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Appendix A: Notes on the indicators and data sources

Background details

Measures used

Data are presented as percentages, rates per population, or ratios. Where it was considered that variations in the age distribution of the population in an area for a particular variable could affect the analysis, the data have been indirectly age-standardised.

Indirectly age-standardised rates compare the actual number of events in an area (e.g., in the LGA of Salisbury) with the expected number of events based on rates in a reference population (in this atlas, South Australia). These rates are generally based on the five-year age group and sex data in the reference population. The standardised ratios are the ratios of the observed (actual) to expected number of events. The observed figure comes from the local area, and the expected, from applying the rate in the reference population to the local population.

This effectively means any differences in age-standardised rates between areas reflect the influence of factors other than age.

Geography

Data are presented by two geographic areas, the PHA and LGA level in Adelaide, and the LGA level in Regional South Australia. PHAs are comprised of a combination of whole SA2s and multiple (aggregates of) SA2s, where the SA2 is an area in the new ABS structure - the Australian Statistical Geographical Standard (ASGS), July 2011. LGAs are based on the ABS Australian Standard Geographical Classification (ASGC), July 2011.

In the tables where data are presented by both geographies, i.e., by both PHA and LGA, the LGA totals will not match the sum of the PHAs within the corresponding LGA, due to a combination of random perturbation (for ABS Census data), and the boundaries of the PHAs not aligning precisely with the LGA boundaries.

Maps

The maps show data for the PHA or LGA of the usual resident address of the person to whom the statistic refers (e.g., of children living in jobless families; of adult smokers).

Some areas have not been mapped where there was only a small number of cases for a particular indicator: in general, this was fewer than five cases or events. For income support data, data less than 20 are not mapped.

For AEDC, data are not shown for areas where one or more of the following conditions have been met:

- three or fewer children had been assessed;
- less than fifteen children had valid AEDC scores;
- less than two teachers had completed the AEDC instrument for children in that location; and
- the AEDC instrument was completed for less than 80% of all non-special needs children.

Data could also not be mapped for Very Remote areas or discrete Aboriginal communities, as modelled estimates were not published for these regions.

Glossary

Terminology

Adelaide	The area mapped that shows the built-up area of Adelaide, extending from Gawler in the north, to Sellicks Beach in the south.
Aboriginal	Aboriginal and Torres Strait Islander peoples
AEDC	Australian Early Development Census
Community regions	Geographical areas based on groupings of Statistical Local Areas or of Local Government Areas
ERP	Estimated Resident Population
Indigenous status	People identifying as Aboriginal and/or Torres Strait Islander
IRSD	Index of Relative Socio-economic Disadvantage
LGA	Local Government Area
Modelled estimate	The numbers and rates provided are the likely value of an indicator for an area, based on specific characteristics of the population in that area. (See Appendix B, for further details).
NAPLAN	National Assessment Program – Literacy and Numeracy
Not mapped	Areas have not been mapped where data were likely to be unreliable due to there being a small number of cases for a particular indicator, low population numbers, or no estimates available for the area.
PHA	Population Health Area
PHIDU	Public Health Information Development Unit
Rate	Indirectly age-standardised rate per 100 population
Rate ratio/RR	The ratio of the rate (i.e., the percentage or the standardised rate) in one area to that in another: in this report, it is generally the ratio of the PHA and/or LGA figure to the metropolitan Adelaide or to the Regional South Australia total.
Regional South Australia	The whole state, other than Adelaide (see above)
SA2	Statistical Area Level 2
SMR	Standardised Mortality Ratio

Symbols used

.. not applicable

% per cent

(a) not shown: for NAPLAN indicators, replaces numbers between 1 and 4.

(b) not shown: for AEDC indicators, when one or more of the following have been met:

- three or fewer children had been assessed
- fewer than fifteen children had valid AEDC scores
- less than two teachers had completed the AEDC instrument for children in that location; or
- the AEDC instrument was completed for less than 80% of all non-special needs children.

(c) not shown (numbers including true zeros): for Income support, replaces numbers from 0 to 19.

not shown: modelled estimates not produced for Very Remote areas and Aboriginal communities, and replaces numbers where the total population is less than 1,000.

