

6 Statistical analysis

Introduction

Two sets of analyses have been undertaken to illustrate the extent of association between areas with low socioeconomic status and poor health. Correlation coefficients have been produced to indicate interdependence between the indicators of socioeconomic status, health status and use of health services. The correlation analysis was undertaken for metropolitan postcode and SLAs and non-metropolitan SLAs. Non-metropolitan Health Regions were eliminated from the analysis as there were too few variables that met the criteria for inclusion.

Inequalities in health have traditionally been indicated by an approximation to social class, frequently based on a categorisation of occupations. The other major indicators traditionally used have included income, education, ethnicity and employment status (which allows for the inclusion of unemployed people and those not in the labour force). The measures of socioeconomic status included in this analysis include income, education, occupation, labour force status and Aboriginality.

Correlation analysis

Description

Correlation is the degree to which one variable is statistically associated with another. The correlation coefficient is a measure of the strength of this association. When high values for one variable are matched by high values for the other (or when low values are matched by low values), then they are positively correlated. Where the interdependence is inverse (ie. high values for one are matched by low values for another), the two variables are negatively correlated.

Methods

The Pearson product-moment correlation coefficient (r) has been used in the analysis to indicate the degree of correlation between pairs of variables. Pearson correlation coefficients range from +1 (complete positive correlation) through 0 (complete lack of correlation) to -1 (complete negative correlation). As a general rule, correlations of plus or minus 0.5 or above are considered to be of meaningful statistical significance. Correlations of plus or minus 0.71 or above are of substantial statistical significance, because this higher value represents at least 50 per cent shared variation (r^2 greater than or equal to 0.5).

Correlation coefficients were calculated by comparing the value (expressed as a percentage or as a standardised ratio) for each variable in the SLA (or postcode) with the value of each of the other variables. Correlation coefficients are generally referred to as being, for example, 'a correlation of children living in low income families with the *paired* variable of hospital admissions'. However, to promote ease of reading where many correlations are quoted in the text, the word 'paired' has been omitted. For similar reasons the symbol used to indicate a correlation coefficient (r) has been omitted.

Three measures of socioeconomic status included in the analysis in this section have not been mapped. They are people in high status occupations classified as 'managers and administrators', and professionals'; families receiving an income of \$52,000 or more per annum; and female labour force participation. These three measures were included as they indicate high socioeconomic status, in contrast to most other measures, which were chosen because they indicate low socioeconomic status.

The results of the correlation analysis, which was undertaken separately for Adelaide and the rest of the State, are shown in the following tables: coefficients of from 0.5 to 0.7 and from 0.71 to 1 (both positive and negative) are highlighted in the tables, and are referred to in the individual map commentaries, as appropriate.

When discussing the results of the correlation analysis in the text, mention is often made of 'the indicators of socioeconomic disadvantage'. This reference is to variables such as those for children living in single parent families, low income families, dwellings with no motor vehicles and dwellings rented from the SA Housing Trust; unemployed people; and Indigenous people. Reference to 'high socioeconomic status' reflects the variables for high income families, female labour force participation and managers and administrators, and professionals.

The associations discussed in the text are, in general, limited to associations between the variable under discussion and the indicators of socioeconomic status from Chapter 3. The extent of any association with the other variables analysed can be ascertained from an examination of the correlation matrices (Table 6.1, 6.2 and 6.3).

When there are small numbers of cases, the correlation analysis can be affected. In undertaking this analysis for school achievement scores at the postcode level, the initial results showed there to be little in the way of correlation between the variables. When grouped to SLAs, however, there were noticeable correlations with a number of indicators of socioeconomic status. The correlations were re-run, excluding postcode areas with fewer than 20 students. This increased the number of correlations of meaningful or substantial significance.

Similarly, the relatively large number of SLAs in the non-metropolitan areas with relatively small numbers of cases reduces the strength of the analysis. SLAs with populations below 4,000 were excluded from the analysis, increasing the number of correlations of meaningful or substantial significance.

Results

Adelaide by postcode

The results of the correlation analysis for postcode areas in Adelaide showed significant relationships between a number of the demographic, health status and health service utilisation variables. Generally, and as would be expected, variables within the separate chapters of the atlas tended to be correlated more often with each other than with variables from other chapters. For example, demographic variables tended to be associated with other demographic variables, socioeconomic indicators with other socioeconomic indicators, and so on. However, there were also some notable relationships between variables across chapters. This chapter summarises the most notable and statistically significant results. To review the complete analysis, refer to **Table 6.1**.

There were correlations of significance at the postcode level between the indicators of socioeconomic disadvantage and a number of the health status and health service use variables. The strongest of these were with the variables for substantiated reports of child abuse and neglect; public acute hospital admissions for children aged 0 to 14 years and young people aged 15 to 24 years; general medical practitioner services to children aged 5 to 14 years; and clients of Family and Youth Services.

Adelaide by Statistical Local Areas

As can be seen from a comparison of **Table 6.1** and **Table 6.2**, the correlation coefficients at the SLA level were generally stronger than at the postcode level. Correlations of substantial significance were recorded with a number of the indicators of socioeconomic disadvantage: they included the variables for admissions of children aged 0 to 14 years to a public acute hospital, and to any (public acute plus private) hospital for respiratory system diseases, as well as for bronchitis, emphysema and asthma; admissions of young people aged 15 to 24 years to a public acute hospital or to any hospital, and admissions of females at these ages; and clients of Family and Youth Services. There were inverse correlations of substantial significance between a number of the indicators of socioeconomic disadvantage and immunisation rates of children at 12 months of age and admission to a private hospital of children aged 0 to 14 years and young people aged 15 to 24 years.

Non-metropolitan areas

It is clear from **Table 6.3** that there are fewer correlations of significance at the SLA level in the non-metropolitan areas of South Australia than there were in Adelaide.

The strongest correlations with the indicators of socioeconomic disadvantage were with the variables for substantiated reports of child and abuse and neglect, a number of the hospital admission variables (including for procedures), with general medical practitioner services and services to clients of Child and Adolescent Mental Health Services; and with clients of Family and Youth Services.

