7 Availability of selected health services

Introduction

The location of services and facilities in relation to the distribution of the population is an important indicator of accessibility. Unfortunately the data currently available as to the location of health, welfare and other services and facilities is limited. This is true even for data at the SLA level: the range of data by actual address location that can be mapped precisely are even more limited.

Greater interest is, however, being shown in establishing databases of services by exact location. Such databases can assist in developing a better understanding of the patterns of provision, access to and use of services and inform policy development and strategic planning processes for the location and delivery of health services. These initiatives are being aided by the use of Geographical Information Systems (GIS) techniques[1].

In this chapter data are mapped at the SLA level for general medical practitioners (GPs), hospital beds (public acute and private hospitals) and residential aged care facilities (nursing home places and hostel places). The data for GPs are for the 1996/97 financial year and for public acute hospital beds they are 1995/96: the remaining data are at 30 June 1997.

Data mapped

Population per GP

The spatial distribution of GPs has been illustrated by mapping the population per GP in each area.

Data are of the number of full-time equivalent (FTE) GPs[2] per practice site. Data were available for postcode areas and were converted to SLA.

The rate of population per GP was calculated for each SLA and is mapped over five ranges. In many non-metropolitan SLAs the rate was very high, because the denominator, the FTE number of GPs, was very small. An examination of the distribution of rates across all non-metropolitan areas in Australia revealed that a sensible cut-off would be where the rate of population per GP exceeded 10,000 people per GP. Most of the SLAs with rates of this size had fewer than 0.3 FTE GPs. On the maps, these areas are shown as having 'No GP' (or fewer than 10,000 people per GP) even though they may have a GP practising for one session per week. The other SLAs are mapped across the remaining four ranges.

The GPs included in this analysis exclude GPs working in salaried practice who do not submit accounts to Medicare. Examples include GPs working for the Royal Flying Doctor Service and the Aboriginal Medical Service, those working in specialist services such as low vision clinics, as well as in a small number of community health centres (see comments on page 303 in relation to GP services not included in the data mapped). If, however, these GPs meet the definition quoted above for work performed in another practice, they will be included as practising from that location.

Users should be cautious not to place too heavy an emphasis on the population per GP in any one SLA, as the location of the principal practice in an SLA may be close to the population of a neighbouring SLA and provide a significant number of services to people in this neighbouring SLA. This is less of a problem for the larger areas (SSDs) mapped in the Australian atlas.

It is not possible to directly compare the data shown here with that in the first edition of the atlas because of the use in this edition of the more accurate FTE measure. In the first edition GPs were defined as the number of medical practitioners who performed (during 1990/91) at least 1,000 GP services (based on selected items in the Commonwealth Medical Benefits Schedule) for which Medicare benefits were paid, and who received more than 50 per cent of fee-charged income from those items (ie. they were charging patients for services appropriate for a GP for more than 50 per cent of the income they derived from Medicare). This was a relatively small number of services and, as such allowed for the inclusion, in the number of GPs, of many (but not all) of the medical practitioners who were practising part-time in medicine.

Despite this change in definition, the data for the earlier period have been shown below to allow users to examine variations in the rates between the States and Territories at each reference date.

Hospital beds

The number of beds in public acute hospitals and private hospitals has been mapped per 1,000 population of the area in which the hospital is located. The public hospital data were available at 30 June 1996 and the private hospital data at 30 June 1997.

Questions remain as to the accuracy of the data, even at this broad level of publication, as it is has not been used in this way before and has therefore not been subject to scrutiny. Although the public hospitals are referred to as 'acute' hospitals, they treat and care for patients with long term care needs, including for rehabilitation (leading to a return to life outside of a hospital or nursing home) and those who are unlikely to ever leave such care, whether in a hospital or nursing home (see below under *Residential aged care facilities*).

The data for some States are also likely to be more difficult to obtain in the future as the organisational arrangements for the management and delivery of health services changes, with hospital data being available only for areas or networks, and not by each service location. Some data are already supplied at the establishment level, even when there are two or more separately

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[1] GIS is an organised collection of computer hardware and software designed to efficiently capture, store, update, manipulate, analyse and display all forms of geographically referenced information.

[2] In computing full-time equivalent GPs, use was made of a threshold of $71,725 in Schedule fee income in 1995-96. Practitioners with a Schedule fee income above the average, were given a fraction of '1'. All other practitioners were given a proportion of 1, having regard to the Schedule fee income for the practitioner concerned relative to the threshold income of $71,725.

located campuses operated by the establishment. In these cases the campus location without bed numbers was removed from the file before mapping.

Residential aged care facilities

Nursing home places and hostel places are mapped per 1,000 population aged 70 years and over, in line with the Commonwealth planning targets for residential care places of 90 places per 1,000 population aged 70 years and over. This target is comprised of 40 nursing home places and 50 hostel places per 1,000 population aged 70 years and over. Data for community aged care packages have not been mapped as these packages are allocated on a regional basis that does fit well with the areas mapped.

In many areas (in particular areas away from the capital cities and other major regional centres) of Australia where there are few (or no) nursing home facilities, people requiring long term intensive care are often cared for in public hospitals (where they are classified as 'long stay nursing home type patients'). Overall, 9.7 per cent of patient days in public acute hospitals in South Australia were for nursing home type patients, 30.8 per cent of bed days in the non-metropolitan areas, and 0.4 per cent in **Adelaide** (**Table 7.1**). New South Wales had 12.6 per cent of its bed days used by nursing home type patients, with 9.7 per cent in South Australia and 9.5 per cent in Tasmania. South Australia had the highest proportion in the non-metropolitan areas, with 30.8 per cent of bed days used by nursing home type patients; New South Wales had the second highest proportion, with 25.9 per cent.

As the number of beds used by these patients is not available, their details have not been included in the maps.

Table 7.1: Patient days for nursing home type patients in public acute hospitals, by area, States and Territories, 1997/98

Location of hospital	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
Metropolitan	270,289	32,545	32,166	2,675	3,737	948	2,081	1,171	345,612
Non-metropolitan	442,350	41,602	136,682	21,380	128,382	30,746	..	388	801,530
Total	712,639	74,147	168,848	24,055	132,119	31,694	2,081	1,559	1,147,142
					Per cent: Nursing home type patient bed days as a proportion of all bed days				
Metropolitan	6.9	1.2	2.1	0.3	0.4	0.6	0.8	1.1	3.3
Non-metropolitan	25.9	4.3	13.7	6.4	30.8	17.0	..	0.5	17.1
Total	12.6	2.0	6.6	1.8	9.7	9.5	0.8	0.8	7.5

Source: AIHW, *unpublished data*

The tables and maps of nursing home and hostel places show each of these variables separately. To assist readers in assessing the provision of residential care places in relation to the Commonwealth planning targets (90 places per 1,000 population aged 70 years and over) they have been combined in **Table 7.2**.

In all capital cities, excluding **Darwin** (72 places per 1,000 population), the number of residential care places per 1,000 population was above the Commonwealth planning target. There were more places per 1,000 population in the capital cities than in the *Rest of State /Territory* areas of Australia in all but the Northern Territory and Victoria (where there were fewer).

Table 7.2: Nursing home and hostel places per 1,000 population aged 70 years and over, 1997

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Capital city	101	91	103	105	102	99	72	96	99
Other major urban centres [2]	84	96	74	..	..	..	..	..	82
Rest of State/Territory	81	94	88	74	75	87	72	–[3]	85
Whole of State/Territory	93	92	92	97	96	92	72	96	93

[1]Includes Queanbeyan (C).
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld).
[3]Data unreliable: included with ACT total.
Source: See *Data sources*, Appendix 1.3

Gaps and deficiencies in the data

In addition to the limitations noted above in the *Introduction* as to the small range of data available, the limitations of the choropleth mapping technique should also be kept in mind when reading this chapter.

For example, users should be cautious not to place too much emphasis on the population per GP in any one SLA, as the location of the practice in an SLA may be close to the population of a neighbouring SLA and provide a significant number of services to people in that neighbouring SLA. Other factors also impact on accessibility, including the availability of private and public transport. However, where a contiguous group of SLAs all have high populations per GP (high relative to the State or Territory average), it is likely that the level of provision is low. Similarly, where regional groupings of SLAs together have relatively low nursing home bed rates, provision of these care places is clearly low (although readers should be aware of the note above as to the use, in some instances, of hospital beds for long term care).

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Population per general medical practitioner, 1996/97

Capital city comparison

Details of general medical practitioners (GPs) included in the following analysis, and the way in which the number of GPs has been calculated, are on page 319.

As can be seen from **Table 7.3**, the population per GP was highest in **Darwin** (1,642 people per GP) and **Canberra** (1,467 people per GP), (indicating that there were fewer GPs per head of population practising in these cities) and lowest in **Sydney** (1,118 people per GP) and **Adelaide** (1,145 people per GP).

Although calculated in a different way (see notes on page 319 under *Data mapped*), the 1990/91 figures can be used to examine the differences of rates between the capital cities. The earlier rates show that levels of provision of GPS in **Hobart**, **Brisbane** and **Darwin** have decreased between the periods shown, while levels of provision in Melbourne have moved closer to the *All capitals* average (**Table 7.3**).

Table 7.3: Population per general medical practitioner, capital cities

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra [1]	All capitals
1996/97	1,118	1,181	1,182	1,145	1,259	1,167	1,642	1,467	1,169
1990/91	860	921	834	827	1,015	820	900	1,042	886

[1] Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3

Adelaide

In 1996/97, there were 1,145 people per GP in **Adelaide**. Of the total of 910 GPs, 686 were males (75.4 per cent) and 221 were females (24.3 per cent), a rate of 1,518 people per male GP and 4,707 people per female GP. In contrast to the overall predominance of male GPs in **Adelaide** (3.1 male GPs to each female GP), it was estimated (using the technique described on page 319) that Walkerville had marginally more female than male GPs (a rate of 1.1 female to male GPs), although this was the smallest number of GPs in any SLA in **Adelaide**.

In general, the population per GP was highest in the northern and southern metropolitan regions and lowest in and around the city centre (**Map 7.1**). The exceptions to this were the high rates recorded in Walkerville (a rate of 1,537 people per GP and 4 GPs), West Torrens (1,549 and 27) and Campbelltown (1,467 and 30) and the lower rate in Glenelg (478 and 27).

The SLAs with highest rates included Happy Valley (with a rate of 1,975 people per GP and 18 GPs), Marion (1,527 and 49), Brighton (1,487 and 12) and Stirling (1,437 and 11), situated in the southern regions; and Munno Para (1,554 and 24), Salisbury (1,469 and 74) and Enfield [Part A] (1,402 and 32 GPs) located north of the city. Rates between 1,200 and 1,400 were recorded in the northern areas of Tea Tree Gully (1,384 people per GP and 66 GPs) and Elizabeth (1,229 and 21) as well as in Noarlunga (1,328 and 67 GPs) and Henley and Grange (1,202 and 11 GPs).