Notes and data sources

The following notes and data sources provide more detailed information to that included on the indicator pages in Section 4.

Age distribution

Estimated Resident Population, 2013

The ABS Estimated Resident Population (ERP) is the most accurate representation of the population living in an area. It is based on the Usual Resident Population (URP) – the ABS count of people in Australia on Census night – but includes adjustments for overseas visitors, undercounting, and Australian residents who were temporarily overseas on Census night.

The data presented are the total population by five year age groups: 0-4 years to 85+ years, expressed as a proportion of the total population.

Compiled by PHIDU based on the ABS Estimated Resident Population, 30 June 2013.

Indigenous status and age, 2015

The Australian Government Department of Health (through the Indigenous and Rural Health Division (IRHD)) contracted [Prometheus Information Pty. Ltd.](#) to develop a set of population estimates by Indigenous status for 2011, and projections to 2015 at the Statistical Areas Level 2 (SA2) across Australia, adapting the model and approach they had previously developed for the former Office for Aboriginal and Torres Strait Islander Health (OATSIH).

The population estimates sum to published 2012 and 2013 ABS ERPs for the Indigenous population at the SA2, Indigenous Region and State/Territory level, and to the published 2014 and 2015 ABS projections 2014 and 2015 for the Indigenous population, at the Indigenous Region level.

The data presented are the total Aboriginal population by five year age groups: 0-4 years to 65+ years, expressed as a proportion of the total Aboriginal population.

Compiled by PHIDU using data developed by Prometheus Information Pty. Ltd., under a contract with the Australian Government Department of Health.

Socioeconomic status

Index of Relative Socio-economic Disadvantage, 2011

The Index of Relative Socio-economic Disadvantage is one of four socioeconomic indexes produced by the ABS from the 2011 Census. The Index has a base value of 1000 for Australia: scores above 1000 indicate relative advantage, and those below 1000 indicate relative disadvantage.

It is derived using principal component analysis, from attributes such as low income, low educational attainment, high unemployment, jobs in relatively unskilled occupations and variables, which reflect disadvantage rather than measure specific aspects of disadvantage (e.g., Indigenous status and separated/divorced). Full details of the composition and construction of this and the other three indexes are available from the Technical Paper, *Socio-Economic Indexes for Areas (SEIFA), 2011* (ABS Cat. no. 2033.0.55.001).

The data present the Index of Relative Socio-economic Disadvantage (IRSD).

Source: Compiled by PHIDU using data from ABS SEIFA, 2011 Census.

Children aged less than 15 years living in jobless families, 2011

The data presented are the number of children aged less than 15 years living in families in which no parent is employed, expressed as a proportion of all children aged less than 15 years of age.

Compiled by PHIDU using data from the ABS Census 2011 (unpublished) data.

Age pension recipients, June 2014

The data presented are the number of people in receipt of an Age Pension from the Department of Human Services, expressed as a proportion of all persons aged 65 years and over.

Compiled by PHIDU using data from the Department of Social Services, June 2014; and ABS Estimated Resident Population, 30 June 2013

Child development and education

Australian Early Development Census (AEDC)

Children developmentally vulnerable in one or more domains, 2012

The AEDC results are presented as the number of children who are considered to be 'developmentally vulnerable' (children who score in the lowest ten per cent) on one or more of the five domains (or areas of early childhood development, which are: physical health and wellbeing; social competence; emotional maturity; language and cognitive skills (school-based); and communication skills and general knowledge), as a proportion of all children who were assessed using the AEDC.

Source: Compiled by PHIDU using data from the 2012 Australian Early Development Census

National Assessment Program - Literacy and Numeracy (NAPLAN)

Numeracy outcomes of children in Year 3 attending government schools, 2014

The NAPLAN results are presented as the number of children in Year 3 in government schools who are considered to have scores below the national minimum standard for numeracy, as a proportion of students assessed.

Source: Compiled by PHIDU using data supplied by the Department of Education and Childhood Development, South Australia.

Early school leavers who left school at Year 10 or below, or did not go to school, 2011

The data presented are the number of people who left school at Year 10 or below, or did not go to school, expressed as an age-standardised rate per 100,000 population aged 15 years and over.