Table 6.1: Correlation matrix for postcode areas in Adelaide...cont

	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62				
V1	-0.01	0.23	0.02	0.20	-0.20	-0.05	0.10	0.30	0.55	0.12	0.24	0.13	-0.12	V1	Age distribution	V1	Children aged 0 to 4 years
V2	0.06	0.10	-0.03	0.10	-0.02	-0.14	0.05	0.06	0.54	-0.10	0.08	-0.01	0.02	V2		V2	Children aged 5 to 9 years
V3	-0.10	-0.03	-0.12	0.09	0.06	-0.35	-0.09	-0.09	0.41	-0.22	0.02	-0.16	-0.21	V3		V3	Children aged 10 to 14 years
V4	-0.02	0.10	-0.05	0.14	-0.05	-0.21	0.02	0.09	0.54	-0.08	0.11	-0.02	-0.12	V4		V4	Children aged 0 to 14 years
V5	-0.19	-0.10	-0.11	0.06	0.32	-0.38	-0.11	-0.08	-0.04	-0.23	-0.10	-0.32	-0.13	V5		V5	Children aged 15 to 19 years
V6	0.10	0.00	-0.02	-0.02	0.00	0.33	0.09	0.11	-0.37	0.29	0.05	0.01	0.23	V6		V6	Children aged 20 to 24 years
V7	-0.02	-0.05	-0.08	0.02	0.19	0.06	0.01	0.05	-0.33	0.11	-0.02	-0.17	0.12	V7		V7	Children aged 15 to 24 years
V8	-0.03	0.08	-0.09	0.16	0.03	-0.20	0.02	0.12	0.43	-0.03	0.12	-0.11	-0.07	V8		V8	Children aged 0 to 24 years
V9	0.36	0.35	0.14	0.13	-0.38	0.59	0.27	0.34	0.25	0.68	0.57	0.64	0.25	V9	Families	V9	Children aged 0 to 14 years living in single parent families
V10	0.30	0.34	0.09	0.17	-0.47	0.61	0.33	0.43	0.37	0.69	0.60	0.60	0.13	V10		V10	Children aged 0 to 14 years living in low income families
V11	0.35	0.47	0.24	0.26	-0.25	0.56	0.28	0.40	0.34	0.76	0.70	0.57	0.11	V11	Housing	V11	Children aged 0 to 14 years living in dwellings rented from the SA Housing Trust
V12	0.39	0.40	0.20	0.20	-0.32	0.64	0.28	0.38	0.23	0.79	0.55	0.56	0.17	V12		V12	Children aged 0 to 14 years living in dwellings with no motor vehicle
V13	0.23	0.28	0.08	0.16	-0.35	0.22	0.17	0.41	0.14	0.48	0.40	0.28	0.06	V13	Aboriginal and Torres Strait Islander people	V13	Children aged 0 to 14 years identified as Aboriginal and Torres Strait Islanders
V14	0.33	0.35	0.17	0.21	-0.38	0.46	0.28	0.39	0.20	0.58	0.42	0.45	0.22	V14		V14	People aged 15 to 24 years identified as Aboriginal and Torres Strait Islanders
V15	0.16	0.15	0.15	0.06	-0.14	0.42	0.29	0.21	-0.09	0.45	0.43	0.06	0.17	V15	People born in predominantly non-English speaking countries	V15	Children aged 0 to 14 born in predominantly non-English speaking countries
V16	0.13	0.18	0.12	0.04	-0.24	0.46	0.31	0.23	0.02	0.48	0.55	0.14	0.10	V16		V16	People aged 15 to 24 born in predominantly non-English speaking countries
V17	0.21	0.15	-0.06	0.04	-0.55	0.55	0.16	0.22	0.22	0.56	0.44	0.44	0.10	V17	Labour force	V17	Unemployed males aged 15 to 24 years
V18	0.43	0.26	0.07	0.01	-0.41	0.53	0.08	0.21	0.22	0.62	0.51	0.43	0.25	V18		V18	Unemployed females aged 15 to 24 years
V19	-0.29	-0.28	-0.02	-0.26	0.40	-0.50	-0.34	-0.37	-0.35	-0.47	-0.28	-0.50	-0.22	V19	Education	V19	People aged 15 to 24 years who are full-time students
V20	0.28	0.37	0.04	0.33	-0.35	0.42	0.31	0.48	0.61	0.61	0.42	0.44	0.02	V20		V20	People aged 15 to 24 years who left school at age 15 or less
V21	-0.23	-0.36	-0.07	-0.22	0.28	-0.36	-0.27	-0.49	-0.61	-0.37	-0.41	-0.43	0.29	V21		V21	Average publicly examined subject achievement scores
V22	-0.27	-0.43	-0.14	-0.24	0.30	-0.43	-0.37	-0.50	-0.52	-0.49	-0.46	-0.51	0.31	V22		V22	Average publicly assessed subject achievement scores
V23	-0.21	-0.25	0.06	-0.20	0.39	-0.40	-0.23	-0.47	-0.49	-0.50	-0.42	-0.46	0.27	V23		V23	Average school assessed subject achievement scores
V24	-0.25	-0.38	-0.10	-0.32	0.34	-0.42	-0.36	-0.41	-0.41	-0.49	-0.49	-0.57	-0.29	V24	High socioeconomic status variables	V24	Mangers and administrators, and professionals
V25	-0.34	-0.33	-0.02	-0.26	0.42	-0.50	-0.25	-0.38	-0.45	-0.71	-0.56	-0.45	-0.20	V25		V25	Female labour force participation
V26	-0.24	-0.32	-0.07	-0.20	0.45	-0.48	-0.34	-0.42	-0.46	-0.55	-0.49	-0.57	-0.19	V26		V26	High income families
V27	-0.37	-0.39	-0.12	-0.26	0.45	-0.63	-0.37	-0.45	-0.40	-0.73	-0.65	-0.60	-0.20	V27	ABS SEIFA	V27	Index of Relative Socioeconomic Disadvantage
V28	0.25	0.28	-0.02	0.20	-0.46	0.40	0.33	0.46	0.48	0.58	0.52	0.49	0.13	V28	Income support payments	V28	Dependent children of selected pensioners and beneficiaries
V29	0.11	0.50	0.22	0.29	0.01	0.10	0.55	0.59	0.76	0.20	0.36	0.19	0.16	V29	Total Fertility Rate	V29	Total Fertility Rate
V30	0.26	0.19	0.01	-0.04	-0.23	0.23	0.11	0.18	0.31	0.46	0.25	0.25	0.07	V30	Health status	V30	Perinatal risk factors
V31	0.34	0.30	0.08	0.11	-0.15	0.31	0.33	0.38	0.33	0.38	0.31	0.29	0.40	V31		V31	Low birthweight babies
V32	0.15	0.22	0.14	0.42	-0.09	0.32	0.30	0.25	0.20	0.18	0.14	0.22	-0.18	V32		V32	Overweight and obese 4 year old males
V33	-0.01	0.18	0.13	0.30	0.07	0.15	0.32	0.28	0.23	-0.04	-0.07	0.20	-0.33	V33		V33	Overweight and obese 4 year old females
V34	0.47	0.40	0.18	0.17	-0.33	0.68	0.30	0.34	0.33	0.89	0.61	0.57	0.15	V34		V34	Substantiated reports of child abuse and neglect
V35	0.38	0.66	0.49	0.43	0.13	0.49	0.56	0.54	0.24	0.53	0.34	0.31	0.32	V35	Hospital admissions - 0 to 14 years	V35	Public acute hospitals and private hospitals
V36	0.39	0.59	0.34	0.40	-0.12	0.55	0.50	0.53	0.29	0.65	0.46	0.40	0.29	V36		V36	Public acute hospitals
V37	-0.06	0.03	0.26	-0.07	0.65	-0.28	0.07	-0.10	-0.16	-0.48	-0.43	-0.30	0.10	V37		V37	Private hospitals
V38	0.35	0.64	0.47	0.43	0.12	0.48	0.52	0.48	0.21	0.50	0.35	0.32	0.31	V38		V38	Males
V39	0.36	0.51	0.39	0.29	0.09	0.37	0.45	0.48	0.22	0.43	0.23	0.21	0.25	V39		V39	Females
V40	0.22	0.50	0.49	0.30	0.31	0.23	0.37	0.33	0.01	0.18	0.10	0.04	0.20	V40		V40	Same day admissions
V41	0.33	0.51	0.29	0.58	-0.16	0.46	0.51	0.51	0.22	0.58	0.39	0.30	0.22	V41		V41	Respiratory system diseases
V42	0.39	0.41	0.25	0.36	-0.21	0.69	0.42	0.24	0.20	0.47	0.42	0.37	0.45	V42		V42	Bronchitis, emphysema and asthma
V43	0.31	0.27	0.15	0.17	-0.03	0.33	0.27	0.33	0.11	0.44	0.20	0.04	0.30	V43		V43	Injury and poisoning
V44	0.66	0.81	0.61	0.42	-0.14	0.54	0.56	0.64	0.73	0.60	0.46	0.57	0.29	V44	Hospital admissions - 15 to 24 years	V44	Public acute hospitals and private hospitals
V45	0.59	0.65	0.41	0.31	-0.33	0.62	0.43	0.53	0.60	0.72	0.55	0.63	0.25	V45		V45	Public acute hospitals
V46	-0.02	0.09	0.25	0.05	0.51	-0.34	0.16	0.03	0.08	-0.50	-0.37	-0.33	0.08	V46		V46	Private hospitals
V47	0.48	0.60	0.61	0.33	0.12	0.23	0.35	0.30	0.37	0.21	0.11	0.23	0.15	V47		V47	Males
V48	0.60	0.73	0.48	0.36	-0.20	0.54	0.53	0.66	0.73	0.64	0.51	0.58	0.29	V48		V48	Females
V49	0.48	0.80	0.82	0.32	-0.07	0.46	0.45	0.48	0.46	0.34	0.32	0.52	0.22	V49		V49	Same day admissions
V50	1.00	0.47	0.38	0.26	-0.06	0.51	0.20	0.21	0.39	0.45	0.30	0.32	0.41	V50		V50	Injury and poisoning
V51	0.47	1.00	0.86	0.54	0.19	0.40	0.63	0.68	0.62	0.40	0.34	0.45	0.27	V51	Hospital admissions for a surgical procedure - 0 to 24 years	V51	All procedures
V52	0.38	0.86	1.00	0.29	0.26	0.28	0.43	0.43	0.35	0.18	0.20	0.33	0.18	V52		V52	Same day procedures
V53	0.26	0.54	0.29	1.00	0.15	0.21	0.53	0.55	0.35	0.23	0.04	0.22	0.00	V53		V53	Tonsillectomy and/or adenoidectomy
V54	-0.06	0.19	0.26	0.15	1.00	-0.29	0.10	-0.05	-0.04	-0.26	-0.33	-0.26	0.13	V54		V54	Myringotomy
V55	0.51	0.40	0.28	0.21	-0.29	1.00	0.41	0.26	0.25	0.57	0.46	0.47	0.41	V55	Termination of pregnancy	V55	Termination of pregnancy
V56	0.20	0.63	0.43	0.53	0.10	0.41	1.00	0.79	0.62	0.26	0.31	0.35	0.39	V56	General medical practitioner services	V56	0 to 4 year olds
V57	0.21	0.68	0.43	0.55	-0.05	0.26	0.79	1.00	0.69	0.35	0.34	0.40	0.15	V57		V57	5 to 14 year olds
V58	0.39	0.62	0.35	0.35	-0.04	0.25	0.62	0.69	1.00	0.26	0.35	0.37	0.20	V58		V58	15 to 24 year olds
V59	0.45	0.40	0.18	0.23	-0.26	0.57	0.26	0.35	0.26	1.00	0.50	0.52	0.13	V59	Service use	V59	Family and Youth Services
V60	0.30	0.34	0.20	0.04	-0.33	0.46	0.31	0.34	0.35	0.50	1.00	0.43	0.12	V60		V60	Community based health services
V61	0.32	0.45	0.33	0.22	-0.26	0.47	0.35	0.40	0.37	0.52	0.43	1.00	0.15	V61		V61	Child and Adolescent Mental Health services
V62	0.41	0.27	0.18	0.00	0.13	0.41	0.39	0.15	0.20	0.13	0.12	0.15	1.00	V62	Immunisation	V62	Immunisation
	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62				
	Figures highlighted thus indicate correlations of meaningful significance between the appropriate variables in the matrix;																
	those highlighted thus indicate correlations of substantial significance																

