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 Victoria (**Table 9.1**). For **Melbourne**, the largest increases were for the population of Aboriginal and Torres Strait Islander people (an increase of 73.7 per cent over this ten year period); unemployed people (58.0 per cent); low income families (52.8 per cent); single parent families (44.2 per cent); the occupational grouping of managers and administrators, and professionals (33.1 per cent); people aged 65 years and over (25.6 per cent) and people born overseas in predominantly non-English speaking countries: an increase of 24.5 per cent for those resident for five years or more, and of 21.0 per cent for those resident for less than five years. The largest decreases recorded over this ten year period were for the variables for unskilled and semi-skilled workers (down by 17.6 per cent) and early school leavers (down by 17.4 per cent).

Changes over this period for **Geelong** were relatively consistent with those recorded for **Melbourne**, with the exception of the population aged from 0 to 4 years, female labour force participation, the Indigenous population, unemployment (all ages), people born overseas in predominantly non-English speaking countries resident in Australia for more than five years, people with poor proficiency in English and housing authority rented dwellings.

Variations of this order were also recorded in the non-metropolitan areas of Victoria. The major differences from the changes noted for **Melbourne** were the larger increases in the number of single parent families; smaller increases for the population of Indigenous people, unemployed people, low income families, the occupations of managers and administrators and professionals, and the population of people aged 65 years and over; and decreases for the two variables for people born overseas in predominantly non-English speaking countries.

Table 9.1: Changes in demographic and socioeconomic status variables, by Section of State, Victoria

Per cent change

Variable	Melbourne	Geelong	Rest of State	Whole State
1986 to 1996				
0 to 4 year olds	8.3	0.0	-5.2	4.0
65 years & over	25.6	28.5	23.2	25.1
Single parent families	44.2	45.3	46.4	44.8
Low income families	52.8	43.6	36.2	46.8
Unemployed people	58.0	53.2	33.1	50.8
Unemployed people aged 15 to 19 years	-7.3	-7.8	-15.7	-9.8
Female labour force participation (20 to 54 years)	7.8	17.0	10.7	8.9
Early school leavers	-17.4	-18.2	-16.8	-17.2
Unskilled & semi-skilled workers	-17.6	-20.8	-18.3	-17.9
Managers & administrators, & Professionals	33.1	24.3	0.7	23.1
Aboriginal & Torres Strait Islander people	73.7	104.6	64.5	70.3
People[1] born overseas & resident for less than 5years	21.0	16.1	-21.6	18.9
People[1] born overseas & resident for 5 years or more	24.5	-3.2	-0.6	21.6
People[1] born overseas: speaks English not well/not at all	15.3	-10.8	-21.7	13.1
Housing authority rented dwellings	18.8	2.4	-0.7	11.2
Dwellings without a motor vehicle	4.6	10.4	11.4	6.1
1989 to 1996				
Age pensioners	5.0	4.9	-0.4	3.4
Disability support pensioners	53.1	35.3	34.5	46.6
Female sole parent pensioners	53.1	35.3	34.5	46.6
Unemployment beneficiaries	269.7	176.6	130.4	216.4
Dependent children of selected pensioners & beneficiaries	104.2	68.7	63.4	87.2

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

Substantial increases were recorded in income support payments to residents of **Melbourne** for all of the payment types analysed, other than the Age Pension, for which there was only a small increase (5.0 per cent). Of the other payment types, the number of unemployment beneficiaries more than doubled (an increase of 269.7 per cent), with a similar increase occurring for dependent children in families receiving an income support payment (104.2 per cent) (**Table 9.1**). Similar, although smaller, increases were recorded in the non-metropolitan areas of Victoria for all of these income support payments other than the Age Pension (showing little change, down by 0.4 per cent). The increases in **Geelong** fall between those recorded for the non-metropolitan areas of the State and **Melbourne**.

Changes in health status variables

As noted in Chapter 5 (see *Background*), death rates in Australia have declined for the majority of causes. Victoria is no exception, 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 **Melbourne**, the largest decreases were recorded for the infant death rate (down by 36.6 per cent); and for deaths of people aged from 15 to 64 years from respiratory system diseases (down by 41.8 per cent), circulatory system diseases (down by 41.1 per cent), lung cancer (down by 26.5 per cent) and accidents, poisonings and violence (down by 28.1 per cent). All causes mortality was 25.8 per cent lower over this period, marginally more so for males than for females. There were reductions for every category in **Table 9.2** for **Geelong**.

There were also reductions in rates of premature death in the non-metropolitan areas of Victoria for all major causes of deaths. However the reductions were all lower than those recorded for **Melbourne**, with the exception of deaths from accidents, poisonings and violence (which recorded a slightly larger reduction). All cause mortality in non-metropolitan Victoria was just over three quarters (76.7 per cent) that in **Melbourne**.

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

Variable	Melbourne	Geelong	Rest of State	Whole State
Infant deaths	-36.6	-47.7	-34.9	-36.1
Deaths of 15 to 64 year olds				
Males	-26.0	-17.1	-21.5	-24.7
Females	-25.5	-14.8	-16.5	-23.1
Persons, by cause				
Circulatory system diseases	-41.1	-32.1	-31.6	-38.5
All cancers (malignant neoplasms)	-18.8	-2.8	-6.9	-15.5
Lung cancer	-26.5	-18.8	-19.7	-24.7
Respiratory system diseases	-41.8	-45.9	-25.3	-37.6
Accidents, poisonings & violence	-28.1	-16.1	-31.6	-29.0
Other causes	-2.8	3.2	-1.9	-2.4
All causes	-25.8	-15.6	-19.8	-24.1

[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 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 SLA of address in the records studied. To do this, each SLA in the major urban centres (**Melbourne** and **Geelong**) 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 19). 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).