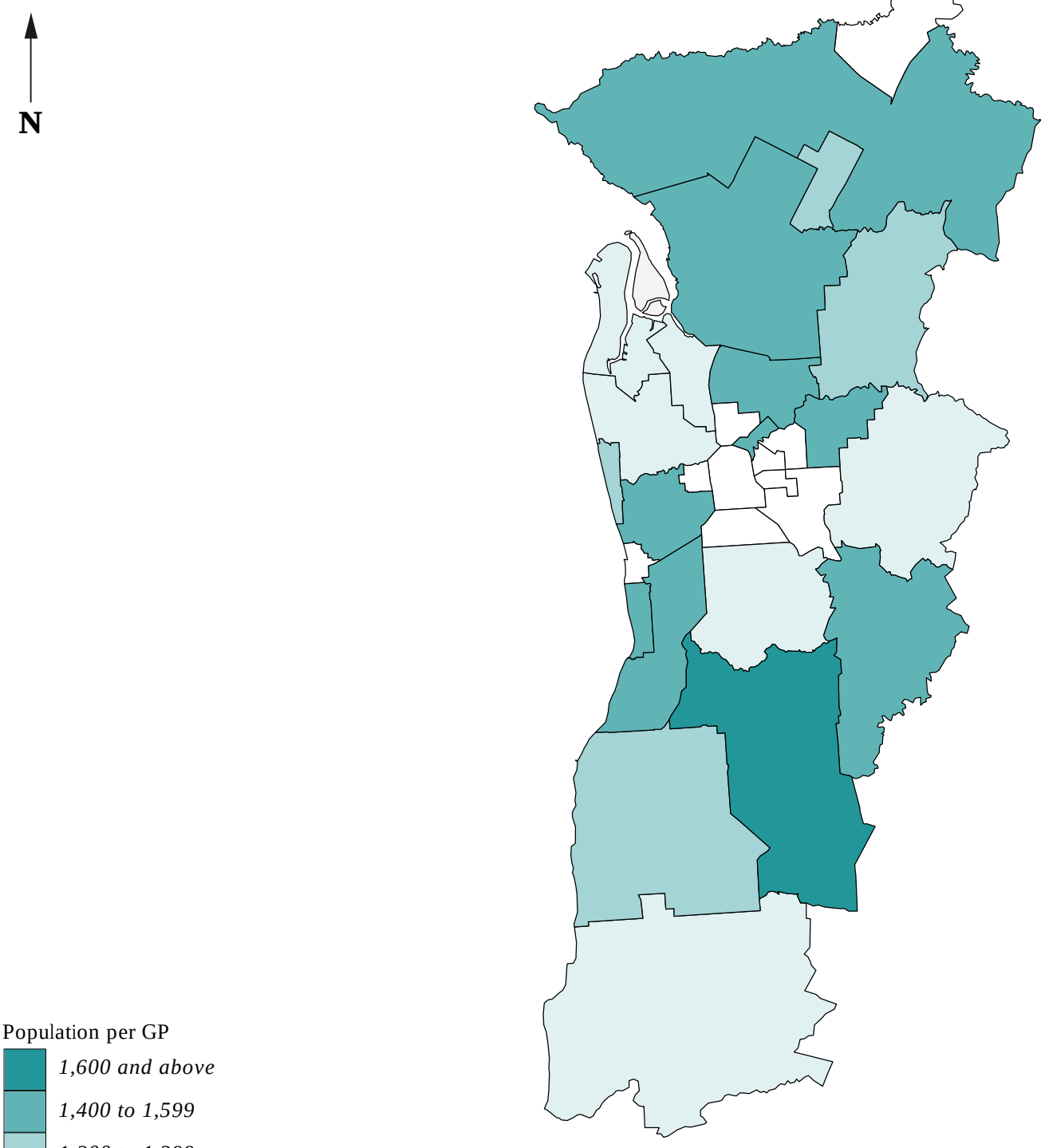
At the other end of the scale, there were only 330 people per GP in the City of Adelaide, based on an estimated 46 GPs. Rates of below 1,000 people per GP were also recorded in the inner SLAs of Thebarton (491 people per GP and 15 GPs), Prospect (569; 32 GPs), Payneham (767; 20 GPs), Kensington and Norwood (577; 15 GPs), St Peters (848; 10 GPs) and Unley (841; 42 GPs). Also in this range were Glenelg (478 people per GP and 27 GPs) and Gawler (938 and 18 GPs).

The largest numbers of GPs were recorded in Hindmarsh and Woodville (83), Salisbury (74), Noarlunga (67), Tea Tree Gully (66), Mitcham (50) and Marion (48).

The results of the correlation analysis were equivocal. The strongest correlations were with the variables for children aged from 0 to 4 years (0.50) and dwellings without a motor vehicle (an inverse correlation of –0.55).

Map 7.1
Population per general medical practitioner, Adelaide, 1996/97

number of people in each Statistical Local Area per general medical practitioner (GP)



Population per GP

- *1,600 and above*
- *1,400 to 1,599*
- *1,200 to 1,399*
- *1,000 to 1,199*
- *below 1,000*
- *data excluded**

**Data have been excluded when the population of the SLA is less than 100*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Population per general medical practitioner, 1996/97

State/Territory comparison

The notes on page 319 as to the GPs and GP type services not covered by this data are of particular relevance to the data for the non-metropolitan areas. The population per GP was higher in the non-metropolitan areas of the States and the Northern Territory than in the capital cities, indicating that there were fewer GPs in these areas (**Table 7.4**). The *Rest of State/Territory* figures ranged from 1,464 people per GP in Tasmania to a very high 3,604 people per GP in the Northern Territory. The rate of population to GPs in Western Australia was also well above the *Rest of State/Territory* average, at 1,968 people per GP.

Although calculated in a different way (see notes on page 319 under *Data mapped*), the 1990/91 figures show that New South Wales, South Australia, Tasmania and the Northern Territory had fewer people per GP in the *Rest of State/Territory* areas than the average for these areas (ie. more GPs) whereas in 1996/97 New South Wales had just above the average and the Northern Territory had a considerably higher rate.

Table 7.4: Population per general medical practitioner, State/Territory

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1996/97									
Capital city	1,118	1,181	1,182	1,145	1,259	1,167	1,642	1,467[1]	1,169
Other major urban centres[2]	1,339	1,337	1,188	..	..	..	..	..	1,278
Rest of State/Territory	1,656	1,559	1,616	1,517	1,968	1,464	3,604	–[3]	1,627
Whole of State/Territory	1,250	1,262	1,335	1,225	1,400	1,325	2,356	1,451	1,290
1990/91									
Rest of State/Territory	942	1,196	1,203	1,145	1,374	1,000	1,133	–[3]	1,147

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3]Data unreliable: included with ACT total
Source: See *Data sources*, Appendix 1.3

Rest of State

As expected, the population per GP was considerably higher in the non-metropolitan areas of South Australia (1,517 people per GP) than in **Adelaide** (1,145 people per GP). In 1996/97, there were 251 GPs outside of the metropolitan area, over one quarter (27.6 per cent) the number recorded in **Adelaide** (with 910 GPs).

Whereas just under one quarter (24.3 per cent) of GPs in **Adelaide** were females, in the non-metropolitan areas of South Australia only 16.4 per cent were females.

As can be seen from **Map 7.2**, the most highly elevated rates were generally in the far northern areas of South Australia, with the lowest rates (highest provision of GPs) located in the south-eastern and lower northern areas surrounding the city centre.

In total, it was estimated that 11 SLAs throughout the non-metropolitan areas of South Australia had no GPs. These areas included Browns Well, Bute, Carrieton, Coonalpyn Downs, Dudley, Hallett, Morgan, Peake, Port MacDonnell, Spalding and Unincorporated Pirie.

There were more than 10,000 people per GP in the SLAs of Lucindale (25,348 people per GP and 0.05 FTE GPs), Mount Gambier (DC) (21,759 and 0.23) and Saddleworth and Auburn (18,540 and 0.11). The next highest rates of population per GP (indicating the lowest number of GPs) were recorded in Peterborough (6,753 people per GP and 0.05 FTE GPs), Unincorporated Far North (6,152 and 1.0), Unincorporated Whyalla (4,595 and 0.07), Warooka (4,056 and 0.27), Paringa (3,876 and 0.45) and Unincorporated Flinders Ranges (3,849 and 0.56). Closer to **Adelaide**, rates of above 2,500 people per GP were also recorded in Mallala (4,142 people per GP), Robertstown (3,329) and Barossa (3,112) as well as Penola (2,726) and Unincorporated Lincoln (2,621).