Table 6.3: Correlation matrix for Statistical Local Areas in the non-metropolitan areas of South Australia..cont

	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58				
V1	0.17	0.06	0.11	0.13	0.10	-0.07	0.16	-0.32	-0.33	-0.45	0.44	0.21	-0.02	V1	Age distribution	V1	Children aged 0 to 4 years
V2	-0.13	-0.23	-0.22	-0.25	-0.26	-0.29	-0.05	-0.47	-0.35	-0.42	0.15	-0.22	-0.03	V2		V2	Children aged 5 to 9 years
V3	-0.38	-0.24	-0.24	-0.32	-0.25	-0.37	-0.06	-0.41	-0.37	-0.30	-0.09	-0.22	0.14	V3		V3	Children aged 10 to 14 years
V4	0.11	0.02	0.14	0.12	0.07	-0.10	0.23	-0.39	-0.39	-0.48	0.31	0.03	0.04	V4		V4	Children aged 0 to 14 years
V5	-0.29	-0.11	-0.18	-0.22	-0.13	-0.31	-0.12	-0.33	-0.46	-0.52	0.03	0.09	0.38	V5		V5	Children aged 15 to 19 years
V6	0.06	0.04	0.01	0.05	0.08	-0.09	0.00	-0.25	-0.36	-0.57	0.43	0.28	0.08	V6		V6	Children aged 20 to 24 years
V7	-0.19	-0.06	-0.20	-0.17	-0.07	-0.30	-0.10	-0.30	-0.42	-0.47	0.18	0.23	0.35	V7		V7	Children aged 15 to 24 years
V8	0.17	0.17	0.13	0.18	0.20	0.22	0.29	0.38	0.32	0.27	0.18	0.12	-0.17	V8		V8	Children aged 0 to 24 years
V9	0.59	0.61	0.30	0.61	0.54	0.53	0.01	0.50	0.56	0.48	0.58	0.64	-0.27	V9	Families	V9	Children aged 0 to 14 years living in single parent families
V10	0.68	0.52	0.24	0.52	0.41	0.37	0.06	0.46	0.60	0.61	0.45	0.52	-0.32	V10		V10	Children aged 0 to 14 years living in low income families
V11	0.62	0.70	0.36	0.63	0.65	0.30	0.15	0.12	0.14	0.07	0.73	0.69	-0.24	V11	Housing	V11	Children aged 0 to 14 years living in dwellings rented from the SA Housing Trust
V12	0.62	0.58	0.27	0.49	0.41	0.30	-0.09	-0.06	0.07	-0.02	0.83	0.53	-0.45	V12		V12	Children aged 0 to 14 years living in dwellings with no motor vehicle
V13	0.05	-0.07	-0.10	-0.14	-0.19	-0.18	-0.20	-0.55	-0.44	-0.44	0.51	-0.06	-0.31	V13	Aboriginal and Torres Strait Islander people	V13	Children aged 0 to 14 years identified as Aboriginal and Torres Strait Islanders
V14	0.00	-0.14	-0.14	-0.19	-0.24	-0.20	-0.21	-0.55	-0.46	-0.45	0.42	-0.13	-0.30	V14		V14	People aged 15 to 24 years identified as Aboriginal and Torres Strait Islanders
V15	0.12	0.00	-0.11	-0.13	-0.02	-0.25	-0.19	-0.24	-0.23	-0.30	0.20	0.10	-0.55	V15	People born in predominantly non-English speaking countries	V15	Children aged 0 to 14 born in predominantly non-English speaking countries
V16	0.35	0.16	-0.04	0.14	0.24	0.00	0.22	0.11	0.06	0.02	0.10	0.14	-0.36	V16		V16	People aged 15 to 24 born in predominantly non-English speaking countries
V17	0.50	0.40	0.02	0.26	0.16	0.28	-0.25	0.36	0.46	0.38	0.49	0.50	-0.34	V17	Labour force	V17	Unemployed males aged 15 to 24 years
V18	0.47	0.34	-0.04	0.24	0.20	0.31	-0.24	0.32	0.43	0.31	0.36	0.42	-0.38	V18		V18	Unemployed females aged 15 to 24 years
V19	-0.34	-0.28	-0.27	-0.31	-0.27	-0.09	-0.13	0.20	0.19	0.22	-0.52	-0.30	0.21	V19	Education	V19	People aged 15 to 24 years who are full-time students
V20	0.33	0.25	0.19	0.27	0.20	0.09	0.05	-0.13	-0.07	-0.06	0.46	0.30	-0.26	V20		V20	People aged 15 to 24 years who left school at age 15 or less
V21	-0.43	-0.20	0.09	-0.09	-0.04	-0.01	0.27	0.12	0.06	0.19	-0.67	-0.49	0.44	V21		V21	Average publicly examined subject achievement scores
V22	-0.05	-0.07	0.06	0.06	0.04	0.19	0.17	0.13	0.11	0.16	-0.21	-0.14	0.20	V22		V22	Average publicly assessed subject achievement scores
V23	-0.39	-0.20	-0.05	-0.10	0.01	-0.17	0.34	-0.27	-0.31	-0.34	-0.39	-0.36	0.30	V23		V23	Average school assessed subject achievement scores
V24	-0.16	-0.39	-0.09	-0.27	-0.24	-0.20	0.00	0.00	-0.07	0.05	-0.52	-0.49	-0.11	V24	High socioeconomic status variables	V24	Mangers and administrators, and professionals
V25	-0.35	-0.13	0.10	-0.10	0.04	-0.14	0.20	0.10	-0.10	-0.04	-0.43	-0.10	0.31	V25		V25	Female labour force participation
V26	-0.45	-0.35	-0.27	-0.39	-0.29	-0.33	-0.17	-0.33	-0.47	-0.58	-0.26	-0.32	0.33	V26		V26	High income families
V27	-0.69	-0.53	-0.25	-0.51	-0.44	-0.23	0.00	-0.03	-0.12	-0.09	-0.70	-0.59	0.42	V27	ABS SEIFA	V27	Index of Relative Socioeconomic Disadvantage
V28	0.59	0.49	0.32	0.54	0.45	0.44	0.20	0.62	0.72	0.69	0.40	0.55	-0.32	V28	Income support payments	V28	Dependent children of selected pensioners and beneficiaries
V29	0.38	0.37	0.50	0.49	0.41	0.23	0.23	0.33	0.28	0.28	0.03	0.30	-0.05	V29	Total Fertility Rate	V29	Total Fertility Rate
V30	0.17	0.21	0.14	0.14	0.07	0.16	-0.14	-0.14	-0.07	0.03	0.10	0.18	-0.03	V30	Health status	V30	Overweight and obese 4 year old males
V31	0.20	0.22	0.08	0.18	0.07	0.27	-0.12	0.15	0.18	0.17	0.20	0.32	0.32	V31		V31	Overweight and obese 4 year old females
V32	0.53	0.41	0.13	0.34	0.28	0.10	-0.12	-0.09	-0.07	-0.11	0.88	0.67	-0.36	V32		V32	Substantiated reports of child abuse and neglect
V33	0.68	0.73	0.76	0.80	0.67	0.72	0.27	0.37	0.37	0.35	0.26	0.30	-0.32	V33	Hospital admissions - 0 to 14 years	V33	Public acute hospitals and private hospitals
V34	0.69	0.82	0.76	0.84	0.74	0.66	0.27	0.31	0.33	0.30	0.39	0.47	-0.32	V34		V34	Public acute hospitals
V35	0.07	-0.20	0.10	-0.04	-0.15	0.29	0.03	0.26	0.18	0.21	-0.40	-0.51	-0.06	V35		V35	Private hospitals
V36	0.62	0.70	0.79	0.80	0.67	0.71	0.33	0.38	0.39	0.38	0.21	0.31	-0.27	V36		V36	Males
V37	0.69	0.69	0.65	0.72	0.60	0.66	0.16	0.31	0.30	0.28	0.29	0.26	-0.37	V37		V37	Females
V38	0.43	0.43	0.55	0.63	0.74	0.28	0.65	0.27	0.20	0.27	-0.03	0.12	-0.35	V38		V38	Same day admissions
V39	0.54	0.59	0.58	0.62	0.43	0.73	0.00	0.30	0.32	0.22	0.20	0.23	-0.18	V39		V39	Respiratory system diseases
V40	0.51	0.48	0.48	0.49	0.33	0.47	-0.15	0.13	0.25	0.20	0.14	0.19	-0.28	V40		V40	Bronchitis, emphysema and asthma
V41	0.48	0.56	0.70	0.63	0.51	0.50	0.13	0.16	0.12	0.19	0.11	0.16	-0.33	V41		V41	Injury and poisoning
V42	0.83	0.95	0.77	0.93	0.83	0.60	0.31	0.33	0.38	0.35	0.57	0.55	-0.46	V42	Hospital admissions - 15 to 24 years	V42	Public acute hospitals and private hospitals
V43	0.82	0.94	0.68	0.89	0.83	0.49	0.28	0.19	0.25	0.25	0.67	0.65	-0.48	V43		V43	Public acute hospitals
V44	-0.13	-0.15	0.16	-0.02	-0.14	0.28	0.05	0.45	0.39	0.30	-0.50	-0.47	0.16	V44		V44	Private hospitals
V45	0.57	0.90	0.76	0.80	0.72	0.55	0.30	0.33	0.39	0.36	0.41	0.42	-0.32	V45		V45	Males
V46	1.00	0.72	0.48	0.73	0.66	0.43	0.23	0.25	0.29	0.27	0.57	0.53	-0.57	V46		V46	Females
V47	0.72	1.00	0.71	0.91	0.85	0.57	0.33	0.28	0.33	0.31	0.56	0.54	-0.38	V47		V47	Same day admissions
V48	0.48	0.71	1.00	0.76	0.67	0.42	0.36	0.16	0.19	0.18	0.30	0.34	-0.28	V48		V48	Injury and poisoning
V49	0.73	0.91	0.76	1.00	0.94	0.63	0.48	0.36	0.36	0.34	0.46	0.47	-0.31	V49	Hospital admissions for a surgical procedure - 0 to 24 years	V49	All procedures
V50	0.66	0.85	0.67	0.94	1.00	0.46	0.62	0.29	0.27	0.25	0.43	0.47	-0.33	V50		V50	Same day procedures
V51	0.43	0.57	0.42	0.63	0.46	1.00	0.08	0.57	0.55	0.45	0.07	0.11	-0.14	V51		V51	Tonsillectomy and/or adenoidectomy
V52	0.23	0.33	0.36	0.48	0.62	0.08	1.00	0.16	0.13	0.19	0.01	0.12	0.10	V52		V52	Myringotomy
V53	0.25	0.28	0.16	0.36	0.29	0.57	0.16	1.00	0.92	0.82	-0.07	0.26	0.14	V53	General medical practitioner services	V53	0 to 4 year olds
V54	0.29	0.33	0.19	0.36	0.27	0.55	0.13	0.92	1.00	0.88	0.01	0.23	0.05	V54		V54	5 to 14 year olds
V55	0.27	0.31	0.18	0.34	0.25	0.45	0.19	0.82	0.88	1.00	-0.03	0.21	0.03	V55		V55	15 to 24 year olds
V56	0.57	0.56	0.30	0.46	0.43	0.07	0.01	-0.07	0.01	-0.03	1.00	0.72	-0.42	V56	Service use	V56	Family and Youth Services
V57	0.53	0.54	0.34	0.47	0.47	0.11	0.12	0.26	0.23	0.21	0.72	1.00	-0.17	V57		V57	Child and Adolescent Mental Health services
V58	-0.57	-0.38	-0.28	-0.31	-0.33	-0.14	0.10	0.14	0.05	0.03	-0.42	-0.17	1.00	V58	Immunisation	V58	Immunisation
	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58				
	Figures highlighted thus																
	those highlighted thus																
	indicate correlations of meaningful significance between the appropriate variables in the matrix;																
	indicate correlations of substantial significance																