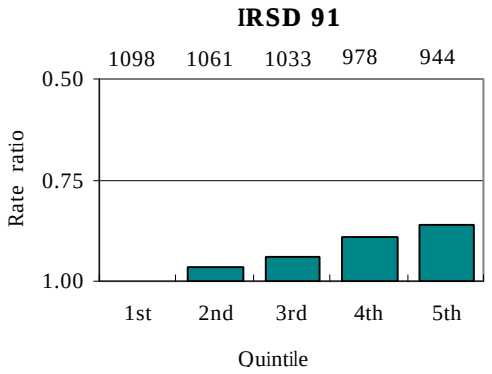
These rates were then graphed, with the rate, standardised ratio or percentage for the first quintile set to 1 in order to highlight variations from the rates recorded in the most advantaged areas (**Figure 9.2**). This exercise was repeated for SLAs in the non-metropolitan areas of Victoria.

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 have 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 advantaged SLAs in **Melbourne** and **Geelong**) was 1098, decreasing for each quintile to a score of 944 in Quintile 5 (the most disadvantaged SLAs). The range

of index scores for the non-metropolitan areas of Victoria was from 1078 in Quintile 1 to 961 in Quintile 5.

Figure 9.1: Differentials in IRSD scores for SLAs in Melbourne and Geelong, 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 are for periods close to the 1996 Census. At the 1996 Census, the IRSD scores were, for Quintile 1, 1095; Quintile 2, 1050; Quintile 3, 1019; Quintile 4, 982; Quintile 5, 919. These 1996 IRSD scores (other than for Quintile 2) are lower than in 1991. The range of index scores for the non-metropolitan areas of Victoria was from 1037 in Quintile 1 to 934 in Quintile 5. These 1996 IRSD scores are all lower than in 1991.

Results

Health status in Melbourne and Geelong

Figure 9.2 (overleaf) shows similar graphs (to that above) for each of the health status variables for SLAs in **Melbourne** and **Geelong**.

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 just over 1.5 (ie. the SR is more than 50 per cent higher in the areas in Quintile 5 than in Quintile 1). The actual values of the SRs (shown above the bars) range from 79 in the most advantaged areas (21 per cent fewer YPLL than were expected from the Victorian rates) to 123 in the most disadvantaged areas (indicating that there were 23 per cent more YPLL than were expected from the Victorian rates). Large differentials were also evident for deaths of 15 to 64 year old males (from an SDR of 75 in Quintile 1 to 133 in Quintile 5) and deaths of 15 to 64 years olds from lung cancer (73 to 129), circulatory system diseases (69 to 127) and respiratory system diseases (61 to 133).

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 major exception is the Physical Component Summary PCS), 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. The Total Fertility Rate is the same in both Quintiles 1 and 5, with higher rates in the intervening quintiles.

Health service utilisation in Melbourne and Geelong

Figure 9.3 shows the graphs for each of the health service utilisation variables for SLAs in **Melbourne** and **Geelong**. Although there is some variability across the quintiles, the pattern evident for a number of variables is 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 graphs for admissions to a private hospital; admissions for neurotic, personality and other mental disorders; same day admissions for a surgical procedure and admissions for the surgical procedures of myringotomy, hip replacement, lens insertion and endoscopy. Others, including the graph for total admissions (including same day admissions and surgical admissions), admissions of males and of females and for all cancers reveal a less consistent pattern. There are also strong gradients evident for the use of GP services, although there is little variation by socioeconomic status of area of residence for immunisation status at 12 months of age.

Health status in the non-metropolitan areas of Victoria

Figure 9.4 shows the graphs for each of the health status variables for SLAs in the non-metropolitan areas of Victoria. The main differences from the gradients evident for **Melbourne** and **Geelong** are the higher overall SDRs and the higher overall Total Fertility Rates.