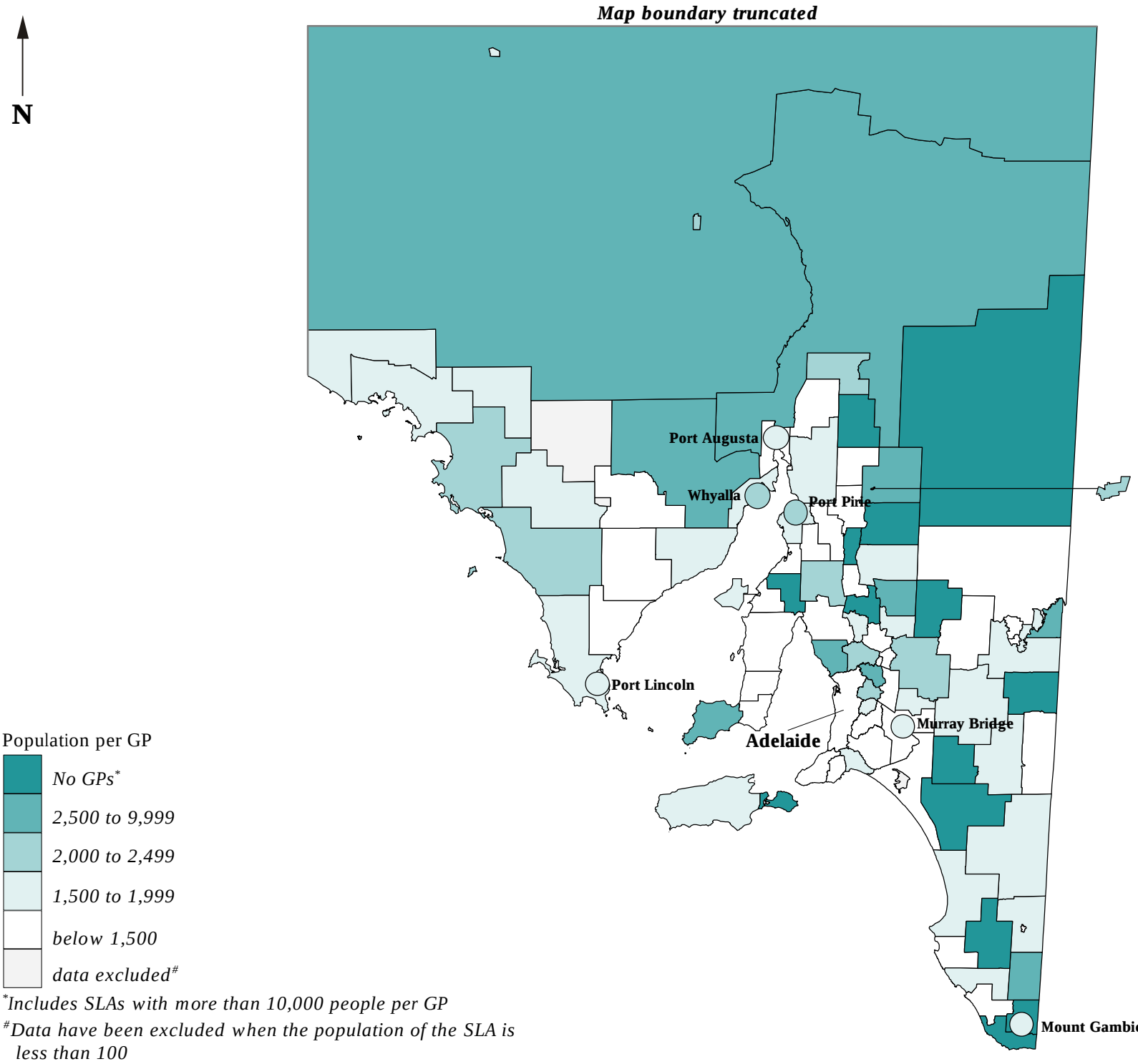
Victor Harbor, on the Fleurieu Peninsula, recorded the lowest rate for this variable, with 705 people per GP. Relatively low rates were also recorded just north of **Adelaide** and on the Eyre Peninsula in Clare (with a rate of 719 people per GP), Port Broughton (774), Meningie (892), Northern Yorke Peninsula (906), Mount Pleasant (929), Kapunda (958), Orroroo (998), Cleve (1007) and Wallaroo (1,032).

In 1996/97, there were an estimated 17 GPs in the SLA of Mount Barker: more than eight GPs were also estimated for Mount Gambier (16), Whyalla (13), Victor Harbor (12), Murray Bridge (11), Port Augusta (10), Port Lincoln (nine) and Northern Yorke Peninsula (eight).

There was no consistent evidence in the correlation analysis of an association at the SLA level in the non-metropolitan areas of South Australia between high rates of population per GP and socioeconomic status.

Map 7.2
Population per general medical practitioner, South Australia, 1996/97

number of people in each Statistical Local Area per general medical practitioner (GP)



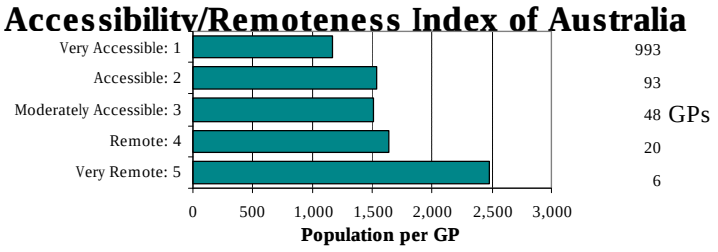
*Includes SLAs with more than 10,000 people per GP

#Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Accessibility/Remoteness Index of Australia



There are three distinct levels across the ARIA categories in the rate of population per GP. The lowest rate of 1,165 people per GP is in the Very Accessible areas; the middle three categories have similar rates; and the Very Remote areas have 2,475 people per GP, more than twice the number in ARIA category 1. Although levels of provision of GP services are low in the remote areas, readers should note the cautions opposite as to the limitations of this data.

Source: Calculated on ARIA classification, DHAC

Public acute hospital beds per 1,000 population, 1995/96

Capital city comparison

In 1995/96, there were 3.1 beds (average available beds over 1995/96) per 1,000 population in public acute hospitals in the capital cities. There was little variation among the capital cities, with rates varying from 2.7 per 1,000 population in **Canberra** to 4.0 in **Hobart** (**Table 7.5**).

Over the period from 1989 to 1995/96, the rate of public acute hospital beds decreased in each of the capital cities for which data were available in the first edition of the atlas, with the exception of **Melbourne** (where the rate remained stable at 2.8 public hospital beds per 1,000 population) and **Adelaide** and **Sydney** (both with a small increase, from 3.1 beds to 3.2 per 1,000 population). The largest decline occurred in **Brisbane**, where the rate decreased from 4.1 public hospital beds per 1,000 population in 1989 to 3.4 in 1995/96.

Table 7.5: Public acute hospital beds per 1,000 population, capital cities

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra [1]	All capitals
1995/96	3.2	2.8	3.4	3.2	3.1	4.0	3.5	2.7	3.1
1989	3.1	2.8	4.1	3.1	3.3	..	..	..	3.2

[1]Includes Queanbeyan (C)

Source: See *Data sources*, Appendix 1.3

Adelaide

In 1995/96, there were 3,290 beds (average available beds over 1995/96) in public acute hospital in **Adelaide**, 3.2 beds per 1,000 population. These beds were located in 14 hospitals, an average of 235 beds per hospital.

As can be seen from **Map 7.3**, a large number of SLAs (73.3 per cent of all SLAs) throughout the metropolitan area had no public acute hospital beds in 1995/96. Of those that did contain a public hospital, there was a wide variation in the number of available beds, ranging from as high as 106.6 public hospital beds per 1,000 population in the SLA of Adelaide to as low as 0.8 in Noarlunga.

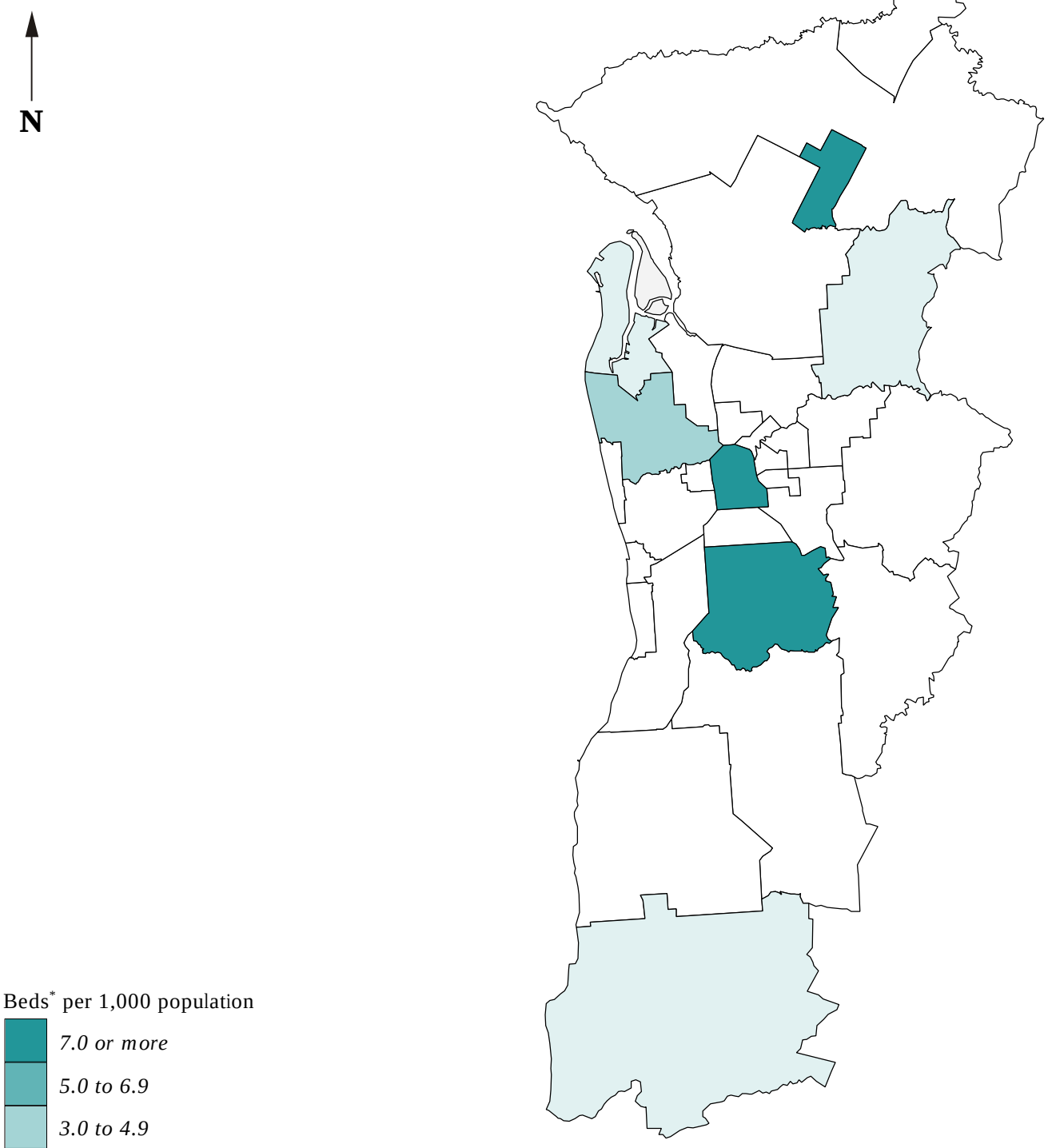
Above average rates were recorded in the SLAs of Adelaide (106.6 public hospital beds per 1,000 population), Mitcham (12.2), Elizabeth (7.8) and Hindmarsh and Woodville (4.3). Relatively low rates were recorded in the southern SLAs of Noarlunga (0.8) and Willunga (1.1), in the western SLA of Port Adelaide (1.3) and in the northern SLA of Tea Tree Gully (2.6).

The largest number of public acute hospital beds was recorded in the SLA of Adelaide, with 1,633 beds. More than 200 beds were also recorded in Mitcham (720 beds), Hindmarsh and Woodville (365), Tea Tree Gully (234) and Elizabeth (201).