Cluster analysis

Description

The intention of the cluster analysis is to identify areas of similar socioeconomic status or with similar health service use profiles. The results of the analysis can be useful in identifying areas requiring additional resources, or for targeting programs. The analysis has been undertaken at the postcode level in Adelaide and at the SLA level in the non-metropolitan areas of the State.

It should be noted that the cluster analysis is an exploratory technique and, as with all such techniques, the real test of a solution is whether it makes any sense. Decisions as to the variables to be used, or the number of clusters in a solution, all impact on the final result.

The results of the cluster analysis, therefore, represent indicative groupings of areas with broadly similar characteristics among the variables analysed in each set. They will be a useful tool for some purposes: on other occasions, however, the individual variables on which they are based may also be relevant.

Methods

Cluster analysis (using the squared Euclidean measure) was undertaken by the Ward's method. This (hierarchical) clustering method seems to partition a set of objects (eg. postcode or SLA) into a set of non-overlapping groups so as to maximise some external criterion of 'goodness of clustering', typically the extent to which the within-cluster inter-object similarities are maximised and the between-cluster similarities are minimised.

In cluster analysis, ten records (ie. postcodes) per variable is considered desirable, with an absolute minimum of five. Had all variables been used in the analysis there would have been many fewer than this. A variety of techniques were used to overcome this problem, including applying a factor analysis and undertaking an experimental fit of the full data set, and using the results to reduce the number of variables included in the final analysis.

Table 6.4 lists the variables considered for inclusion in the analysis. The analysis was undertaken separately for Adelaide and the rest of the State.

Table 6.4: Variables considered for inclusion in the cluster analysis

Demography and socioeconomic status	to public acute and private hospitals
% children aged 0-4 yrs	total admissions
% children aged 5-9 yrs	of males
% children aged 10-14 yrs	of females
% children aged 0-14 yrs	same day
% children aged 15-19 yrs	for respiratory system diseases
% children aged 20-24 yrs	for bronchitis, emphysema, and asthma
% children aged 15-24 yrs	for injury and violence
% children aged 0-24 yrs	Hospital admissions (Standardised Ratio) – 15-24 yrs
% children aged 0-14 yrs living in single parent families	to public acute hospitals
% children aged 0-14 yrs living in low income families	to private hospitals
% children aged 0-14 yrs living in Housing Trust dwellings	to public acute and private hospitals
% children aged 0-14 yrs living in dwellings with no car	total admissions
% Indigenous children aged 0-14 yrs	of males
% children aged 0-14 yrs born in NESB countries	of females
% unemployed males aged 15-24 yrs	same day
% unemployed females aged 15-24 yrs	for injury and violence
% full-time students aged 15-24 yrs	Hospital admissions (Standardised Ratio) – 0-24 yrs
Standardised ratio for early school leavers	for all surgical procedures
% Indigenous people aged 15-24 yrs	for all same day surgical procedures
% people aged 15-24 yrs born in NESB countries	for a tonsillectomy and/or adenoidectomy
Total Fertility Rate	for a myringotomy
Publicly examined achievement score	General medical practitioner services (Standardised Ratio)
Publicly assessed achievement score	for people aged 0-4 yrs
School assessed achievement score	for people aged 5-14 yrs
% dependent children	for people aged 15-24 yrs
Utilisation of health services	Community services (Standardised Ratio)
Hospital admissions (Standardised Ratio) – 0-14 yrs	Family and Youth Services
to public acute hospitals	Community based health services
to private hospitals	Child and Adolescent Mental Health Services
	Children fully immunised at 12 months

Results

Socioeconomic clusters in Adelaide

Variables considered for inclusion in this part of the cluster analysis are those listed in **Table 6.4** under the heading *Demography and socioeconomic status*. The ABS Index of Relative Socio-Economic Disadvantage (IRSD) from the 1996 Census was used as an independent check on the solution.

