

An atlas of diabetes in South Australia:

Population patterns of prevention, detection and management

*Produced for the
South Australian Department for Health and Ageing*



PHIDU
[public health information development unit]



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Introduction

The WHO Global report on diabetes (2016) highlights the scale of diabetes as an important public health problem. The number of adults living with (type 1 and type 2) diabetes has almost quadrupled since 1980 to 422 million adults [1]. This dramatic rise is largely due to the rise in type 2 diabetes and factors driving it include overweight and obesity. For Australia, the scale of the issue is no different. In the 2011 burden of disease study diabetes was ranked the twelfth leading cause of the total burden of disease (eighth for males and fourteenth in females) [2]. Diabetes also contributes to coronary heart disease which is the top ranked cause of the total burden of disease. For causes of the fatal burden of disease, diabetes is ranked ninth (eleventh for males and ninth for females) and coronary heart disease is ranked the leading cause.

The WHO report calls upon governments to ensure that people are able to make healthy choices and that health systems are able to diagnose, treat and care for people with diabetes. It encourages us all as individuals to eat healthily, be physically active, and avoid excessive weight gain.

For Australia, diabetes is ranked the sixth leading cause of death contributing 3% of total deaths [2]. Over one in every 20 (5.1%) people were estimated to have been informed by a healthcare professional that they had diabetes in 2014/15 [3]. The true prevalence is likely to be higher given that there will be a proportion who are undiagnosed. Almost nine out of every 10 (86.3%) of these cases were type 2 diabetes. In addition, (based on 2011/12 data) there are also estimated to be a further 3.1% of adults who are at high risk of type 2 diabetes [3].

With respect to the major risk factors for diabetes, in 2014/15 44.5% of the Australian population were estimated to miss the recommended level of physical activity in the last week, either being inactive or insufficiently active and almost two in every three (63.4%) adults were overweight or obese [3].

Healthcare directly attributable to diabetes costs approximately \$1.7 billion per year with the total cost (including reduced productivity and absence from work) estimated to cost up to \$14 billion per year [4]. The average annual healthcare cost per person with diabetes is estimated to be \$4,025 if there are no associated complications but more than doubles to \$9,645 in people with complications [5].

Importantly, Type 2 diabetes is largely preventable [4], and the risk of those with diabetes developing complications can be reduced significantly with appropriate management [6].

National action

Recognising the importance of a multi-sectoral response to diabetes and its complications to ensure coordinated care and to maximise use of resources, the current National Diabetes Strategy for Australia (2016-2020) [4] sets out areas for action to reduce the impact of diabetes in the community. It promotes an approach focused on prevention and self-management across the disease pathway for the general population and for priority groups including Aboriginal and Torres Strait Islander people, culturally and linguistically diverse people, older Australians and people living in rural and remote areas. The strategy provides potential areas for action in a broad range of settings including schools, workplaces, communities and within the healthcare system including by Primary Health Networks and Aboriginal Controlled Community Health Services as well as through governmental mechanisms. Potential measures of progress are also suggested.

The national strategy sets the current direction for diabetes, furthering what has been an ongoing focus on tackling chronic disease in Australia. In 1996 diabetes was included as a National Health Priority Area in recognition of its impact on individuals, families and the wider Australian community. Diabetes was also one of five chronic conditions included in the National Chronic Disease

Strategy 2005 [7] as a way of encouraging coordinated action in response to the growing impact of chronic disease. The previous national diabetes strategy was for 2000-2004. [8]

The National Chronic Disease Strategy 2005 sets out similar themes as in the current National Diabetes Strategy (encouraging healthy lifestyles to reduce risk, early diagnosis, promoting self-management as well as good multidisciplinary care to prevent complications) highlighting the sustained action that is needed on these areas to achieve progress on reducing the impact of diabetes. A National Strategic Framework for Chronic Conditions which is currently under consultation will supersede the 2005 version.

While there is no national diabetes prevention programme in Australia, in 2007, the State of Victoria established the first systematic, full-scale type 2 diabetes prevention programme in the world, known as the 'Life! Taking Action on Diabetes program' [9]. This programme continues to be funded in Victoria and has demonstrated positive results [10], however, no similar diabetes prevention programme has been implemented in other States / Territories of Australia. Also in 2007 the Australian Government announced funding of a 4-year diabetes prevention initiative aimed at those aged 40 to 49 years [8]. Funding was not continued after 2011.

However, there have been national campaigns as part of Australia's National Diabetes Action Program run by the state and territory member organisations of Diabetes Australia [11]. For National Diabetes Week in 2015, the '280 a Day' television and online media campaign was launched and was estimated to reach 8.5million Australians. The campaign targeted the general public to communicate compelling messages to raise awareness of the seriousness of diabetes and its consequences. One of the key messages was that 280 Australians develop diabetes everyday [12]. This campaign followed those previously run such as 'Check My Risk' in 2014, 'Face of Diabetes' in 2013, 'Lets Prevent Diabetes' in 2012 and 'Reduce your waist. Reduce your risk' in 2007.

The 2014 'Check My Risk' campaign promoted Australians to check their risk of developing type 2 diabetes using the Australian Diabetes Risk (AUSDRISK) Assessment Tool [13]. This campaign aimed to increase public awareness of the seriousness of type 2 diabetes, draw attention to the increasing numbers of Australians developing the condition, and promote the 'good news' story that up to 58% of cases can be prevented. Self-assessment of diabetes risk using this tool remains part of the current national diabetes strategy.

In relation to treatment and management of diabetes, the National Diabetes Services Scheme (NDSS) aims to enhance the capacity of people with diabetes to understand and self-manage their condition, by providing subsidised products including syringes and needles, blood glucose test strips, urine ketone test strips and insulin pump consumables to persons with diagnosed diabetes who are registered with the scheme [14]. The Medical Benefits Scheme and the Pharmaceutical Benefits Scheme also provide subsidised care for primary health care and medications for people with diabetes.

Between 2001 to 2014 the Australian Government funded a cluster randomised controlled trial to test components of models of care for type 1 and type 2 diabetes [15]. The results of this [16] fed into the development of the National Diabetes Strategy (2016 - 2020) and will also be used to inform local practice.

Since 1998, the Australian National Diabetes Audit (previously known as the Australian National Diabetes Information Audit and Benchmarking project (ANDIAB)) has undertaken the collection, collation, analysis, audit and reporting of clinical diabetes, patient education and self-care data in specialist diabetes centres across all states and territories in Australia [17].

South Australian level

The South Australian Department for Health and Ageing is undertaking a re-design of the State's healthcare system. This initiative, *Transforming Health*, aims to make the healthcare system one that provides the 'quality care, effectiveness and adaptability that South Australians expect and deserve' [18]. As part of this initiative, a world-class quality healthcare system has been identified as one which is characterised by the following attributes:

- patient centred;
- safe;
- effective;
- accessible;
- efficient; and
- equitable.

A key driver for the Transforming Health programme was the identified need to respond to the changing nature of health needs and the ageing population. Diabetes is an example of a chronic, complex and often co-morbid condition where evidence based management co-ordinated alongside adherence to key care processes is essential to optimise patient care. Optimal management is likely to reduce pressure on the healthcare system through reduced morbidity, complications and disability.

As well as redesigning the health system, South Australia has taken a committed approach to preventing chronic disease. A pertinent example is the Obesity Prevention and Lifestyle Project which aims to increase the proportion of 0-18 year olds in the healthy weight range by increasing healthy eating and physical activity through families and communities [19]. It tackles the problems of chronic disease in the community by starting with children and young people.

South Australia also recognised the particular burden of diabetes for Aboriginal communities since its first set of regional Aboriginal Health Plans in 1997 where diabetes was identified as a priority issue and through its Diabetes Strategy for Aboriginal and Torres Strait Islander People (2005-2010) [20].

In addition, there are valued services outside the health system, such as Diabetes SA so that people with diabetes have a place to turn to and help them learn to manage living with diabetes, through raising awareness, provision of information, developing education, facilitating support and supplying products [21].

This atlas provides a timely analysis to understand the current state of diabetes care in South Australia, providing information to support improvement through its detailed data, maps and analyses. We hope this will help identify opportunities for better care to reduce costs to system.

What is diabetes?

Diabetes comprises type 1, type 2 and gestational diabetes. Type 2 diabetes is Australia's fastest growing chronic condition. Importantly, Type 2 diabetes can be prevented, and the risk of those with diabetes developing complications can be reduced through appropriate blood glucose control and monitoring. However, it is largely preventable through a healthy lifestyle.

For those who become diabetic, early diagnosis and good management are important for prevention of potentially debilitating or life threatening complications. Its complications can lead to serious conditions including heart attack or stroke (macrovascular complications), and blindness, kidney failure and peripheral neuropathy which can lead to lower limb amputation (microvascular complications).

Gestational diabetes is not explicitly covered in this atlas. Measures relate to type 1 and type 2 diabetes combined. Numbers of type 1 diabetes at small area level are too low to provide useful data to present.

Aims of the atlas

The atlas aims:

- to describe a number of factors, using indicators that reflect key influences on developing and living with diabetes across the life span; and
- by mapping these indicators, to provide information in a form that will identify significant differences or 'inequalities' across the South Australian community, and support discussion and action to remediate them.

The atlas provides a broad picture of health in South Australia. It combines socioeconomic and other risk factors associated with diabetes with prevalence, treatment and service use data. The data is presented in a logical sequence in order to build a picture of diabetes from prevention to detection and management both in primary care and in hospitals, at small area level. The atlas starts with looking at the 'causes of the causes' of ill-health (or the social determinant of health), lifestyle risk factors (which are important targets for preventing ill-health), detection of diabetes (prevalence), management in the community (Medical Benefits Scheme and Pharmaceutical Benefits Scheme indicators), emergency care (ED presentations) which may reflect poor management, care in hospital where more intensive, specialist or urgent care is needed and finally followed by deaths due to diabetes.

The atlas aims to assist communities, practitioners, policy-makers and service planners, to understand better aspects of diabetes at the community level. The circumstances of communities across the State vary in different ways. By looking at diabetes and its determinants at a small area level, decision-makers are better able to tailor and direct specific services to those who need them most. As diabetes cannot be understood by looking at one aspect or service alone, the ability to combine a broad range of data items with maps showing small geographic areas, allows for a more thorough understanding of diabetes across the State, especially where socioeconomic status, remoteness and access affect prevalence and service use by different groups within the population.

The atlas presents indicators and maps using data for:

- socioeconomic variables;
- risk factor estimates;
- prevalence estimates of diabetes and related conditions;
- Medicare-funded services provided by GPs related to diabetes care;
- Pharmaceutical Benefit Scheme (PBS) prescriptions used in the management of diabetes;
- Emergency Department presentations for endocrine and related reasons;
- diabetes specific and diabetes related admissions to hospitals; and
- premature mortality due to diabetes and related conditions.

Where possible, these indicators are presented by relevant demographic characteristics, including age, sex and Indigenous status.

Methods

Data

Geography

All data included in this atlas are for usual residents of South Australia. Clients of services in South Australia who were residents of other States, Territories or countries are excluded from the data analysis. Similarly, where address information was not provided, data have been excluded: these data made up a very small proportion of totals.

Throughout the atlas, geography refers to the residential address of the population in question rather than the location of the service. For example, rates in Elizabeth East refer to people who live in Elizabeth East, even though they may have used a service in the Adelaide CBD (which is in the Adelaide PHA).

Statistical Local Areas (SLAs) are a pre-July 2011 statistical geography under the Australian Standard Geographical Classification [23]. In order to present all indicators on a common basis, this geography was selected.

Regional South Australia refers to that part of the State, which is not included in the Adelaide Statistical Division, as defined under the ASGC.

Limitations

While this atlas attempts to provide a complete picture of use of healthcare services across the diabetes care pathway in South Australia, outpatient data were not included, as they were unavailable. There are also some specific limitations for the definitions of the measures used for these indicators which are covered in each section. Future analyses should aim to overcome the limitations of some aspects of the data included here to gain a greater understanding of diabetes care in the State.

Modelled estimates

The atlas includes a number of indicators for which prevalence data have been derived as 'modelled estimates' by the Australian Bureau of Statistics (ABS), as these data are not available from administrative systems or other sources. A modelled estimate can be interpreted as the likely value for a 'typical' area with those characteristics. The model used for predicting small area data is determined by analysing data at a higher geographic level, in this case, for Australia. The relationship observed at the higher geographic level between the characteristic of interest and known characteristics is assumed to hold also at the small area level. The estimates are made by applying the model to data on those known characteristics that can be reliably estimated at the small area level. These modelled estimates, of some chronic conditions and health risk factors, were based on the 2011-13 National Health Survey.

In addition to the modelled estimates, the number of completed diabetes cycles of care is a direct estimate from the 2011-13 National Health Survey.

Rates

All rates other than the unemployment rate are age-standardised. Age-standardisation is a method of adjusting a crude rate to eliminate the effect of differences in population age structures: in this atlas, to allow comparisons between geographic areas.

Adjustments are undertaken for each of the populations being examined (or the study population) against a reference population: in these data, the reference is the Australian population for the years of data most relevant to the indicator.

Where rates are age-standardised per 100 population (e.g., smoking rates), these may be referred to as proportions or percentages.

Indigenous status

Note that the term, Aboriginal, is used throughout this atlas to denote persons identifying as being of Aboriginal and/or Torres Strait Islander origin.

Socioeconomic disadvantage

In the atlas, there is a focus on socioeconomic disadvantage as a determinant of health and wellbeing. Here, the term 'socioeconomic' refers to the social and economic aspects of a population where 'social' includes information about the community and its level of education, income support, housing, employment and so forth. It is not used in the context of 'social' as in 'social skills', 'social ability' or 'social behaviour' of community members. Therefore, an area described as having a 'high level of socioeconomic disadvantage' does not imply that the area has low social cohesion or lacks strength as a community; rather, it identifies a relative lack of resources or opportunities that are available to a greater extent in more advantaged communities. Thus, this lack of resources leads inevitably to avoidable differences in diabetes and other outcomes for disadvantaged communities.

Identifying the communities whose residents are not faring as well as others may be perceived by some people as stigmatising. However, the purpose of the atlas is to highlight the extent of their disadvantage in order to provide evidence upon which community members and decision-makers can rely, and which can underpin advocacy for improvements in the healthcare system. If we avoid highlighting the most disadvantaged areas, we avoid providing the evidence that society is failing those who live there. Moreover, being complacent about their plight, and not publishing the evidence, makes us complicit in their poorer life outcomes.

Inequality measures

Index of Relative Socio-economic Disadvantage (IRSD)

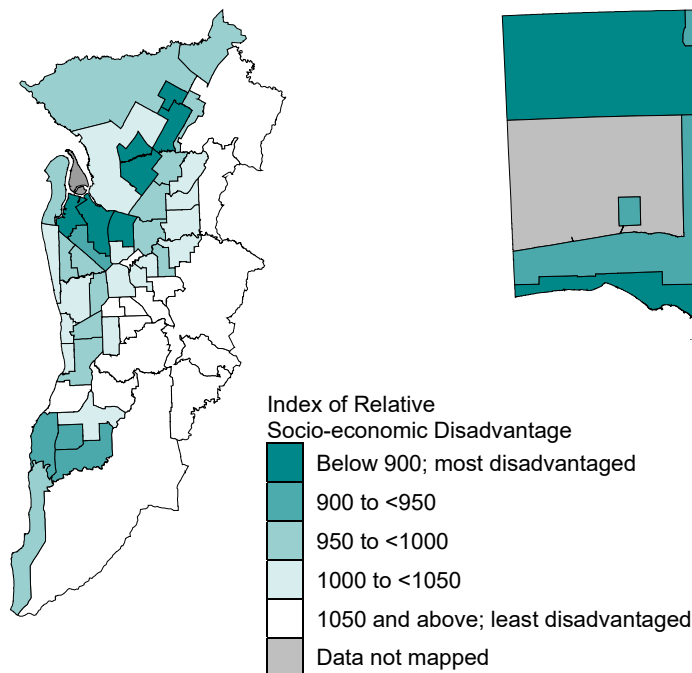
Context: The IRSD represents the socioeconomic status of Australian communities and identifies areas of disadvantage. The IRSD scores each area by summarising attributes of the population, such as low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. It reflects the overall or average level of disadvantage of the population of an area. Being an average, the score is likely to reduce apparent and actual differences between individuals in an area, and between areas.

In 2011, the South Australian average IRSD score of 983 was less than the Australian average of 1002, indicating higher levels of relative disadvantage in the State.

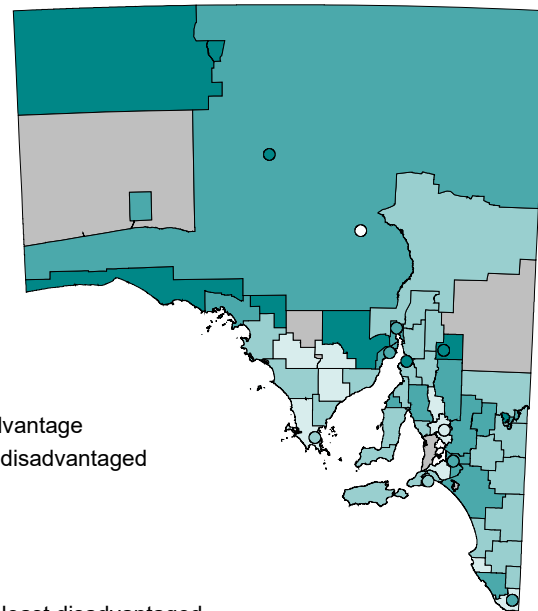
Overall, communities in Adelaide are less disadvantaged than those in Regional South Australia. However, clear geographic patterns of disadvantage can be seen within both of these areas.

In Adelaide, there are three main clusters of SLAs with the greatest levels of disadvantage: the outer north (in Playford - Elizabeth, Playford - West Central, Salisbury - Central and Salisbury - Inner North); the outer south (Onkaparinga - North Coast/ Hackham Morphett); and to the north and north-west (Port Adelaide Enfield - Park/ Inner /Port) (Map 1). The least disadvantaged areas are clustered to the east, south-east and north-east of Adelaide, and in the Adelaide Hills.

Map 1: Index of Relative Socio-economic Disadvantage, Adelaide, 2011



Map 2: Index of Relative Socio-economic Disadvantage, Regional South Australia, 2011



Map 2 shows that the most disadvantaged SLAs in Regional South Australia cover much of the Far North of the State, with the State's lowest score by far (a score of 593) in the Anangu Pitjantjatjara Yankunytjatjara Lands (referred to here as the APY Lands). Other very low scores were recorded for many of the towns, including Coober Pedy, Renmark, Peterborough and Port Pirie.

Children in their first year of school assessed as being developmentally vulnerable

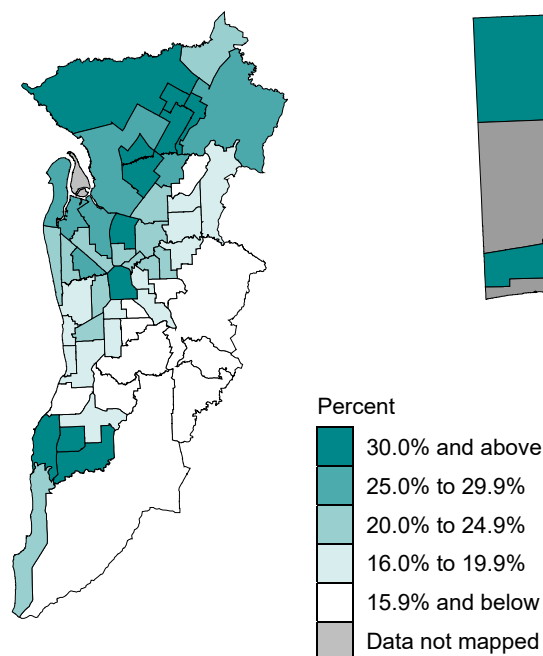
Context: *The quality of a child's earliest environments and the availability of appropriate experiences at the right stages of development are crucial determinants of health and wellbeing. Supportive communities that promote optimal early childhood development greatly increase children's chances of a successful transition to school, good learning outcomes and better education, employment, and physical and mental health in adulthood.*

The Australian Early Development Census (AEDC) is a census of children's health and development in their first year of full-time schooling.⁵ Five domains of early childhood development are assessed: physical health and wellbeing, social competence, emotional maturity, language and cognitive skills (schools-based), and communication skills and general knowledge. [22] Children who are placed in the bottom 10% in a domain are classified as being developmentally vulnerable in that domain.

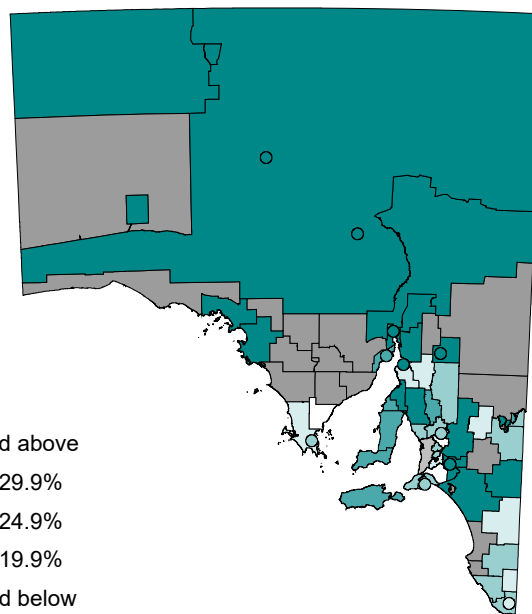
A higher proportion of children in Regional South Australia were assessed as being developmentally vulnerable on one or more domains of the AEDC than was the case in Adelaide (24.5% and 23.4%, respectively). Again, strong geographic patterns of disadvantage are evident.

In Adelaide, the highest percentages of children who were assessed as being developmentally vulnerable under this index are found in the outer north (in Playford - Elizabeth (44.1%) / West (42.7%), Salisbury - Central (34.5%) and Inner North (34.1%)) as well as Adelaide PHA (34.1%) and Port Adelaide Enfield - Inner (34.0%) (Map 3). In the outer south, Onkaparinga - Hackham (31.0%)/ North Coast (30.5%)/ Morphett (30.2%) were also observed to have high percentages of children assessed as being developmentally vulnerable. Percentages are generally lower in more advantaged areas to the east, north-east and south-east of the city.