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.3
Public acute hospital beds per 1,000 population, Adelaide, 1995/96

number of public acute hospital beds* in each Statistical Local Area per 1,000 population



Beds are average available beds over 1995/1996

#Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Public acute hospital beds per 1,000 population, 1995/96

State/Territory comparison

There were more beds (average available beds over 1995/96) per 1,000 population in public acute hospitals in the *Rest of State /Territory* areas of Australia than in the capital cities in all but Tasmania and the Northern Territory (where there were fewer). The average *Rest of State /Territory* rate across Australia was 4.0 public acute hospital beds per 1,000 population, with similar rates recorded in most non-metropolitan areas excluding South Australia, where the rate was higher, at 5.9 beds per 1,000 population. The beds in the non-metropolitan areas include beds used by long stay patients (see page 319)

The non-metropolitan areas of New South Wales, Victoria and Queensland recorded similar rates in both periods as shown in **Table 7.6**. Western Australian recorded a considerable decrease, down from 6.4 public hospital beds per 1,000 population in 1989 to 3.6 public acute hospital beds in 1995/96, with a smaller decrease in South Australia.

Table 7.6: Public acute hospital beds per 1,000 population, State/Territory

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1995/96									
Capital city	3.2	2.8	3.4	3.2	3.1	4.0	3.5	2.7[1]	3.1
Other major urban centres [2]	3.2	3.3	2.2	..	..	..	..	..	2.8
Rest of State/Territory	4.6	3.6	3.7	5.9	3.6	2.6	2.7	–[3]	4.0
Whole of State/Territory	3.6	3.0	3.3	3.9	3.3	3.2	3.0	2.6	3.4
1989									
Rest of State/Territory	4.5	3.9	4.6	6.5	6.4	..	..	..	4.7

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3]Data unreliable: included with ACT total
Source: See *Data sources*, Appendix 1.3

Rest of State

In the non-metropolitan areas of South Australia, there were 5.9 beds (average available beds over 1995/96) per 1,000 population in public acute hospitals. These beds were located in 67 hospitals, with 2,253 available beds, an average of 33.6 beds per hospital.

The overall pattern of distribution of public hospital beds shows that the higher rates are in SLAs to the north of **Adelaide**, particularly in the mid northern region (**Map 7.4**). The highest rates were recorded in the mid northern SLAs of Hawker (90.8 public hospital beds per 1,000 population), Peterborough (80.2) and Orroroo (22.6). Relatively high rates were also recorded in Riverton (41.0), Eudunda (18.8) and Burra Burra (16.6), in the lower north; Le Hunte (34.0), Franklin Harbor (16.5) and Kimba (16.4), located on the Eyre Peninsula; Pinnaroo (27.8) and Lameroo (15.4), situated in the Murray Lands; Gumeracha (20.6), on the outskirts of **Adelaide;** and Wallaroo (19.6) and Port Broughton (16.9), on the Yorke Peninsula.

There were sixteen SLAs mapped in the middle class interval, with bed numbers ranging from a rate of 10.0 public hospital beds per 1,000 population in the SLA of Elliston to 14.8 in Crystal Brook-Redhill.

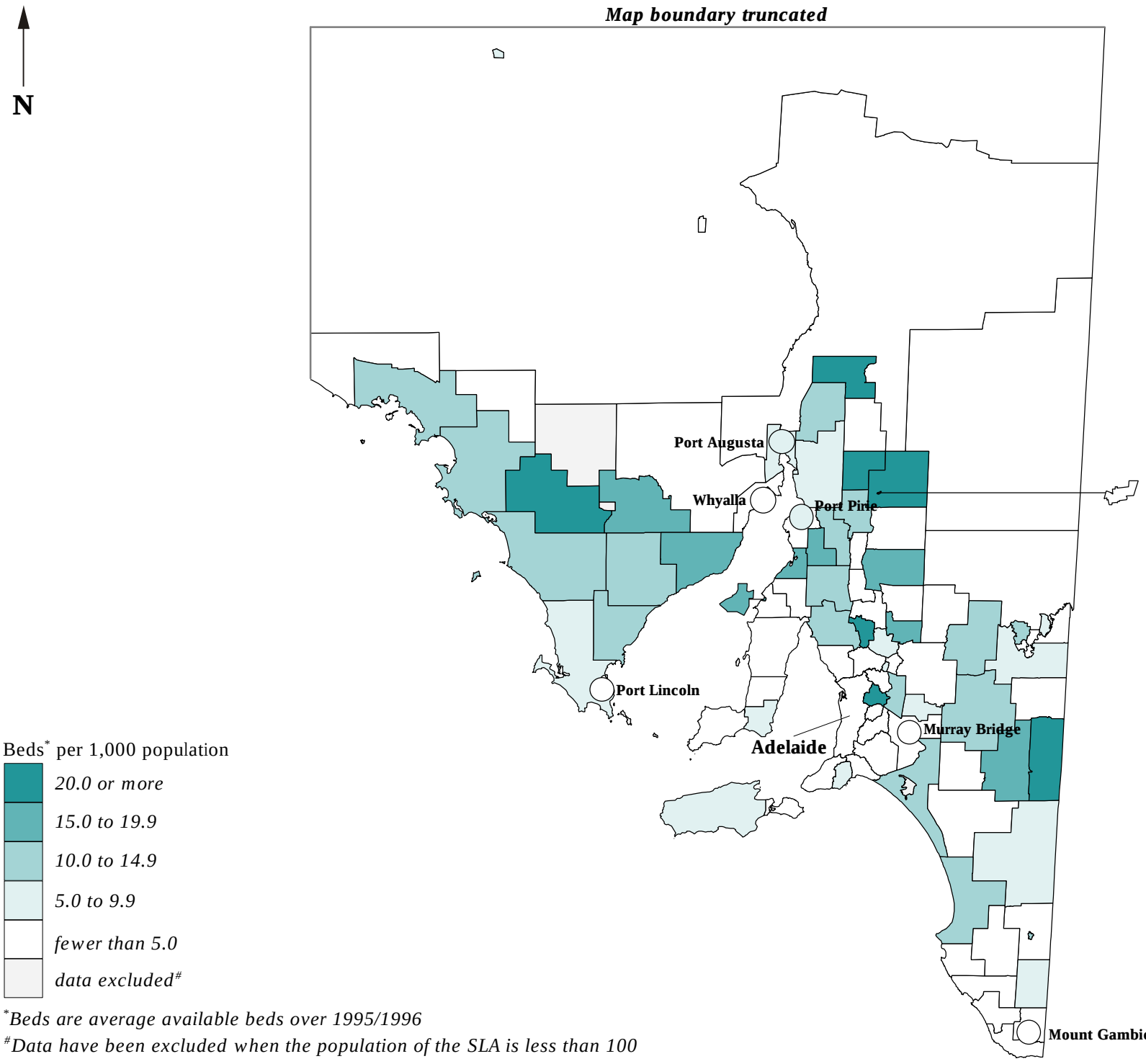
A number of SLAs throughout the non-metropolitan areas of South Australia had no public hospital beds, including the south-eastern areas of Beachport, Coonalpyn Downs, Lucindale, Mount Gambier (DC), Naracoorte (DC), Peake, Port MacDonnell and Robe. Rates of below 5.0 beds per 1,000 population were recorded in Central Yorke Peninsula, Millicent and Mount Gambier (C) (each with 4.9 public hospital beds per 1,000 population), Whyalla (4.6), Strathalbyn (4.1), Unincorporated Far North (3.8), Murray Bridge (3.4), Mount Barker (2.5) and Unincorporated Flinders Ranges (1.4).

In 1995/96, the largest numbers of beds in public acute hospital were recorded in the SLAs of Gumeracha (124 beds), Whyalla (109), Mount Gambier (C) (108) and Port Pirie (104). Sixty or more public hospital beds were also recorded in each of Port Augusta (80 beds), Riverton (65), Port Lincoln (61) and Barmera (60).

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.4
Public acute hospital beds per 1,000 population, South Australia, 1995/96

number of public acute hospital beds* in each Statistical Local Area per 1,000 population



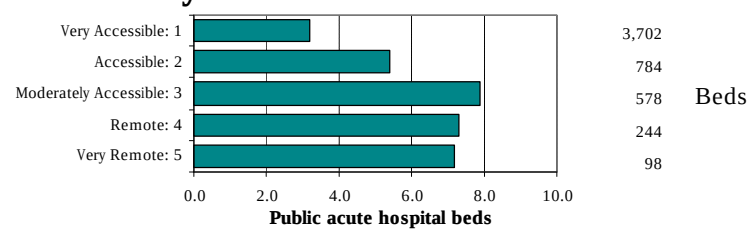
*Beds are average available beds over 1995/1996

#Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Accessibility/Remoteness Index of Australia



Beds in public acute hospitals are located throughout South Australia, with increasing levels of provision with increasing remoteness. Rates vary from 3.2 beds per 1,000 population in the Very Accessible ARIA category, to 7.9 beds per 1,000 in the Moderately Accessible category, with marginally lower rates of 7.3 and 7.2 beds per 1,000 population in the Remote and Very Remote categories. The largest number of beds (and the widest range of services) is, however, in the most accessible areas.

Source: Calculated on ARIA classification, DHAC

Private hospital beds per 1,000 population, 30 June 1997

Capital city comparison

At 30 June 1997, there were 1.5 private hospital beds per 1,000 population in the capital cities. The majority of capital cities had near average percentages for this variable, with lower rates recorded in both **Canberra** (a rate of 0.5) and **Sydney** (a rate of 1.1). **Adelaide** and **Hobart** recorded the highest rates with 2.0 and 2.1 private hospital beds per 1,000 population, respectively (**Table 7.7**).

The *All capitals* rate increased slightly between the two periods for which data were analysed, rising from 1.4 private hospital beds per 1,000 population in 1989 to 1.5 in 1997.

Table 7.7: Private hospital beds per 1,000 population, capital cities

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra [1]	All capitals
1997	**1.1**	**1.7**	**1.7**	**2.0**	**1.7**	**2.1**	**1.7**	**0.5**	**1.5**
1989	**1.2**	**1.6**	**1.5**	**1.8**	**1.5**	**..**	**..**	**..**	**1.4**

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3

Adelaide

At 30 June 1997, there were 2.0 private hospital beds per 1,000 population in **Adelaide** based on a total of 2,172 beds in 32 private hospitals.

As can be seen from **Map 7.5**, SLAs with high rates of private hospital beds were generally located in areas of higher socioeconomic status. By far the highest ratios were recorded in the inner SLAs of Adelaide and Walkerville, with 58.4 and 20.2 private hospital beds per 1,000 population respectively. Relatively high rates were also recorded in the western areas of Glenelg (with a rate of 6.6 private hospital beds per 1,000 population), Henley and Grange (6.3) and West Torrens (5.5).

