again shown, but in a way which highlights the differentials evident by socioeconomic status of area (**Figure 9.6**). As data was not available for non-metropolitan SLAs in the first edition of the atlas, the following comparisons are limited to the capital cities and other major urban centres. The non-metropolitan rates will be calculated and posted on the atlas World Wide Web site (www.publichealth.gov.au).

Infant death rates (infant deaths per 1,000 live births) in the capital cities and other major urban centres are shown for both 1985-89 and 1992-95, by quintile of socioeconomic status of area. There is a gradient evident in the data for the earlier period, from the lowest rate in the high socioeconomic areas (Quintile 1, an infant death rate of 7.1) to the highest rate (11.1) in the low socioeconomic areas (Quintile 5). In 1992-95, however, there is a lesser gradient between the quintiles (from an infant death rate of 4.7 in Quintile 1 to 6.5 in Quintile 5). Although infant death rates are lower in 1992-95 than in 1985-89 for each quintile, the largest percentage decline is in the most disadvantaged areas (down by 41.3 per cent), with declines of around one third in the other quintiles. This has resulted in the differential in the infant death rates between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas) decreasing, from 1.55 times higher in the most disadvantaged areas in 1985-89 to 1.39 times higher in 1992-95. This is a notable reduction, although the remaining differential (of 39 per cent) is still substantial.

It is clear from the graph for males that, despite overall lower death rates, the strong gradient evident in death rates in 1985-89 remains in 1992-95. In fact, the differential in death rates for male residents of the capital cities and other major urban centres aged from 15 to 64 years between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas) increased from 1.53 times higher in the most disadvantaged areas to 1.76 times higher. The percentage decline in death rates between the two periods is similar across Quintiles 1 to 4, with a smaller decrease in Quintile 5.

Death rates for female residents of the capital cities and other major urban centres aged from 15 to 64 years are lower than for males, cover a smaller range, and have a smaller differential between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas). As shown in **Figure 9.6**, the rates in the later period are lower than in the earlier period for each quintile. The percentage decreases in death rates for females between the two periods also exhibit a gradient, from the largest decrease in Quintile 1 (25.2 per cent) to the smallest in Quintile 4 (16.6 per cent); Quintile 5 broke this pattern with a larger decrease, of 19.1 per cent. For females, the differential in death rates between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas) while lower than that for males, also increased, from 1.30 times higher in the most disadvantaged areas in 1985-89 to 1.40 times higher in 1992-95.

The graph for deaths of all people aged from 15 to 64 years, the combination of the male and female rates, shows similar gradients to those above. The differential in death rates increased from 1.45 times higher in the most disadvantaged areas in 1985-89 to 1.63 times higher in 1992-95.

There are also clear gradients evident for premature deaths from cancer, although they are not as marked as for deaths of males or females from all causes. Death rates in each of the quintiles is lower in the later period, with the largest decrease occurring in the most advantaged areas (Quintile 1, down 20.0 per cent). Death rates in Quintile 5 dropped by a lower 10.7 per cent. The differential in death rates between Quintile 1 and Quintile 5 increased from 1.14 times higher in 1985-89 to 1.27 times higher in 1992-95.