Map 3: Children in their first year of school who are developmentally vulnerable on one or more domains under the AEDC, Adelaide, 2012



Map 4: Children in their first year of school who are developmentally vulnerable on one or more domains under the AEDC, Regional South Australia, 2012



The APY Lands has by far the highest proportion of children who are developmentally vulnerable on one or more domains under the AEDC in the State, with 80.0% of children in this category, almost double the proportion of the next highest PHA of Coober Pedy, with a proportion of 46.4% (Map 4).

Towns in Regional South Australia with above-average percentages of children who are developmentally vulnerable, were Murray Bridge (33.4%), Port Pirie (32.2%) and Roxby Downs (30.7%). Among other areas, Berri & Barmera, Murray Bridge Region, Flinders Ranges and Port Augusta also had over one third of their children in this category.

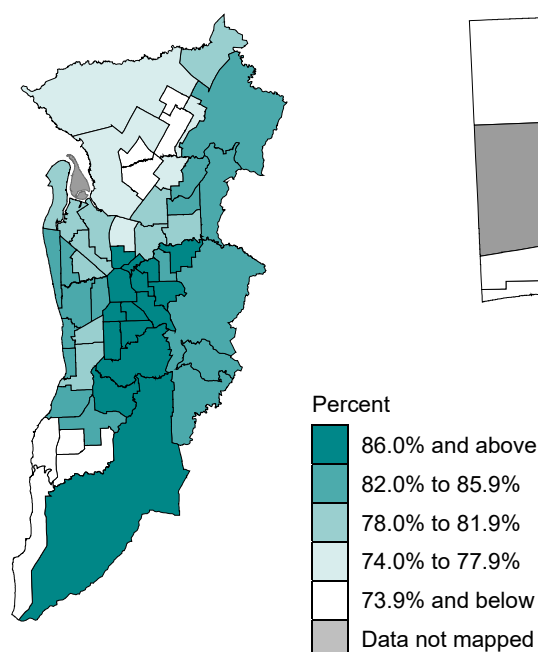
Learning or earning

Context: A connection between education level/employment status and health has long been recognised. Young people (15 to 19 years) who are not learning or earning can have an effect on unhealthy behaviours. For example, there is an association between youth unemployment and increased alcohol consumption. In addition, being in education has been shown to be protective of health and reduces risk of heart disease and diabetes. [23]

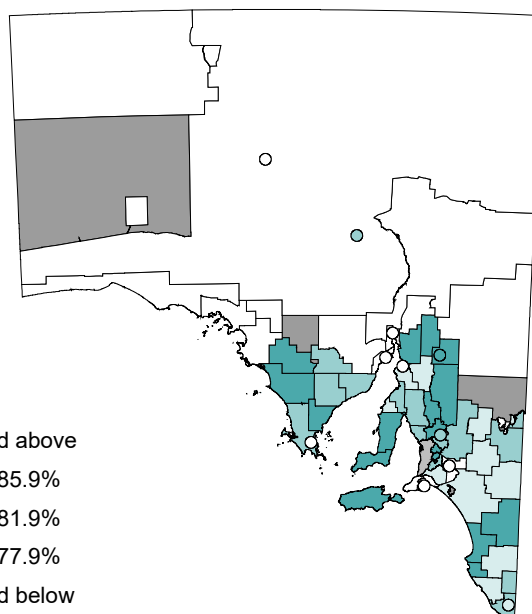
The proportion of 15 to 19 year olds who are engaged in school, work or further education/ Training in 2011 was greater for Adelaide (80.9%) than it was for Regional South Australia (76.8%).

The highest levels of 15 to 19 year olds learning or earning were observed in the eastern suburbs of Adelaide, specifically, Burnside - South-West (90.5%) and North-East (90.0%), Mitcham - North-East (89.2%)/ West (88.6%)/ Hills (88.1%) and Unley - West (87.6%) and East (87.4%), as well as to the north of the CBD, in Norwood - West (88.7%) and East (87.3%), Walkerville (86.6%) and Prospect (86.6%) (Map 5). In the outer south, high proportions of learning and earning are also seen in Onkaparinga - Reservoir (86.7%) and Hills (86.3%). In Adelaide, the lowest proportion of 15 to 19 year olds learning or earning were observed in Playford and Salisbury in the outer north and Onkaparinga in the outer south with other areas having lower proportions than the Adelaide average learning or earning.

Map 5: Learning or earning, percent, Adelaide, June 2014



Map 6: Learning or earning, percent, Regional South Australia, June 2014



In Regional South Australia, the APY Lands had the highest proportion of 15 to 19 year olds learning or earning (51.3%), followed by Ceduna (67.6%) (Map 6). The highest proportions of learning or earning were in Tatiara, Kingston and Robe (all at 85.2%).

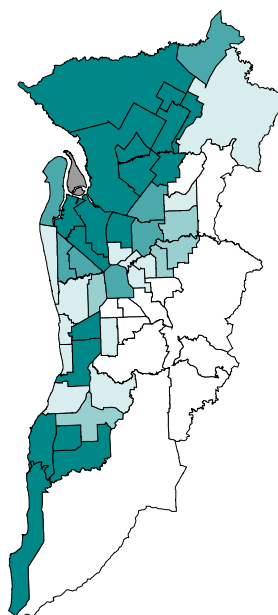
Unemployment

Context: *The association between unemployment and health has long been studied and has been shown to work both ways. Unemployment has been linked with increased exposure to lifestyle related risk factors and chronic disease including diabetes. It is important to note that the relationship between unemployment and negative health outcomes is complex as each individual will experience unemployment differently and a number of factors such as education, socio economic status, gender, age, social and family support, the health system and state support may be interacting with the effects that unemployment will have on health. [24]*

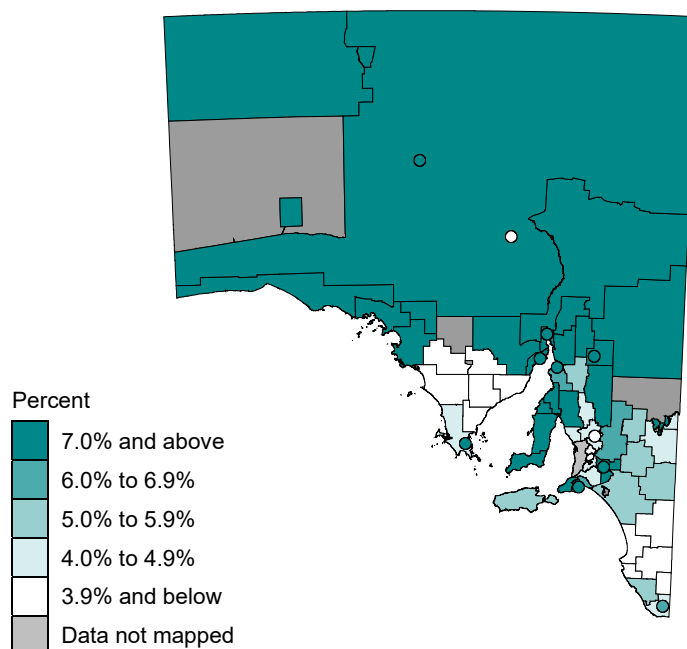
The unemployment rate for June 2014 in Adelaide was 6.8% and for Regional South Australia, it was 6.4%. The highest levels of unemployment are found in the north-west, outer north and outer south of Adelaide. Map 5 also shows that the lowest levels of unemployment are in the eastern suburbs of Adelaide.

In Adelaide, the highest unemployment rate was estimated for Playford - Elizabeth (22.5%) and West Central (20.9%), where the proportion unemployed was over three times the Adelaide average). Onkaparinga - North Coast (17.8%) / Hackham (14.7%) / Morphett (12.3%) in the outer south were also observed to have particularly high unemployment (Map 7). Many other areas had unemployment rates above the Adelaide average, including in the LGAs of Port Adelaide Enfield and Salisbury. Unemployment was lower in areas to the east, north-east and south-east of the city.

Map 7: Unemployment, percent, Adelaide, June 2014



Map 8: Unemployment, percent, Regional South Australia, June 2014



In Regional South Australia, the APY Lands had the highest unemployment (35.6%), followed by Port Pirie (14.4%) and the Copper Coast (10.9%) (Map 8). The lowest proportions of unemployment were in Roxby Downs (0.8%) and in Kimba, Franklin Harbour and Cleve (2.4%).

Households in dwellings receiving rent assistance

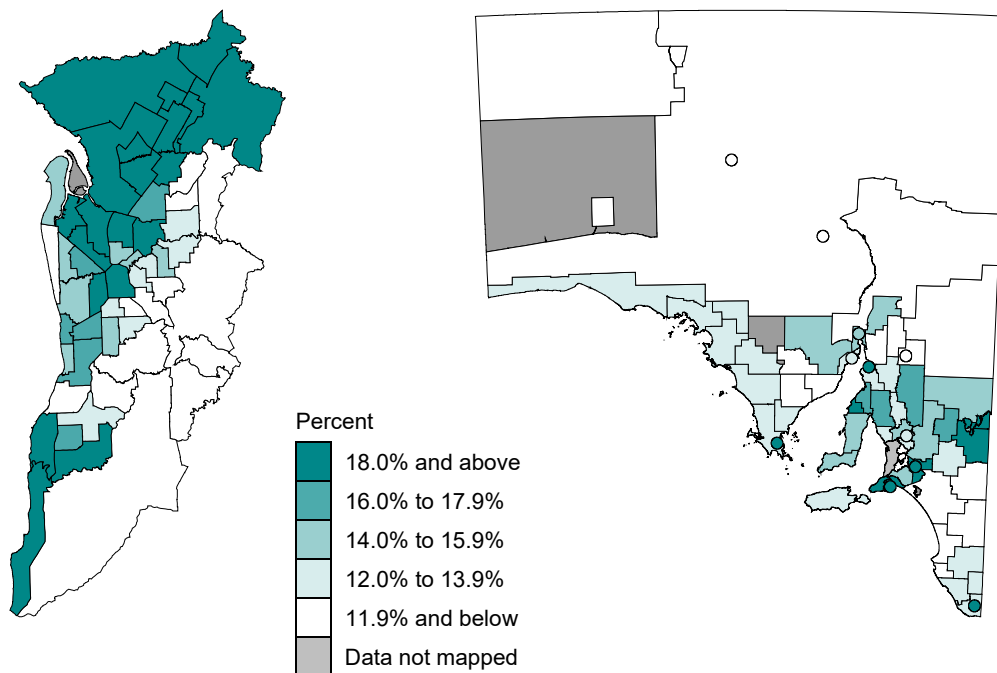
Context: *Affordable, secure and safe housing is fundamental to one's health and wellbeing, employment, education and other life opportunities. Being in receipt of rent assistance is a measure of financial strain and is associated with negative effects on both physical and mental health [24].*

Adelaide (17.1%) has a higher percentage of households receiving rent assistance than Regional South Australia (16.2%).

The distribution across Adelaide of households receiving rent assistance highlights a striking social segregation and reflects what has been seen in the earlier maps. Playford - West Central (35.2%)/ Elizabeth (32.6%)/ East Central (31.8%)/ West (31.4%)/ Hills (29.6%) in the outer north and Onkaparinga - North Coast (26.1%) and South Coast (24.9%) in the outer south as well, as the Adelaide PHA (25.0%) have the highest proportion of households receiving rent assistance (Map 9). Areas to the east, north-east and south-east of Adelaide have the lowest proportions of people receiving rent assistance – particularly, the Adelaide Hills - Central (6.2%) and Ranges (6.5%).

Map 9: Households receiving rent assistance, percent, Adelaide, 2011

Map 10: Households receiving rent assistance, percent, Regional South Australia, 2011



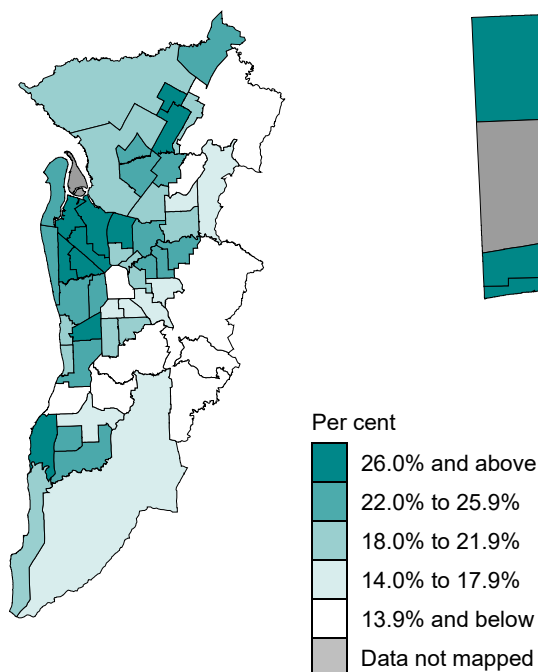
In Regional South Australia, Victor Harbor (29.1%), Yankalilla (29.0%), Alexandrina - Coastal (26.8%) and Murray Bridge (22.9%) have the highest proportion of households receiving rent assistance (Map 10). The APY Lands has 0% receiving rent assistance although this is likely to reflect the living circumstances of the population.

People living in homes with no Internet connection

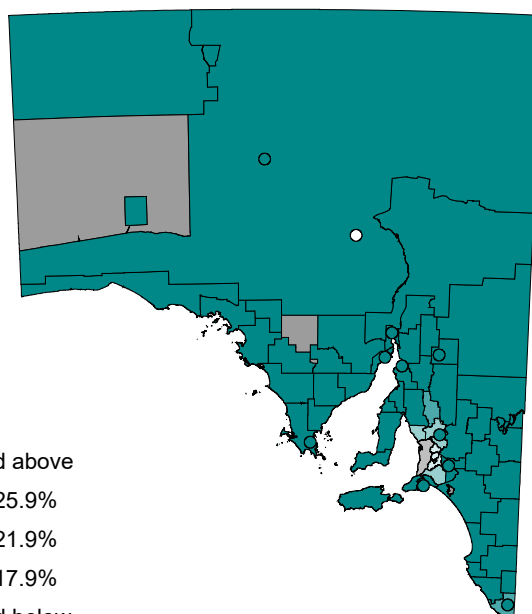
Context: *Diabetes is a chronic condition for which self-care (including maintaining a suitable diet, monitoring blood sugar levels) is a key part of its management. The Internet plays an increasing role in achieving this including through connecting to others with the same medical condition, provision of online diabetes education and support groups, and accessibility of high quality health information [26]. Furthermore, novel uses of e- and m-technology are expanding.*

Regional South Australia has a higher percentage of people living in private dwellings with no Internet connection than Adelaide (27.8% v 21.9% respectively). In Adelaide, the highest proportion were observed in the outer north in Playford - Elizabeth (33.2%) and the outer north west Port Adelaide Enfield - Park (33.0%)/ Port (33.0%)/ Inner (31.4%) and Charles Sturt - North-East (29.0%) and Inner West (28.6%). Marion (28.2%), to the south west of the CBD and Onkaparinga - North Coast (26.2%) in the outer south also have a high percentage of people living in private dwellings with no Internet connection (Map 11). The lowest proportions are observed to the east, south-east and north-east.

Map 11: People living in homes with no Internet connection, percent, Adelaide, 2011



Map 12: People living in homes with no Internet connection, percent, Regional South Australia, 2011



In Regional South Australia, the APY Lands had the highest percentage of private dwellings with no Internet connection (70.8%) which is nearly double the proportion of Port Pirie (37.7%) which saw the next highest proportion (Map 12). A number of other areas saw more than one in three homes with no Internet connection including Peterborough (35.0%), Mount Remarkable (35.0%), Orroroo / Carrieton (34.9%) and Yorke Peninsula (34.4%).

General health

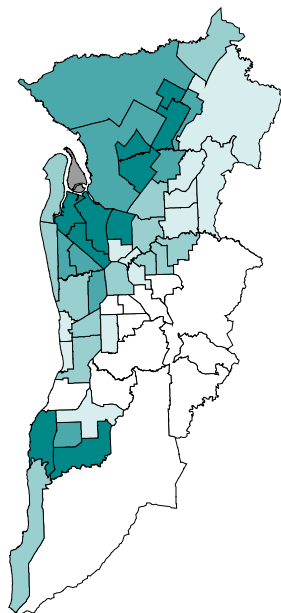
Self-assessed health status

Context: *Self-assessed health status is commonly used as a proxy measure for actual health status; and how people rate their health overall is strongly related to their experience of illness and disability [27]. This includes being strongly associated with specific health problems, particularly serious conditions including diabetes [28].*

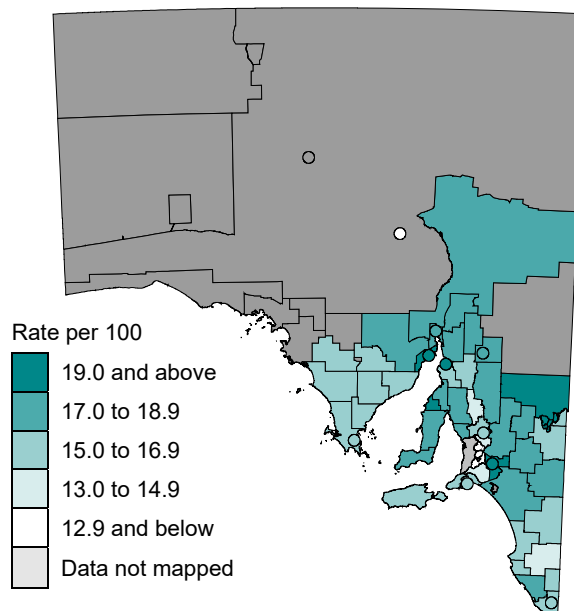
The estimated proportion of the population who assessed their health as fair or poor in South Australia was 16.2%. Adelaide had a lower percentage than Regional South Australia, with 16.0% compared to 16.7%, respectively.

In Adelaide, the patterns of people reporting fair or poor health are highly consistent with the pattern of relative socioeconomic disadvantage, with areas with higher disadvantage having higher levels of poor self-assessed health (Map 13). The highest percentages of the population with fair or poor health were estimated for Playford - Elizabeth (24.8%) and West Central (24.2%), Port Adelaide Enfield - Park (24.0%)/ Port (24.0%)/ Inner (21.2%), Salisbury - Central (21.1%) and Inner North (20.9%) and Charles Sturt - North-East (20.1%). In the outer south, Onkaparinga - North Coast (19.9%) and Hackham (19.1%) also saw a relatively high estimated proportion of the population who assessed their health as fair or poor.

Map 13: Estimates of self-assessed health status as fair or poor, rate per 100, Adelaide, 2011-13



Map 14: Estimates of self-assessed health status as fair or poor, rate per 100, Regional South Australia, 2011-13



The lowest levels were in the Adelaide Hills - Central (9.6%) and Ranges (9.9%), Burnside - South-West (10.1%) and North-East (10.8%) and Mitcham - Hills (10.3%).

In Regional South Australia, the highest levels of fair to poor self-assessed health were estimated to be in Port Pirie (21.6%), Copper Coast (19.7%) and Renmark (19.7%) (Map 14). The lowest percentages were estimated for people in Roxby Downs (9.6%), Barossa (14.0%) and Clare and Gilbert Valleys (14.1%).

Note that estimates were not produced for most of the SLAs in the Far North, as Very Remote areas, Aboriginal communities, or areas with a population of less than 1,000, were excluded from the estimates.

Health risk factors

Obesity

Context: *Being overweight or obese is the main modifiable risk factor for type 2 diabetes. In Australia, almost 2 in 3 adults are overweight or obese and around 1 in 4 children [29]. The prevalence of overweight and obesity is rising and which will contribute to a rise in the prevalence of type 2 diabetes.*

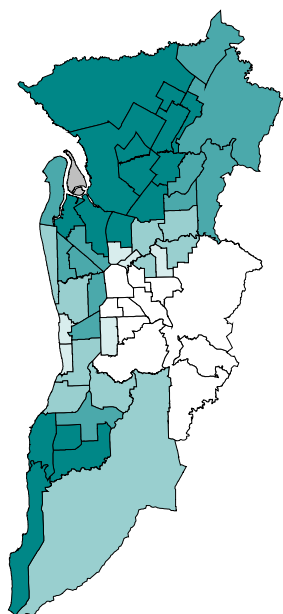
Overall, estimated obesity prevalence is 29.7% in South Australia. Estimated obesity prevalence is lower in Adelaide (28.7%) than in Regional South Australia (32.5%). This does not include people who are estimated to be overweight.

In Adelaide, areas where more than one in three adults (18 years and over) are estimated to be obese correspond to the areas which experience higher socioeconomic disadvantage – the north-west, outer north and outer south of Adelaide (Map 15). Specifically, these areas include (but are not limited to), Playford - West Central (39.0%)/ West (35.6%)/ East Central (35.3%)/ Elizabeth (35.0%) and Salisbury - Central (36.7%) and Inner North (36.5%) in the outer north; Port Adelaide Enfield - Inner (34.9%)/ Port (34.4%)/ Park (34.4%) in the north-west; and Onkaparinga - Morphett (34.2%)/ Hackham (34.2%)/ North Coast (34.1%)/ South Coast (33.6%) in the outer south.