Rates of completion of schooling beyond Year 10 have increased over the years: for example, the population aged 80 years had lower rates of completion of Year 10 than did the population aged 40 years. The data have, therefore, been age-standardised (to the population aged 15 years and over) to remove any cohort influence.

Source: Compiled by PHIDU using data from the ABS Census 2011 data.

Labour force

Unemployment benefits recipients, June 2014

The data presented are the number of people in receipt of the *Newstart Allowance* or *Youth Allowance (Other)* from the Department of Human Services, expressed as a proportion of the population aged 16 to 64 years.

Compiled by PHIDU using data from the Department of Human Services, June 2014; and ABS Estimated Resident Population, 30 June 2013.

Young people aged 16 to 24 years receiving an unemployment benefit, June 2014

The data presented are the number of people in receipt of the *Newstart Allowance* (people aged 16 to 24 years) or *Youth Allowance (Other)* paid by the Department of Human Services, expressed as a proportion of the population aged 16 to 24 years.

Youth Allowance (Other) is largely comprised of unemployed people aged 16 to 21 looking for full-time work or undertaking approved activities, such as part-time study or training. It excludes Youth Allowance customers who are full-time students or undertaking an apprenticeship/ traineeship.

Compiled by PHIDU using data from the Department of Human Services, June 2014; and ABS Estimated Resident Population, 30 June 2013.

Young people aged 15 to 24 years engaged in learning or earning, 2011

The data presented are the number of 15 to 19 year olds fully engaged in school, work or further education/training, expressed as a proportion of the population aged 15 to 19 years.

'Fully engaged' includes people who reported at the 2011 Census that they were in full-time work or in full-time education, or in part-time work combined with part-time education. The remaining youth population, those who are 'not fully engaged' includes people who were working part-time (but not studying), unemployed (regardless of whether studying part-time), studying part-time (and not working) and not in the labour force (excluding full-time students).

Compiled by PHIDU using data from the ABS Census 2011.

Disability

People aged 15 to 64 years with a disability who are living in the community

The data presented are the number people aged 15 to 64 years with a profound or severe disability and living in the community, as a proportion of the population aged 15 to 64 years.

The 'Core Activity Need for Assistance' variable was developed by the Australian Bureau of Statistics (ABS) for use in the five-yearly population Census to measure the number of people with a profound or severe disability, and to show their geographic distribution. A person with profound or severe limitation needs help or supervision always (profound) or sometimes (severe) to perform activities that most people undertake at least daily, that is, the core activities of self-care, mobility and/or communication, because of a disability, long-term health condition (lasting six months or more), and/or older age. Fewer people are reported under this measure as having a profound or severe disability as are measured in the ABS Survey of Disability, Ageing and Carers (SDAC). The reasons for this are definitional (the SDAC approach, which uses a filtering approach to determine whether the respondent has a disability, and the severity) as compared to the self-report approach in the Census; and the large not-stated category in the Census data, with more people not responding to this set of questions than are reported as having a profound or severe disability. While the SDAC figures should be used as the measure for this concept, the Census data are appropriate for gaining an understanding of the geographic distribution of this population group.

The ABS data include people of all ages, including those living in long-term residential accommodation in nursing homes, accommodation for the retired or aged (not self-contained), hostels for the disabled and psychiatric hospitals. The figure in this atlas excludes people living in these accommodation types, in order to provide an estimate of the number 'living in the community'. People aged 65 years and over have also been excluded.

Source: Compiled by PHIDU using data from the ABS 2011 Census.

Access

Households without Internet access, 2011

The data presented are the number of private dwellings with no Internet connection, expressed as a proportion of total private dwellings.

Source: Compiled by PHIDU using data from the ABS 2011 Census.

Households without a motor vehicle, 2011

The data presented are the number of occupied private dwellings with no motor vehicle parked or garaged there on Census night, expressed as a proportion of all occupied private dwellings.

Source: Compiled by PHIDU using data from the ABS 2011 Census.