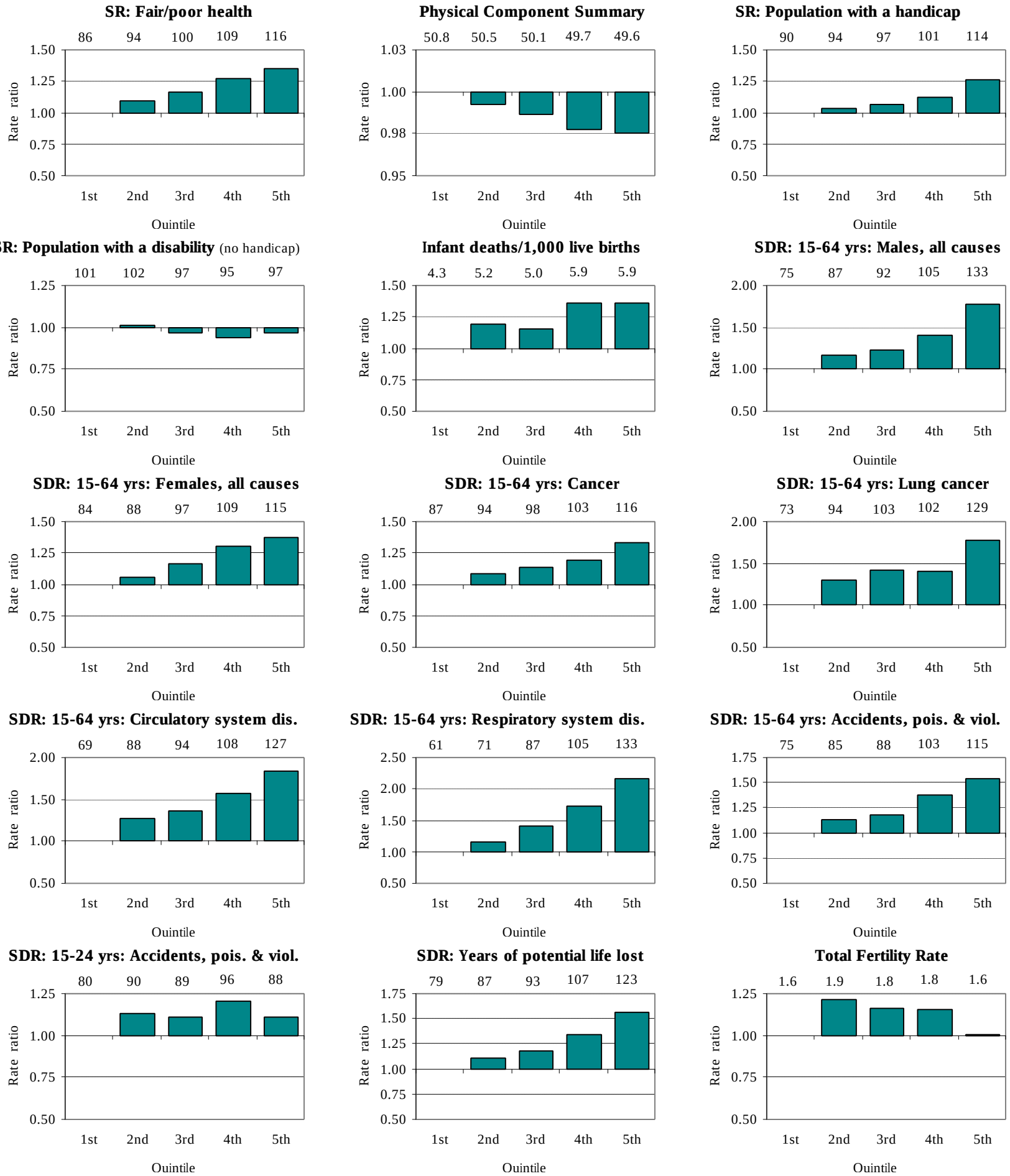
Health service utilisation in the non-metropolitan areas of Victoria

Figure 9.5 shows the graphs for each of the health service utilisation variables for SLAs in the non-metropolitan areas of Victoria. The main differences from the data for **Melbourne** and **Geelong** are the higher overall standardised ratios and the weakening or reversal of the gradients for admissions for psychosis and for neurotic, personality and other mental disorders; for the surgical procedures of myringotomy, hip replacement, lens insertion and endoscopy; and the use of GP services. The graphs for immunisation again show little variation by socioeconomic status of area of residence.

Change in health status by socioeconomic area of residence

The two previous sections have shown the overall decrease in death rates in **Melbourne** and **Geelong** and in the non-metropolitan areas of Victoria, as well as 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 have only been produced for **Melbourne** and **Geelong**. The non-metropolitan rates will be calculated and posted on the atlas World Wide Web site (www.publichealth.gov.au).

Figure 9.2: Health status differentials by quintile of socioeconomic disadvantage of area, Melbourne and Geelong