There were 122 postcodes in Adelaide. The factor analysis was initially run on 25 variables and thus was not supported by enough data. The first factor showed potential as a factor concerning socioeconomic status. However, small postcodes were suspected to be affecting the solution. The following postcodes, all with populations of less than 1,000, were subsequently dropped from the analysis: 5020, 5040, 5094, 5117, 5120, 5121, 5134, 5136, 5137, 5138, 5140, 5141, 5142, 5144, 5151, 5156, 5157, 5166, 5170, and 5174.

The following variables were entered into a reliability analysis to ascertain whether they were all likely to be contributing to a measure of socio-economic status: full-time students aged 15-24 years, publicly examined achievement score, publicly assessed achievement score, school assessed achievement score, dependent children, children aged 0-14 yrs living in low income families, children aged 0-14 yrs living in single parent families, children aged 0-14 yrs living in dwellings with no car, children aged 0-14 years living in dwellings rented from the SA Housing Trust, unemployed males aged 15-24 yrs, unemployed females aged 15-24 yrs, Indigenous people aged 0-14 years, Indigenous people aged 15-24 years and early school leavers. The reliability analysis indicated that a scale constructed from these variables would be more reliable if the variable for people who left school at 15 years or earlier, was removed from the scale. This variable was therefore removed from the variable set, and another cluster analysis was performed. This analysis resulted in a very clean three-factor solution as set out below (**Table 6.5** and **Map 6.1**). The three clusters have been labelled as High (50 postcodes), Medium (42 postcodes) and Low (10 postcodes) socioeconomic status clusters.

A check with the IRSD found that, of the top 50 postcodes, 46 (92.0%) were grouped into the high socioeconomic cluster. Of the ten lowest postcodes rated by the IRSD, nine (80.0%) were classified to the Low cluster.

Health service utilisation clusters in Adelaide

Variables considered for inclusion in this part of the cluster analysis are those listed in **Table 6.4** under the heading *Utilisation of health services*. The ABS Index of Relative Socio-Economic Disadvantage (IRSD) from the 1996 Census was used as an independent check on the solution.

The data set had 26 variables and 122 observations, almost enough to support an analysis including all input variables. The correlation matrix suggested that the direction of the variables concerning private hospital admission should be reversed, and this was done by subtracting the standardised ratio from 200. The variables were examined in a reliability analysis, which suggested they all had a contribution to make, with the possible exception of the Community Health Centre data. A cluster analysis was run including all input variables in the hope of generating a sensible solution that could be accepted.

The result of this analysis was not particularly satisfactory, resulting in a somewhat fuzzy solution of three or four clusters. The variables which did not seem to cluster the same as the rest were; admissions of people aged 0-14 years and 15-24 years to a private hospital, surgical procedure for a myringotomy, and immunisation.

Closer examination of the input variables revealed that smaller postcodes were affecting the solution. The following postcodes, all with populations of less than 1,000, were subsequently dropped from the analysis: 5020, 5040, 5094, 5117, 5120, 5121, 5134, 5136, 5137, 5138, 5140, 5141, 5142, 5144, 5151, 5156, 5157, 5166, 5170, and 5174.

These 22 variables were entered into the cluster analysis on the remaining 102 postcodes. The analysis resulted in a very clean three-factor solution as set out in **Table 6.5** and **Map 6.2**.

A check with the IRSD showed that, of the bottom 18 postcodes for Adelaide as classified by the IRSD, 12 (66.7%) were classified to the High health service use group in this analysis. Further, of the top 51 postcodes under the IRSD, 39 (76.5%) were classified to the Low health service use group.

Table 6.5: Composition of postcode clusters in Adelaide

Postcode	Socioeconomic status	Health service utilisation
5000 - Adelaide (City)	High	High
5006 - North Adelaide	High	Low
5007 - Hindmarsh	Medium	Medium
5008 - Croydon	Medium	Medium
5009 - Kilkenny	Medium	Medium
5010 - Ferryden Park	Low	High
5011 - Woodville	Medium	High
5012 - Woodville North	Low	High
5013 - Rosewater East	Low	High
5014 - Alberton	Medium	Medium
5015 - Port Adelaide	Medium	High
5016 - Largs Bay	Medium	High
5017 - Osborne	Low	High
5018 - Outer Harbor	High	Medium
5019 - Semaphore	Medium	High
5020 - West Lakes Shore	Not grouped	Not grouped
5021 - West Lakes	High	Low
5022 - Henley Beach	High	Low
5023 - Seaton	Medium	Medium
5024 - Fulham	High	Low
5025 - Flinders Park	High	Medium
5031 - Thebarton	Medium	Medium
5032 - Brooklyn Park	High	Medium
5033 - Cowandilla	Medium	Medium
5034 - Goodwood	High	Low
5035 - Keswick	Medium	Low
5037 - Netley	High	Medium
5038 - Plympton	Medium	Low
5039 - Edwardstown	Medium	Medium
5040 - Novar Gardens	Not grouped	Not grouped
5041 - Daw Park	High	Low
5042 - St Marys	Medium	Low
5043 - Park Holme	Medium	Medium
5044 - Somerton Park	High	Low
5045 - Glenelg	High	Low
5046 - Oaklands Park	Medium	Low
5047 - Darlington	Medium	Medium
5048 - Brighton	High	Medium
5049 - Seacliff	High	Low
5050 - Eden Hills	High	Low
5051 - Blackwood	High	Low
5052 - Belair	High	Low
5061 - Unley	High	Low
5062 - Kingswood	High	Low
5063 - Eastwood	High	Low
5064 - Glen Osmond	High	Low
5065 - Glenside	High	Low
5066 - Burnside	High	Low
5067 - Norwood	High	Low
5068 - Kensington Park	High	Low
5069 - St Peters	High	Low
5070 - Marden	High	Low
5072 - Magill	High	Low
5073 - Rostrevor	Medium	Medium
5074 - Campbelltown	Medium	Low
5075 - Paradise	High	Medium
5076 - Athelstone	High	Low

Table 6.5: Composition of postcode clusters in Adelaide ...cont

Postcode	Socioeconomic status	Health service utilisation
5081 - Walkerville	High	Low
5082 - Prospect	High	High
5083 - Nailsworth	High	Medium
5084 - Blair Athol	Low	High
5085 - Enfield	Low	High
5086 - Greenacres	Medium	Medium
5087 - Klemzig	Medium	Medium
5088 - Holden Hill	Medium	Low
5089 - Highbury	High	Low
5090 - Hope Valley	High	Low
5091 - Tea Tree Gully	High	Low
5092 - Modbury North	High	Low
5093 - Para Vista	Medium	Medium
5094 - Gepps Cross	Not grouped	Not grouped
5095 - Pooraka	Medium	Medium
5096 - Para Hills	Medium	Low
5097 - St Agnes	High	Low
5098 - Ingle Farm	Medium	Medium
5107 - Parafield Gardens	Medium	High
5108 - Salisbury	Medium	High
5109 - Salisbury East	Medium	Low
5110 - Burton	Medium	Low
5112 - Elizabeth	Low	High
5113 - Elizabeth North	Low	High
5114 - Smithfield	Medium	High
5115 - Munno Para	Medium	Low
5116 - Evanston	Medium	Medium
5117 - Angle Vale	Not grouped	Not grouped
5118 - Gawler	Medium	Medium
5120 - Virginia	Not grouped	Not grouped
5121 - MacDonald Park	Not grouped	Not grouped
5125 - Golden Grove	High	Medium
5126 - Fairview Park	High	Medium
5127 - Wynn Vale	High	Medium
5134 - Montacute	Not grouped	Not grouped
5136 - Norton Summit	Not grouped	Not grouped
5137 - Ashton	Not grouped	Not grouped
5138 - Basket Range	Not grouped	Not grouped
5140 - Greenhill	Not grouped	Not grouped
5141 - Summertown	Not grouped	Not grouped
5142 - Uraidla	Not grouped	Not grouped
5144 - Carey Gully	Not grouped	Not grouped
5151 - Piccadilly	Not grouped	Not grouped
5152 - Stirling	High	Low
5153 - Stirling Forward	High	Low
5154 - Aldgate	High	Low
5155 - Bridgewater	High	Low
5156 - Upper Sturt	Not grouped	Not grouped
5157 - Blackwood Forward	Not grouped	Not grouped
5158 - O'Halloran Hill	High	Low
5159 - Happy Valley	High	Low
5161 - Reynella	Medium	Low
5162 - Morphett Vale	Medium	Medium
5163 - Hackham	Medium	Medium
5164 - Christie Downs	Low	Medium
5165 - Christies Beach	Low	Low
5166 - O'Sullivan Beach	Not grouped	Not grouped
5167 - Port Noarlunga	Medium	Medium