Housing

Low income households under financial stress from rent or mortgage repayments, 2011

The data presented are the proportion of low income households, those households in the bottom 40% of income distribution (having less than 80% of median equivalised income), spending more than 30% of income on mortgage repayments, or on rent.

Equivalised total household income is total household income adjusted by the application of an equivalence scale to facilitate comparison of income levels between households of differing size and composition. Equivalised household income per week can be viewed as an indicator of the economic resources available to a standardised household. For a lone person household, it is equal to household income. For a household comprising more than one person, it is an indicator of the household income that would be needed by a lone person household to enjoy the same level of economic wellbeing.

Equivalised income varies by State/ Territory - NSW: \$633; Victoria: \$640; Qld.: \$649; SA: \$551; WA: \$699; Tasmania: \$488; NT: \$853; ACT: \$987.

Source: Compiled by PHIDU using data from the ABS 2011 Census.

Community strengths

Proportion who positively rate the local environment in terms of planning, open spaces and lack of pollution

The data presented are the number of persons aged 18 years and over, who rated their local community as excellent, very good or good in terms of planning, open spaces and lack of pollution, as a proportion of the population aged 18 years and over.

For further information on the Indicators of Community Strength study 2013, see:

http://www.dcsi.sa.gov.au/_data/assets/pdf_file/0013/15061/Community-Strength-Survey-Report-2013-FINAL-PDF.pdf

Source: Compiled by PHIDU using data supplied by the Department for Communities and Social Inclusion, South Australia.

Participated in voluntary work for an organisation of group, 2011

The data presented are the number of persons aged 15 years and over who participated in voluntary work for an organisation or group, expressed as a proportion of persons aged 15 years and over.

The 2011 Census variable 'Voluntary work for an organisation or group' records people who spent time doing unpaid voluntary work through an organisation or group in the twelve months prior to Census night.

Compiled by PHIDU using data from the ABS Census 2011.

Can get support in times of crisis from outside of the household, 2010 (modelled estimates)

The data presented are the number of persons aged 18 years and over who are able to get support in times of crisis from persons outside the household, expressed as an indirectly age-standardised rate per 100 population aged 18 years and over.

'Support in a time of crisis' refers to whether there is someone outside the person's household that could be asked for support in a time of crisis. Support could be in the form of emotional, physical or financial help. Potential sources of support could be family members, friends, neighbours, work colleagues and various community, government and professional organisations.

This indicator is a modelled estimate from the ABS 2010 General Social Survey. For details on this indicator and the survey please refer to the General Social Survey: User Guide, Australia, 2010 (ABS Cat. No. 4159.0.55.002) at

<http://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/4159.0.55.002?OpenDocument>.

For further information on modelled estimates, refer to Appendix B.

Source: Compiled by PHIDU using data estimated from the 2010 General Social Survey, ABS (unpublished); and ABS Estimated Resident Population, 30 June 2010.

Health and wellbeing

Health status: modelled estimates from the 2011-13 Australian Health Survey

The Australian Health Survey (AHS), conducted by the Australian Bureau of Statistics in 2011-13, is made up of three components:

- the National Health Survey (NHS);
- the National Nutrition and Physical Activity Survey (NNPAS); and
- the National Health Measures Survey (NHMS).

All people selected in the AHS were selected in either the NHS or the NNPAS; however, data items in the core were common to both surveys and therefore information for these data items is available for all persons in the AHS. All people aged 5 years and over were then invited to participate in the voluntary NHMS.

Around 20,500 people participated in the NHS, answering questions about items such as detailed health conditions, health risk factors and medications as well as all items in the core content. For the NHS component (those items collected only in the NHS and not the core), the sample size is similar to that of previous National Health Surveys and the results are therefore comparable. However, for those items collected in the core, the sample size (32,000 people – results for which are published in [Australian Health Survey: Updated Results, 2011-12](#) [ABS Cat. no. 4364.0.55.003]) is approximately 1.5 times that in the past and the estimates for core items such as smoking and Body Mass Index are more accurate, particularly at finer disaggregations, than in previous surveys.

For full details, refer to the *Australian Health Survey: Users' Guide, 2011-13* (ABS Cat. no. 4363.0.55.001) at

<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/74D87E30B3539C53CA257BBB0014BB36?opendocument>.