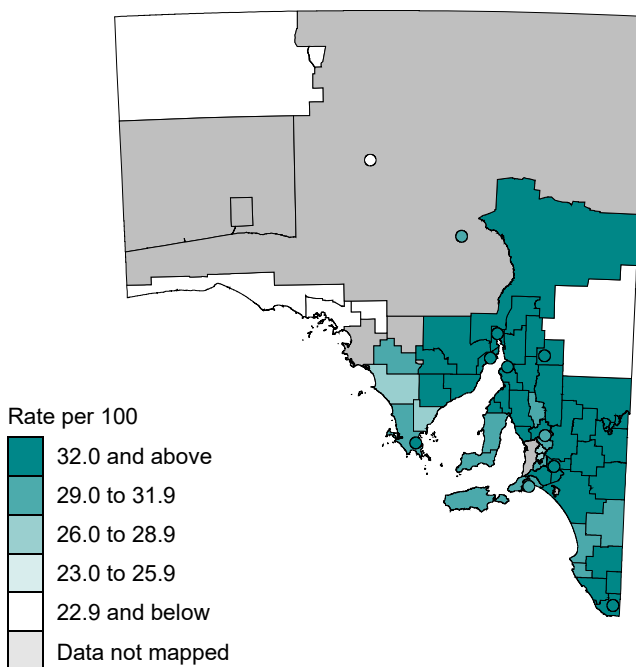
Obesity prevalence in Regional areas of South Australia are relatively high for all SLAs for which estimates were made. In particular, high rates were estimated for Murray Bridge (36.4%), Whyalla (35.9%), Port Pirie (35.4%), Copper Coast (35.1%) and Grant (35.1%) (Map 16).

The lowest prevalence estimates were for Tumby Bay (28.8%), Elliston (28.8%), Le Hunte (29.1%) and Roxby Downs (29.6%), although it is important to note that this is still more than one in four of the adult population in these areas who are estimated to be obese.

Map 15: Estimates of obesity aged 18 years and over, rate per 100, Adelaide, 2011-13



Map 16: Estimates of obesity aged 18 years and over, rate per 100, Regional South Australia, 2011-13



Smoking

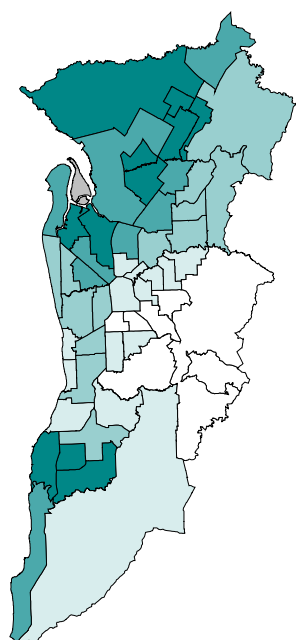
Context: Tobacco smoking is recognised as the largest single preventable cause of death and disease in Australia. Tobacco smoking increases the risk of developing diabetes as well as aggravates the complications of diabetes (both micro- and macro-vascular complications). Smoking cessation is therefore an important target for diabetes prevention and control. [29]

Overall, estimated smoking prevalence is 18.1% in South Australia. Estimated smoking prevalence is higher in Regional South Australia (20.6%) than Adelaide (17.2%). These estimates are based on self-reported data gathered through the 2011-13 Australian Health Survey where respondents aged 18 years and over reported being “a current, daily or at least once weekly smoker”.

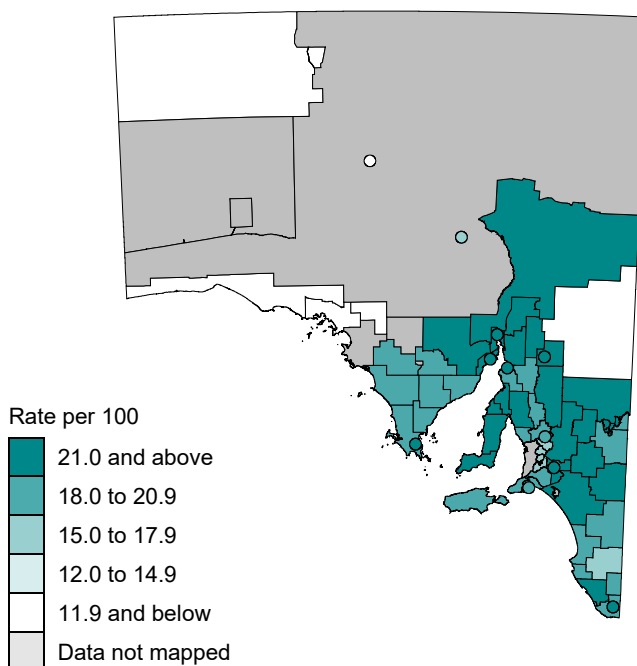
Geographic patterns of smoking are similar to geographic patterns of socioeconomic disadvantage. The highest proportions, all with over one in five of the adult population estimated to be current smokers, were in the outer north in Playford - Elizabeth (29.8%)/ West Central (29.4%)/ East Central (21.9%)/ West (21.6%) and Salisbury - Central (22.4%)/ Inner North (22.2%)/ North-East (20.7%); north west of Port Adelaide Enfield - Park (21.5%)/ Port (21.5%)/ Coast (20.4%)/ Inner (20.2%); and the outer south in Onkaparinga - North Coast (25.8%)/ Hackham (24.1%)/ Morphett (22.1%)/ South Coast (20.8%) (Map 17). The area in Adelaide with the lowest estimated smoking prevalence is Burnside - North-East, at 10.0%.

In Regional South Australia, the estimated smoking prevalence was greater than one in four people for Port Pirie (26.0%), Unincorporated Whyalla, Flinders Ranges, Port Augusta and the Unincorporated Flinders Ranges (all at 25.8%) (Map 18). The lowest rate was estimated for Roxby Downs (14.9%), well below the next lowest rates in the Barossa - Barossa (17.2%)/ Angaston (17.9%) and Naracoorte and Lucindale (17.5%).

Map 17: Estimates of current smokers aged 18 years and over, rate per 100, Adelaide, 2011-13



Map 18: Estimates of current smokers aged 18 years and over, rate per 100, Regional South Australia, 2011-13



Alcohol use at levels risky to health

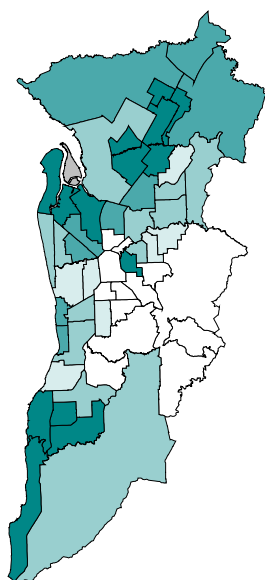
Context: *Alcohol consumption, especially at high levels, can increase the risk of developing a range of major risk factors such as obesity and high blood pressure as well as chronic diseases including cardiovascular disease, type 2 diabetes and some cancers [31]. At low to moderate alcohol intake the relationship is less clear [31]. While there have been some studies to suggest that lower consumption may be protective for type 2 diabetes it may be that these findings are due to alternative explanations (confounding factors).*

Overall, estimated prevalence of alcohol use at levels risky to health in South Australia is 4.0%. The estimated prevalence is higher in Regional South Australia (4.5%) than it is in Adelaide (3.9%). The definition of alcohol consumption used is that from the 2001 NHMRC guidelines, where 'high risk' is defined as an average daily consumption of seven or more standard drinks for males and five or more standard drinks for females; and more than 43 standard drinks per week for males, and more than 29 standard drinks per week for females.

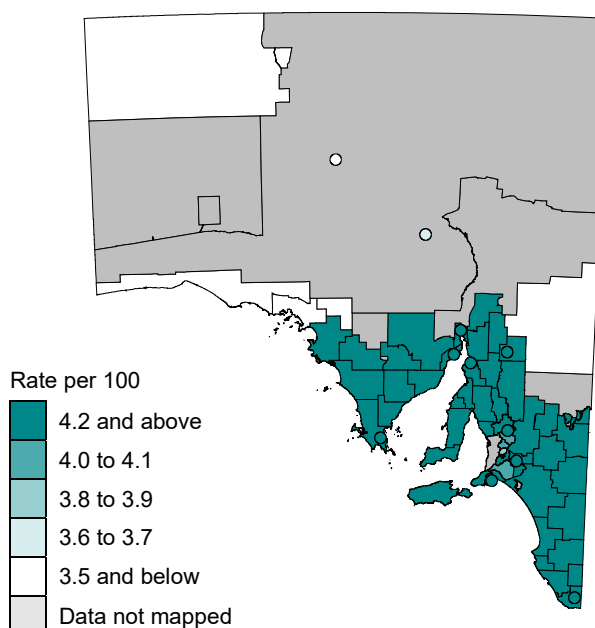
The pattern of risky alcohol consumption in Adelaide is generally similar to that shown by the pattern of higher levels of socioeconomic disadvantage. The highest estimates of risky alcohol consumption in Adelaide were in the outer north in Playford - Elizabeth (4.8%), north-west in Port Adelaide Enfield - Coast (4.7%), and outer south in Onkaparinga - North Coast (4.5%) and Morphett (4.4%) (Map 19). The lowest prevalence estimated were observed in the eastern suburbs of Unley - West and Burnside - South-West and North-East and to the immediate north in Prospect and Walkerville (all at 3.3%).

Little variation was observed in Regional South Australia. The areas with the highest estimated prevalence indicated that more than one in 20 adults consumed alcohol at levels risky to health. These areas were Peterborough, Mount Remarkable and Orroroo / Carrieton (all at 5.1%) (Map 20). Roxby Downs (3.5%), Barossa - Barossa / Angaston / Tanunda and Alexandrina - Strathalbyn (all at 4.1%) had the lowest prevalence estimates in Regional South Australia, although this is still higher than many of areas within Adelaide.

Map 19: Estimates of the population aged 18 years and over who consume alcohol at levels considered to be high risk to health, rate per 100, Adelaide, 2011-13



Map 20: Estimates of the population aged 18 years and over who consume alcohol at levels considered to be high risk to health, rate per 100, Regional South Australia, 2011-13



Prevalence of diabetes and related conditions

Prevalence of diabetes

Context: *In common with many developed countries around the world, the prevalence of type 2 diabetes in the Australian population is increasing. Diabetes has been described as 'the epidemic of the 21st century'. It is the world's fastest growing chronic condition. The total annual cost of diabetes in Australia is estimated to be \$14.6 billion. [33]*

This indicator is defined as the prevalence of diabetes measured by a glycosylated haemoglobin test $\geq 6.5\%$ from a subset of Australian Health Survey participants [34].

Overall, the estimated prevalence of diabetes in South Australia is 6.9%. The estimated percentage of the population who had diabetes is higher in Adelaide than in Regional South Australia (7.2% and 6.3%, respectively). The prevalence of diabetes mellitus was defined as a HbA1c test result of greater than or equal to 6.5% collected from volunteering participants selected as part of the Australian Health Survey.

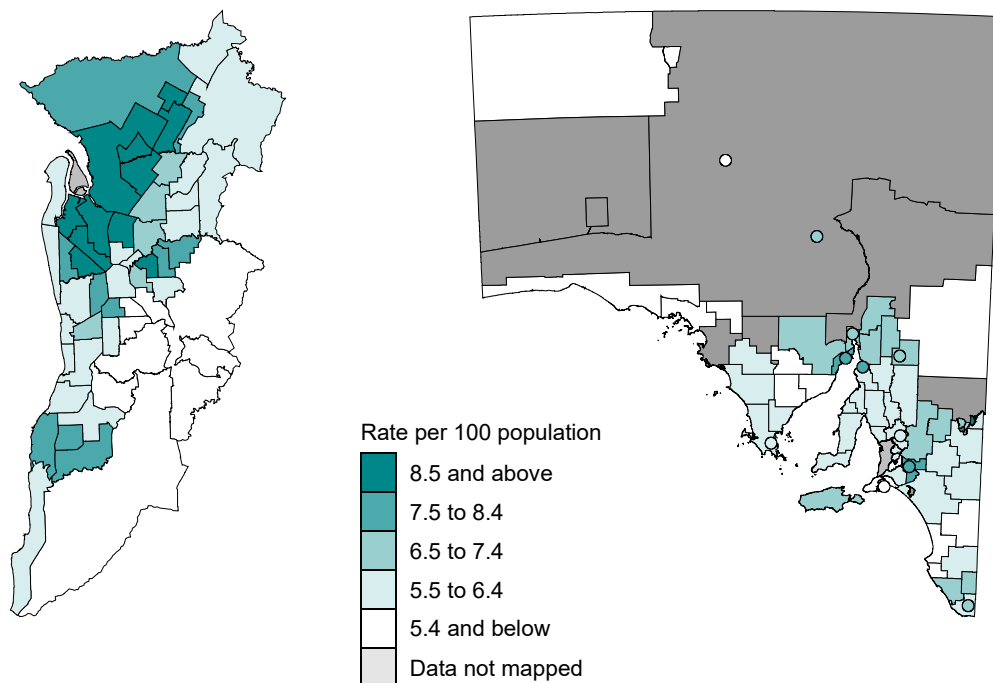
In Adelaide, areas with the highest diabetes prevalence which indicated more than one in 10 adults had diabetes were estimated to be in the north-west in Port Adelaide Enfield - Park (14.8%)/ Port (14.8%)/ Inner (12.8%), Charles Sturt - North-East (11.5%); and in the outer north in Salisbury - Central (10.3%)/ Balance (10.3%)/ Inner North (10.2%) and Playford - West Central (10.2%) (Map 21).

Areas with the lowest estimated diabetes prevalence were the eastern and south eastern suburbs of Burnside - South-West (5.1%), Mitcham - Hills (5.2%)/ North-East (5.2%) and Unley (5.4%) as well as the outer south and eastern areas including the Adelaide Hills - Central (5.1%) and Ranges (5.2%), Mount Barker (5.2%) and Onkaparinga - Hills (5.3%) and Reservoir (5.3%).

The highest percentages of the population estimated to have diabetes in Regional South Australia were in Renmark Paringa - Renmark (8.5%), Whyalla (7.9%), Port Pirie (7.9%) and Murray Bridge (7.5%) (Map 22). The areas with the lowest estimate prevalence of diabetes were Tatiara, Robe, Kingston, Victor Harbor, Yankalilla and Alexandrina - Coastal (all at 5.3%).

Map 21: Estimates of the population with diabetes, rate per 100, Adelaide, 2011-13

Map 22: Estimates of the population with diabetes, rate per 100, Regional South Australia, 2011-13



Prevalence of high cholesterol

Context: People with diabetes are at risk of macrovascular complications. This includes conditions which high cholesterol can contribute too, including heart disease. Preventing or lowering high cholesterol levels is especially important in people with diabetes. Lifestyle measures should be implemented in the first instance and medications to lower cholesterol can also be effective. [33]

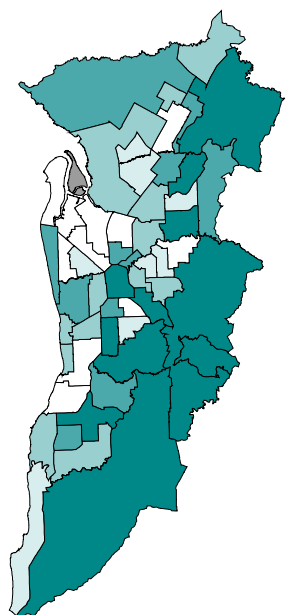
This indicator is defined as a total cholesterol result of ≥ 5.5 mmol/L as measured by a blood sample from participants of the NHMS component of the Australian Health Survey (12 years+) [34].

Overall, the prevalence of high cholesterol in South Australia was estimated to be 35.0%. The estimated percentage of the population who have high cholesterol is slightly lower in Adelaide (34.8%) than in Regional South Australia (35.4%) although the actual difference is small (less than 1%). The prevalence of high cholesterol was defined as a total cholesterol result of greater than or equal to 5.5mmol/L collected from the NHMS component of the Australian Health Survey.

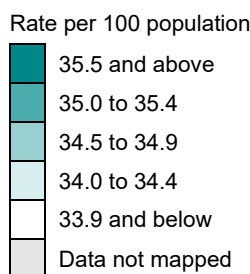
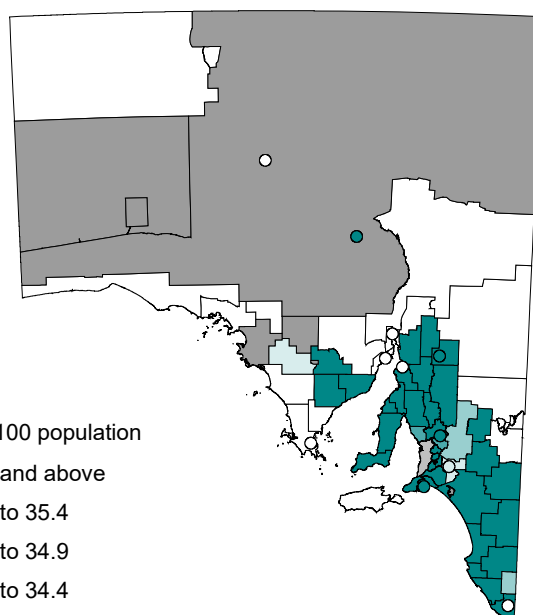
In Adelaide, the highest estimated prevalence of high cholesterol was in the Adelaide PHA (38.7%), along with the hills to the north-east and south-east (Map 23). These areas include Mitcham - Hills (38.3%), Onkaparinga - Hills (37.6%), Playford - Hills (36.9%) and Adelaide Hills - North (36.3%)/ Balance (36.35)/ Central (36.1%)/ Ranges (36.1%). The south eastern suburb of Burnside - South-West also features among the areas with the highest estimated prevalence (36.7%).

In Regional South Australia, the areas with the highest estimated prevalence of high cholesterol were Roxby Downs (38.4%) along with Victor Harbor, Yankalilla and Light (all at 37.9%) (Map 24). All but two SLA's in South Australia had an estimated prevalence of high cholesterol for 1 in 3 adults or more. The two SLA's with a lower estimated prevalence (albeit only very slightly lower) were Marion - South (32.7%) and Unley - East (33.2%).

Map 23: Estimates of the population with hypercholesterolaemia, rate per 100, Adelaide, 2011-13



Map 24: Estimates of the population with hypercholesterolaemia, rate per 100, Regional South Australia, 2011-13



Prevalence of high blood pressure

Context: High blood pressure is a major risk factor in the development of cardiovascular disease, including type 2 diabetes [31]. It also contributes to complications of diabetes. Recognition of the considerable overlap in individuals who have diabetes, high blood pressure (as well as obesity) has led to a greater understanding of risk factor clustering [34].

This indicator is defined as respondents who reported in the Australian Health Survey to have ever been told by a doctor or nurse that they had hypertension and that it was current or long term [34].

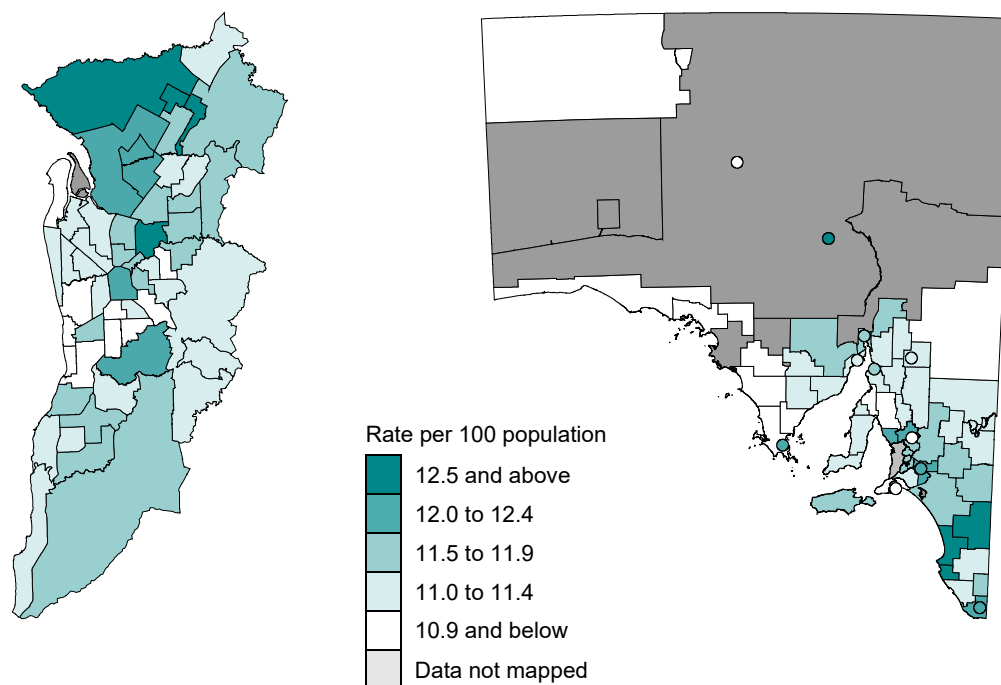
Overall, the prevalence of high blood pressure in South Australia was estimated to be 11.3%. There is almost no difference between the estimated prevalence in Adelaide (11.3%) and Regional South Australia (11.4%). The prevalence of high blood pressure was defined as persons who reported in the Australian Health Survey of having been told by a doctor or nurse that they had hypertension and that their condition was current at the time of interview and had lasted, or was expected to last, 6 months or more.

In Adelaide, areas with the highest prevalence of high blood pressure were estimated to be in Playford - West (12.8%) / East Central (12.6%) / West Central (12.5%), Port Adelaide Enfield - East (12.4%), Adelaide (12.2%), and Salisbury - Inner North / Central / Balance (all at 12.1%) (Map 25). The areas with the lowest estimated prevalence were Port Adelaide Enfield - Coast (10.2%), Unley - West (10.4%) and Holdfast Bay - North (10.5%).

In Regional South Australia, the highest estimated prevalence of high blood pressure was observed in Roxby Downs (14.2%), Tatiara, Kingston and Robe (all at 13.2%) (Map 26). The lowest estimated prevalence was in Elliston and Tumby Bay (both at 10.3%).

Map 25: Estimates of the population with hypertension, rate per 100, Adelaide, 2011-13

Map 26: Estimates of the population with hypertension, rate per 100, Regional South Australia, 2011-13



Prevalence of circulatory disease

Context: *Diabetes is a risk factor for circulatory disease. In addition, people with diabetes are more likely to have higher blood pressure and high cholesterol levels which increase the risk of atherosclerosis and circulatory disease. [35]*

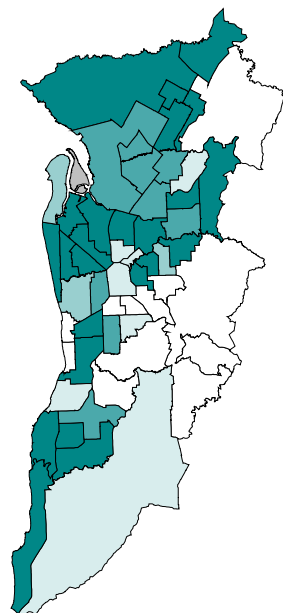
This indicator is defined as respondents aged two years or more who reported in the Australian Health Survey to have ever been told by a doctor or nurse that they had one or more heart or other circulatory system conditions [35].