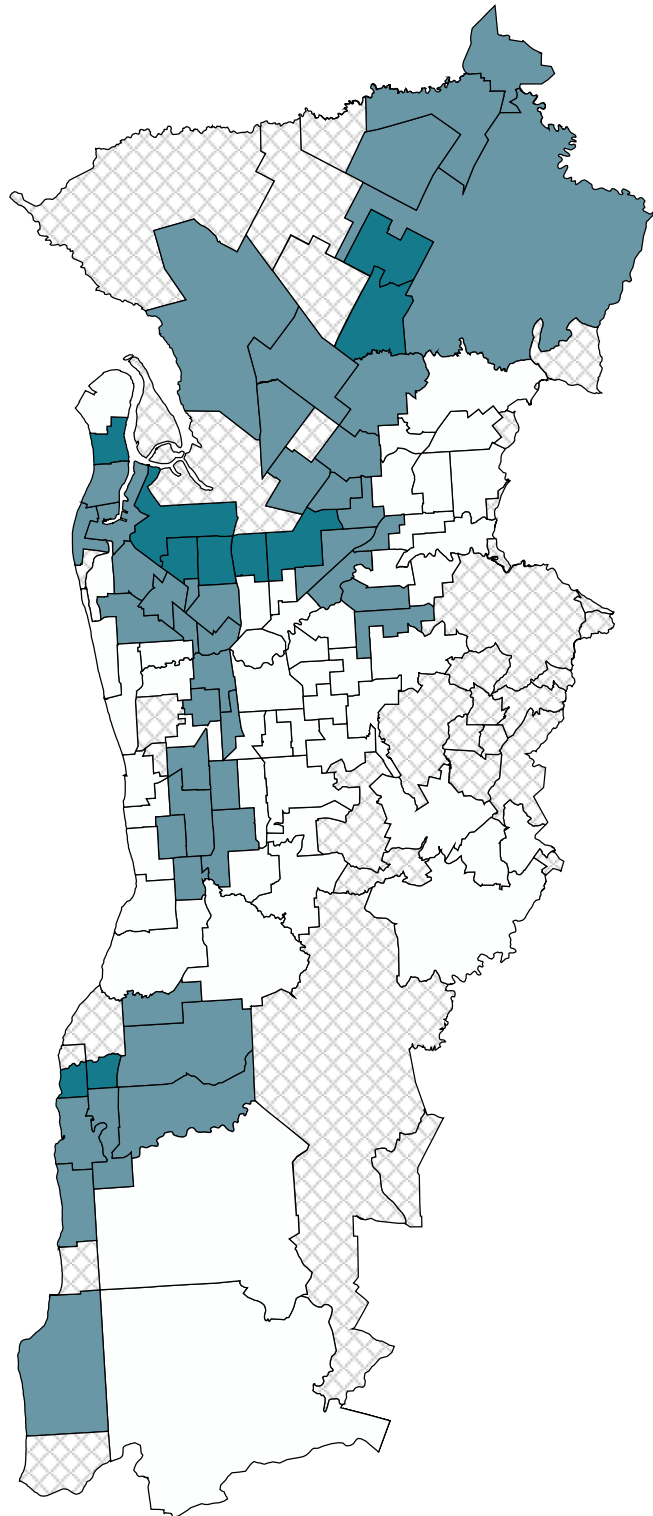
Table 6.5: Composition of postcode clusters in Adelaide ...cont

5168 - Old Noarlunga	Medium	High
5169 - Moana	Medium	Medium
5170 - Maslin Beach	Not grouped	Not grouped
5171 - McLaren Vale	High	Low
5172 - Willunga	High	Low
5173 - Aldinga	Medium	Low
5174 - Sellicks Beach	Not grouped	Not grouped

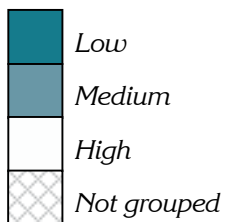
Source: Produced from project sources

Map 6.1 Socioeconomic status clusters based on postcodes, Adelaide

clusters of postcodes with generally similar socioeconomic characteristics



Socioeconomic status clusters



*Areas were not grouped because either the postcode has a population of less than 1,000, or only a small part of the postcode is located in Adelaide.

Source: Compiled from project sources

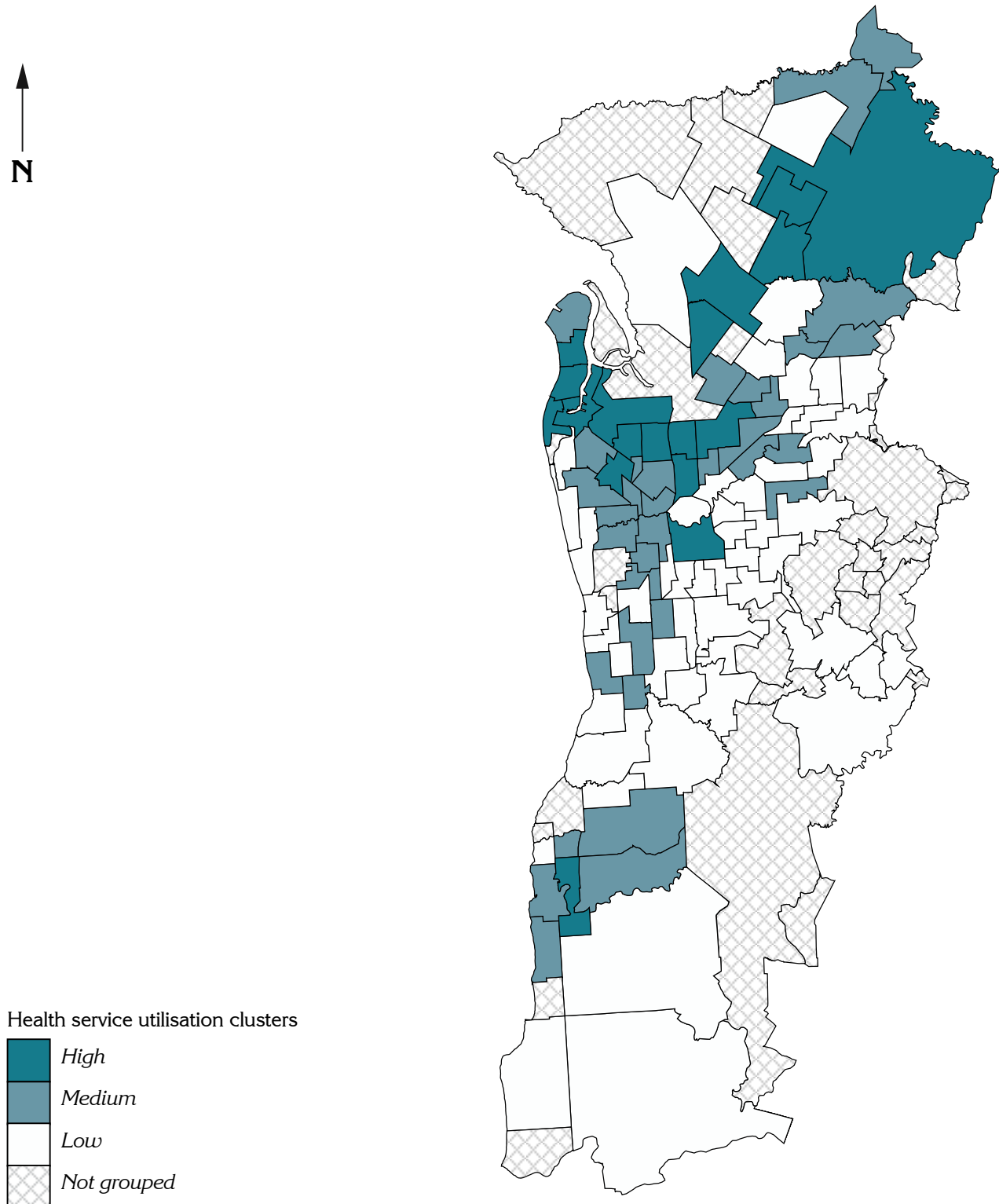
Details of map boundaries are in Appendix 1.2

A Social Health Atlas of Young South Australians, 2003

Map 6.2

Health service utilisation clusters based on postcodes, Adelaide

clusters of postcodes with generally similar health service use characteristics



*Areas were not grouped because either the postcode has a population of less than 1,000, or only a small part of the postcode is located in Adelaide.