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, Melbourne and Geelong

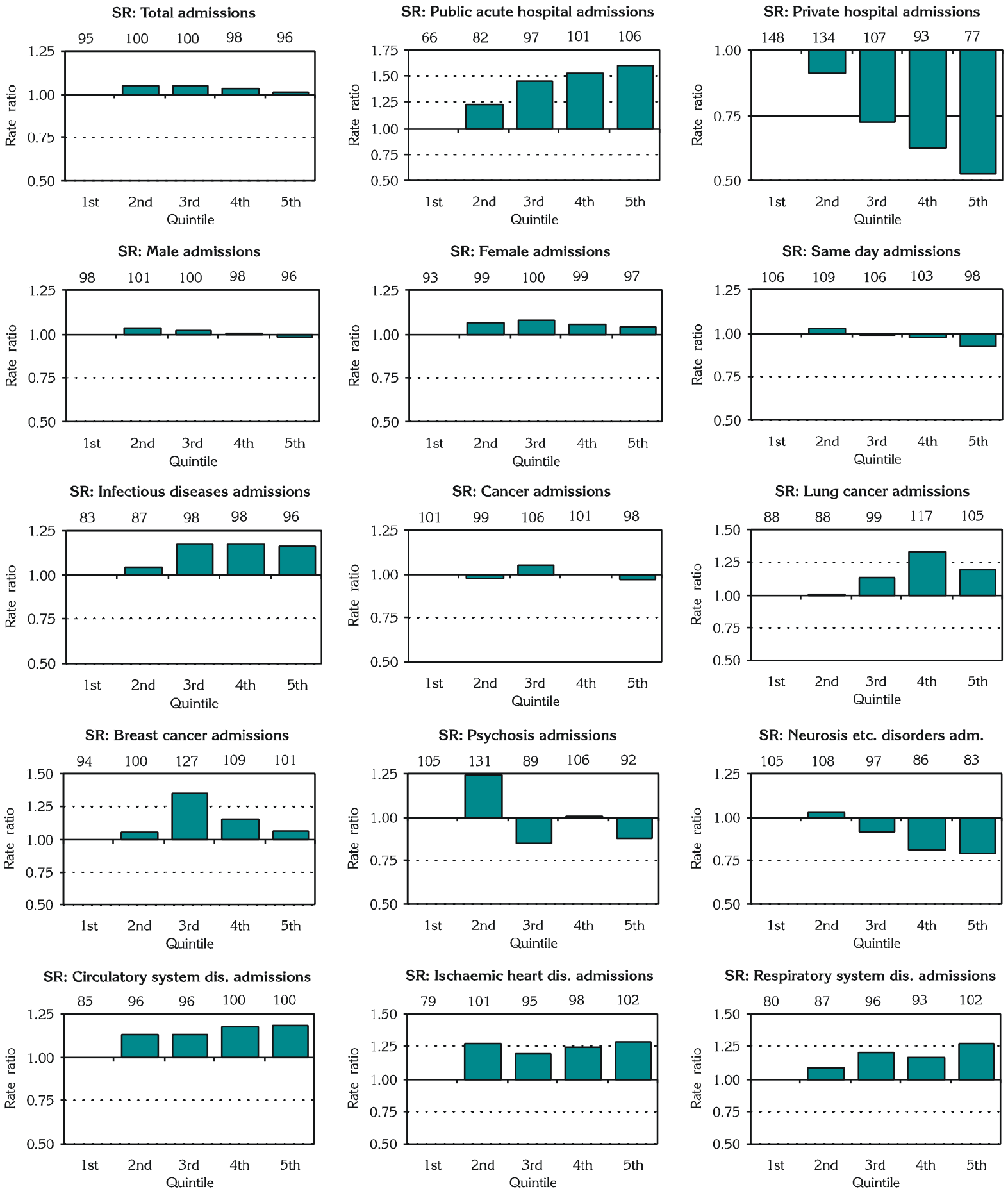