Overall, the prevalence of circulatory disease in South Australia was estimated to be 18.3%. The estimated percentage of the population who have circulatory disease is lower in Adelaide (18.0%) than in Regional South Australia (19.0 %). The prevalence of circulatory disease was defined as persons who reported in the Australian Health Survey of having ever been told by a doctor or nurse that they had one or more heart or other circulatory system conditions and if they considered they currently have one or more such conditions. Conditions included here were rheumatic heart disease, heart attack, heart failure, stroke and angina.

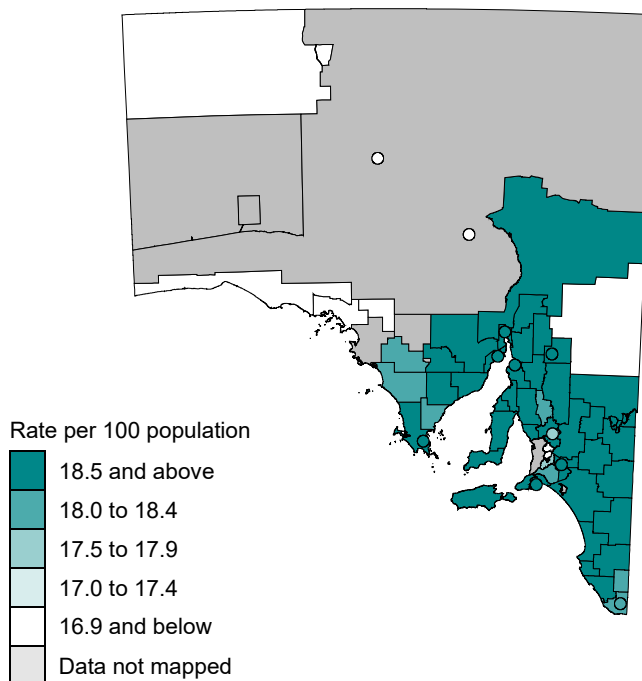
In Adelaide, areas with the highest estimated prevalence of circulatory disease were geographically spread to the north west of the city in Port Adelaide Enfield - Park and Port (both at 19.4%), the outer north in Playford - Elizabeth (19.4%), to the outer south in Onkaparinga - Morphett (19.0%) and the south western suburb of Marion - North (19.0%) (Map 27). Areas with the lowest estimated prevalence were observed in south and eastern areas of Unley - West (15.4%), Adelaide Hills - Central / Balance / North / Ranges and Onkaparinga - Reservoir (all at 16.1%).

In Regional South Australia, areas in the south-east of the State had the highest estimated prevalence of circulatory disease including Southern Mallee (20.8%), The Coorong (20.8%) and Karoonda East Murray (20.7%) (Map 28). Areas with the lowest estimated prevalence were Roxby Downs (15.2%) and Barossa - Tanunda (17.5%) / Angaston (17.8%).

Map 27: Estimates of the population with circulatory disease, rate per 100, Adelaide, 2011-13



Map 28: Estimates of the population with circulatory disease, rate per 100, Regional South Australia, 2011-13



Primary care services

Services provided under the Medical Benefits Schedule

Completed diabetes cycles of care

Context: Items provided under the Medical Benefits Schedule are those provided in primary care and which attract a payment for the service.

Good control of diabetes is key to preventing complications. This is achieved through appropriate primary care and self-management. A completed cycle of diabetes care indicates that this monitoring has been undertaken. It includes necessary biochemical, lifestyle, physical and medication checks which must be completed within a specified timeframe (either each year or every two years). [37]

Overall in South Australia in 2012/13, the rate of completed diabetes cycles of care was 13.5 per 1,000 population. It was higher in Regional South Australia (17.4 per 1,000) than in Adelaide (11.8 per 1,000). 22,435 MBS claims for completed cycles of diabetes care were made across South Australia.

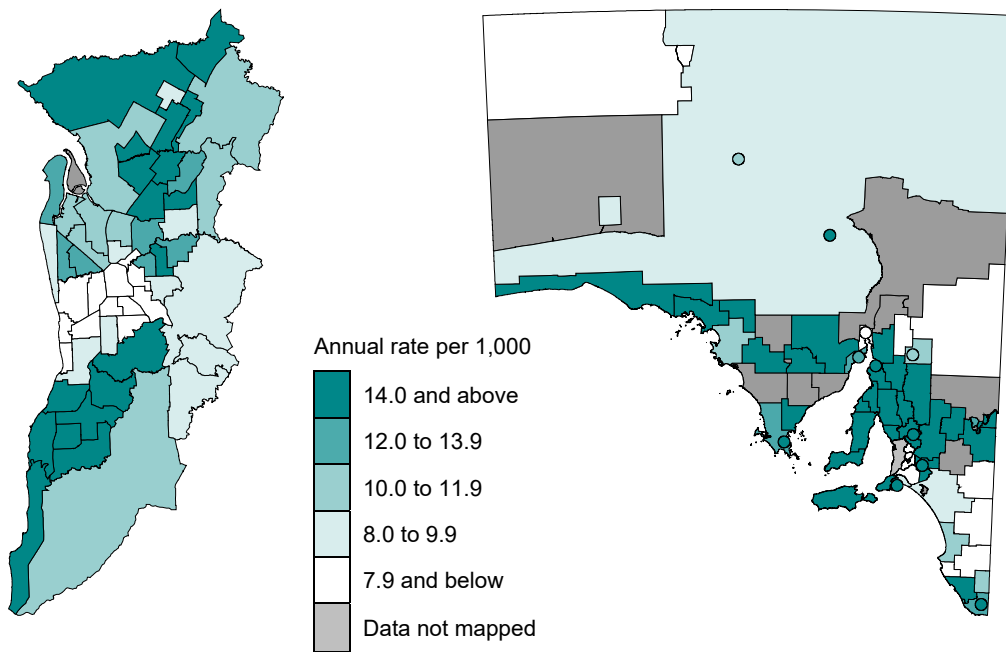
In Adelaide, the areas with the highest rates of MBS claims for completed cycles of diabetes care were concentrated in the outer north, in Gawler (23.9 per 1,000), Playford - West (21.5 per 1,000) and Salisbury - Inner North (21.4 per 1,000)/ North-East (17.0 per 1,000)/ South-East (16.4 per 1,000); and in the outer south in Onkaparinga - Hackham (20.1 per 1,000)/ Morphett (18.0 per 1,000)/ North Coast (17.6 per 1,000)/ Woodcroft (15.9 per 1,000) (Map 29). Areas with the lowest rates of completed cycles of care were observed predominantly in the south-eastern and south-western suburbs. The lowest rates were in Walkerville (5.6 per 1,000) and Holdfast Bay - North (5.6 per 1,000). The rate observed in Gawler (highest) was over four times that seen in Walkerville (lowest).

In Regional South Australia, Barunga West (42.4 per 1,000) had the highest rate of completed cycles of diabetes care (Map 30). The rate in Barunga West was 50% higher than the area with the next highest rate which was Light (28.1 per 1,000). This was followed by Wakefield (27.1 per 1,000) and Mallala

(26.7 per 1,000). In Regional South Australia, there had been no MBS claims for completed cycles of diabetes care in Maralinga Tjarutja and The APY Lands in 2012/13.

Map 29: Completed diabetes cycles of care, rate per 1,000, Adelaide, 2012/13

Map 30: Completed diabetes cycles of care, rate per 1,000, Regional South Australia, 2012/13

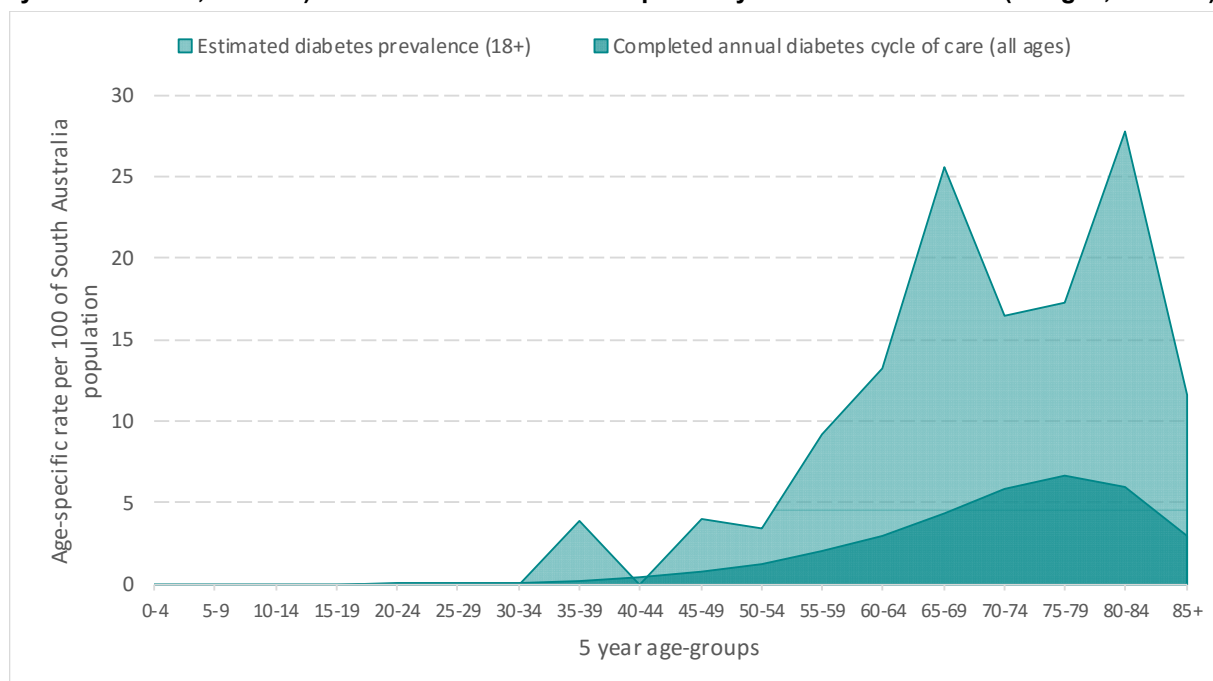


By age group

Figure 1 compares the age-specific rates per 100 of the South Australian population estimated to have diabetes (18 years and over, 2011-13) alongside age-specific rates per 100 for completed cycles of diabetes care claimed for under the MBS (all ages, 2012/13).

As is expected, the estimated diabetes prevalence, although not a smooth curve, broadly increases with age. The highest estimated diabetes prevalence is seen in the 60 years and over age groups. The rates of MBS claims for completed cycles of diabetes care also increase with age. However, this curve demonstrates much lower activity than would be expected if all those who are estimated to have diabetes were receiving an annual completed cycle of care. The underlying reason which may explain this difference is outside the scope of this work. It may be the case that MBS claims for this service are not being submitted, or, it may show a true gap in comprehensive diabetes care which people with diabetes are receiving each year, or a combination of these factors. From these data we can draw no conclusions about which individuals are receiving completed cycles of diabetes care as these findings are not based on individual unit record data.

Figure 1: Age-specific rates per 100 of the South Australian population estimated to have diabetes (18 years and over, 2011-13) and for MBS claims of completed cycles of diabetes care (all ages, 2012/13)



Glycosylated haemoglobin tests

Context: A glycosylated haemoglobin test can be used in the diagnosis and monitoring of diabetes. Haemoglobin is found in red blood cells. This test measures the proportion of glycated haemoglobin in the blood. As the lifespan of a red blood cell is about 120 days, results of this test reflect that time period.

This indicator presents the rate of the number of glycosylated haemoglobin tests done. It is important to note that the number of tests carried out may be influenced by a number of factors including threshold for suspicion of diabetes as well as frequency of monitoring.

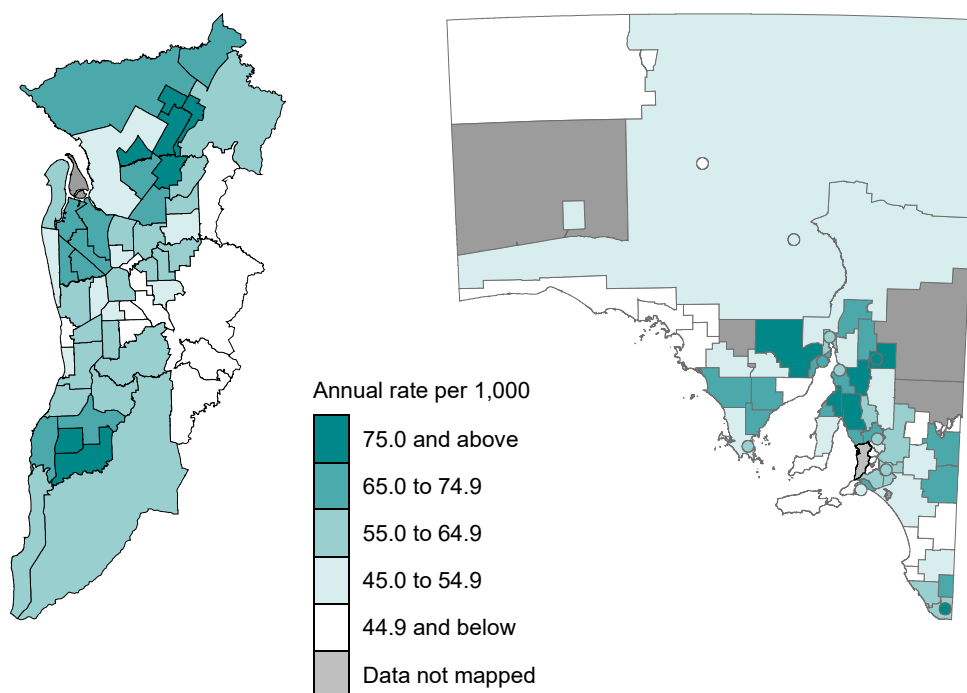
Overall in South Australia in 2012/13, the rate of glycosylated haemoglobin (HbA1C) tests undertaken was 59.1 per 1,000 population. The total number of HbA1C tests undertaken was 98,386. The rate was only slightly higher in Adelaide (59.7 per 1,000) than it was for Regional South Australia (57.9 per 1,000). It is important to note that this is the rate of the number of tests undertaken, and therefore, multiple tests may have been undertaken for one person.

In Adelaide, the highest rates of HbA1C tests undertaken were in the outer northern SLAs of Salisbury - Inner North (101.6 per 1,000)/ North-East (75.8 per 1,000)/ Central (74.3 per 1,000) and Playford - East Central (84.3 per 1,000)/ Elizabeth (83.9 per 1,000)/ West Central (83.9 per 1,000); as well as the outer south in Onkaparinga - Hackham (78.7 per 1,000)/ Morphett (76.6 per 1,000) (Map 31). These areas are largely reflective of the more disadvantaged areas in Adelaide. The areas with the lowest rates of HbA1C tests undertaken were in the Adelaide Hills - Ranges (36.0 per 1,000)/ Central (36.0 per 1,000)/ North (37.3 per 1,000)/ Balance (37.5 per 1,000) and Burnside - South-West (37.1 per 1,000).

In Regional South Australia, Unincorporated Whyalla (105.1 per 1,000), Wakefield (99.0 per 1,000) and Peterborough (95.2 per 1,000) have the highest rate of HbA1C testing (Map 32). The lowest rate was observed in The APY Lands (5.3 per 1,000) by a margin, with the next lowest rates observed in Streaky Bay (19.4 per 1,000) and the Unincorporated West Coast (23.5 per 1,000).

Map 31: Glycosylated haemoglobin tests, rate per 100,000, Adelaide, 2012/13

Map 32: Glycosylated haemoglobin tests, rate per 100,000, Regional South Australia, 2012/13



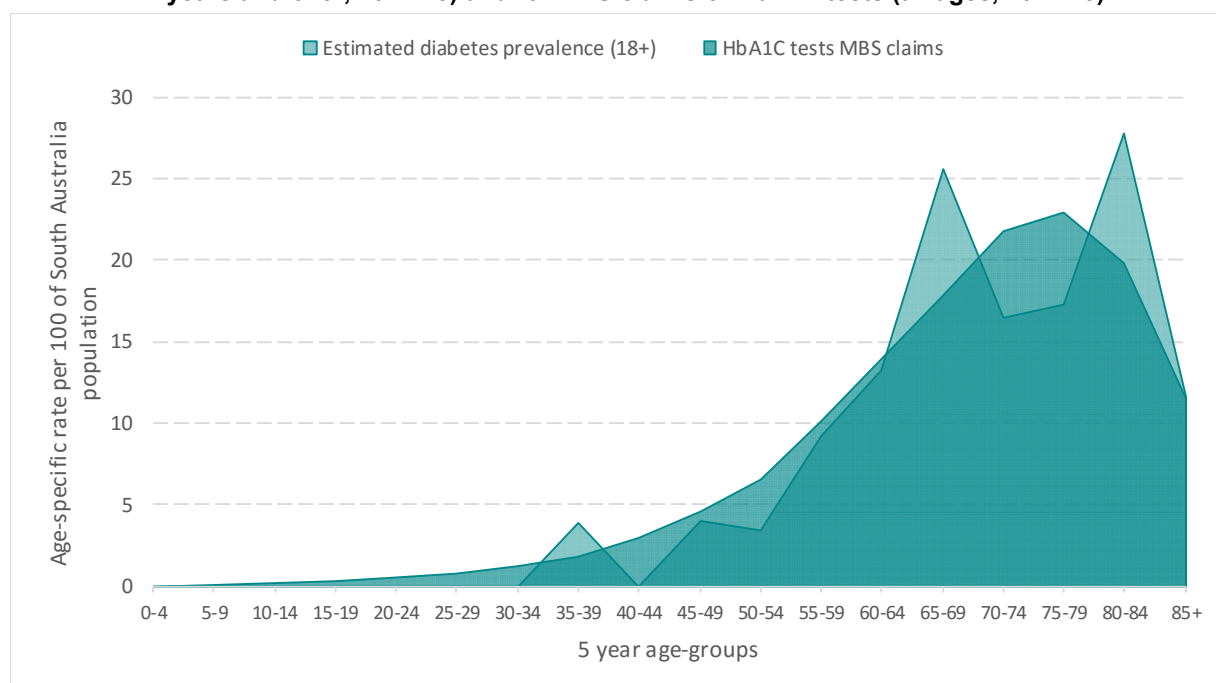
By age group

Figure 2 compares the age-specific rates per 100 of the South Australian population estimated to have diabetes (18 years and over, 2011-13) alongside age-specific rates per 100 for HbA1C tests undertaken and claimed for under the MBS (all ages, 2012/13).

As highlighted in the previous section, the estimated diabetes prevalence, although not a smooth curve, broadly increases with age. The highest estimated diabetes prevalence is seen in the 60 years and over age groups. The rate of MBS claims for HbA1C tests also increase with age and is roughly aligned to the profile of diabetes prevalence.

HbA1C tests are predominantly used to monitor blood sugar control in people who have diabetes. It is therefore encouraging that the profiles of these two indicators are consistent. However, this population level analysis does not help understand whether each individual person with diabetes is receiving the appropriate monitoring and management. From these data we can draw no conclusions about which individuals are having HbA1C tests as these findings are not based on individual unit record data.

Figure 2: Age-specific rates per 100 of the South Australian population estimated to have diabetes (18 years and over, 2011-13) and for MBS claims of HbA1C tests (all ages, 2012/13)



Diabetes Education Service

Context: *An MBS fee can be claimed where a Diabetes Education Service has been provided to an individual where it meets specified criteria. Diabetes education can support individuals with diabetes to navigate decisions about their condition and achieve good self-care [38].*

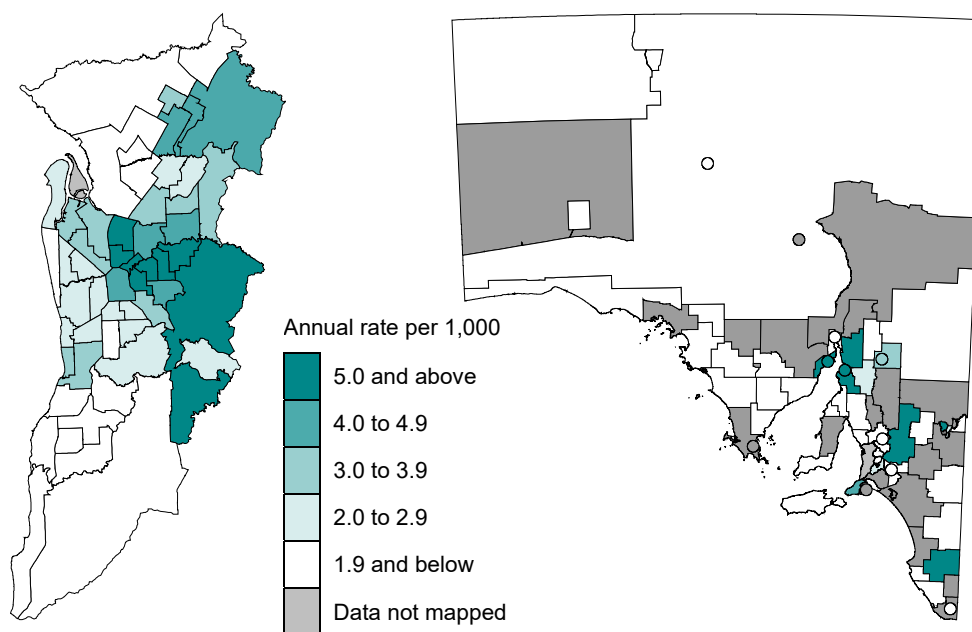
Overall in South Australia in 2012/13, the rate of MBS claims for a Diabetes Education Service was 3.1 per 1,000 population. The total number of Diabetes Education Service MBS claims made was 5,084. The rate was 37% higher in Adelaide (3.3 per 1,000) than it was for Regional South Australia (2.4 per 1,000). Under the MBS, the Diabetes Education Service must be provided by an eligible diabetes educator, as a one to one session lasting at least 20 minutes. A maximum of five services can be provided in a calendar year.