In total, four SLAs were mapped in the middle class interval, with rates ranging from 4.1 private hospital beds per 1,000 population in the southern SLA of Brighton to 4.9 in the eastern SLA of Burnside.

The lowest rate were recorded in Tea Tree Gully and Hindmarsh and Woodville, both with 0.3 private hospital beds per 1,000 population. Rates of below 3.0 were also recorded in Noarlunga (0.9 private hospital beds per 1,000 population), Mitcham (1.0), Unley (1.2), Willunga and Campbelltown (both 1.3), Gawler (1.7) and Stirling (2.1).

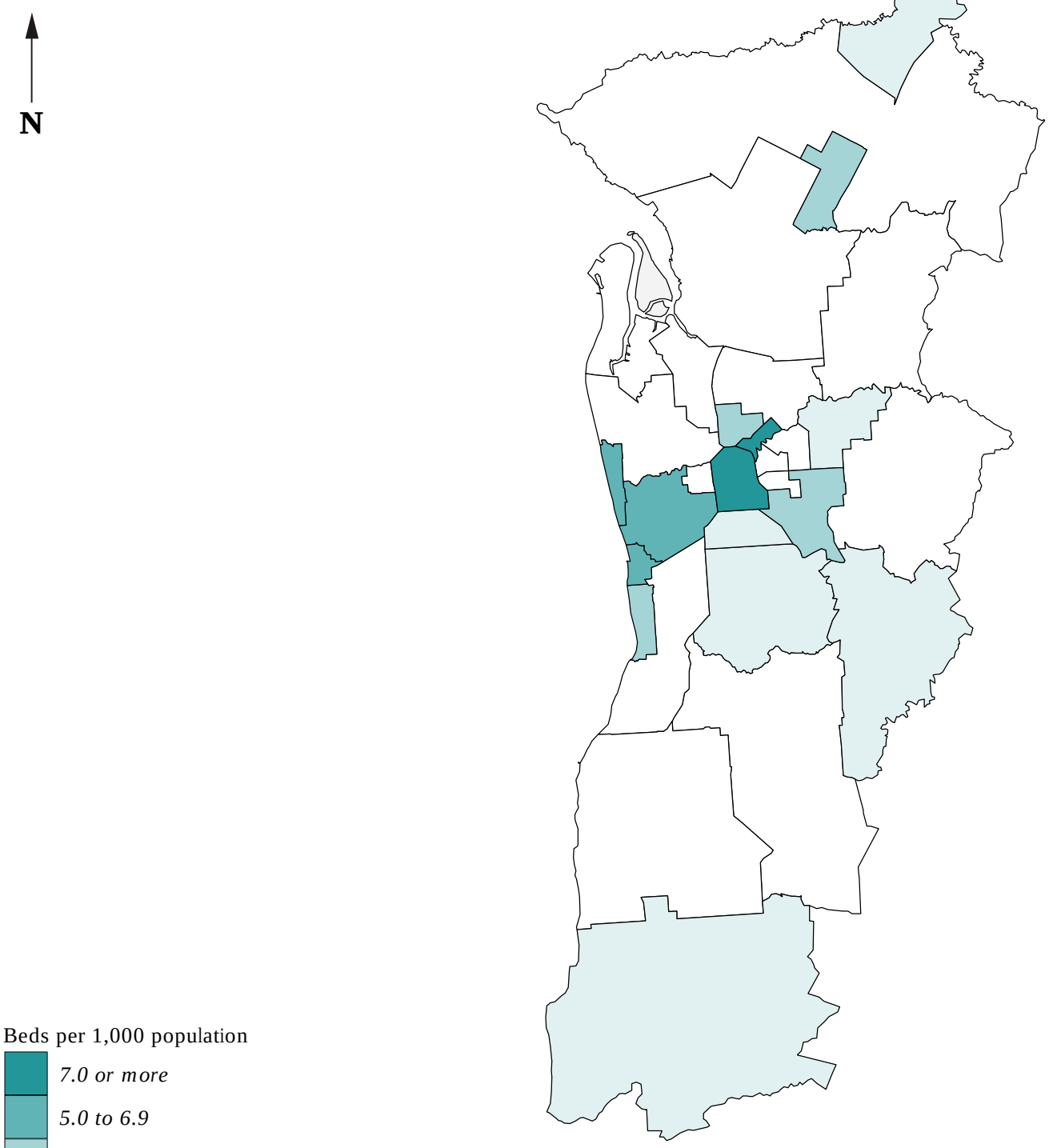
In total, 12 SLAs recorded no private hospital beds in 1997, including the northern SLAs of Enfield [Part A], Munno Para and Salisbury; the western areas of Enfield [Part B], Port Adelaide and Thebarton; and in the inner SLAs of Kensington and Norwood, Payneham and St Peters.

There were 755 private hospital beds recorded in the SLA of Adelaide, more than 100 beds were also recorded in West Torrens (243 beds), Burnside (199), Walkerville (140) and Elizabeth (111).

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.5
Private hospital beds per 1,000 population, Adelaide, 1997

number of private hospital beds in each Statistical Local Area per 1,000 population



*Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Private hospital beds per 1,000 population, 30 June 1997

State/Territory comparison

In 1997, rates of private hospital beds were higher in the capital cities than in the *Rest of State/Territory* areas, with the exception of the Northern Territory , with no private hospital beds in the non-metropolitan areas (**Table 7.8**). The highest non-metropolitan rate was recorded in Tasmania (1.9 private hospital beds per 1,000 population), while the lowest (excluding the Northern Territory) was recorded in South Australia and Western Australia (both with a rate of 0.4).

Rates of private hospital beds in the *Rest of State/Territory* remained reasonably consistent between 1989 and 1997, with slight decreases occurring in Victoria, Queensland and Western Australia. The rate recorded in New South Wales increased marginally from 0.6 private hospital beds per 1,000 population in 1989 to 0.7 in 1997, while the rate in South Australia remained consistent (0.4 private hospital beds per 1,000 population).

Table 7.8: Private hospital beds per 1,000 population, State/Territory

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1997									
Capital city	1.1	1.7	1.7	2.0	1.7	2.1	1.7	0.5[1]	1.5
Other major urban centres[2]	1.0	1.3	2.0	..	..	..	..	..	1.4
Rest of State/Territory	0.7	0.8	1.2	0.4	0.4	1.9	0.0	–[3]	0.8
Whole of State/Territory	1.0	1.4	1.6	1.6	1.4	2.0	0.8	0.5	1.3
1989									
Rest of State/Territory	0.6	0.9	1.3	0.4	0.5	..	..	..	0.8

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3]Data unreliable: included with ACT total
Source: See *Data sources*, Appendix 1.3

Rest of State

There were relatively few private hospitals in the non-metropolitan areas of South Australia, a total of eight hospitals with 149 beds. These figures represented 0.4 private hospitals per 1,000 population.

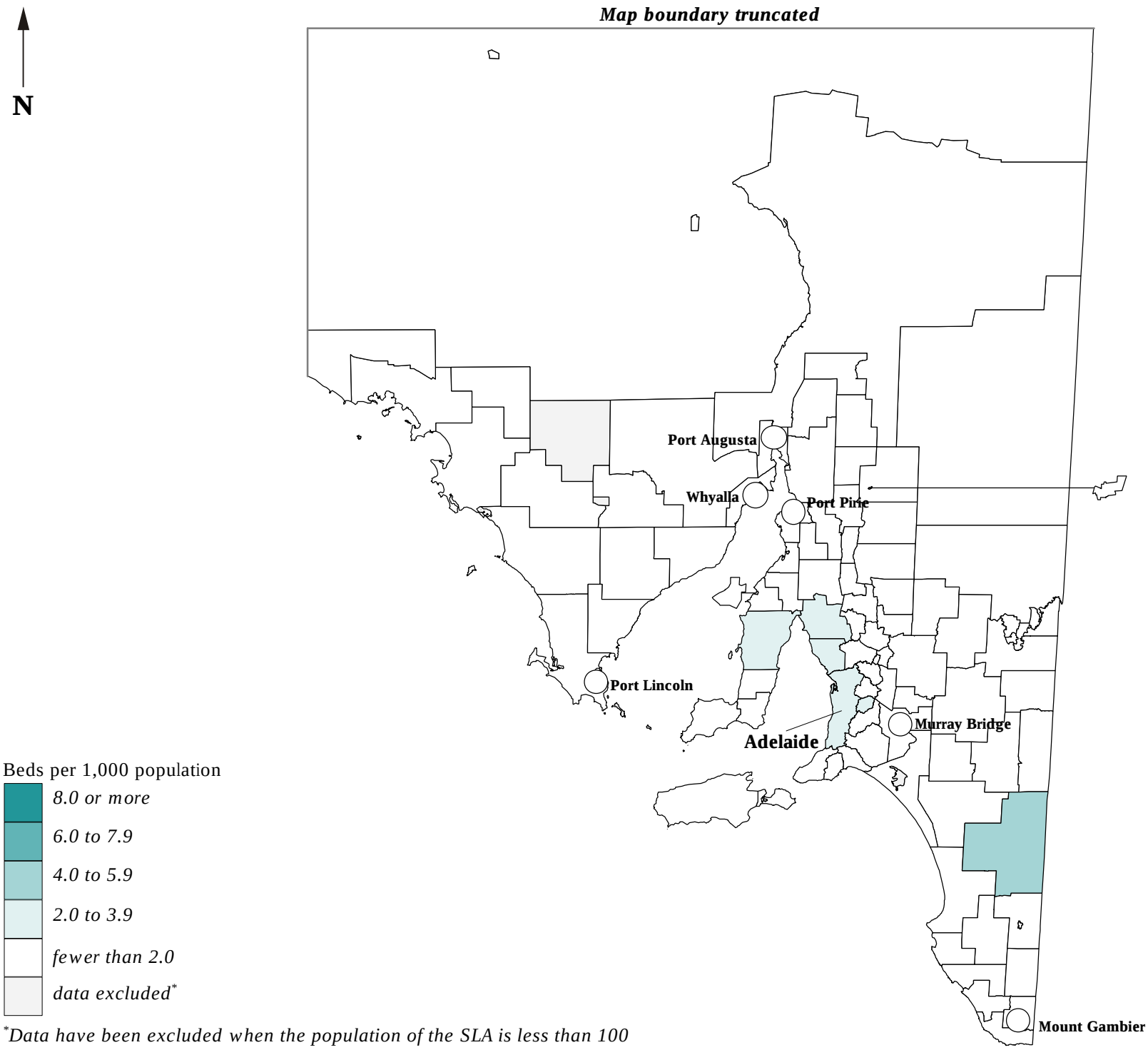
Private hospitals were located in only eight of the non-metropolitan SLAs (**Map 7.6**). These areas included Tatiara (with 4.6 private hospital beds per 1,000 population), Onkaparinga (3.3) and Victor Harbor (1.0), situated in the southern region of the State; Wakefield Plains (3.6) and Mallala (2.8), located in the lower north; Central Yorke Peninsula (3.2) and Northern Yorke Peninsula (1.7), situated on the Yorke Peninsula; and Berri (1.7), in the Riverland.