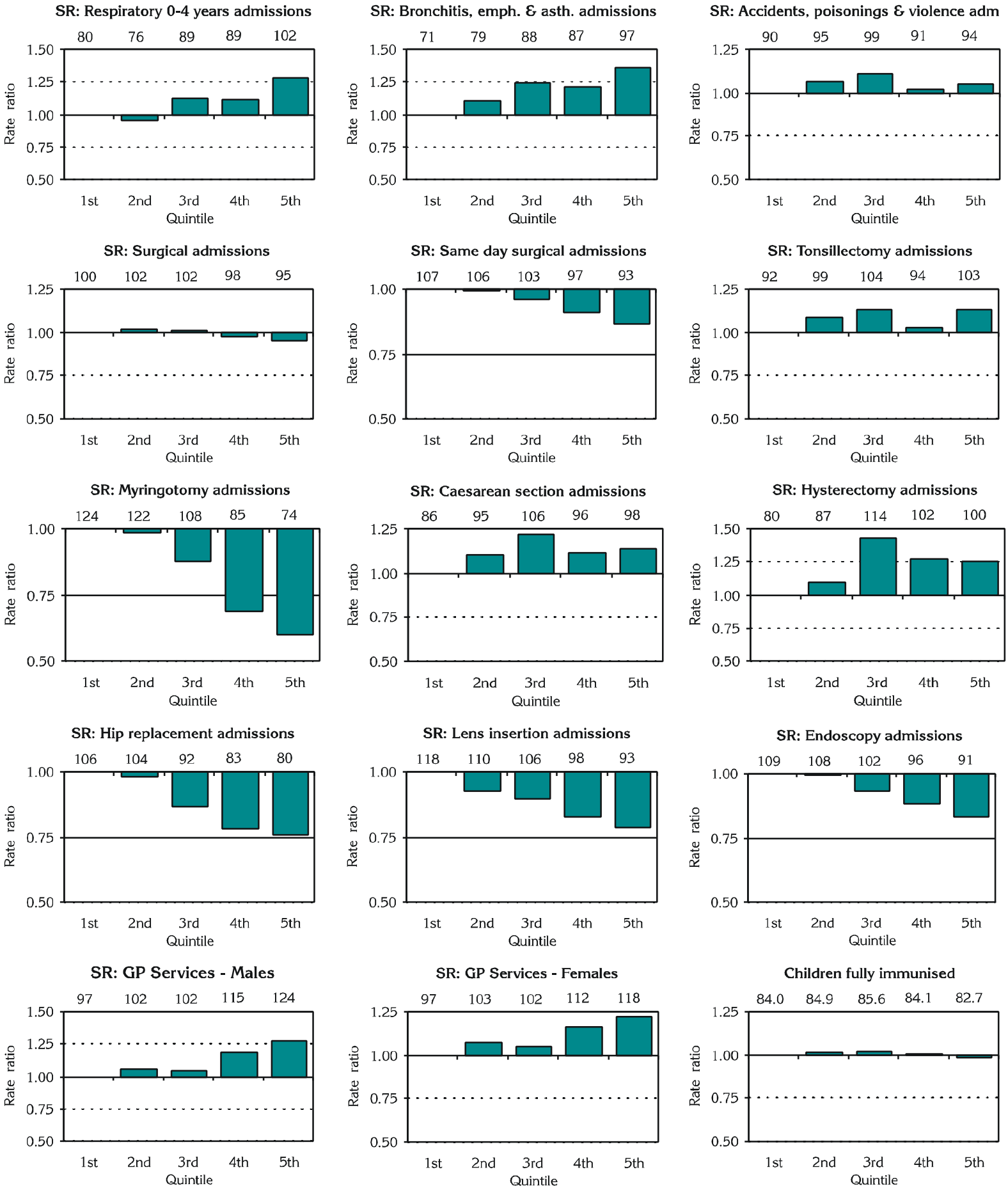
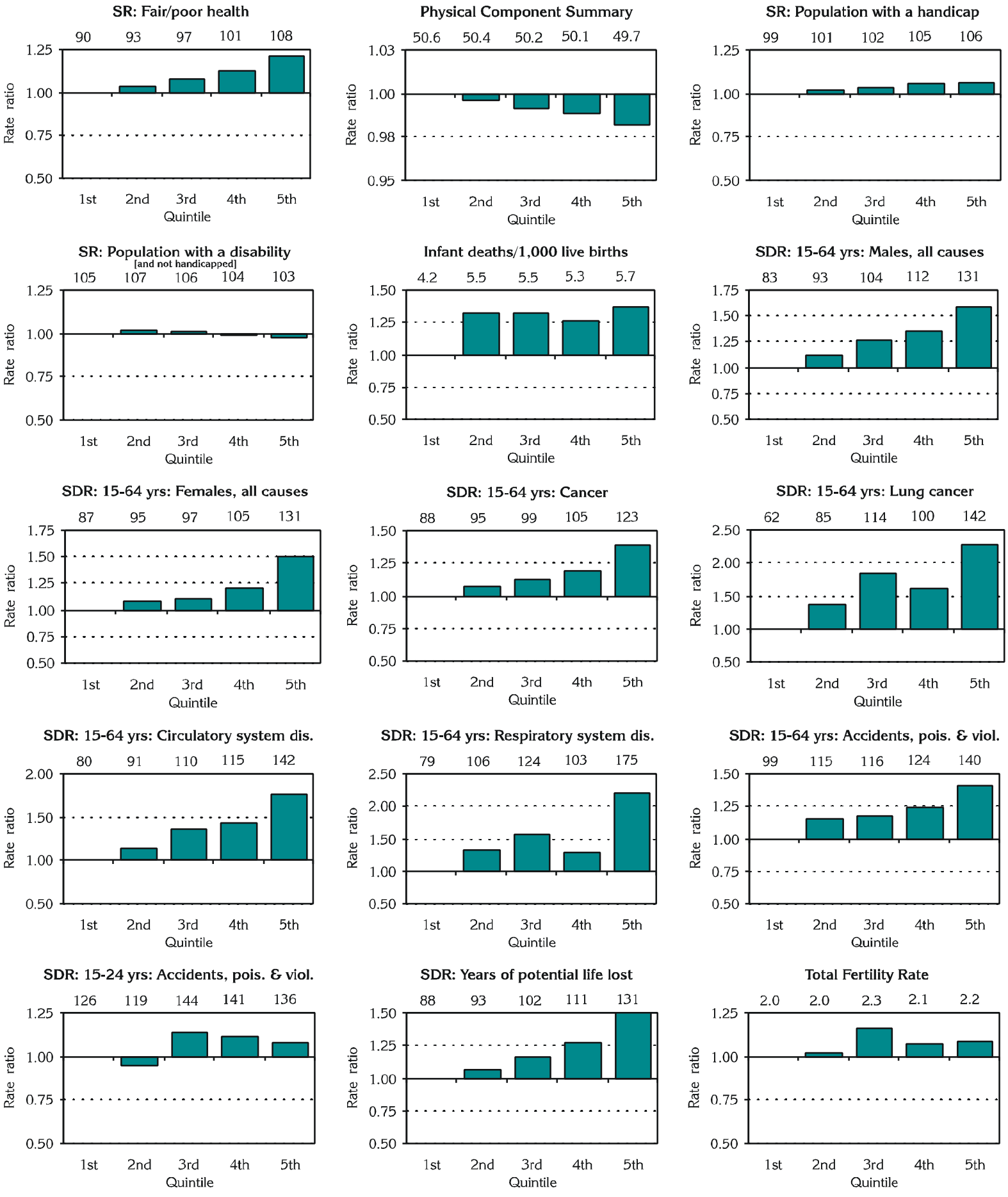