In Adelaide the highest rates of MBS claims for a Diabetes Education Service were in Campbelltown - East (12.4 per 1,000)/ West (10.3 per 1,000) which are in the north eastern suburbs (Map 33). The areas with the lowest rates were in the outer south in Onkaparinga - Hills (0.5 per 1,000)/ South Coast (0.7 per 1,000)/ North Coast (1.0 per 1,000), outer north in Gawler (0.8 per 1,000) and Adelaide Hills - Balance (0.9 per 1,000) in the east.

In Regional Adelaide, the highest rates of MBS claims for a Diabetes Education Service were from Port Pirie (23.0 per 1,000), Berri and Barmera - Barmera (19.3 per 1,000), Mid Murray (15.0 per 1,000) and Naracoorte and Lucindale (11.8 per 1,000) (Map 34). These areas are geographically distinct. A number of areas had no MBS claims for a Diabetes Education Service at all in the timeframe looked at.

Map 33: Diabetes Education Service, rate per 100,000, Adelaide, 2012/13

Map 34: Diabetes Education Service, rate per 100,000, Regional South Australia, 2012/13

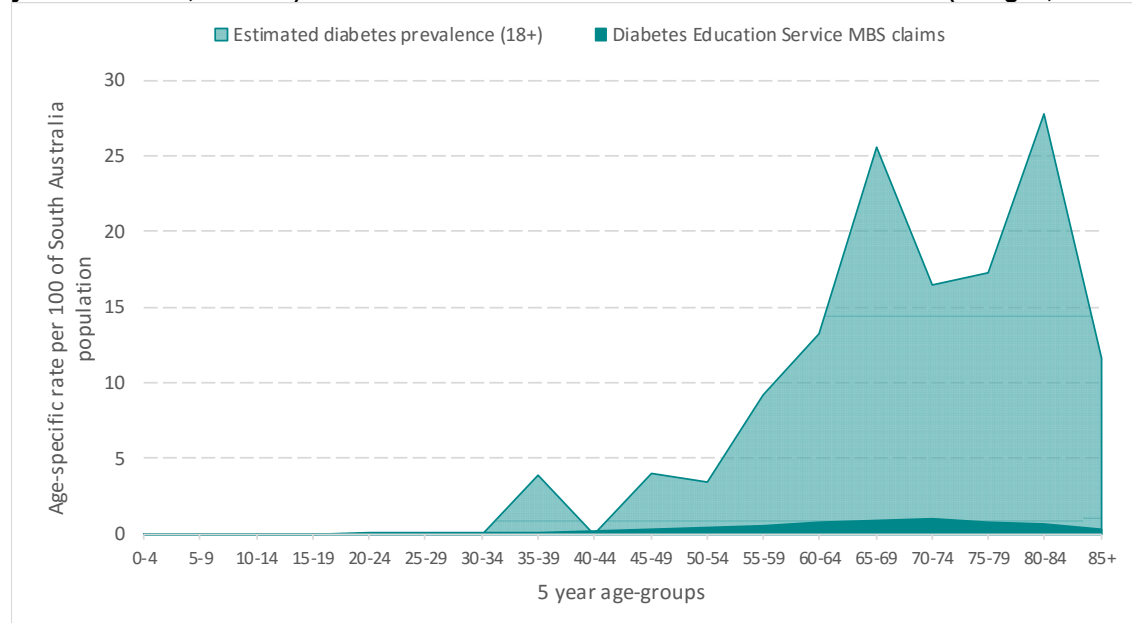


By age group

Figure 3 compares the age-specific rates per 100 of the South Australian population estimated to have diabetes (18 years and over, 2011-13) alongside age-specific rates per 100 for MBS claims for a Diabetes Education Service (all ages, 2012/13).

As highlighted in the previous sections, the estimated diabetes prevalence, although not a smooth curve, broadly increases with age. The highest estimated diabetes prevalence is seen in the 60 years and over age groups. The rate of MBS claims for a Diabetes Education Service is comparatively very low across all age groups, although higher rates are also seen in the over 60 age groups. While this work is unable to explain definitively why there are low rates of MBS claims for a Diabetes Education Service it may be that there is limited capacity in the service, that thresholds to attend the service are high, that acceptance of an offer to go to such a service is low, or perhaps that GPs feel the service adds little additional value to advice they already provide.

Figure 3: Age-specific rates per 100 of the South Australian population estimated to have diabetes (18 years and over, 2011-13) and for MBS claims for a Diabetes Education Service (all ages, 2012/13)



Care provided under the Pharmaceutical Benefits Schedule

Blood Glucose Test Strips

Context: *Blood Glucose Test Strips (BGTS) are used in the monitoring of blood sugar levels in people with type 1 diabetes. BGTS are listed on the PBS [39] although are also available through the National Diabetes Service Scheme [14]. Therefore, this indicator is only one data source which would go towards providing an indication of overall use.*

Overall in South Australia in 2012/13, the rate of Blood Glucose Test Strip (BGTS) items dispensed under the PBS was 10.7 per 1,000. The total number of BGTS items dispensed in this time period was 17,853. The rate of BGTS items dispensed was higher in Adelaide (11.8 per 1,000) than for Regional South Australia (8.3 per 1,000). It is important to note that this does not take account of the volume dispensed for each item or the number of people these prescriptions were dispensed for as this data was not available to us.

In Adelaide the highest rates of BGTS items dispensed were in the north-west, in Port Adelaide Enfield - Park (41.8 per 1,000) and Port (34.6 per 1,000) and Charles Sturt - North-East (30.5 per 1,000), and in the outer north in Playford - Hills (27.7 per 1,000) and West Central (25.0 per 1,000) and Salisbury - Inner North (25.3 per 1,000) (Map 35).

In Regional Adelaide, the highest rates of BGTS items dispensed under the PBS were for Streaky Bay (29.9 per 1,000) and Ceduna (23.6 per 1,000) as well as Yorke Peninsula - South (25.5 per 1,000) (Map 36).

For South Australia, the average benefit received by patients per BGTS item dispensed under the PBS was \$48.50 per item (sum of total benefit \$864,476). There was little difference between the average benefit received for those items dispensed in Adelaide (\$48.50 per item) compared to Regional South Australia (\$48.00 per item).

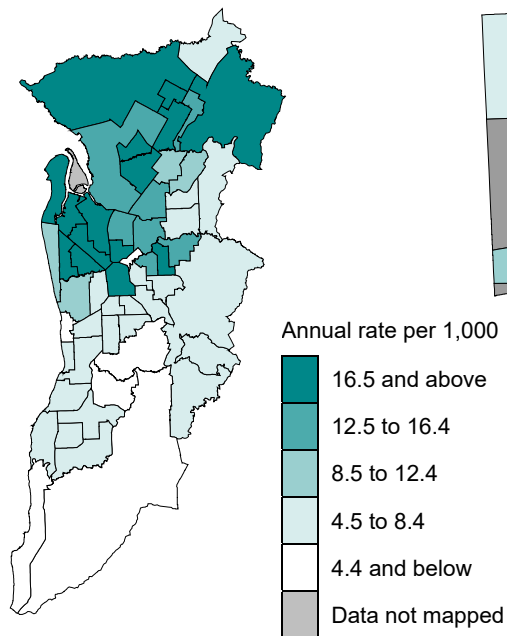
The geographical distribution on maps 3

5-38, indicates little correlation in the rate of BGTS items dispensed and the average benefit to the patient per item. There could be many underlying reasons for this which cannot be ascertained from this data. Possible explanations may include those presented in Table 1. The interplay between such factors is likely to depend on specific characteristics of each area.

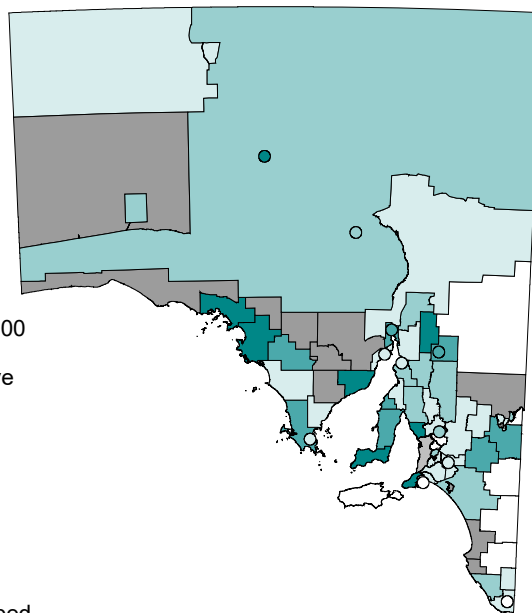
Table 1: Possible explanations underlying relationship between BGTS items dispensed under the PBS and the average patient benefit (\$) per item in 2012/13

High items, High benefit - High need population - Good access to a GP - Frequent review or prescribing - Close monitoring or engagement with primary care - Overuse of BGTS - High volume prescribing per item - High cost choice of BGTS item	High items, Low benefit - High need population - Good access to a GP - Frequent review or prescribing - Close monitoring or engagement with primary care - Overuse of BGTS - Low volume prescribing per item - Low cost choice of BGTS item
Low items, High benefit - Low need population - Poor access to a GP - Infrequent review or prescribing - Poor monitoring or engagement with primary care - High self-management - High volume prescribing per item - High cost choice of BGTS item - High volume supplied through National Diabetes Services Scheme	Low items, Low benefit - Low need population - Poor access to a GP - Infrequent review or prescribing - Poor monitoring or engagement with primary care - High self-management - Low volume prescribing per item - Low cost choice of BGTS item - High volume supplied through National Diabetes Services Scheme

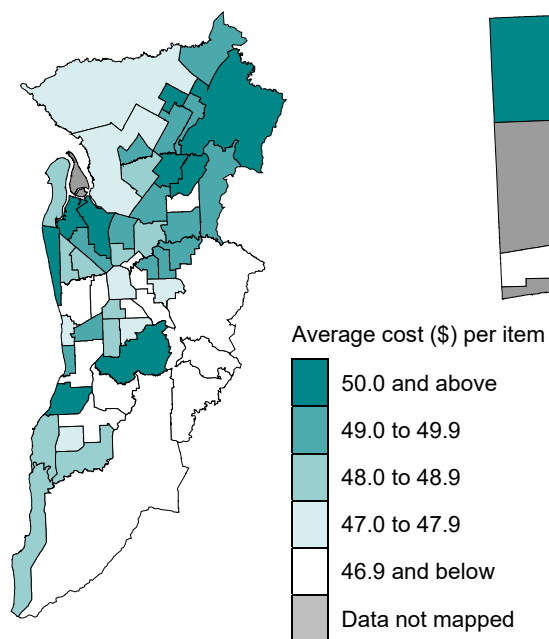
Map 35: Dispensing of Blood Glucose Test Strips, rate per 1,000, Adelaide, 2012/13 and 2013/14



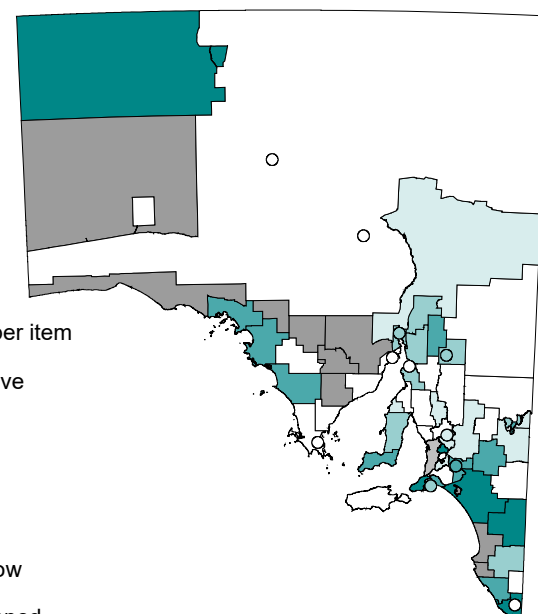
Map 36: Dispensing of Blood Glucose Test Strips, rate per 1,000, Regional South Australia, 2012/13 and 2013/14



Map 37: Blood Glucose Test Strips, average cost (\$) per item dispensed, Adelaide, 2012/13 and 2013/14



Map 38: Blood Glucose Test Strip, average cost (\$) per item dispensed, Regional South Australia, 2012/13 and 2013/14



Dispensing of oral antidiabetic medications

Context: *Oral antidiabetic medications are used in the management of type 2 diabetes to control blood sugar levels. There are several classes of oral antidiabetic (including biguanides, sulfonylureas, and other newer classes) which have different mechanisms of action and different dosing schedules. This indicator presents rates of prescribing for total oral antidiabetic prescribing.*

Overall in South Australia in 2012/13, the rate of oral antidiabetic items dispensed under the PBS was 348.0 per 1,000. The total number of oral antidiabetic items dispensed in this time period was 578,924. The rate of oral antidiabetic items dispensed was similar in Adelaide (348.1 per 1,000) and Regional South Australia (347.8 per 1,000). It is important to note that this does not take account of the volume dispensed for each item or the number of people these prescriptions were dispensed for as this data was not available to us.

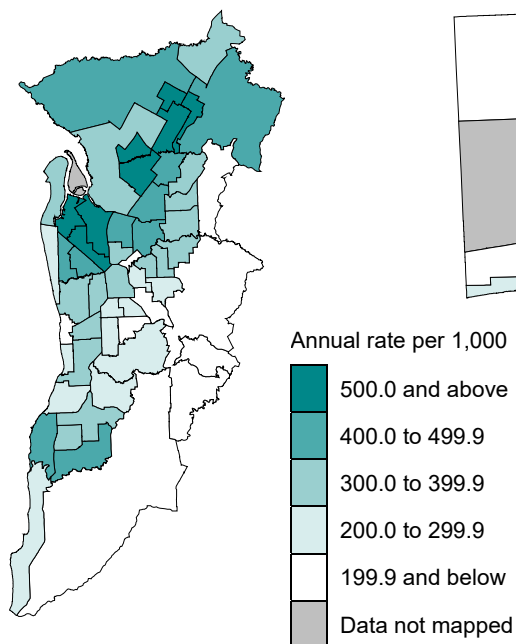
In Adelaide the highest rates of oral antidiabetic items dispensed were in the outer north in Salisbury - Inner North (749.4 per 1,000) and Central (505.4 per 1,000) and Playford - Elizabeth (571.0 per 1,000)/ West Central (541.3 per 1,000)/ East Central (525.5 per 1,000) (Map 39). The northwest also saw high rates in Port Adelaide Enfield - Park (624.6 per 1,000) and Port (572.9 per 1,000) and Charles Sturt - North-East (560.3 per 1,000).

In Regional Adelaide, the highest rates of oral antidiabetic items dispensed were in Unincorporated Lincoln (2063.7 per 1,000) – although again based on relatively small numbers of items dispensed (n=28) – Unincorporated Whyalla (923.2 per 1,000), Maralinga Tjarutja (746.1 per 1,000 (n=37 items)), Whyalla (565.4 per 1,000), Port Augusta (550.9 per 1,000) and Port Pirie - City (528.8 per 1,000) (Map 40).

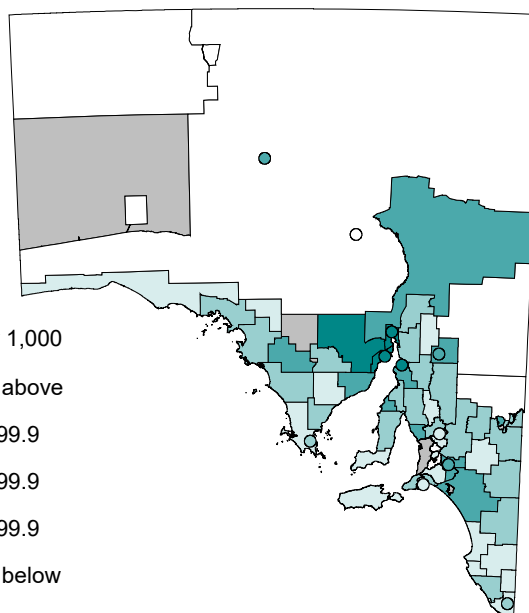
For South Australia, the average benefit received by patients per oral antidiabetic item dispensed under the PBS was \$25.7 per item (sum of total benefit \$14,861,127). The average benefit received for those items dispensed in Adelaide (\$26.40 per item) was slightly higher than for items dispensed for people living in Regional South Australia (\$23.80 per item).

Through a visual comparison of maps 39-40 showing the rate of oral antidiabetic items dispensed with maps 41-42 of the average benefit to the patient per item, there appear to be some commonalities in areas which are rated 'high' on both indicators in the Adelaide area. However, there appears to be little correlation in the Regional area. In the Adelaide area, some areas in the outer north (Salisbury / Playford) are rated towards the higher end of the range of the respective indicator, as are some areas to the outer south in Onkaparinga. However, the Adelaide Hills appears to be low for oral antidiabetic items dispensed but to have a high average benefit. Although the underlying reason for this is outside the scope of this work, one possible explanation, given it is an area of low disadvantage, may be that it is a low need population, engaged in self-care and therefore receive lower frequency, higher volume prescriptions of oral antidiabetics than people living in other areas. Alternatively, high cost agents may be being selected to prescribe.

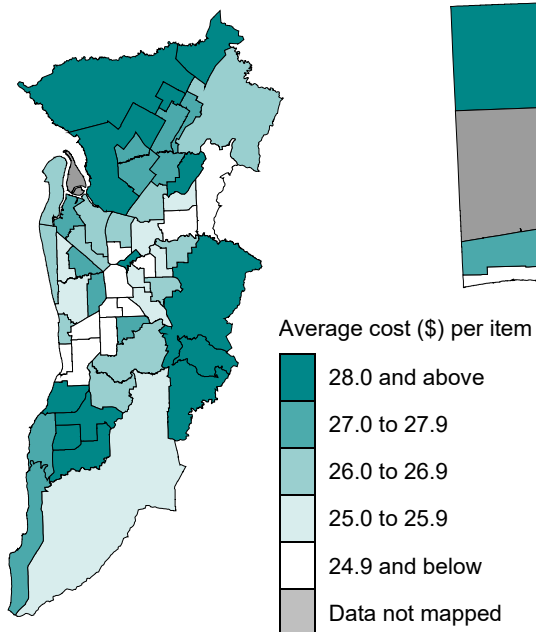
Map 39: Dispensing of oral antidiabetic medications, rate per 1,000, Adelaide, 2012/13 and 2013/14



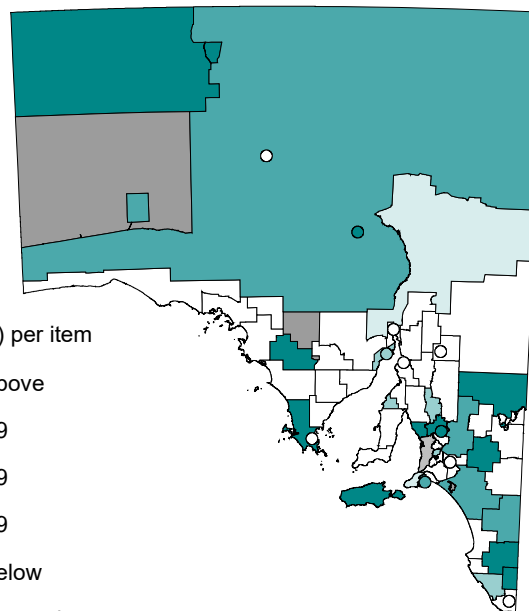
Map 40: Dispensing of oral antidiabetic medications, rate per 1,000, Regional South Australia, 2012/13 and 2013/14



Map 41: Oral antidiabetic medications, average cost (\$) per item dispensed, Adelaide, 2012/13 and 2013/14



Map 42: Oral antidiabetic medications, average cost (\$) per item dispensed, Regional South Australia, 2012/13 and 2013/14



Dispensing of fast acting insulins

Context: *Insulin is a hormone which is made naturally in the body. It works to control blood sugar levels. When the body does not make enough insulin or the body does not use it effectively, it needs to be replaced by injecting it just under the surface of the skin.*

Fast acting insulins are usually used just before meals. This indicator presents the information grouped for all the different types of fast acting insulin.

Overall in South Australia in 2012/13, the rate of fast acting insulin items dispensed under the PBS was 12.2 per 1,000. The total number of fast acting insulin items dispensed in this time period was 20,355. There was little difference between the rate in Adelaide (12.0 per 1,000) and Regional areas of South Australia (12.9 per 1,000). It is important to note that this does not take account of the volume dispensed for each item or the number of people these prescriptions were dispensed for as this data was not available to us.

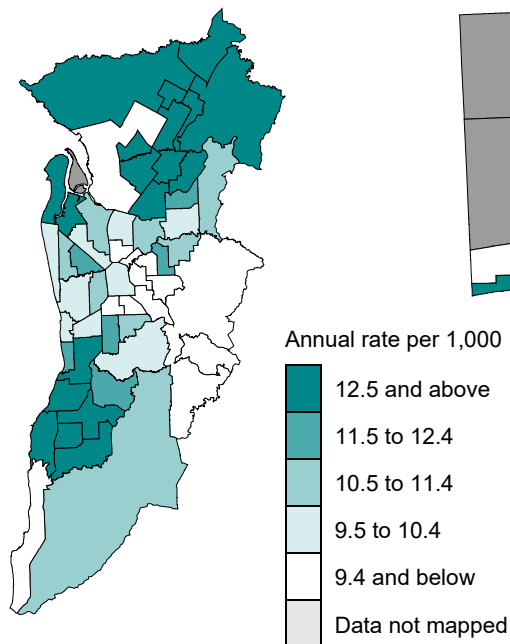
In Adelaide the highest rates of fast acting insulin items dispensed were in the outer north in Playford - Elizabeth (20.5 per 1,000), Salisbury - Inner North (17.3 per 1,000) and North-East (16.6 per 1,000), Gawler (16.3 per 1,000) and also the south in Marion - South (17.5 per 1,000) and outer south in Onkaparinga - Morphett (16.7 per 1,000) and Hackham (16.7 per 1,000) (Map 43).