The largest number of private hospital beds was recorded in the SLA of Tatiara, with 32 beds. At least 10 beds were also recorded in Onkaparinga (27 beds), Mallala (20), Wakefield Plains and Central Yorke Peninsula (both 17), Northern Yorke Peninsula (14), Berri (12) and Victor Harbor (10).

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.6
Private hospital beds per 1,000 population, South Australia, 1997

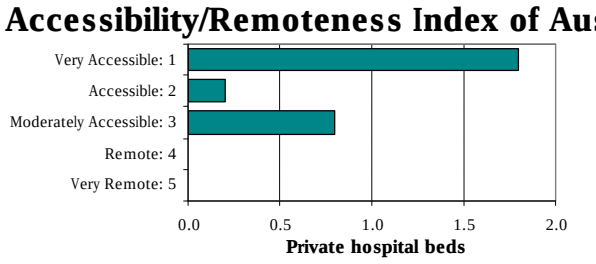
number of private hospital beds in each Statistical Local Area per 1,000 population



*Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Accessibility/Remoteness Index of Australia



2,229
31
61 Beds

Private hospital beds were only located in the three 'accessible' categories, with rates of 1.8 private hospital beds per 1,000 population in the Very Accessible ARIA category, 0.8 in the Moderately Accessible category and a very low 0.2 private hospital beds per 1,000 population in the Accessible category. The majority of these beds (2,229 beds, 96.0 per cent) were located in the Very Accessible category at 30 June 1997.

Source: Calculated on ARIA classification, DHAC

Nursing home places per 1,000 population aged 70 years and over, 1997

Capital city comparison

There were 56 nursing home places per 1,000 population aged 70 years and over in the capital cities at 30 June 1997. The range of rates was from a high of 65 in **Sydney**, 58 in **Adelaide** and 57 in **Hobart**, to a low of 39 in **Canberra** and 41 in **Darwin** (**Table 7.9**).

The rates for all of the cities for which data were published in the first edition of the atlas have decreased, some more substantially than others. This is largely a result of moves to meet the target rate of 40 nursing home places per 1,000 population aged 70 years and over. At the same time, the number of hostel places has increased (page 338). The largest decrease was recorded in **Perth**, where the rate decreased from being equivalent to the *All capitals* average in 1992 to 7.1 per cent below in 1997, a drop of 24.6 per cent: the decrease of 23.9 in **Brisbane** was almost as marked.

Table 7.9: Nursing home places per 1,000 population aged 70 years and over, capital cities

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra [1]	All capitals
1997	65	48	54	58	52	57	41	39	56
1992	79	53	71	74	69	..	..	..	69

[1]Includes Queanbeyan (C)

Source: See *Data sources*, Appendix 1.3

Adelaide

At 30 June 1997, there were 6,010 nursing home places (in 132 nursing home facilities) in **Adelaide**, 58 places per 1,000 population aged 70 years and over.

As shown in **Map 7.7**, the inner areas of **Adelaide** had the highest rates of nursing home places per 1,000 population aged 70 years and over. Rates of above 80 nursing home places per 1,000 population aged 70 years and over were recorded in the inner SLAs of Kensington and Norwood (186 places per 1,000), St Peters (179) and Unley (137). There was a wide variation in the provision of nursing home places at the SLA level within the second highest class interval. Rates within this range were recorded in the SLAs of Walkerville (79), Adelaide (73) and Payneham (65), located in and around the city centre; Henley and Grange (78) and Port Adelaide (66), situated in the west; Brighton (74), Glenelg (68) and Mitcham (60), in the south; and Gawler (65) and Enfield [Part A] (64), located in the north.

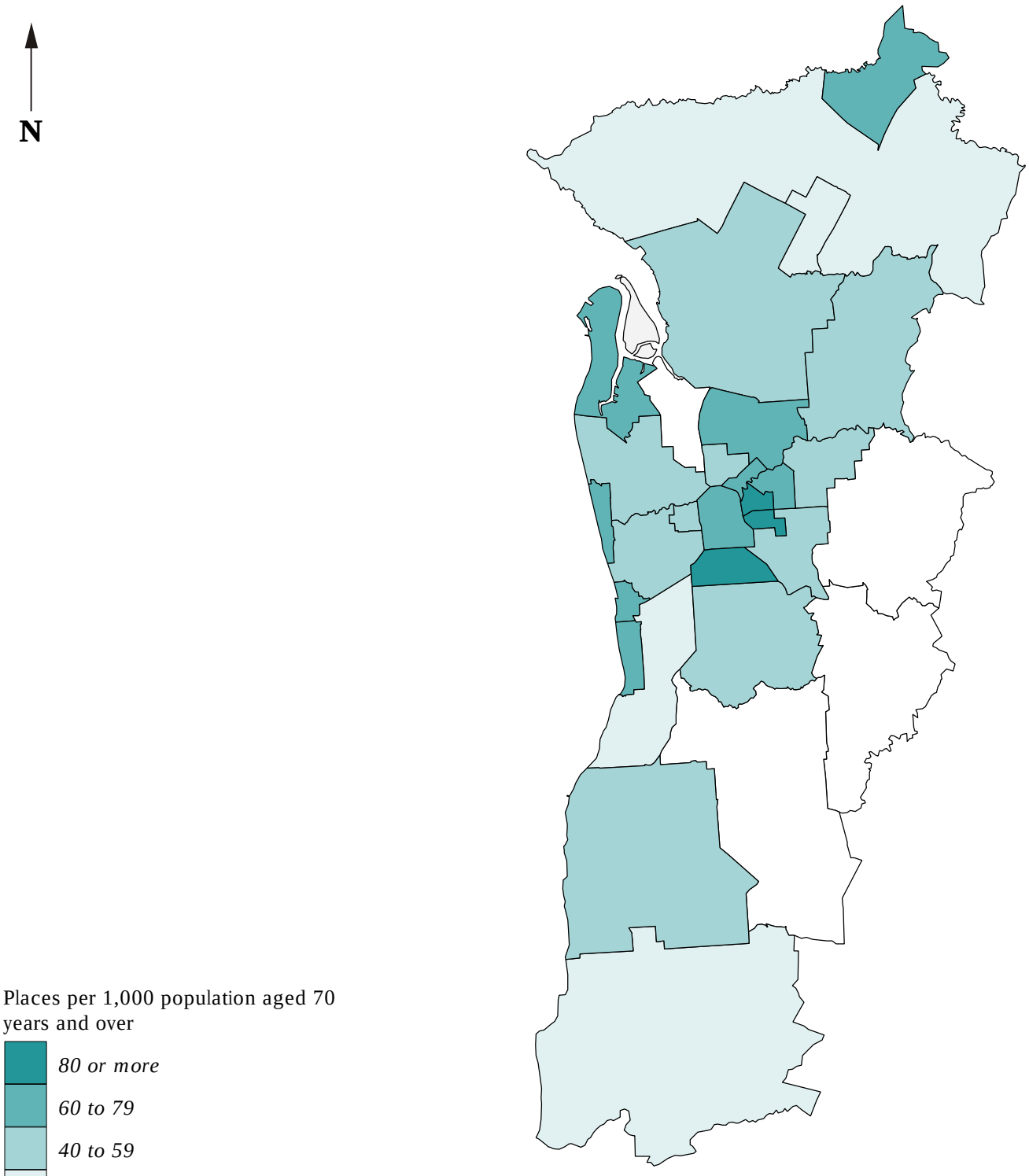
The lowest rates were recorded in Munno Para (26 places per 1,000 population) and Elizabeth (33), situated in the north and Willunga (28) and Marion (37), located in the south. There were no nursing home places located in East Torrens, Enfield [Part B], Happy Valley and Stirling.

The SLA of Unley had the largest number of nursing home places in **Adelaide** in 1997 (628 places and 15 facilities), followed by Hindmarsh and Woodville (597; 11), Mitcham (461; 13), Enfield [Part A] (375; eight), Marion (329; four), West Torrens (320; five) and Noarlunga (313; six).

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.7
Nursing home places per 1,000 population aged 70 years and over, Adelaide, 1997

number of nursing home places in each Statistical Local Area per 1,000 population aged 70 years and over



*Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Nursing home places per 1,000 population aged 70 years and over, 1997

State/Territory comparison

Readers should note the comments on page 319 under the heading *Data mapped* regarding the limitations of this data, especially in regard to the availability, in some instances, of beds in hospitals for long term aged care. Such beds are not included in this data.

There were fewer places per 1,000 population aged 70 years and over in the *Rest of State /Territory* areas of Australia than in the capital cities in all but the Northern Territory (where there were more places) (**Table 7.10**). The highest rates in the *Rest of State /Territory* areas were in Tasmania (49 places per 1,000 population aged 70 years and over) and Victoria (45 places).

Of the States and Territories for which data were published in the first edition of the atlas, South Australia had a very low rate of nursing home places per 1,000 population aged 70 years and over in the *Rest of State /Territory* areas in both periods (a rate of 27 in 1992 and 28 in 1997). In this context it is worthwhile noting that South Australia has the highest proportion of its inpatient bed days in non-metropolitan hospitals used by nursing home type patients (**Table 7.1**, page 320; New South Wales has second highest in the non-metropolitan areas). Western Australia had the only other rate below the *Rest of State /Territory* average for either period.

Table 7.10: Nursing home places per 1,000 population aged 70 years and over, State/Territory

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1997									
Capital city	65	48	54	58	52	57	41	39[1]	56
Other major urban centres [2]	45	55	35	..	..	..	..	..	42
Rest of State/Territory	39	45	40	28	31	49	44	–[3]	40
Whole of State/Territory	55	48	45	50	47	52	42	37	50
1992									
Rest of State/Territory	52	53	52	27	40	..	..	..	50

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3]Data unreliable: included with ACT total
Source: See *Data sources*, Appendix 1.3

Rest of State

In 1997, there were 28 nursing home places per 1,000 population aged 70 years and over in the non-metropolitan areas of South Australia: this represented a total of 946 places in 27 nursing home facilities.

The overall pattern of distribution of nursing home places is one of higher rates in the southern region of the State, particularly in the Riverland and in the areas surrounding **Adelaide**. A large number of SLAs had none of these facilities.