Figure 9.3: Health service utilisation differentials by quintile of socioeconomic disadvantage of area, Melbourne ... *cont*



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, Victoria



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, Victoria

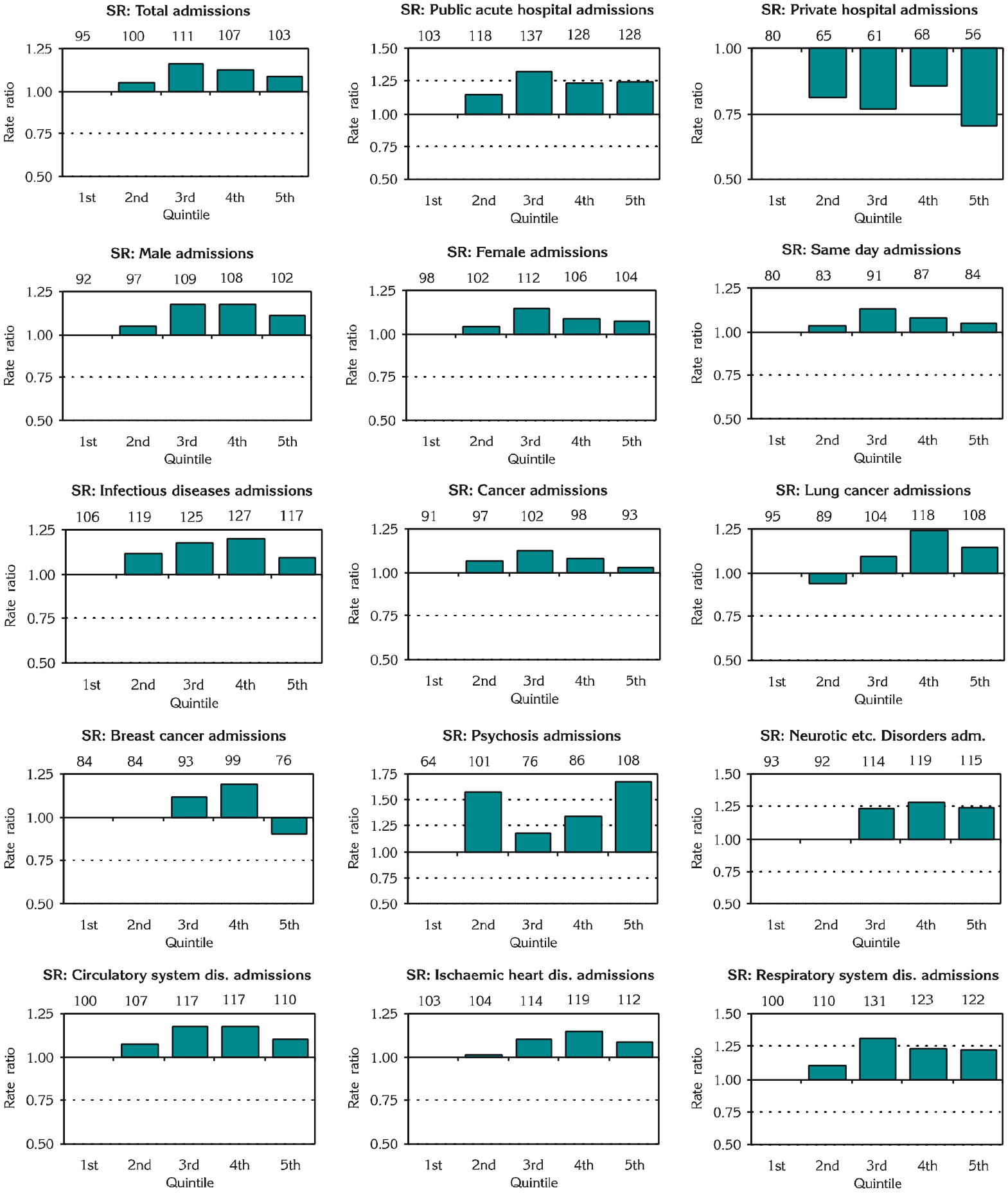
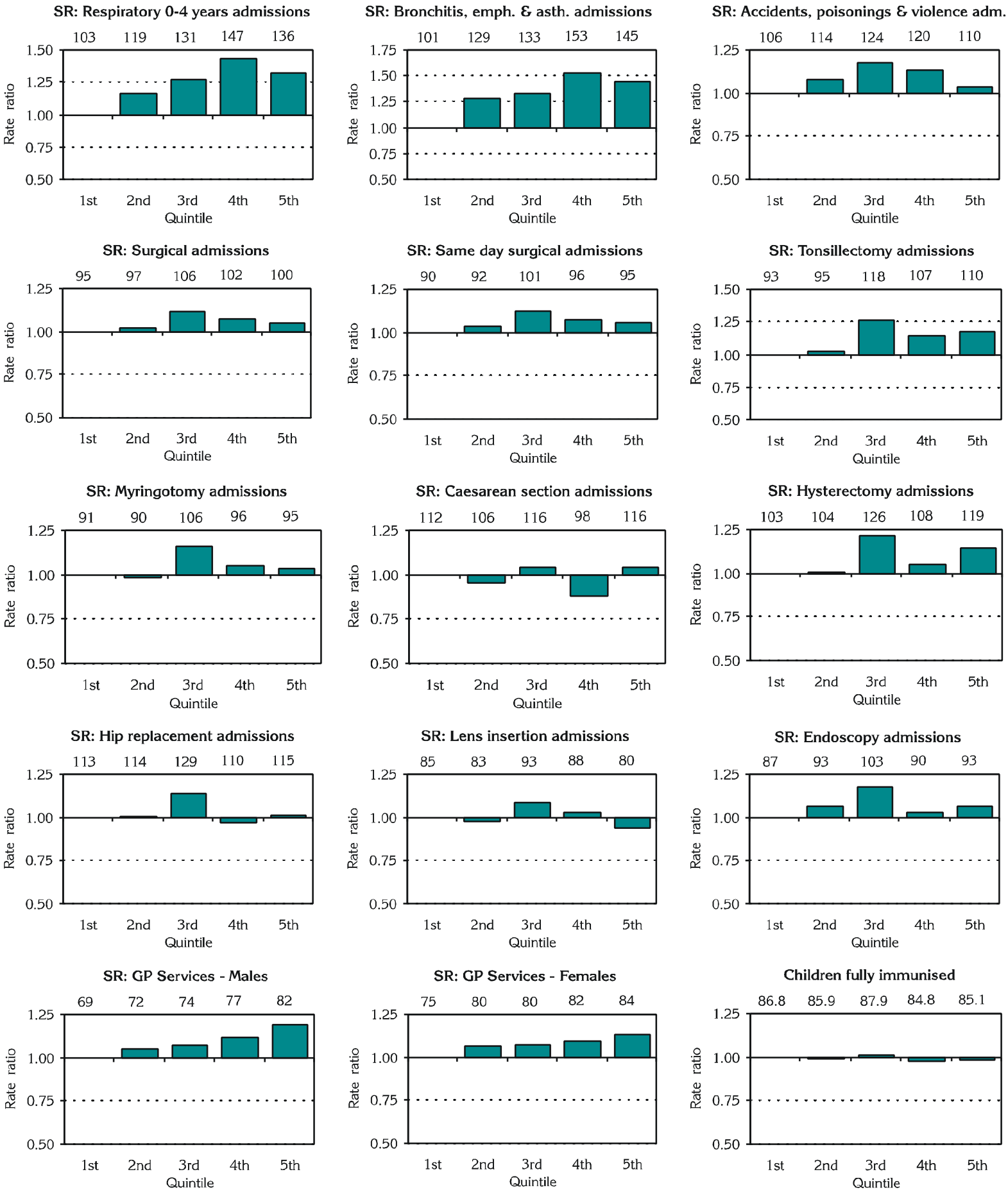