In Regional Adelaide, the highest rates of fast acting insulin items dispensed were across a range of areas, including Unincorporated Pirie (47.4 per 1,000), Le Hunte (19.1 per 1,000), Elliston (19.1 per 1,000), Port Pirie - Balance (18.8 per 1,000) and The Coorong (18.1 per 1,000) (Map 44).

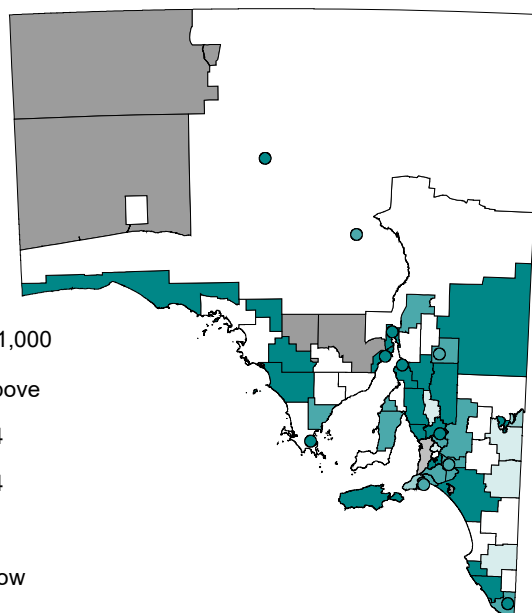
For South Australia, the average benefit received by patients per fast acting insulin item dispensed under the PBS was \$235.7 per item (sum of total benefit \$4,794,873). There was little difference between the average benefit received for those items dispensed in Adelaide (\$234.8 per item) compared to Regional South Australia (\$237.9 per item).

The pattern observed when making a visual comparison of maps 43-44 along with maps 45-46, indicates that while there is some overlap in the geographical spread of the rates deemed to be high on these two indicators, there is also some dissonance. For instance, Onkaparinga - South Coast, Adelaide Hills - Central / Ranges, Ceduna, Streaky Bay and Franklin Harbour (among others) have lower rates of fasting acting insulin items dispensed, however, are defined as being at the upper end of the range for average benefit received by the patient. Conversely, Tea Tree Gully - North and Port Adelaide Enfield - Port (as examples) have higher rates of fasting acting insulin items dispensed, however, are defined as being at the lower end of the range for average benefit received by the patient. While it is not within the scope of this work to examine factors underpinning these findings, the relationship between average cost and items dispensed might be influenced by volume of prescribing, access to a GP and cost of product prescribed, among other factors. For fast acting insulins, the volume used may depend on the insulin regime but also on how closely controlled blood glucose is.

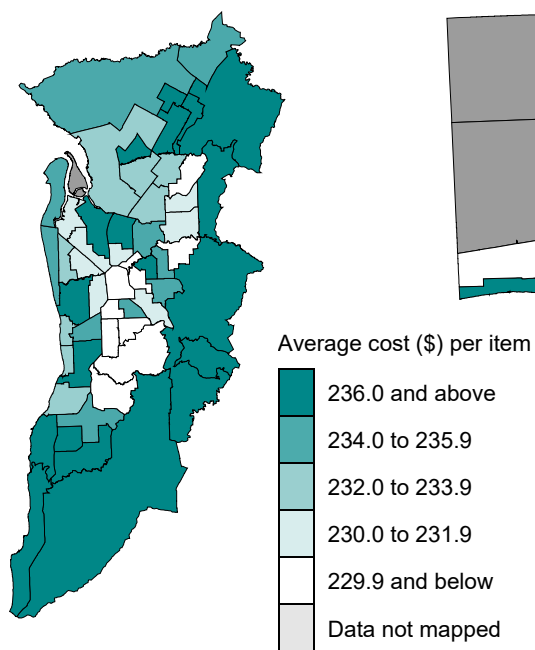
Map 43: Dispensing of fast acting insulins, rate per 1,000, Adelaide, 2012/13 and 2013/14



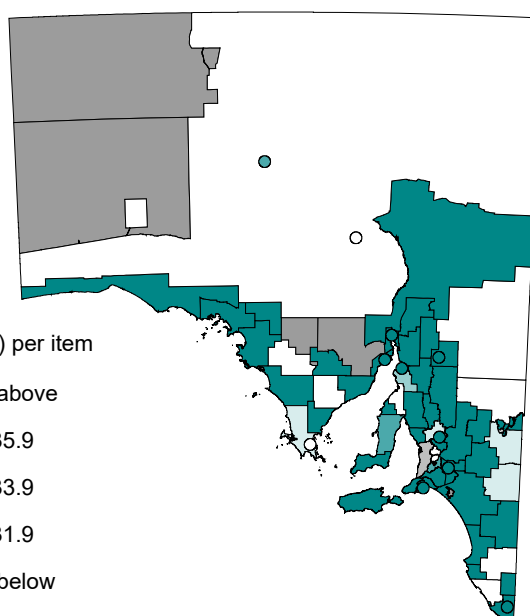
Map 44: Dispensing of fast acting insulins, rate per 1,000, Regional South Australia, 2012/13 and 2013/14



Map 45: Fast acting insulins, average cost (\$) per item dispensed, Adelaide, 2012/13 and 2013/14



Map 46: Fast acting insulins, average cost (\$) per item dispensed, Regional South Australia, 2012/13 and 2013/14



Dispensing of intermediate and long acting insulins

Context: *Insulin is a hormone which is made naturally in the body. It works to control blood sugar levels. When the body does not make enough insulin or the body does not use it effectively, it needs to be replaced by injecting it just under the surface of the skin.*

Intermediate and long acting insulins take longer to exert their action than fast acting insulins. They are usually administered as part of a regular dosing regimen alongside monitoring of blood glucose levels. This indicator presents the information grouped for all the different types of intermediate and long acting insulin.

Overall in South Australia in 2012/13, the rate of intermediate and long acting insulin items dispensed under the PBS was 31.7 per 1,000. The total number of intermediate and long acting insulin items dispensed in this time period was 52,772. There was little difference between the rate in Adelaide (30.2 per 1,000) and Regional areas of South Australia (35.3 per 1,000). It is important to note that this does not take account of the volume dispensed for each item or the number of people these prescriptions were dispensed for as this data was not available to us.

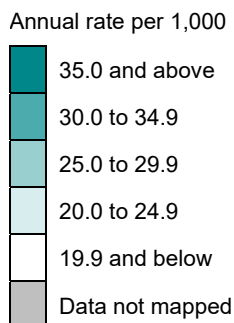
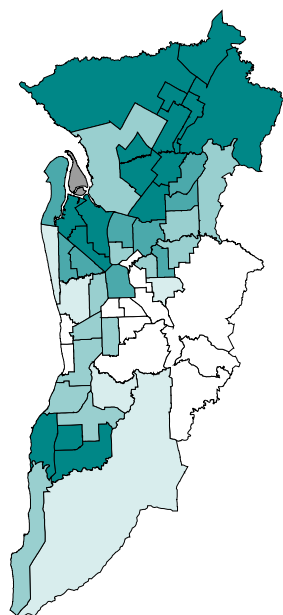
In Adelaide the highest rates of intermediate and long acting insulin items dispensed were predominantly in the outer north in Playford - Elizabeth (63.3 per 1,000) / West Central (60.0 per 1,000)/ East Central (48.6 per 1,000)/ West (45.6 per 1,000) and Salisbury - Inner North (63.2 per 1,000) and Central (49.8 per 1,000), as well as in the outer south in Onkaparinga - Hackham (43.9 per 1,000) and North Coast (41.7 per 1,000) (Map 47).

In Regional Adelaide, the highest rates of intermediate and long acting insulin items dispensed were across a range of areas including Unincorporated Whyalla (80.0 per 1,000), Port Pirie - City (62.1 per 1,000), Le Hunte (58.0 per 1,000), Unincorporated Pirie (57.2 per 1,000), Peterborough (56.8 per 1,000) and Whyalla (56.1 per 1,000) (Map 48).

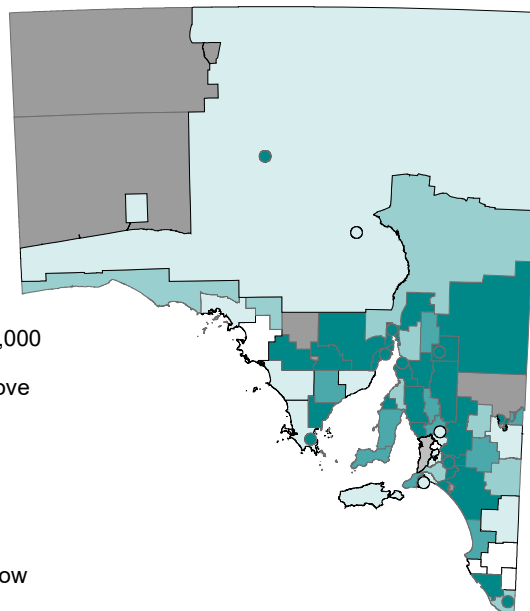
For South Australia, the average benefit received by patients per intermediate and long acting insulin item dispensed under the PBS was \$345.0 per item (sum of total benefit \$18,200,405). There was little difference between the average benefit received for those items dispensed in Adelaide (\$343.0 per item) compared to Regional South Australia (\$349.2 per item).

The pattern observed when making a visual comparison of maps 47-48 along with maps 49-50 indicates that the spatial distribution is broadly similar for higher rates of intermediate and long acting items dispensed and the higher average benefit to the patient per item. There are, however, some areas where this does not hold, including, Adelaide Hills - Central which has a lower rate of intermediate and long acting insulin items dispensed but a higher average patient benefit received per item. While it is not within the scope of this work to examine factors underpinning these findings, the relationship between average cost and items dispensed might be influenced by volume of prescribing, access to a GP and cost of product prescribed, among other factors. For intermediate and long acting insulins, the volume used may depend on the insulin regime and also on patient characteristics such as body mass.

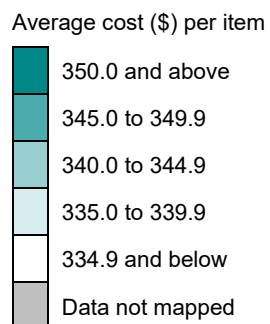
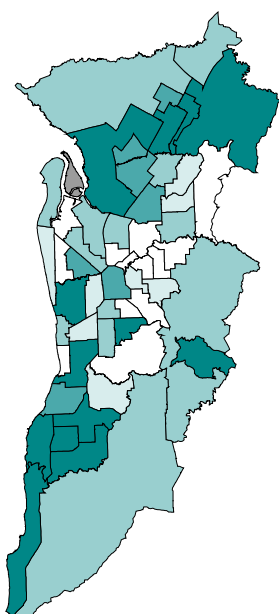
Map 47: Dispensing of intermediate and long acting insulins, rate per 1,000, Adelaide, 2012/13 and 2013/14



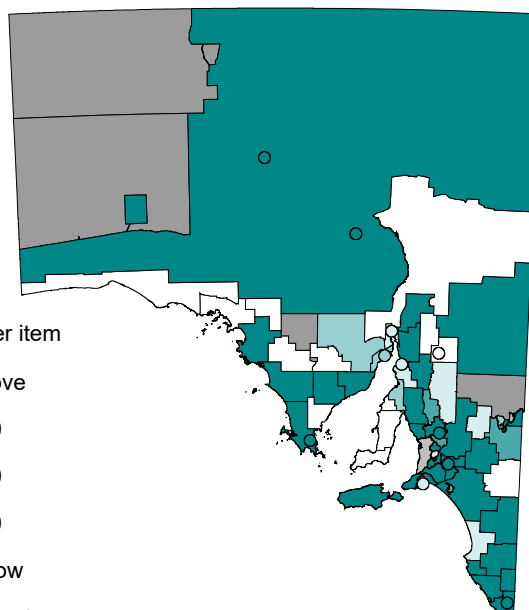
Map 48: Dispensing of intermediate and long acting insulins, rate per 1,000, Regional South Australia, 2012/13 and 2013/14



Map 49: Intermediate and long acting insulins, average cost (\$) per item dispensed, Adelaide, 2012/13 and 2013/14



Map 50: Intermediate and long acting insulins, average cost (\$) per item dispensed, Regional South Australia, 2012/13 and 2013/14



Dispensing of cholesterol lowering medication (statins only)

Context: *People with diabetes are at risk of macrovascular complications. This includes conditions which high cholesterol can contribute too, including heart disease. Preventing or lowering high cholesterol levels is especially important in people with diabetes.*

Statins are effective cholesterol lowering agents which are widely used in the primary or secondary prevention of cardiovascular events. This indicator presents the information grouped for all statins.

Cholesterol lowering items are of interest here, as although they are indicated in cardiovascular risk reduction in a much wider group than the population of people with diabetes, cholesterol lowering agents have an important role in modifying the risk of macrovascular complications of diabetes. In this work we have not been able to examine only statins prescribed for people with diabetes, rather, this relates to total statin prescribing. We have selected to look only at statins as these are the main class of medications used in cholesterol reduction.

Overall in South Australia in 2012/13, the rate of cholesterol lowering medications (statins only) dispensed under the PBS was 1,055.0 per 1,000. The total number of statin items dispensed in this time period was 1,755,101. There was a relatively small difference between the rate observed in Adelaide (1,036.8 per 1,000) and Regional South Australia, with a higher rate observed in Regional South Australia (1,097.0 per 1,000). It is important to note that this does not take account of the volume dispensed for each item or the number of people these prescriptions were dispensed for as this data was not available to us.

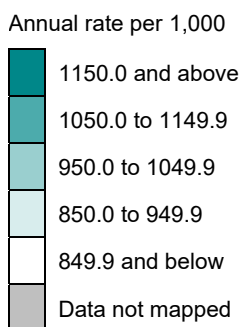
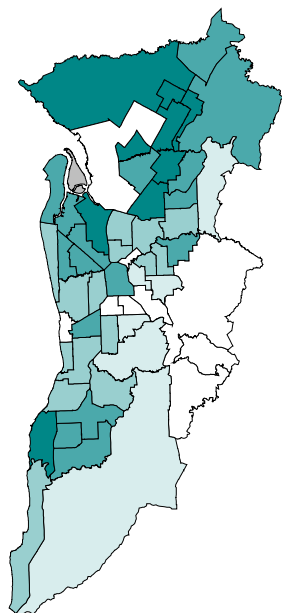
In Adelaide, the highest rates of cholesterol lowering items dispensed were predominantly in the outer north in Salisbury - Inner North (1,621.8 per 1,000) and South-East (1,205.8 per 1,000) and Playford - East Central (1,377.0 per 1,000)/ Elizabeth (1,339.4 per 1,000) /West Central (1,339.3 per 1,000)/ West (1,246.2 per 1,000) (Map 51).

In Regional Adelaide, the highest rates of intermediate and long acting insulin items dispensed were across a range of areas including Unincorporated Lincoln (2,755.6 per 1,000), Unincorporated Whyalla (2,098.9 per 1,000), Port Pirie - City (1,462.6 per 1,000), Berri & Barmora - Barmora (1,386.7 per 1,000), The Coorong (1,352.4 per 1,000) and Whyalla (1,347.6 per 1,000) (Map 52).

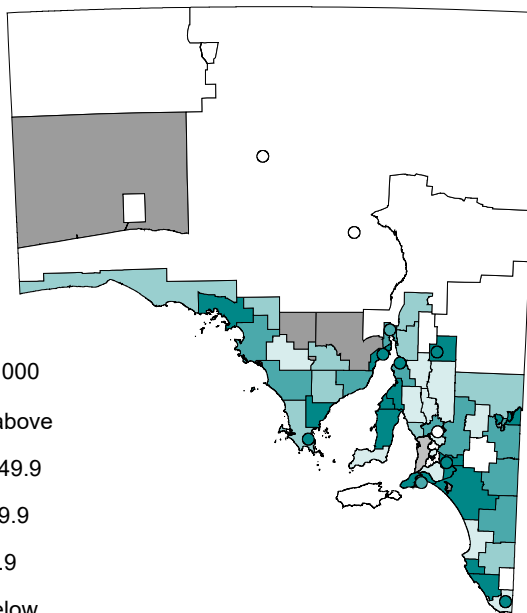
For South Australia, the average benefit received by patients per intermediate and long acting insulin item dispensed under the PBS was \$37.8 per item (sum of total benefit \$66,258,771). There was little difference between the average benefit received for those items dispensed in Adelaide (\$37.6 per item) compared to Regional South Australia (\$38.2 per item).

The pattern observed on maps 51-54, indicates that the spatial distribution is broadly similar for higher rates of cholesterol lowering items (statins) dispensed and the higher average benefit to the patient per item. This is particularly the case in the Adelaide area. There are some areas in Regional South Australia where this does not hold true, as examples, Ceduna and Tumby Bay appear to have a high rate of cholesterol lowering items prescribed but a low average benefit received by the patient. The opposite is true for Kangaroo Island. While it is not within the scope of this work to examine factors underpinning these findings, the relationship between average cost and items dispensed might be influenced by volume of prescribing, access to a GP and cost of product prescribed, among other factors. For statins, the threshold applied by a clinician to prescribe may also influence the volume.

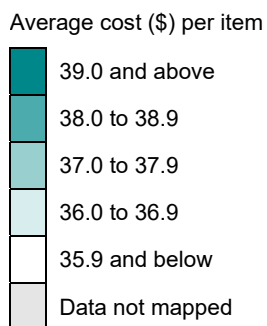
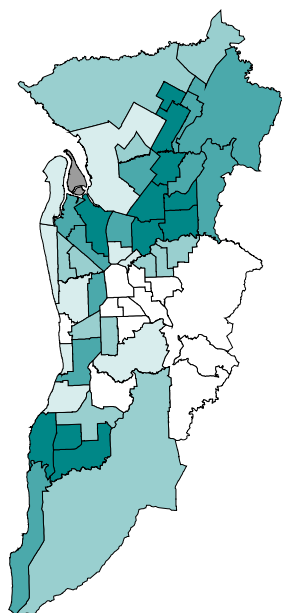
Map 51: Dispensing of cholesterol lowering medication (statins only), rate per 1,000, Adelaide, 2012/13 and 2013/14



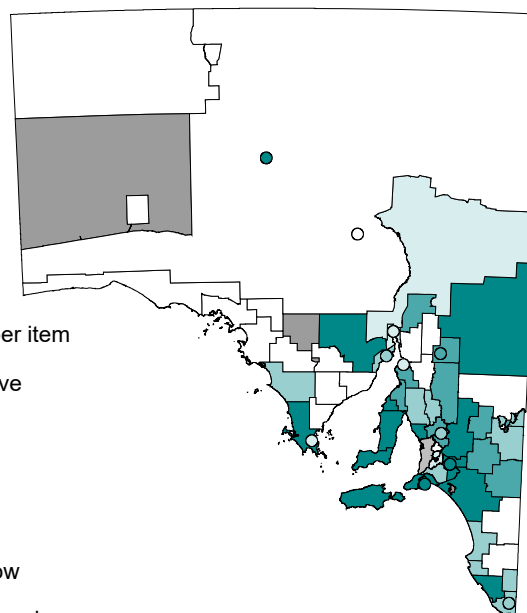
Map 52: Dispensing of cholesterol lowering medication (statins only), rate per 1,000, Regional South Australia, 2012/13 and 2013/14



Map 53: Cholesterol lowering items (statins), average cost (\$) per item dispensed, Adelaide, 2012/13 and 2013/14



Map 54: Cholesterol lowering items (statins), average cost (\$) per item dispensed, Regional South Australia, 2012/13 and 2013/14



Emergency Department attendances for endocrine and related conditions

Context: *Hospital emergency departments (EDs) are designed for emergency responses and acute health care; and they play a role in treating diabetic emergencies (e.g. low or high blood sugar levels). People with diabetes may also present to EDs due to complications of diabetes for urgent care. Ideally, close management may avoid the need to attend EDs for reasons related to diabetes.*

It is important to note that service location may, at least in part, be driving service use. EDs are a case in point, in that they provide services, in particular specialised medical services, which are not always accessible elsewhere after hours. They also provide services to those people who are unlikely to use mainstream medical services, whether for reasons of cost, appropriateness, or because they would feel uncomfortable in doing so for cultural or other reasons.

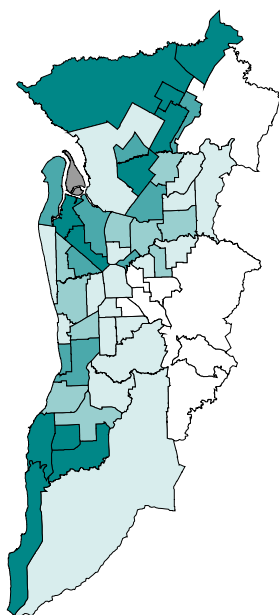
The reasons for attending ED are recorded under broad categories. It is therefore not possible to ascertain exactly which attendances were for diabetes. Rather, this section examines ED use for all endocrine, nutritional and metabolic system illness reasons. Therefore, this may also include acute presentations for vitamin deficiencies (including thiamine deficiency which is associated with alcohol dependency), and other disorders of the endocrine system and metabolic disorders. This category contributes only about 1% of the total ED attendances annually [22].

Overall, for South Australia, there were 528.6 ED attendances per 100,000 population (8,871 attendances) in 2013/14 and 2014/15 for endocrine and related conditions. The rate observed was higher for Adelaide (556.0 per 100,000) than for Regional areas of South Australia (427.3 per 100,000). Three-quarters (75.6%) of the ED attendances were from people living in Adelaide which can be explained by the location of the ED departments attached to public hospitals (these are Flinders Medical Centre, Modbury Hospital, Noarlunga Health Services, Royal Adelaide Hospital and the Queen Elizabeth Hospital) being in the metropolitan area.