The highest rates were recorded in the south-eastern SLAs of Mount Gambier (DC) (165 nursing home places per 1,000 population aged 70 years and over), Millicent (46 places) and Victor Harbor (44); in the areas surrounding **Adelaide** in the SLAs of Light (112), Tanunda (58), Angaston (51), Strathalbyn (47) and Mount Barker (40); on the Yorke Peninsula in Minlaton (100), Northern Yorke Peninsula (78) and Wallaroo (56); and in the Riverland in the areas of Barmera (69), Berri (48), Loxton (45) and Renmark (41). Clare and Port Augusta (located to the north of **Adelaide**) also recorded a relatively high rate, with 56 and 42 nursing home places per 1,000 population aged 70 years and over, respectively.

Rates of below 40 were recorded in the SLAs of Port Pirie (22 nursing home places per 1,000 population aged 70 years and over), Port Elliot and Goolwa (27 places), Mount Gambier (C) (28), Wakefield Plains (31), Whyalla (32), Murray Bridge and Naracoorte (both 34) and Port Lincoln (39).

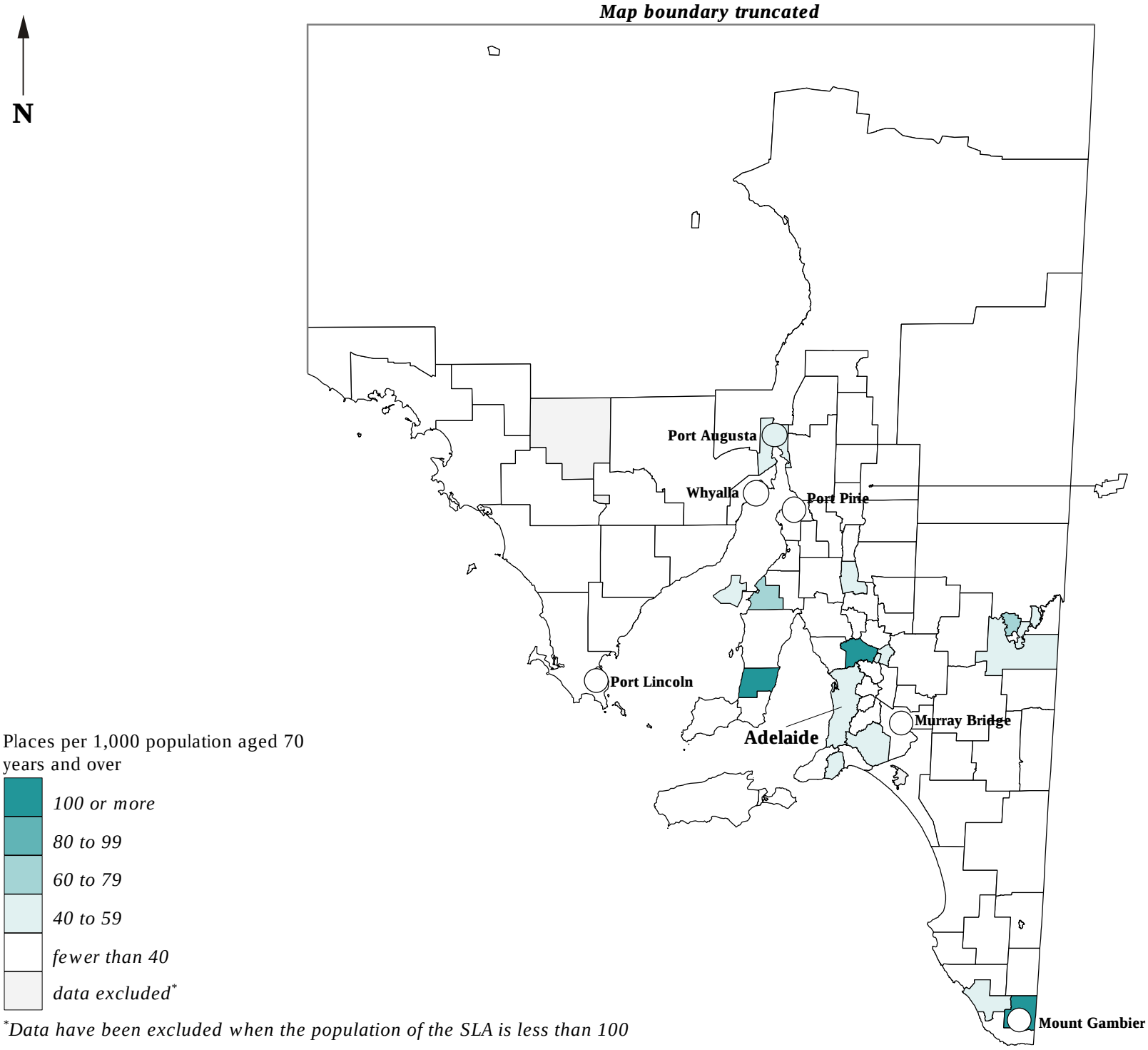
Map 7.8 shows that the SLAs with the lowest rates were mainly distributed in the northern region of the State, with no nursing home places located in just under three quarters (73.7 per cent) of the non-metropolitan SLAs.

The largest numbers of nursing home places were located in the SLAs of Northern Yorke Peninsula (84 places), Victor Harbor (78), Mount Barker (52), Murray Bridge (50), Whyalla and Mount Gambier (C) (both 48), Port Lincoln (44), Mount Gambier (DC) (42) and Port Augusta (40).

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.8
Nursing home places per 1,000 population aged 70 years and over, South Australia, 1997

number of nursing home places in each Statistical Local Area per 1,000 population aged 70 years and over



*Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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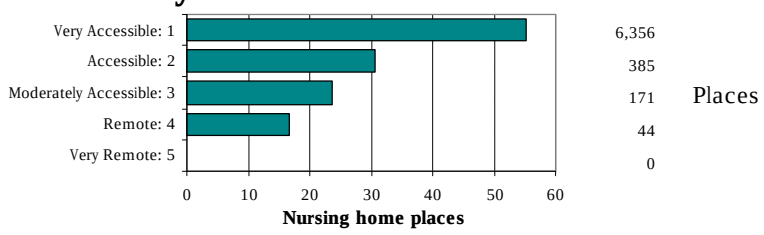


The provision of nursing home places decreases from 55 places per 1,000 population aged 70 years and over in the Very Accessible ARIA category to 17 places per 1,000 population aged 70 years and over in the Remote category. There were no nursing home places in the Very Remote category.

Source: Calculated on ARIA classification, DHAC

Hostel places per 1,000 population aged 70 years and over, 1997

Capital city comparison

There were 43 hostel places per 1,000 population aged 70 years and over in the capital cities at 30 June 1997. The range of rates was from a high of 57 places in **Canberra**, 50 in **Perth** and 49 in **Brisbane** to a low of 30 in **Darwin** (**Table 7.11**).

The rates for all of the cities for which data were published in the first edition of the atlas have increased, some more substantially than others, in all of the capitals other than **Brisbane** (the city with the highest rate in 1992). This is largely a result of moves to meet the target rate of 50 hostel places per 1,000 population aged 70 years and over. At the same time, the number of nursing home places has decreased (page 334). The largest increase was recorded in **Sydney**, where the rate increased from 28 places per 1,000 population aged 70 years and over in 1992 to 36 in 1997, an increase of 22.2 per cent.

Table 7.11: Hostel places per 1,000 population aged 70 years and over, capital cities

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra [1]	All capitals
1997	36	43	49	47	50	42	30	57	43
1992	28	35	55	43	45	..	..	..	37

[1]Includes Queanbeyan (C)

Source: See *Data sources*, Appendix 1.3

Adelaide

There were 47 hostel places per 1,000 population aged 70 years and over in **Adelaide** in 1997, a total of 95 hostel facilities and 4,936 places.

The distribution of SLAs with the highest rates follows a distinct pattern in the inner city and eastern areas, while those with the lowest rates were situated in a number of locations throughout the metropolitan area (**Map 7.9**).

By far the highest rate was recorded in Kensington and Norwood, with 131 hostel places per 1,000 population aged 70 years and over. Rates in the two highest ranges were also recorded in the SLAs of Payneham (with a rate of 112 places), Adelaide (108), Unley (95) and Walkerville (91), located in the inner city region; East Torrens (84) and Campbelltown (65), in the east; and Mitcham (65), situated in the south.

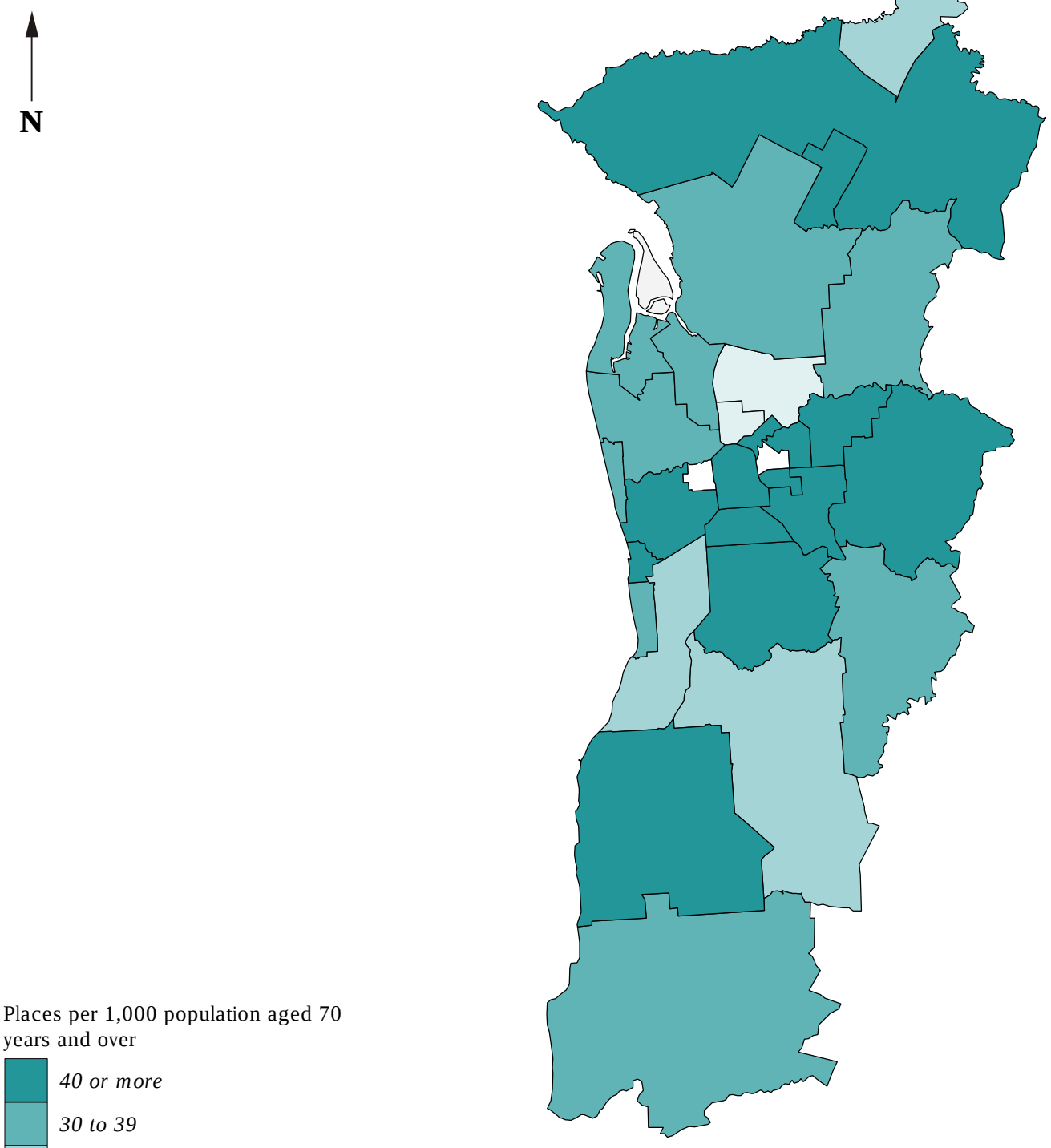
Rates below thirty hostel places per 1,000 population aged 70 years and over were recorded in the SLAs of Enfield [Part A] (17 hostel places per 1,000 population aged 70 years and over), Prospect (19 places), Gawler (24), Happy Valley (25) and Marion (28). Relatively low rates were recorded in Henley and Grange (32 places), Stirling and Hindmarsh and Woodville (both with 34), Tea Tree Gully (36), Willunga and Salisbury (both with 37), Port Adelaide (38) and Brighton (39).