Figure 9.5: Health service utilisation differentials by quintile of socioeconomic disadvantage of area, Victoria ... *cont*



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

Infant death rates (infant deaths per 1,000 live births) in **Melbourne** and **Geelong** are shown by quintile of socioeconomic status of area for both 1985-89 and 1992-95. There is a gradient evident in the data for the earlier period, from the lowest infant death rate in Quintile 1 (the high socioeconomic areas, an infant death rate of 7.5) to Quintile 4, with the highest infant death rate (10.0; and a slightly lower rate, of 9.8, in Quintile 5). A similar situation exists in the 1992-95 period, with infant death rates increasing from 4.3 in Quintile 1 to 6.1 in Quintile 4 (again with a slightly lower rate, of 5.8, in Quintile 5). Although infant death rates are lower in 1992-95 than in 1985-89 in each quintile, there have been slightly larger percentage declines in the areas of highest socioeconomic status. This has resulted in the differential in the infant death rate between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas) increasing, from 1.32 times higher in the most disadvantaged areas in 1985-89 to 1.37 times higher in 1992-95. This is a substantial differential, of 37 per cent.

It is clear from the graph for males that the strong gradient evident in death rates in 1985-89 remains in 1992-95, despite overall lower death rates. In fact, the differential in death rates for male residents of **Melbourne** and **Geelong** aged from 15 to 64 years between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas) increased from 1.27 times higher in the most disadvantaged areas to 1.78 times higher. The percentage decrease in death rates between the two periods is similar across Quintiles 1 to 4 (although decreasing with increasing disadvantage), with a considerably smaller decrease in Quintile 5.

Death rates for female residents of **Melbourne** and **Geelong** aged from 15 to 64 years are lower than (around half) those 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. For females, the differential in death rates between Quintile 1 and Quintile 5 while lower than that for males, also increased, from 1.16 times higher in the most disadvantaged areas in 1985-89 to 1.37 times higher in 1992-95. This is a result of the smaller decreases in death rates between these periods for females in the most disadvantaged areas.

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 discussed above. The differential in death rates between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas) increased from 1.23 times higher in the most disadvantaged areas in 1985-89 to 1.63 times higher in 1992-95.

There is a much less defined gradient in rates of premature death from all cancers than for the other variables studied. However, 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 22.8 per cent), and the smallest decrease recorded in the most disadvantaged areas (Quintile 5, down by 5.2 per cent). The differential in death rates between Quintile 1 and Quintile 5 increased from 1.09 times higher in the most disadvantaged areas in 1985-89 to 1.34 times higher in 1992-95.

The differential in death rates between Quintile 1 and Quintile 5 for premature deaths from lung cancer in **Melbourne** and **Geelong** over the period 1992-95 is larger than for all cancers (1.76 compared with 1.34). The increase in the differential from 1.25 in 1986-89 to 1.76 in 1992-95 is also greater (40.7 per cent compared with 22.7 per cent). Rates of death for lung cancer for residents of the areas in Quintile 1 decreased by 38.9 per cent between 1985-89 and 1992-95, over twice the decrease in Quintile 5.

There is a stronger gradient in rates of premature death from circulatory system diseases in the latter period graphed (**Figure 9.6**). Despite relatively large reductions in death rates across all areas, the differential in death rates between Quintile 1 (the most advantaged areas) and Quintile 5 (the most disadvantaged areas) increased, from 1.25 times higher in the most disadvantaged areas in 1985-89 to 1.83 times higher in 1992-95.