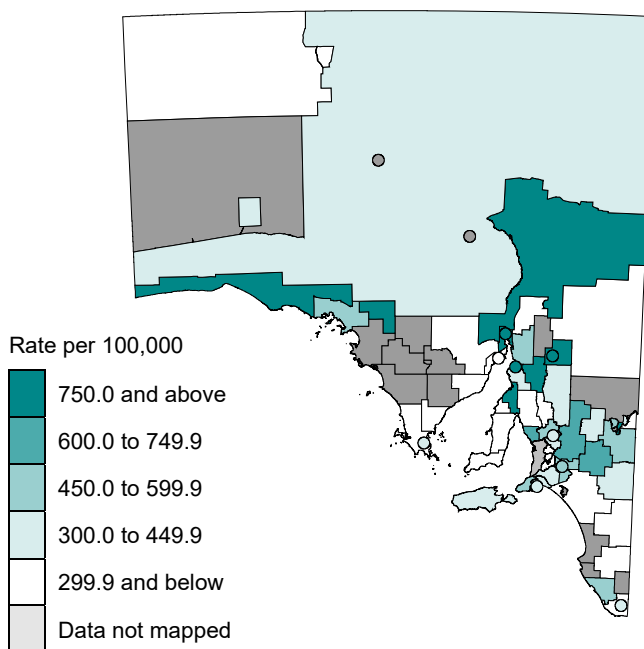
In Adelaide, the highest rates of ED attendances for endocrine and related conditions were seen in the south, in Onkaparinga - Hackham (1165.0 per 100,000)/ North Coast (1014.5 per 100,000)/ Morphett (990.6 per 100,000), and in the outer north, in Playford - Elizabeth (1025.3 per 100,000) and West Central (992.8 per 100,000) and Salisbury - Central (1003.6 per 100,000) (Map 55). These areas in the south cluster around the location of Noarlunga Health Service, and in the north around Lyell McEwin Hospital. This pattern of ED attendances reflects the pattern of where the more disadvantaged areas are located. The lowest rates of ED attendances for endocrine and related conditions in Adelaide were from the Adelaide Hills - Ranges (111.8 per 100,000) / Central (182.2 per 100,000) / Balance (196.1 per 100,000) and Burnside - North-East (156.7 per 100,000).

In Regional areas of South Australia, the highest rates of ED attendances for endocrine and related conditions were seen from the Unincorporated Flinders Ranges (1,315.0 per 1,000), Port Pirie - City (1,226.9 per 1,000), the Unincorporated West Coast (1,116.5 per 1,000) and Port Augusta (977.5 per 1,000) (Map 56). As there are no major ED departments in these areas, these high rates may reflect a high need population in these areas and are broadly reflective of areas of greater disadvantage.

Map 55: Emergency Department presentations for endocrine related conditions, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 56: Emergency Department presentations for endocrine related conditions, rate per 100,000, Regional South Australia, 2013/14 and 2014/15

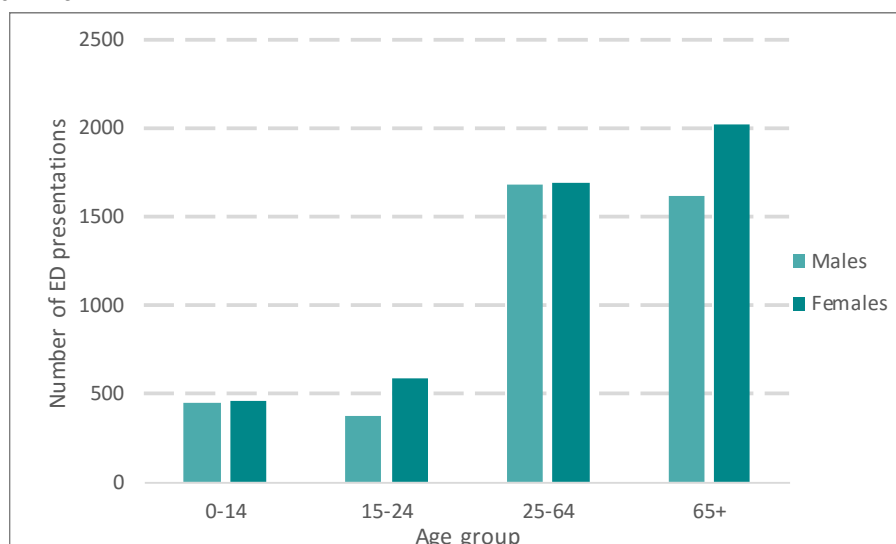


Presentations by age and sex

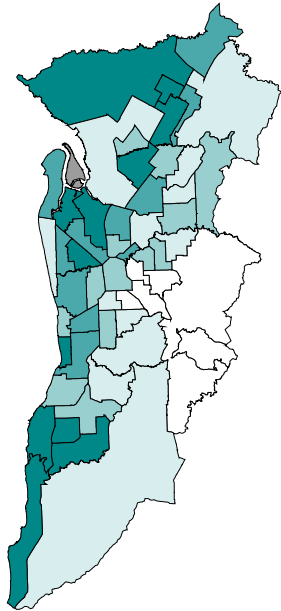
Of the 8,871 ED presentations for endocrine and related disorders in this time period, over half (53.6%, n=4,759) were by females. Of these, over three-quarters (76.5%, n=3,639) were from females living in Adelaide (1.6%, n=76 were unknown). For males, a similar proportion were living in Adelaide (74.7%, n=3,071 (1.7%, 71 unknown)).

The highest number of ED attendances were in the 25-64 and 65 years and over age groups. Examining broad age categories, there was a greater number of presentations by females in each group (Figure 5). This was particularly notable in the 65+ age group, possibly reflecting the longer life expectancy and greater morbidity burden experienced by females. The geographical distribution was similar for males and females (Maps 57-60).

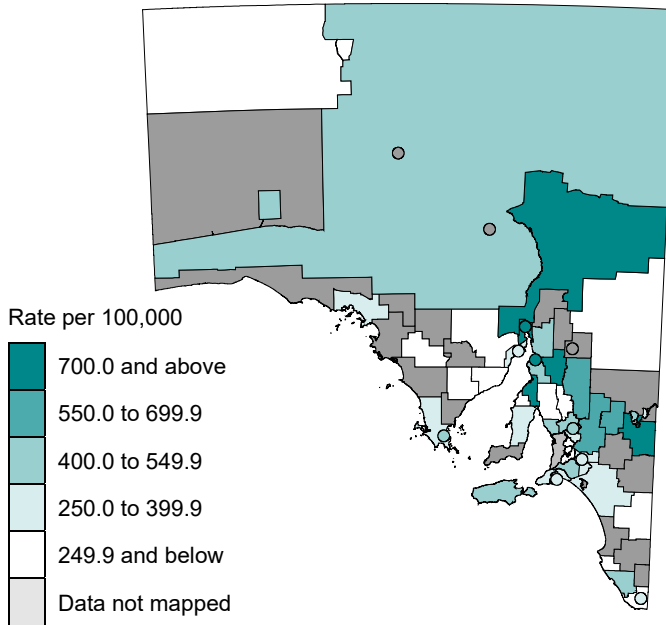
Figure 4: Emergency Department presentations for endocrine and related conditions by age and sex, 2013/14 and 2014/15



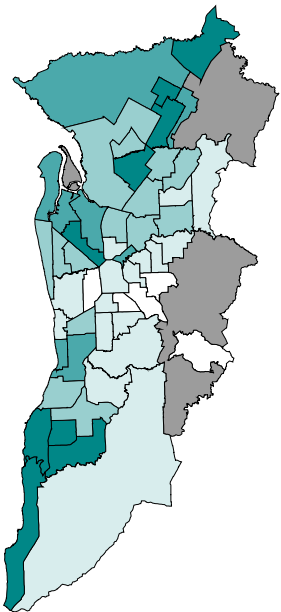
Map 57: Emergency Department presentations of males for endocrine related conditions, rate per 100,000, Adelaide, 2013/14 and 2014/15



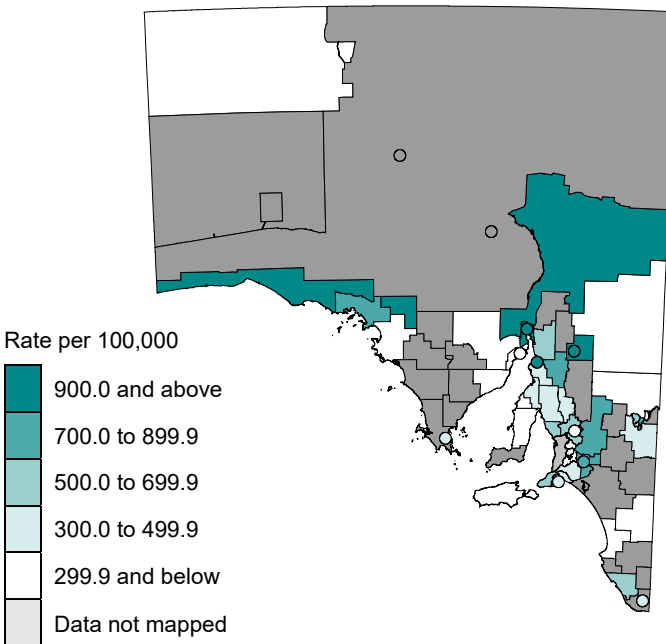
Map 58: Emergency Department presentations of males for endocrine related conditions, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Map 59: Emergency Department presentations of females for endocrine related conditions, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 60: Emergency Department presentations of females for endocrine related conditions, rate per 100,000, Regional South Australia, 2013/14 and 2014/15

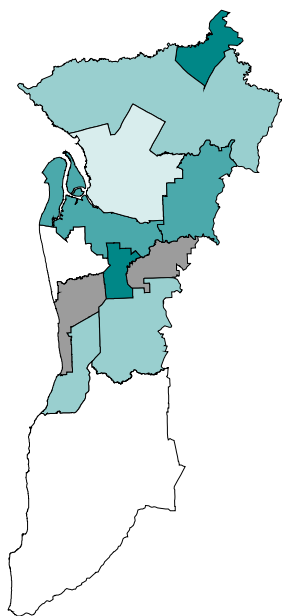


Emergency Department presentations of the Aboriginal population

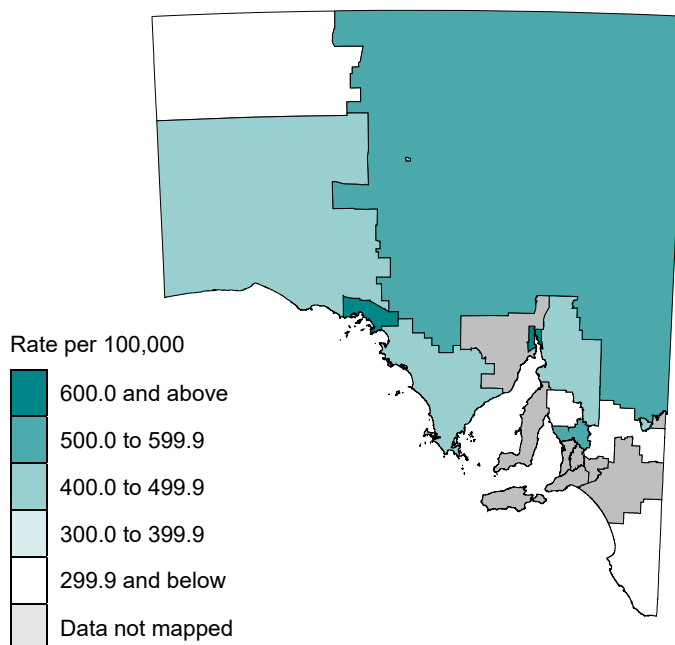
Rates of ED attendances for endocrine and related reasons are lower for Aboriginal people than for the total population in South Australia (453.0 per 100,000 compared to 528.6 per 100,000). ED attendances for endocrine and related reasons for Aboriginal people comprise 3.9% of the total (343 out of 8,871 attendances). It is important to note that ED service location may, at least in part, be driving service use. They provide services which are not always accessible elsewhere after hours. They also provide services to those people who are unlikely to use mainstream medical services, whether for reasons of cost, appropriateness, or because they would feel uncomfortable in doing so for cultural or other reasons. Of ED attendances for endocrine and related reasons by people from Aboriginal communities, just over four out of every ten (44.3%, 152) were by males.

The highest rates of ED attendances for endocrine and related reasons by Aboriginal people were observed for the Indigenous Areas of Adelaide - Prospect - Walkerville (1,115.2 per 100,000), Port Augusta (947.5 per 100,000), Ceduna (682.2 per 100,000) and Gawler (661.8 per 100,000) (maps 61-62). However, for Gawler, this rate was only based on five ED attendances. A number of areas only had smaller numbers of ED presentations and therefore were not able to be mapped.

Map 61: Emergency Department presentations for endocrine related conditions, Indigenous population, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 62: Emergency Department presentations for endocrine related conditions, Indigenous population, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Admissions to public acute hospital for diabetes

Context: People who are admitted to hospital for a diabetes specific reason are likely to have poorly controlled diabetes or be experiencing associated complications. For these patients, hospital facilities provide intensive treatment, including surgical intervention where necessary (e.g. lower limb amputations as a consequence of peripheral neuropathy).

The atlas uses the term 'admission', a more familiar term rather than the official term of 'separation'. A separation indicates an episode of patient care, from admission until discharge, transfer or death. As transfers of people admitted to one hospital, for example, in Regional South Australia, and transferred to another, perhaps in Adelaide, will boost the number of admissions of people living in Regional South Australia, such admissions have been excluded from these data.

The maps below present data for admissions over the two years 2013/14 and 2014/15 (combined).

Admissions specific to diabetes

This section looks at admissions to hospital for which the primary diagnosis is diabetes (or a complication of diabetes) i.e., the main condition necessitating hospital admission. We have termed these 'diabetes specific' admissions.

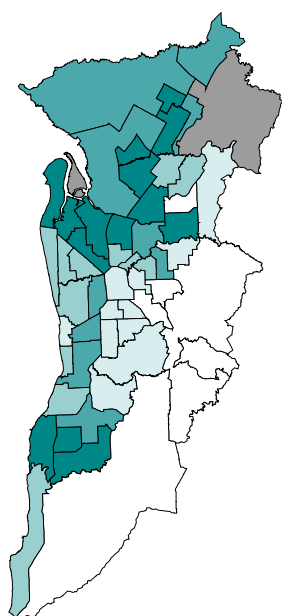
Overall, for South Australia the rate of diabetes specific hospital admissions (emergency admissions and elective admissions to public hospitals) in 2013/14 and 2014/15 was 176.4 per 100,000. This accounted for 5,922 admissions. The rate of diabetes specific hospital admissions was higher for people living in Regional South Australia (210.4 per 100,000) compared to people living in Adelaide (158.7 per 100,000).

In the Adelaide area, the highest rate of diabetes specific hospital admissions was in Port Adelaide Enfield - Port (462.5 per 100,000) (Map 63). High rates were also seen in other areas of the north west including Charles Sturt - North-East (321.4 per 100,000) as well as areas of the outer north including Playford - West Central (392.4 per 100,000) and Elizabeth (363.3 per 100,000) and Salisbury - Central (308.9 per 100,000).

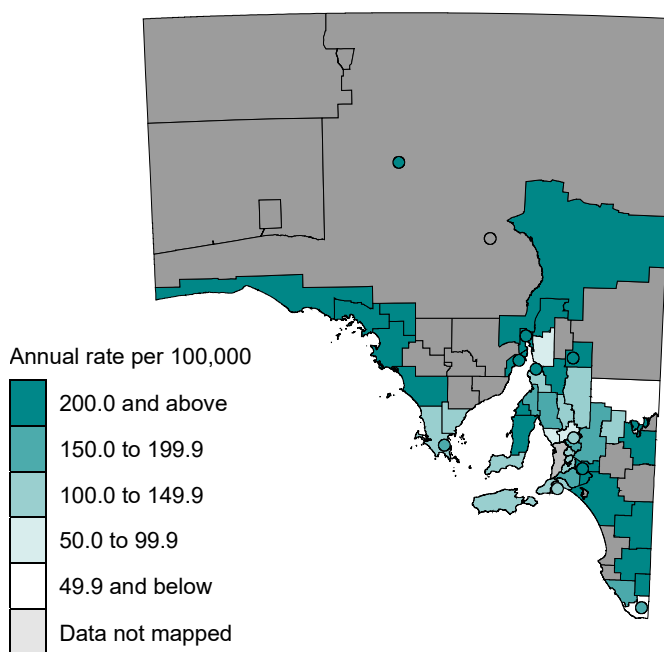
In Regional Adelaide the highest rate of diabetes specific hospital admissions was from those living in the Unincorporated West Coast (1240.4 per 100,000). Port Augusta (688.2 per 100,000) and the Unincorporated Flinders Ranges (531.0 per 100,000) also had rates above the highest in the Adelaide area (Map 64). The highest rates were in Regional South Australia, in Peterborough (461.1 per 100,000), Flinders Ranges (449.7 per 100,000) and Ceduna (439.0 per 100,000).

While age-standardised rates indicate where population need is greatest, it is also important to look at the burden on hospitals in terms of the actual number of hospital admissions and therefore workload. On this measure, looking at Regional South Australia, the greatest number of admissions come from Port Augusta (n=194), Murray Bridge (n=153) and Whyalla (n=122). From the Adelaide area, the areas with the greatest number of admissions matched those with the highest rates (Playford - Elizabeth (n=183), Charles Sturt - North-East (n=180) and Salisbury - Central (n=168).

Map 63: Public acute hospital admissions specific to diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 64: Public acute hospital admissions specific to diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



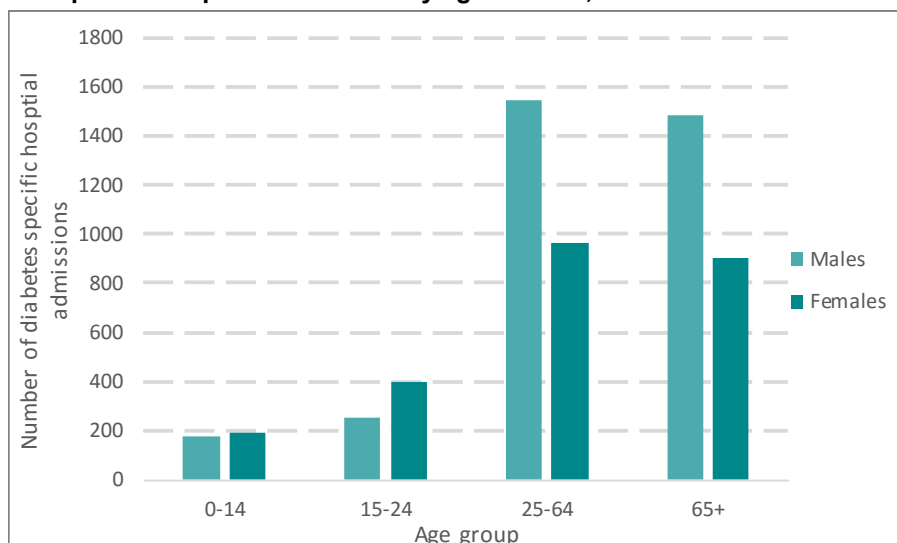
Presentations by age and sex

Of the 5,922 diabetes specific hospital admissions (emergency admissions and elective admissions to public hospitals) in 2013/15, over half (58.4%, n=3,461) were for males.

Examining broad age categories showed that while there was a small majority of diabetes specific hospital admissions by females in the 0-14 age group and a more substantial difference in the 15-24 age group, males had substantially more admissions in the older age groups (25-64 and 65+ years) (Figure 6).

This is a different sex profile to that observed for ED attendances in the two older age groups (Figure 5, above). However, this may be at least partly explained by the definitions of the indicators. This measure is specific to diabetes, whereas the ED attendance measure was much broader (endocrine and related reasons).

Figure 5: Diabetes specific hospital admissions by age and sex, 2013/14 and 2014/15



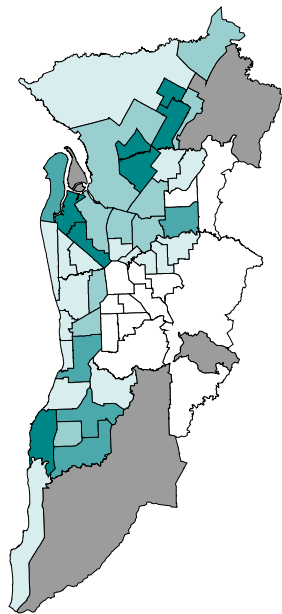
Length of stay

Length of stay reflects the number of nights that a person remains in hospital for each admission. It is monitored as a measure of efficiency due to limited bed capacity in hospitals and the high cost of overnight stays.

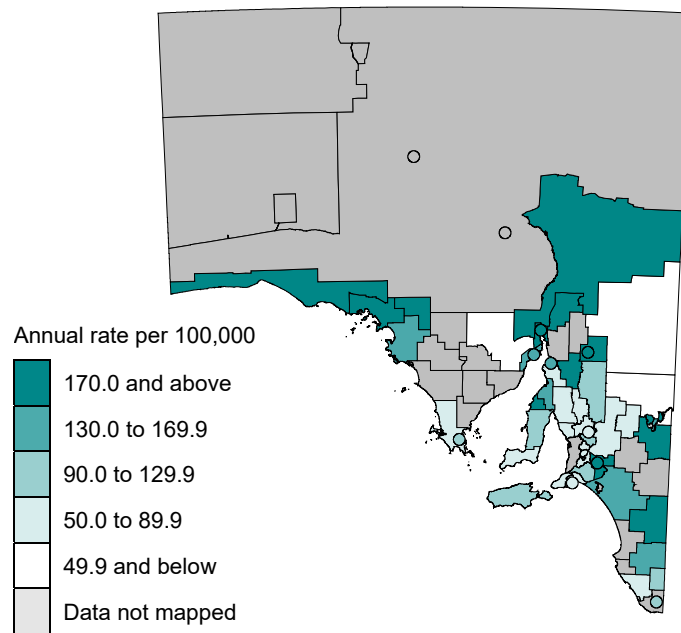
Maps 65-66 show the rate of the count of admissions where the length of stay was three days or less. Six out of 10 (61.6%, 5,922) total admissions had a length of stay of three days or less. This was similar between those being admitted from Adelaide (62.0%) and regional areas of South Australia (60.4%).