For further information on modelled estimates, refer to Appendix B.

Prevalence of high or very high psychological distress, 2011-13

The data presented are the estimated number of people aged 18 years and over assessed as having a 'high' or 'very high' level of psychological stress under the Kessler Psychological Distress Scale-10, expressed as an indirectly age-standardised rate per 100 population aged 18 years and over.

With regard to psychological distress, information was collected from respondents aged 18 years and over using the Kessler Psychological Distress Scale-10 (K10). The ten-item questionnaire yields a measure of psychological distress based on questions about negative emotional states (with different degrees of severity) experienced in the four weeks prior to interview. For each question, there is a five-level response scale based on the amount of time that a respondent experienced those particular feelings. The response options are 'none of the time'; 'a little of the time'; 'some of the time'; 'most of the time'; or 'all of the time'.

Each of the items is scored from 1 for 'none' to 5 for 'all of the time'. Scores for the ten items are summed, yielding a minimum possible score of 10 and a maximum possible score of 50, with low scores indicating low levels of psychological distress and high scores indicating high levels of psychological distress.

K10 results are commonly grouped for output. Results from the 2011-13 AHS are grouped into the following four levels of psychological distress: 'low' (scores of 10-15, indicating little or no psychological distress); 'moderate' (scores of 16-21); 'high' (scores of 22-29); and 'very high' (scores of 30-50). Based on research from other population studies, a 'very high' level of psychological distress shown by the K10 may indicate a need for professional help.

Smoking: persons, 2011-13

With regard to smoking, this refers to tobacco smoking, and includes manufactured (packet) cigarettes, roll-your-own cigarettes, cigars, and pipes; and excludes chewing tobacco and smoking of

non-tobacco products. As part of the AHS, respondents aged 15 years and over were asked to describe their smoking status at the time of interview:

- current smokers: daily, weekly, other;
- ex-smokers;
- never smoked (those who had never smoked 100 cigarettes, nor pipes, cigars or other tobacco products at least 20 times, in their lifetime).

The data presented are the estimated number of people aged 18 years and over who reported being a current, daily or at least once weekly smoker, expressed as an indirectly age-standardised rate per 100 population aged 18 years and over.

Obesity: adults, 2011-13

The Body Mass Index (BMI) (or Quetelet's index) is a measure of relative weight based on an individual's mass and height. The height (in cm) and weight (in kg) of respondents, as measured during the AHS interview, were used to calculate the BMI; and obesity was determined where a person's BMI was 30 or greater. The BMI is a useful tool, at a population level, for measuring trends in body weight and helping to define population groups who are at higher risk of developing long-term medical conditions associated with a high BMI, such as type 2 diabetes and cardiovascular disease.

The data presented are the estimated number of people aged 18 years and over who were assessed as being obese, based on their measured height and weight, expressed as an indirectly age-standardised rate per 100 population aged 18 years and over.

Compiled by PHIDU using on modelled estimates from the 2011-13 Australian Health Survey, ABS (unpublished); and the average of the ABS Estimated Resident Population, 30 June 2011 and 30 June 2012, based on the Australian standard.

Premature mortality: Deaths at ages 0 to 74 years from all causes, 2009-2012

The data presented are the number of deaths at ages 0 to 74 years from all causes, expressed as an indirectly age-standardised ratio, based on the Australian standard.

Source: Data compiled by PHIDU from deaths data based on the 2009 to 2012 Cause of Death Unit Record Files supplied by the Australian Coordinating Registry and the South Australian Attorney-General's Department, on behalf of the Registry of Births, Deaths and Marriages and the National Coronial Information System. The population at the small area level (Statistical Area Level 2) is the ABS Estimated Resident Population (ERP), 30 June 2009 to 30 June 2012; the population standard is the ABS ERP for Australia at 30 June 2011.