Although death rates from respiratory system diseases are lower than those recorded for circulatory system diseases, the gradients across the quintiles of socioeconomic status of area of address of usual residence in **Melbourne** and **Geelong** over both periods are particularly strong. In 1985-89, the differential in death rates between Quintiles 1 and 5 was 1.45; by 1992-95 this had increased by 47.8 per cent a substantial differential of 2.14.

In 1992-95, 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 **Melbourne** and **Geelong**. Again, the differential in 1992-95 is higher than in 1985-89 (up from 1.21 to 1.54). This is a result of the larger declines in death rates in the first three Quintiles.

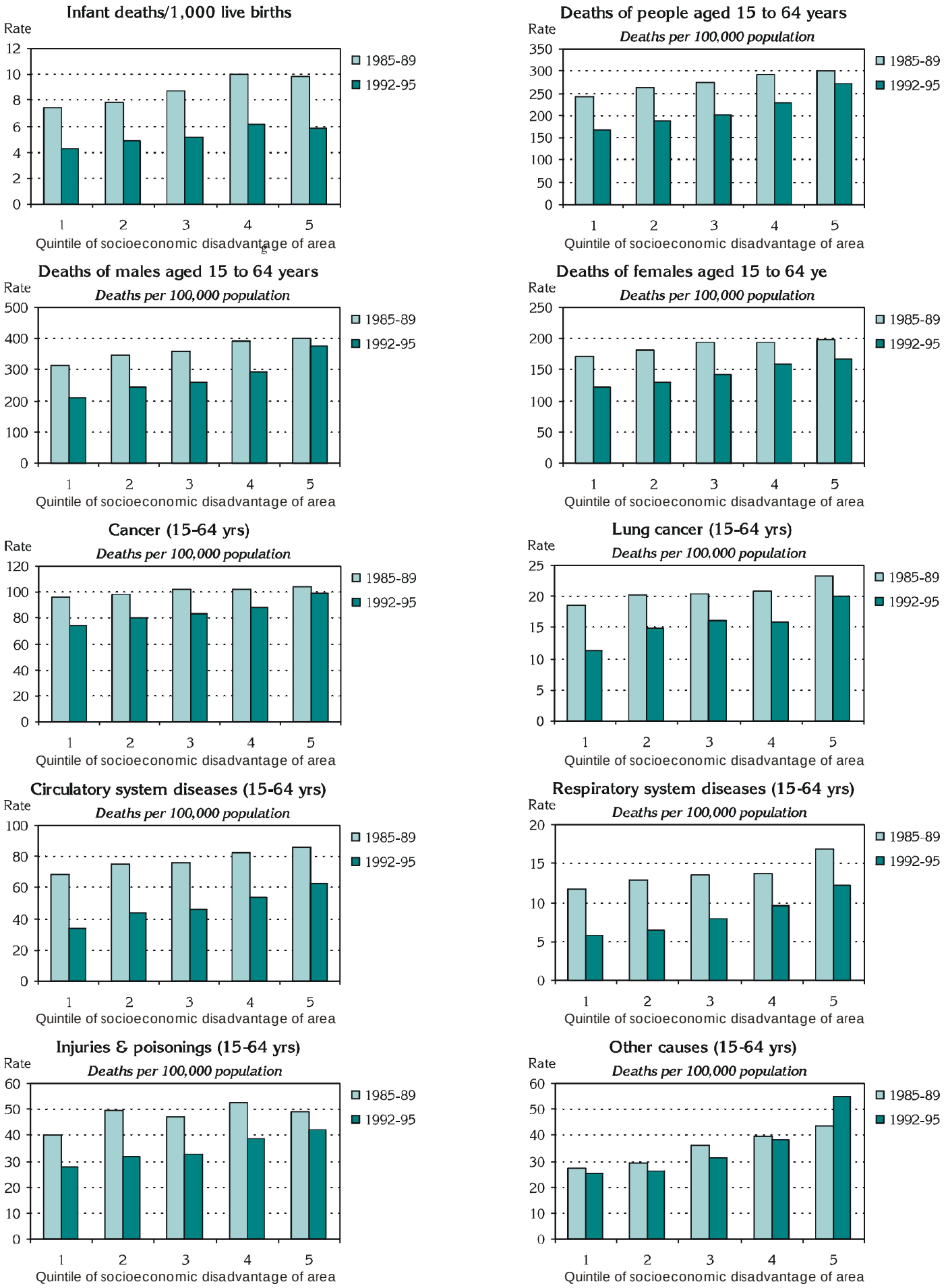
The last graph in **Figure 9.6** shows details for all other causes of death between the ages of 15 and 64 years. Again, there is a clear gradient in the SDRs in both periods, with one of the strongest gradients in SDRs between the most advantaged and most disadvantaged areas. Of the variables studies, these causes also show the smallest reductions in death rates in Quintiles 1 to 4, and rates in Quintile 5 were higher in the latter period graphed.

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 high rates of use of general medical practitioner services and socioeconomic disadvantage. At the SLA level in **Melbourne**, unlike the situation in other large cities (eg. **Sydney** and **Brisbane**), there were no consistent gradients between admission rates and socioeconomic disadvantage, as measured by the IRSD. There were, however, strong gradients evident in the non-metropolitan SLAs with most of the variables for hospital admission (**Figure 9.5**) by socioeconomic disadvantage of area.

Figure 9.6: Change in health status by quintile of socioeconomic disadvantage of area, Melbourne and Geelong



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

It is also clear that, despite the overall improvement in deaths rates from all causes and for a majority of the specific causes studied (**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.