Source: Compiled from project sources

Details of map boundaries are in Appendix 1.2

A Social Health Atlas of Young South Australians, 2003

Socioeconomic clusters in the non-metropolitan areas

The production of clusters at the SLA level in the non-metropolitan areas is even more problematic (than for Adelaide), with SLAs varying enormously in size and composition. For example, large urban centre SLAs such as Whyalla and Mount Gambier (population 23,980 and 23,055 respectively) stand in contrast to rural SLAs such as Unincorporated Riverland (population 164) and Orroroo/Carrieton (1,115). Unincorporated Far North, the SLA with the largest land area, occupies just over two thirds of South Australia's land mass yet has a population of only 5,322. Aboriginal people, generally the most disadvantaged population group, are unevenly distributed throughout these SLAs, from as high as 68.4% in the Unincorporated Far North and 34.4% in the Unincorporated West Coast to less than 1% in over half (58.8%) of the State's non-metropolitan SLAs.

All variables except the IRSD score were entered into an exploratory factor analysis, in a bid to provide some insight into which variables may be most useful as input into the cluster analysis. There were 96 records for SLAs in the non-metropolitan areas of the state. The factor analysis was run on 25 variables, and thus was not supported by enough data. The first factor showed potential as a factor concerning socioeconomic status. The variables involved included: Indigenous people aged 0-14 years and 15-24 years, people who left school at 15 years or younger, children aged 0-14 years living in dwellings with no vehicles and full-time students aged 15-24 years.

These variables were entered into a reliability analysis to ascertain whether they were all likely to be contributing to a measure of socioeconomic status. The variable for full-time students aged 15-24 years had a negative correlation with the other variables and so was reversed in direction by subtracting it from 100 for input into the reliability analysis. However, the analysis indicated that a scale constructed from these variables could be more reliable if full-time students were removed from the scale, although this was marginal.

The variables listed above were entered into a cluster analysis, which resulted in a poor quality four-cluster solution.

The full list of input variables (Table 6.4) were included in a cluster analysis in an attempt to find variables which grouped in a similar way. Unfortunately, this was unsuccessful.

The last factor also consisted of variables which could be expected to be related to socioeconomic status. These variables were entered into a cluster analysis, which again provided a solution of unacceptable quality. A cluster analysis was also tried on the variables comprising both the first and last factors. This was again unsuccessful.

In the face of mounting problems with variable selection, it was decided to attempt a cluster analysis with those variables known through experience to be related to socioeconomic status. The variables selected were: children aged 0-14 years living in single parent families, low income families, dwellings rented for the SA Housing Trust, and dwellings with no vehicles; Aboriginal people aged 0-14 years and 15-24 years; unemployed males and females aged 15-24 years; full-time students aged 15-24 years; and people who left school at 15 years or younger.

Thus there were ten input variables for the analysis on 96 records, so the data supported the analysis. The analysis produced a four-cluster solution of acceptable, rather than exceptional, quality (Table 6.6 and Map 6.3).

Of the 15 SLAs with the lowest scores for the IRSD, ten (75.0%) were classified to either the Low or Very Low cluster; and of the top 49 SLAs for the IRSD, 34 (69.4%) were classified to the High socioeconomic status cluster.

Health service utilisation clusters in the non-metropolitan areas

The dataset had 26 variables and 96 observations, not quite enough to support an analysis including all input variables. The variables were examined in a reliability analysis, which suggested they all had a contribution to make. A cluster analysis was run including all input variables in the hope of generating a sensible solution which could be accepted.

This analysis resulted in a very clean three-factor solution, with Unincorporated West Coast not grouped. Alternatives, removing variables which had not grouped in the same way as the majority, were examined but no other solutions were superior to the original one (Table 6.6 and Map 6.4).

Of the 22 lowest SLAs for the IRSD, eleven (50.0%) were classified to the High hospital use cluster; and of the top eight SLAs, two (25.0%) were classified to the Low hospital use cluster.

Table 6.6: Composition of SLA clusters in the non-metropolitan areas of South Australia
Areas mapped as towns have been highlighted in the table (in bold type)

SLA	Socioeconomic status	Health service utilisation
Angaston (DC)	High	Medium
Baramba (DC)	Medium	High
Barossa (DC)	High	Medium
Beachport (DC)	High	Medium
Berri (DC)	Low	Medium
Blyth-Snowtown (DC)	Medium	Medium
Browns Well (DC)	High	Low
Burra Burra (DC)	High	High
Bute (DC)	High	Medium
Carrieton (DC)	High	Low
Ceduna (DC)	Low	High
Central Yorke Peninsula	High	High
Clare (DC)	High	Medium
Cleve (DC)	High	Medium
Coonalpyn Downs (DC)	High	Medium
Cooper Pedy (DC)	Low	High
Crystal Brook/Red Hill	High	High
Dudley (DC)	Medium	High
Elliston (DC)	High	Medium
Eudunda (DC)	Medium	High
Franklin Harbour (DC)	High	Medium
Gumeracha (DC)	High	Medium
Hallett (DC)	Medium	Medium
Hawker (DC)	High	Low
Jamestown (DC)	Medium	Medium
Kanyaka–Quorn (DC)	High	High
Kapunda (DC)	Medium	Medium
Karoonda–East Murray (DC)	Medium	Medium
Kimba (DC)	High	Medium
Kingscote (DC)	Medium	Medium
Lacepede (DC)	High	Medium
Lameroo (DC)	High	High
Le Hunte (DC)	Medium	Medium
Light (DC)	High	Medium
Lower Eyre Peninsula (DC)	High	Medium
Loxton	High	Medium
Lucindale (DC)	Medium	Medium
Mallala (DC)	High	Medium
Mannum (DC)	Medium	Medium
Meningie (DC)	Medium	High
Millicent (DC)	High	High
Minlaton (DC)	Medium	Medium
Morgan (DC)	High	Medium
Mount Barker (DC)	High	Medium
Mount Gambier (C)	Low	Medium
Mount Gambier (DC)	High	Medium
Mount Pleasant (DC)	High	Medium
Mount Remarkable (DC)	High	Medium
Murray Bridge (DC)	Low	Medium
Naracoorte (M)	High	High
Naracoorte (DC)	High	Medium
Northern Yorke Peninsula (DC)	Medium	Medium
Onkaparinga (DC)	High	Medium
Orroroo (DC)	High	Medium
Paringa (DC)	High	Medium
Peake (DC)	Medium	Medium
Penola (DC)	High	High