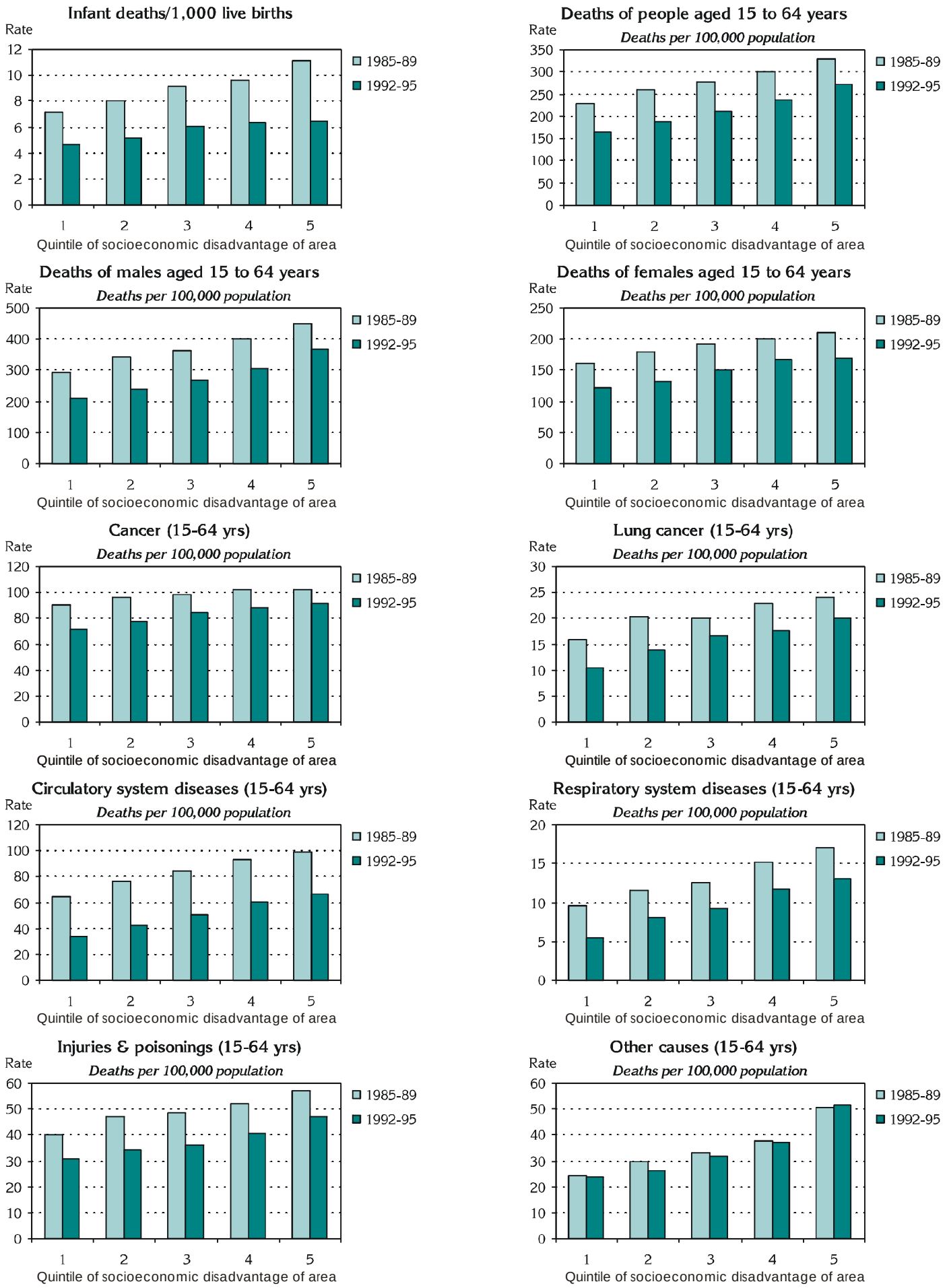
The differential in death rates between Quintile 1 and Quintile 5 for premature deaths from lung cancer in the capital cities and other major urban centres over the period 1992-95 is larger than for all cancers (1.90 compared with 1.27). The increase in the differential from 1.53 in 1986-89 to 1.90 in 1992-95 is also greater (24.4 per cent compared with 11.7 per cent). Rates of death for lung cancer for residents of the areas in Quintile 1 decreased by 33.6 per cent between 1985-89 and 1992-95, just under twice the decrease in Quintile 5. The smallest decline in death rates was recorded in Quintile 3, down by 16.8 per cent.

A number of points can be made from an examination of the graph of deaths from circulatory system diseases. For example, overall rates are relatively high, there is a strong gradient and, despite relatively large reductions in death rates across all areas, the differential in death rates increased from 1.55 times higher in the most disadvantaged areas in 1985-89 to 1.92 times higher in 1992-95.

Although death rates from respiratory system diseases are lower than those recorded for circulatory system diseases (around one seventh), the gradients across the quintiles of socioeconomic status of area of address of usual residence in the capital cities and other major urban centres over both periods are particularly strong. In 1985-89, the differential between Quintiles 1 and 5 was 1.79; by 1992-95 this had increased (by 32.9 per cent) to 2.38.

Death rates of 15 to 64 year old people from the external causes of accidents, poisonings and violence are also highest in the most disadvantaged areas of the capital cities and other major urban centres. Again, the differential in 1992-95 is higher than in 1985-89 (up from 1.42 to 1.54).

Figure 9.6: Change in health status by quintile of socioeconomic disadvantage of area, capital cities and other major urban centres



Note: Quintile of socioeconomic disadvantage of area is based on the ABS SEIFA Index of Relative Socio-Economic Disadvantage.
Source: Compiled from project sources

Although not included in **Figure 9.6**, death rates of 15 to 24 year olds from the external causes of accidents, poisonings and violence show a similar pattern. Rates in both 1985-89 and 1992-95 were highest in Quintile 5 and lowest in Quintile 1. Unlike deaths from these causes in the 15 to 64 year age group, the differential in 1992-95 is smaller than in 1985-89 (down by 4.9 per cent, from 1.24 to 1.18). The largest decline in death rates was in Quintile 3 (down by more than 45.7 per cent); the smallest of the declines was in Quintile 5 (-31.0 per cent).

Conclusion

There is clear evidence in the data of an association at the SLA level between high premature death rates (for both deaths from all causes and from most specific causes) and socioeconomic disadvantage, as measured by the IRSD. These associations are generally evident not only between the most advantaged (Quintile 1) and disadvantaged areas (Quintile 5), but also at each of the intervening levels of socioeconomic status (Quintiles 2 to 4) (**Figures 9.2 and 9.4**).

Similarly, there are associations between socioeconomic disadvantage and high rates of use of general medical practitioner services in the major urban centres, and for most of the variables for hospital admission in both the major urban centres and the non-metropolitan areas (**Figures 9.4 and 9.5**). The gradients by socioeconomic status for admissions are particularly strong in the non-metropolitan areas.

It is also clear that, despite the overall improvement in death rates (**Table 9.2**, **Figure 9.6**), these improvements have not resulted in a reduction in the disparities evident in death rates, for all causes and for a number of specific causes, between residents of the most well off areas and those in the poorest areas (**Figure 9.6**).

The information in this atlas adds to a convincing body of evidence built up over a number of years in Australia as to the striking disparities in health that exist between groups in the population. The challenge for policy makers, health practitioners and governments is to find ways to address these health inequities.