More than 300 hostel places were located in the SLAs of Mitcham (503 places), Unley (436), Hindmarsh and Woodville (384), Burnside (326), Payneham (309) and West Torrens (303). At the other end of the scale there were no hostel places recorded in Thebarton and St Peters.

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.9
Hostel places per 1,000 population aged 70 years and over, Adelaide, 1997

number of hostel places in each Statistical Local Area per 1,000 population aged 70 years and over



*Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Hostel places per 1,000 population aged 70 years and over, 1997

State/Territory comparison

There were fewer hostel places per thousand population aged 70 years and over in the *Rest of State /Territory* areas of Australia than in the capital cities in all but New South Wales and Victoria (with more places) and Queensland (with the same number of places) (**Table 7.12**). The highest rates were in Victoria and Queensland and the lowest was in the Northern Territory.

Of the States/Territories for which data were published in the first edition of the atlas, the largest increase in the *Rest of State /Territory* areas was recorded for Victoria. There was a small increase in the rate in New South Wales and a small decrease for Western Australia: the rate in Queensland and South Australia remained the same.

Table 7.12: Hostel places per 1,000 population aged 70 years and over, State/Territory

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1997									
Capital city	36	43	49	47	50	42	30	57[1]	43
Other major urban centres[2]	40	42	39	..	..	..	..	..	40
Rest of State/Territory	42	49	49	46	43	39	28	–[3]	46
Whole of State/Territory	38	45	47	47	48	40	29	60	43
1992									
Rest of State/Territory	39	40	49	46	45	..	..	..	42

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3]Data unreliable: included with ACT total
Source: See *Data sources*, Appendix 1.3

Rest of State

The rate recorded for the non-metropolitan areas of South Australia was slightly lower than that recorded in **Adelaide**, with 46 hostel places per 1,000 population aged 70 years and over. This represented a total of 61 hostel facilities with 1,554 places.

The distribution of hostel places per 1,000 population aged 70 years and over is shown in **Map 7.10**, from which it can be seen that SLAs with the highest rates were mainly concentrated in the middle region of the State, while those with the lowest were located in the more remote regions.

Rates mapped in the highest range were recorded in the lower northern SLAs of Orroroo (180 hostel places per 1,000 population aged 70 years and over), Kanyaka-Quorn (141 places), Mount Remarkable (120) and Jamestown (82); in the areas just north of **Adelaide** in Riverton (137), Tanunda (128), Blyth-Snowtown (101) and Eudunda (97); on the Yorke Peninsula in Port Broughton (111), Yorketown (91) and Central Yorke Peninsula (90); and on the Eyre Peninsula in Cleve (98) and Kimba (82).

In total, 20 SLAs were mapped in the middle range, with rates ranging from 40 hostel places per 1,000 population aged 70 years and over in Renmark to 58 in Kapunda.

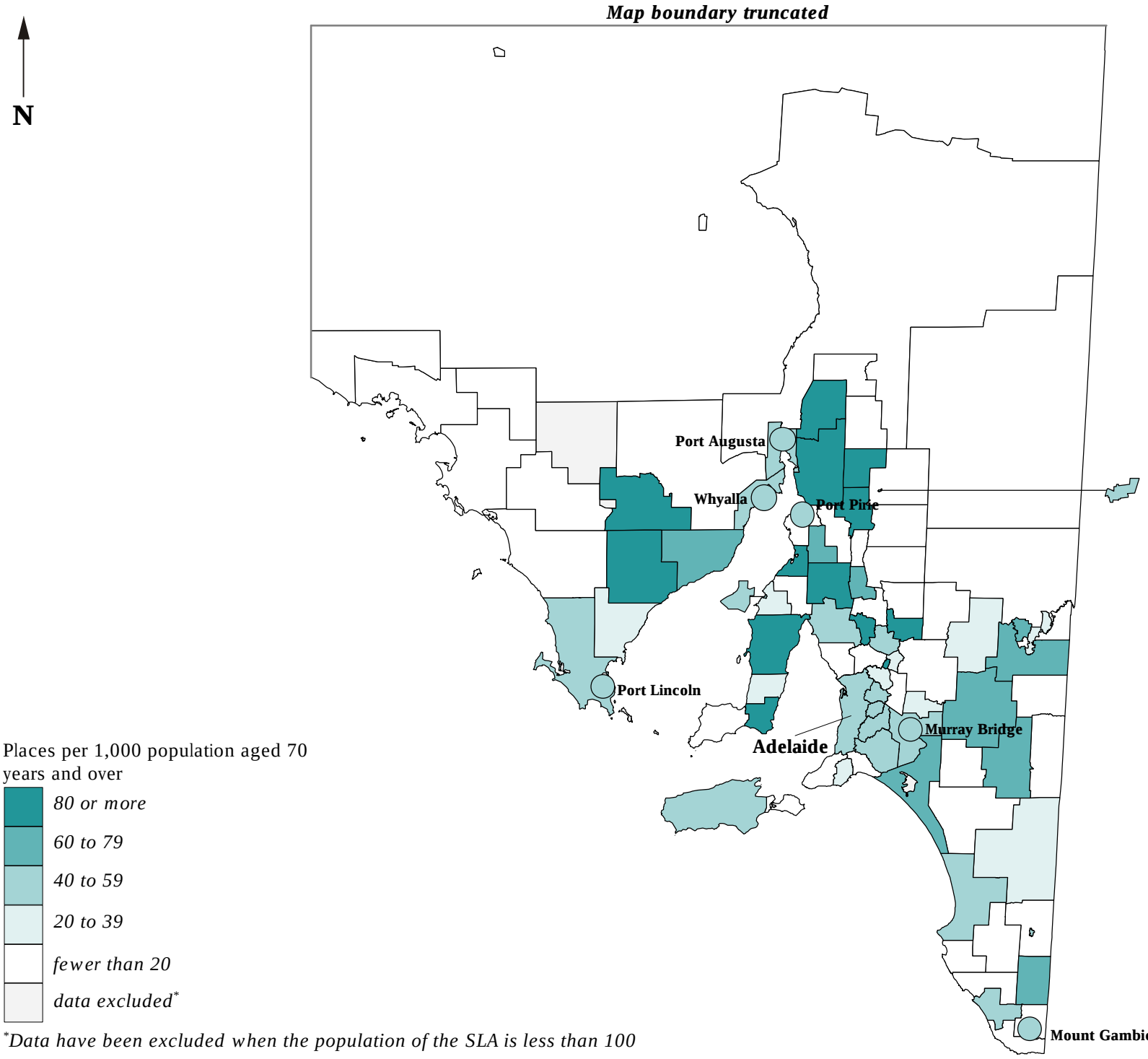
The lowest rates, in areas where nursing home facilities were located, were recorded in Port Elliot and Goolwa (with a rate of 18 places per 1,000 population and a total of 20 places), Victor Harbor (22 and 38) and Mannum (26 and 10). SLAs with fewer than 40 hostel places per 1,000 population aged 70 years and over included Northern Yorke Peninsula and Waikerie (both 30 places), Tumby Bay and Barossa (both 31), Angaston (32), Minlaton (34) and Tatiara (36).

The largest numbers of hostel places were recorded in Mount Gambier (C) (94 places), followed by Tanunda and Whyalla (both 73), Mount Barker (70), Murray Bridge (67), Port Pirie (66), Port Lincoln (58), Central Yorke Peninsula (55) and Port Augusta (54). No hostels were located in 42 of the non-metropolitan SLAs.

The correlation analysis was not undertaken as there were too many SLAs with no data.

Map 7.10
Hostel places per 1,000 population aged 70 years and over, South Australia, 1997

number of hostel places in each Statistical Local Area per 1,000 population aged 70 years and over



*Data have been excluded when the population of the SLA is less than 100

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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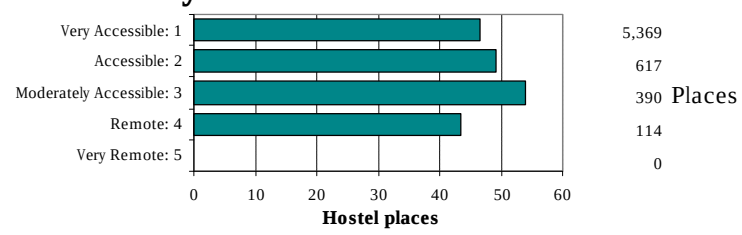

The provision of aged care hostel places is almost the reverse of that for nursing home places and much more like the distribution of public acute hospital beds. The rate of provision increases from 47 places per 1,000 population in the Very Accessible areas to 49 places and 54 places in the Accessible and Moderately Accessible areas, respectively, before dropping to 43 places in the Remote areas (there are no places in the Very Remote areas).

Source: Calculated on ARIA classification, DHAC

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