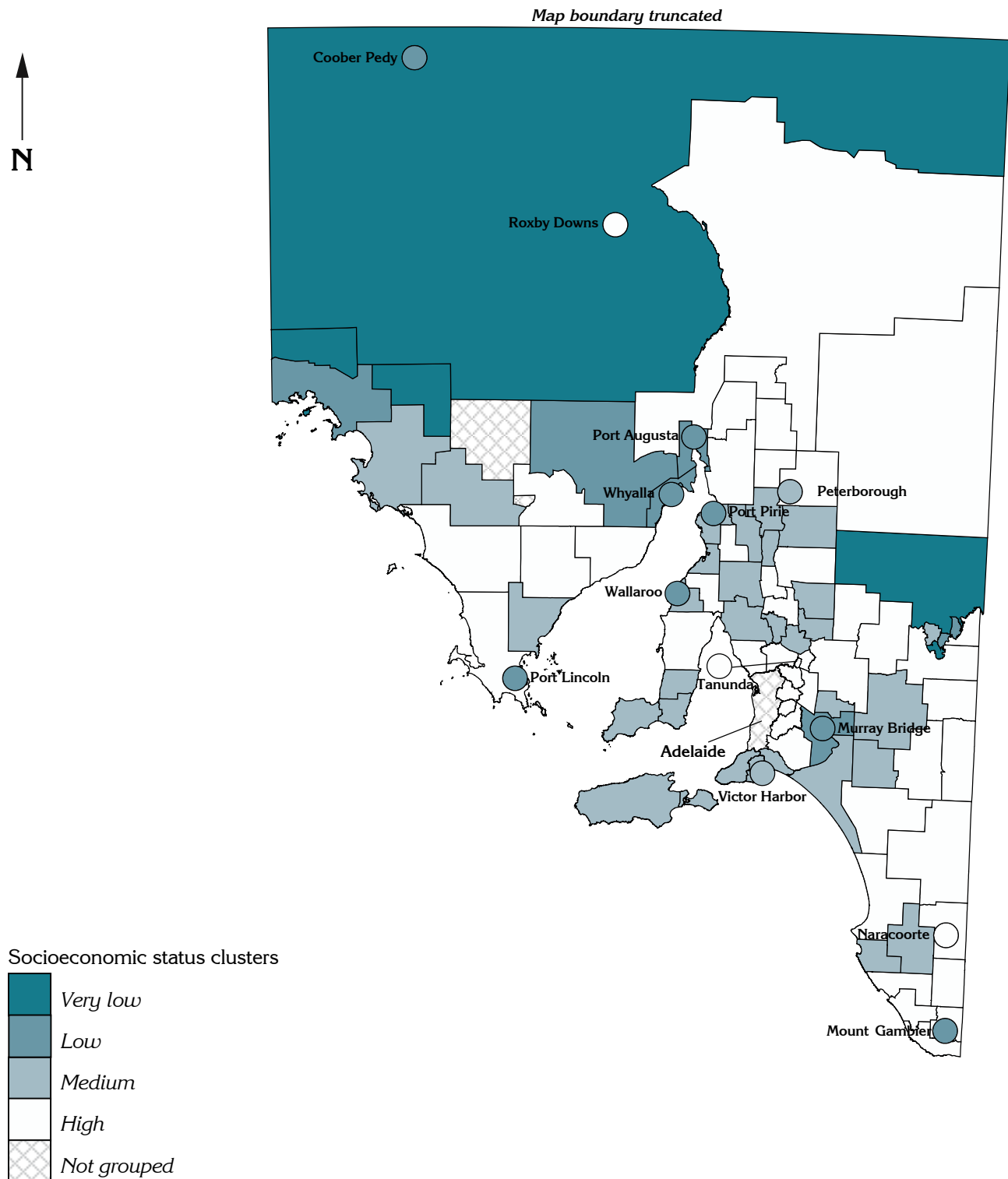
Table 6.6: Composition of SLA clusters in the non-metropolitan areas of South Australia ...cont

SLA	Socioeconomic status	Health service utilisation
Peterborough (M)	Medium	Medium
Peterborough (DC)	High	Low
Pinnaroo (DC)	High	Medium
Pirie (DC)	Medium	Medium
Port Augusta (C)	Low	High
Port Broughton (DC)	Medium	High
Port Elliot & Goolwa (DC)	Medium	Medium
Port Lincoln (C)	Low	High
Port MacDonnell (DC)	High	Medium
Port Pirie (C)	Low	Medium
Renmark (M)	Low	High
Ridley-Truro (DC)	High	Medium
Riverton (DC)	Medium	Medium
Robe (DC)	Medium	Medium
Robertstown (DC)	Medium	Medium
Rocky River (DC)	Medium	Medium
Roxby Downs (M)	High	Medium
Saddleworth & Auburn (DC)	High	Medium
Spalding (DC)	Medium	Medium
Strathalbyn (DC)	High	Medium
Streaky Bay (DC)	Medium	Medium
Tanunda (DC)	High	Medium
Tatiara (DC)	High	High
Tumby Bay (DC)	Medium	Medium
Victor Harbor (DC)	Medium	Medium
Waikerie (DC)	High	Medium
Wakefield Plains (DC)	Medium	Medium
Walleroo (M)	Low	High
Warooka (DC)	Medium	High
Whyalla (C)	Low	High
Yankalilla (DC)	Medium	Medium
Yorketown (DC)	Medium	Medium
Unincorporated Riverland	Very Low	Low
Unincorporated Lincoln	High	Low
Unincorporated West Coast	Very Low	Not grouped
Unincorporated Whyalla	Low	Low
Unincorporated Pirie	High	Low
Unincorporated Flinders Ranges	High	Medium
Unincorporated Far North	Very Low	Medium

Source: Produced from project sources

Map 6.3 Socioeconomic status clusters based on Statistical Local Areas, South Australia

clusters of SLAs with generally similar socioeconomic characteristics



*Areas not grouped include SLAs with a population of less than 100, and Adelaide, which was analysed separately.

Source: Compiled from project sources

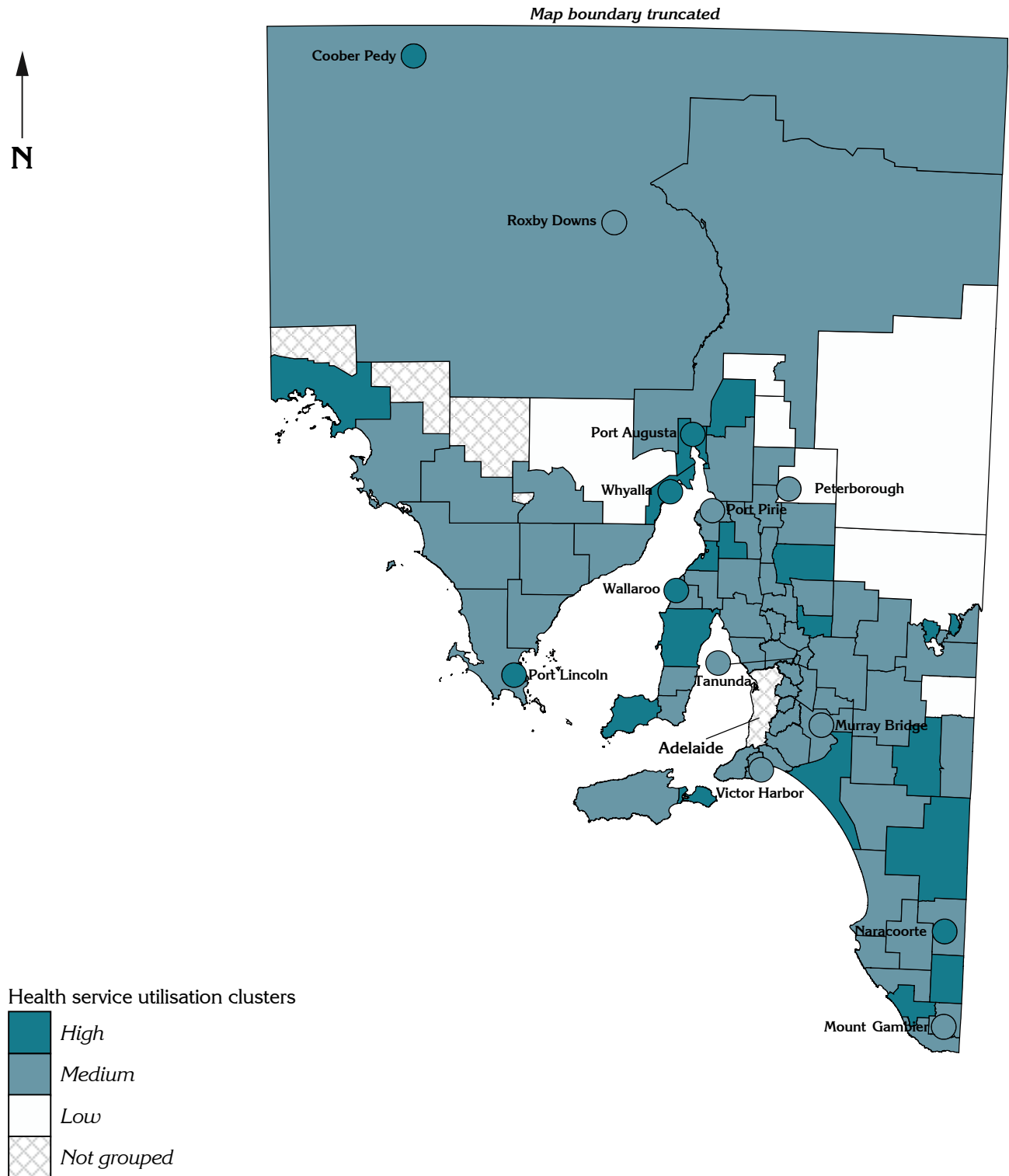
Details of map boundaries are in Appendix 1.2

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Map 6.4

Health service utilisation clusters based on Statistical Local Areas, South Australia

clusters of SLAs with generally similar health service use characteristics



*Areas not grouped include SLAs with a population of less than 100, Unincorporated West Coast (which was not allocated in the cluster analysis) and Adelaide, which was analysed separately.

Source: Compiled from project sources

Details of map boundaries are in Appendix 1.2

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