Comparison of the pension and benefit recipients

Table 45: Comparison of income support payments, selected PHAs and LGAs in Adelaide and Regional South Australia, June 2014

Area	Unemployment benefit		Disability Support Pension		TOTAL			Parenting payment (single females)	
	No.	%	No.	%	No.	Pop 15-64	%	No.	%
PHA and LGA									
Davoren Park	1,692	15.7	1,449	13.4	3,141	10,808	29.1	798	15.8
Elizabeth East	1,056	13.0	947	11.7	2,003	8,093	24.7	308	9.2
One Tree Hill	45	2.6	44	2.6	89	1,704	5.2	#	..
Playford - West	1,448	7.1	1,237	6.1	2,685	20,310	13.2	746	8.2
Elizabeth/ Smithfield - Elizabeth North	2,856	20.4	2,607	18.7	5,463	13,966	39.1	804	13.4
Playford LGA	7,050	12.9	6,218	11.4	13,268	54,505	24.3	2,659	11.1
Dry Creek - North/ Pooraka	784	5.4	693	4.7	1,477	14,600	10.1	214	3.5
Parafield/ Parafield Gardens/ Paralowie	2,170	9.7	1,755	7.8	3,925	22,366	17.5	631	6.6
Salisbury/ Salisbury North	2,840	13.0	2,377	10.9	5,217	21,780	24.0	789	8.8
Ingle Farm	709	7.5	761	8.0	1,470	9,505	15.5	198	5.1
Para Hills/ Salisbury East	1,639	7.8	1,497	7.1	3,136	21,015	14.9	427	4.9
Salisbury LGA	8,243	9.1	7,197	8.0	15,440	90,133	17.1	2,276	6.1
Aberfoyle Park/ Coromandel Valley/ Flagstaff Hill	639	3.5	486	2.7	1,125	18,317	6.1	143	1.9
Aldinga	915	9.5	725	7.5	1,640	9,662	17.0	317	7.4
Christie Downs/ Hackham West - Huntfield Heights	1,424	13.1	1,895	17.4	3,319	10,881	30.5	404	8.8
Christies Beach/ Lonsdale	760	12.0	624	9.8	1,384	6,352	21.8	224	8.8
Clarendon/ McLaren Vale/ Willunga	285	3.8	257	3.4	542	7,506	7.2	73	2.4
Hackham - Onkaparinga Hills/ Seaford (SA)	1,359	7.7	1,171	6.6	2,530	17,619	14.4	424	5.7
Happy Valley/ Happy Valley Reservoir/ Woodcroft	646	3.9	620	3.7	1,266	16,545	7.7	218	3.2
Morphett Vale - East/ Morphett Vale - West	1,424	9.6	1,551	10.4	2,975	14,908	20.0	426	7.1
Reynella	460	7.0	381	5.8	841	6,589	12.8	116	4.3
Onkaparinga LGA	7,896	7.3	7,698	7.2	15,594	107,587	14.5	2,339	5.2
Adelaide	53,478	6.3	54,417	6.4	107,895	844,575	12.8	13,810	3.9
LGA	No.	%	No.	%	No.	Pop 15-64	%	No.	%
Anangu Pitjantjatjara Aboriginal Community	519	27.8	231	12.4	750	1,865	40.2	74	8.4
Ceduna LGA	245	10.3	130	5.4	375	2,386	15.7	76	7.9
Peterborough LGA	145	14.3	220	21.6	365	1,017	35.9	33	8.7
Regional South Australia	18,967	8.2	19,822	8.6	38,789	230,661	16.8	4,742	5.3

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Appendix B: Details of modelled estimates

The modelled estimates, included as part of the data presented in this atlas, include:

- Access to support in times of crisis from persons outside the household;
- Prevalence of obesity;
- Prevalence of smoking; and
- Prevalence of psychological distress.

Further information on the indicators is contained in Appendix A.

The modelled estimates in this atlas were produced at the Population Health Area (PHA) level by the ABS from the 2010 General Social Survey (GSS) and the 2011-13 Australian Health Survey (AHS), and from known characteristics of the area. The estimates provide data at the PHA level for the prevalence of 'high' or 'very high' psychological distress, smoking and obesity.

A modelled estimate can be interpreted as the likely value for a 'typical' area (in this case, the PHA) with those characteristics. This work was undertaken by the ABS, as they hold the unit record files on which the models were based.

The approach used is to undertake an analysis of the survey data for Australia to identify associations in the data between the variables that we wish to predict at the small area level (e.g., prevalence of chronic conditions and risk factors) and the data we have at the small area level (e.g., socioeconomic status, use of health services). The relationship between these variables for which we have area-level data (the predictors) and the reporting of e.g., smoking in the AHS, or people reporting being able to get support in times of crisis in the GSS, is also a part of the model developed by the ABS. For example, such associations might be between the number of people reporting smoking in the AHS and:

- the number of visits to a general medical practitioner;
- the proportion of the population receiving a pension or benefit; and
- socioeconomic status (as indicated by a range of variables from Census data).

The results of the modelling exercise are then applied to the PHA counts of the predictors. The prediction is, effectively, the likely value for a typical area with those characteristics. This modelling technique can be considered as a sophisticated prorating of Australian estimates to the small area level.

The numbers are estimates for an area, not measured events as are, for example, death statistics. As such, they should be viewed as a tool that, when used in conjunction with local area knowledge and taking into consideration the prediction reliability, can provide useful information that can assist with decision making for small geographic regions.

The raw numbers were then age-standardised in PHIDU, to adjust for the effects of differences in the age profiles of the populations in the PHAs.

Although the data were modelled at the PHA (and not at the LGA) level, the PHA data have been allocated to each LGA to produce weighted estimates for LGAs in Adelaide and Regional South Australia; these data are shown in the bar chart. This involved splitting data, for some PHAs, between LGAs.

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Appendix C: Correlation analysis

A correlation analysis has been undertaken to illustrate the extent of association at the small area level between the indicators of disadvantage and those for poor outcomes in health and wellbeing.

Separate analyses were undertaken for:

- the PHAs in Adelaide;
- for the 19 LGAs in Adelaide; and
- for the 50 LGAs (and Unincorporated South Australia) in Regional South Australia.

As a general rule, correlation coefficients of plus or minus 0.71 or above are of substantial statistical significance, because this higher value represents at least fifty per cent shared variation (r^2 greater than or equal to 0.5): these are referred to in this atlas as being 'very strong' correlations, while those of 0.50 to 0.70 are of meaningful statistical significance, and are referred to as being 'strong' correlations.

Readers should note that correlations between the IRSD and poor health outcomes (e.g., high rates of premature death) appear in the tables as negative numbers. This occurs because low scores (under 1000) indicate relatively high levels of relative socioeconomic disadvantage under the IRSD, and high scores (above 1000) indicate relatively low levels of relative socioeconomic disadvantage.

The correlation matrices are available in the Summary section, above.

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Appendix D: Sources of information

The following resources underpin the information presented in the atlas.

1. McMichael AJ, Hartshorne JM. Cardiovascular disease and cancer mortality in Australia, by occupation, in relation to drinking, smoking, and eating. *Community Health Studies* 1980; IV(2): 76-84.
2. Broom D. The social distribution of illness: is Australia more equal? *Social Science & Medicine* 1984; 18: 909-917.
3. Mathers C. Health differentials among Australian children. (Australian Institute of Health and Welfare (AIHW) Health Monitoring series, no. 13). Canberra: AGPS; 1996.
4. Hetzel D, Page A, Glover J, Tennant A. Inequality in South Australia (Volume 1: the evidence). Adelaide: Department of Health SA; 2004.
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6. Glover J, Hetzel D, Tennant S, Leahy K. Understanding educational opportunities and outcomes: a South Australian atlas. Adelaide: Public Health Information Development Unit (PHIDU), The University of Adelaide; 2010.
7. World Health Organization (WHO). WHO on health and economic productivity. *Population and Development Review* 1999; 25(2): 396-401.
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Appendix E: Key maps

The key maps on the following A3 sheets provide details of the Population Health Areas, Local Government Areas and Community Regions in metropolitan Adelaide mapped in Section 4. Local Government Areas and Community Regions mapped for Regional South Australia in Section 4 are also shown.

These sheets can be printed and used as a reference when viewing the maps in Section 4. If the whole report is printed, these key maps can be printed on A3 sheets and folded out to lie alongside the maps in Section 4.

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