Broadly, areas which have high rates of diabetes specific admissions (total count – maps 63-64) also have high rates of where these admissions last for three days or less (maps 65-66). This could indicate that while these are high need populations, the hospitals are working efficiently to return these people to their homes; or, it could indicate that these people could have avoided an admission through a greater degree of self-care or provision of community and primary healthcare services. There are other areas, however, where high rates of admissions specific to diabetes were observed but lower rates for these admissions which were three days or less (relative to other areas). This may indicate that patients are more complex in these areas or that more admissions are generally longer for other reasons including processes within the hospitals or arrangements with community services to support discharge. Examples of these areas are Onkaparinga - Morphett in the outer south, Campbelltown in the north-east, Port Adelaide Enfield - Park in the north-west and Salisbury – South-East in the outer north.

Map 65: Public acute hospital admissions specific to diabetes, persons, rate per 100,000 where length of stay 3 days or less, Adelaide, 2013/14 and 2014/15



Map 66: Public acute hospital admissions specific to diabetes, persons, rate per 100,000 where length of stay 3 days or less, Regional South Australia, 2013/14 and 2014/15



Admissions specific to diabetes, by admission type

Overall, for South Australia, the age-standardised rate of diabetes specific emergency admissions was 133.5 per 100,000. This accounted for three quarters (75.7%, 4,481) of all diabetes specific admissions. Rates of diabetes specific emergency admissions were higher in Regional South Australia (161.3 per 100,000) compared to the Adelaide area (119.0 per 100,000).

The highest rates of diabetes specific emergency admissions in the Adelaide area were to the outer north in Playford - West Central (339.9 per 100,000) and Elizabeth (297.9 per 100,000), Salisbury - Central (275.5 per 100,000) and Port Adelaide Enfield - Port (195.4 per 100,000)/ Park (189.8 per 100,000)/ Inner, as well as in Onkaparinga - Hackham (201.7 per 100,000) in the outer south (Map 67). The lowest rates were in Tea Tree Gully - Central (22.7 per 100,000), Onkaparinga - Hills (26.8 per 100,000) and Adelaide Hills - Central (27.5 per 100,000) and Ranges (28.9 per 100,000).

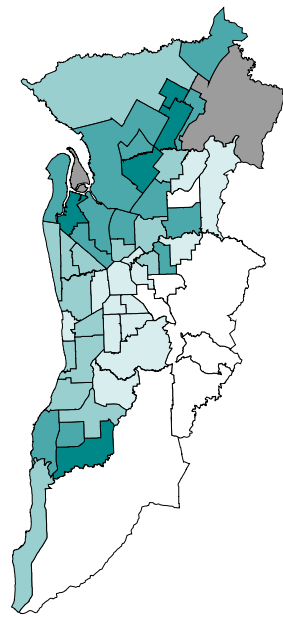
For Regional areas of South Australia, the highest rates of diabetes specific emergency admissions were in Unincorporated West Coast (933.3 per 100,000), Port Augusta (507.2 per 100,000) and Peterborough (427.3 per 100,000) (Map 68). The lowest rates were in Whyalla (27.3 per 100,000), Loxton Waikerie - West (63.2 per 100,000) and Port Pirie - Balance (78.5 per 100,000) although Maralinga Tjarutja, Unincorporated Riverland and Unincorporated Lincoln had no cases of diabetes specific emergency admissions in the timeframe examined.

In the Adelaide area, with regard to elective admissions, the highest rates were observed from Port Adelaide Enfield - Port (272.4 per 100,000), Charles Sturt - North-East (149.6 per 100,000), Salisbury - Inner North (109.5 per 100,000) and Onkaparinga - North Coast (102.3 per 100,000) (Map 69).

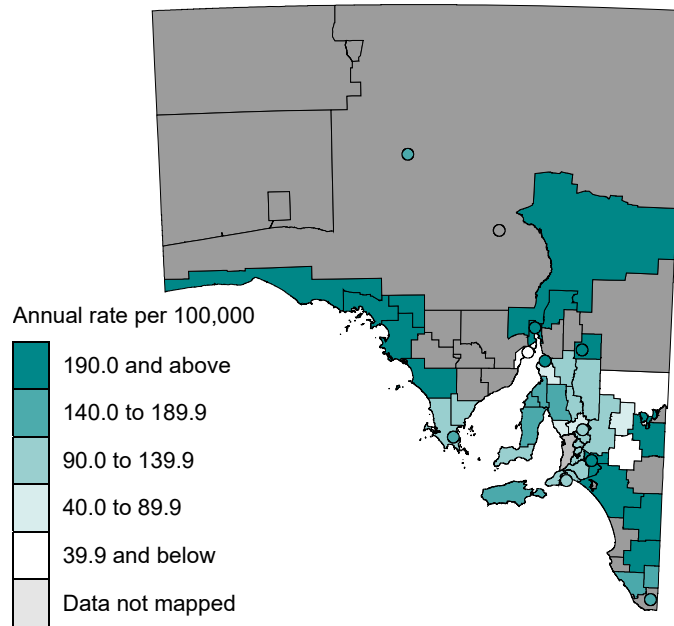
In Regional South Australia, the highest rates of diabetes specific elective admissions were seen for people living in Whyalla (253.7 per 100,000), Port Augusta (181.0 per 100,000), Northern Areas (176.4 per 100,000), Flinders Ranges (134.0 per 100,000), Berri & Barmera - Barmera (122.1 per 100,000) and Copper Coast (113.9 per 100,000) (Map 70).

The geographical spatial distribution of the rate of diabetes specific admissions where admissions last for three days or less for emergency admissions (Maps 67 & 68) and for elective admissions (Maps 69 & 70) mirrors that for the total admissions on each measure.

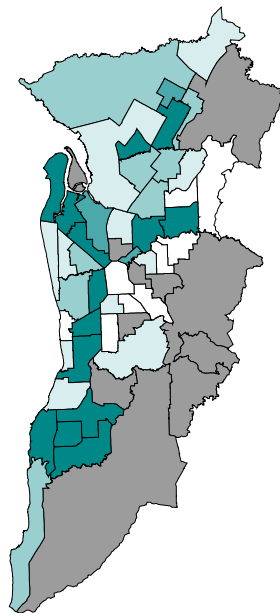
Map 67: Emergency admissions specific to diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15



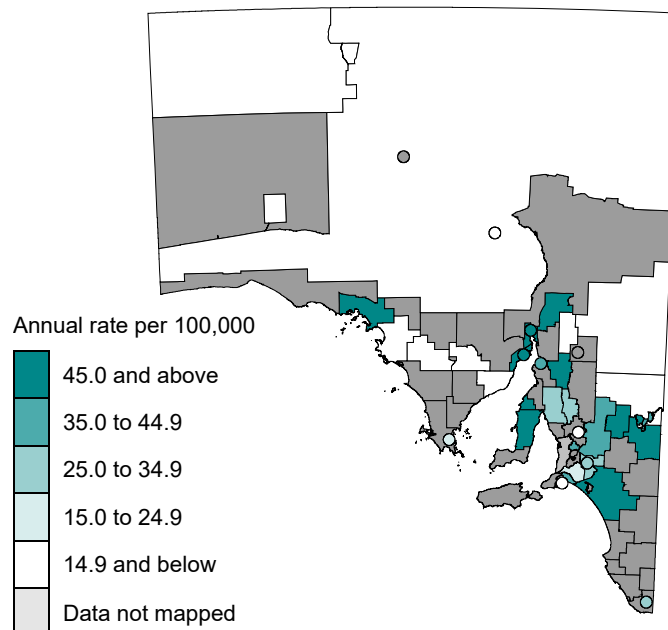
Map 68: Emergency admissions specific to diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Map 69: Elective admissions specific to diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 70: Elective admissions specific to diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Admissions specific to complications of diabetes, by admission type

Admissions specific to complications of diabetes are defined as admissions where the main condition is recorded as Type 1 or 2 diabetes with kidney complication, ophthalmic complication, neurological complication, circulatory complication or multiple complications.

Overall, in South Australia, the rate of emergency admissions specific to complications of diabetes was 34.4 per 100,000. There were 1,154 emergency admissions for these reasons in the data period studied. The rate was higher from the Adelaide area (35.0 per 100,000) compared to Regional South Australia (30.8 per 100,000).

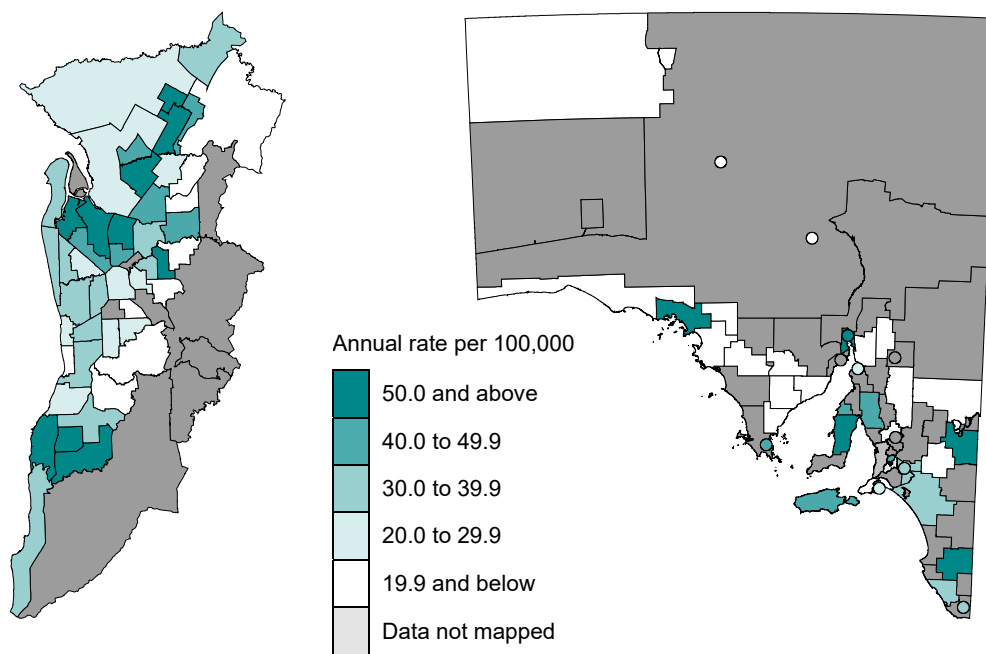
In Adelaide, the highest rates observed were in Playford - Elizabeth (99.7 per 100,000) and West Central (93.2 per 100,000), Salisbury - Central (80.2 per 100,000) and Onkaparinga - Hackham (79.9 per 100,000) (Map 71).

In Regional South Australia, the highest rates observed were in Port Augusta (145.2 per 100,000), Ceduna (102.9 per 100,000) and Yorke Peninsula - North (66.3 per 100,000) (Map 72).

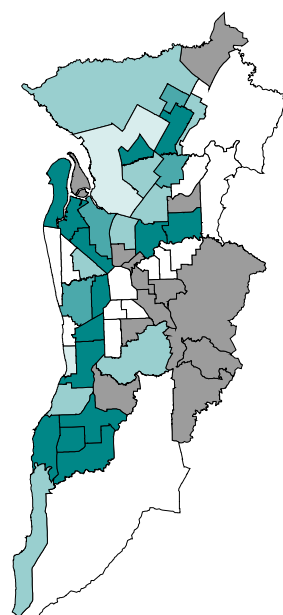
For elective admissions specific to complications of diabetes, the overall rate for South Australia was 33.8 per 100,000. There were 1,133 elective admissions for these reasons in the data period studied. The rate was markedly higher from the Adelaide area (35.6 per 100,000) compared to Regional South Australia (28.4 per 100,000). The geographical distribution of where the higher rates are seen is very similar to that for emergency admissions specific to complications of diabetes (Maps 73-74).

Map 71: Emergency admissions specific to complications of diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15

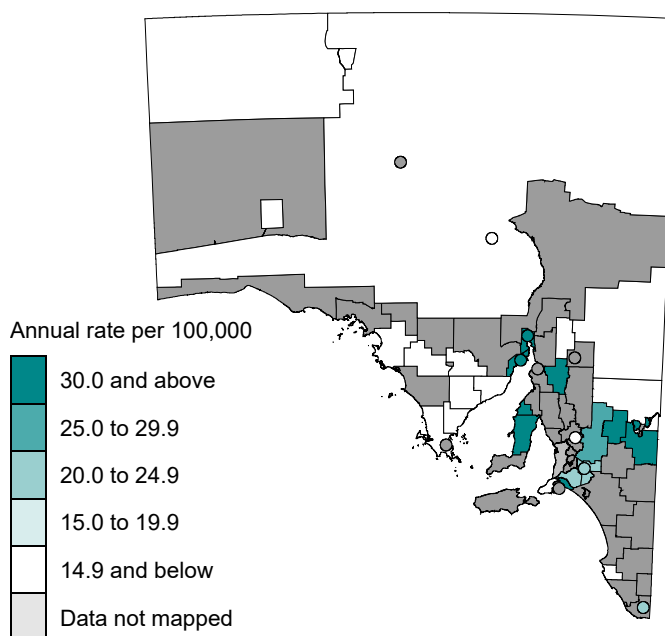
Map 72: Emergency admissions specific to complications of diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Map 73: Elective admissions specific to complications of diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 74: Elective admissions specific to complications of diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



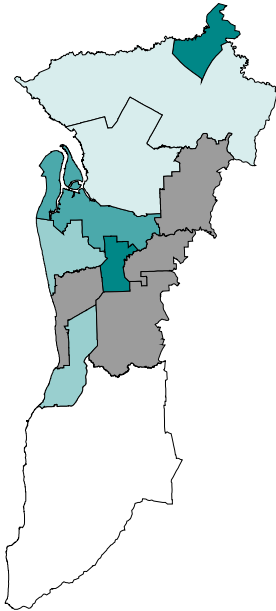
Diabetes specific admissions of the Aboriginal population

Rates of diabetes specific hospital admissions are substantially (2.72 times) higher for Aboriginal people than for the total population in South Australia (469.8 per 100,000 compared to 176.4 per 100,000). Diabetes specific hospital admissions for Aboriginal people comprise 6.1% of the total (363 out of 5,922 admissions). Just over a quarter (27.5%) of the total number of diabetes specific admissions in Aboriginal people are from those living in Adelaide. Four out of every ten (42.4%, 154) diabetes specific hospital admissions were males.

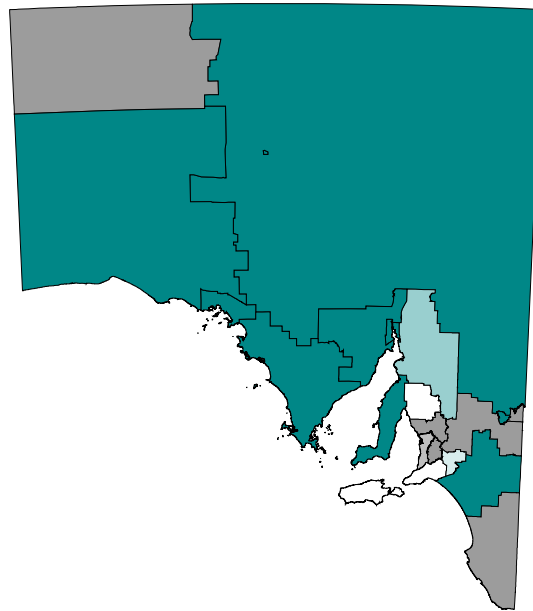
The highest rates of diabetes specific admissions for Aboriginal people were observed for the Indigenous Areas of Port Augusta (1,646.4 per 100,000) and Gawler (1,072.4 per 100,000) (Map 75). The other areas with the highest rates are all in the regional areas of Ceduna (960.9 per 100,000), Ceduna - West Coast (926.7 per 100,000) and Whyalla (732.5 per 100,000) (Map 76). In Adelaide, the areas with the highest rates were Gawler (as above), Adelaide - Prospect - Walkerville (468.2 per 100,000) and Port Adelaide - Enfield (359.7 per 100,000).

Port Augusta also recorded the highest number of diabetes specific hospital admissions for Aboriginal people (n=115) with Port Adelaide - Enfield the next highest (n=26). While the rate observed for Gawler was high, this was based on a relatively small absolute number of admissions (n=9).

Map 75: Public acute hospital admissions specific to diabetes, Indigenous population, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 76: Public acute hospital admissions specific to diabetes, Indigenous population, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Admissions related to diabetes

This section looks at admissions to hospital for which any diagnosis is diabetes (or a complication of diabetes) i.e., where diabetes could be considered an underlying or contributing reason for admission. We have termed these 'diabetes related' admissions.

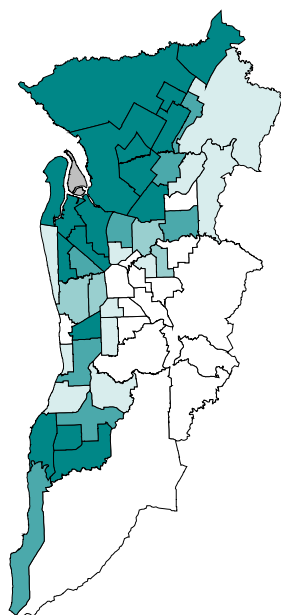
Overall, for South Australia the rate of diabetes related hospital admissions (emergency admissions and elective admissions to public hospitals) in 2013/15 was 2,747.7 per 100,000. This accounted for 92,229 admissions. The rate of diabetes related hospital admissions was almost one third (32.3%) higher for people living in Regional South Australia (3,265.6 per 100,000) compared to people living in Adelaide (2,467.4 per 100,000).

In the Adelaide area, the highest rates of diabetes related hospital admissions were in the outer north, in Playford - West Central (7,020.7 per 100,000) and Elizabeth (5,838.1 per 100,000) and in the outer south, in Onkaparinga - Hackham (5,125.4 per 100,000) (Map 77). High rates were also observed in the LGAs of Port Adelaide Enfield, Salisbury and other parts of Onkaparinga.

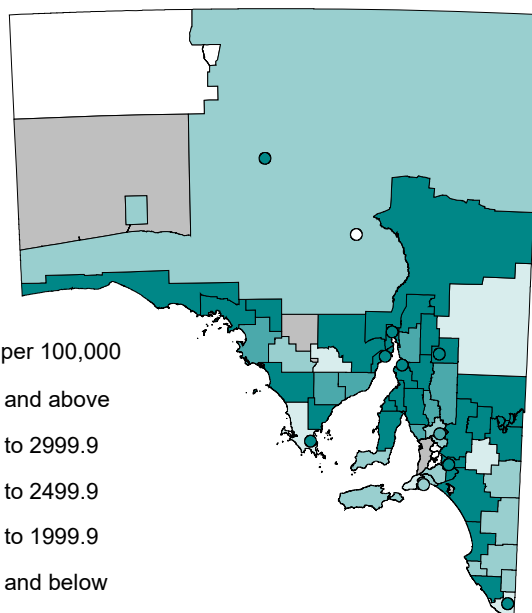
In Regional Adelaide the highest rate of diabetes related hospital admissions was from those living in Unincorporated Riverland (7,864.8 per 100,000), Unincorporated West Coast (7,592 per 100,000) and Port Augusta (7,095.3 per 100,000), as well as in Ceduna (6,826.0 per 100,000), Peterborough (6,238.9 per 100,000) and Port Pirie (6,006.5 per 100,000) (Map 78).

While age-standardised rates indicate where need is greatest, it is also important to look at the burden on hospitals in terms of the actual number of hospital admissions and therefore workload. On this measure, looking at Regional South Australia, the greatest number of admissions come from Whyalla (n=2,352), Port Augusta (n=1,939), Port Pirie - City (n=1,878), Mount Gambia (n=3,684.4) and Murray Bridge (n=3,688.9). From the Adelaide area, the areas with the highest number of diabetes related admissions were Playford - Elizabeth (n=2,859), Marion - Central (n=2,420) and Tea Tree Gully - South (n=2,214). While some of these areas are in common with where the highest rates are observed, other areas are different which demonstrates the purpose of considering both measures.

Map 77: Public acute hospital admissions related to diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 78: Public acute hospital admissions related to diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15

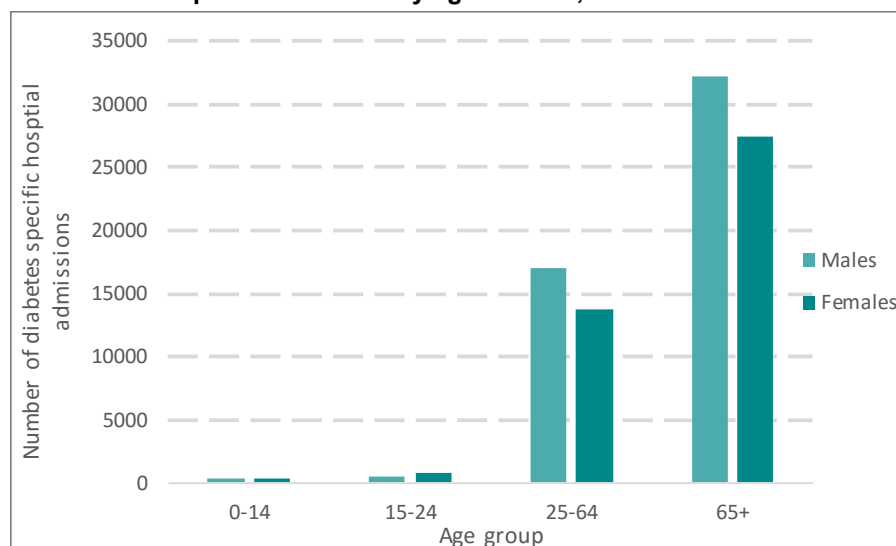


Presentations by age and sex

Of the 92,229 diabetes related hospital admissions (emergency admissions and elective admissions to public hospitals) in 2013/15, over half (54.2%, n=50,008) were for males.

Examining broad age categories showed that while there was a small majority of diabetes related hospital admissions by females in the 0-14 and 15-24 age groups, males had substantially more admissions in the older age groups (25-64 and 65+ years) (Figure 7). For males, 98.4% of diabetes related admissions were in these two older age groups, and 97.3% for females.

Figure 6: Diabetes related hospital admissions by age and sex, 2013/14 and 2014/15



Length of stay

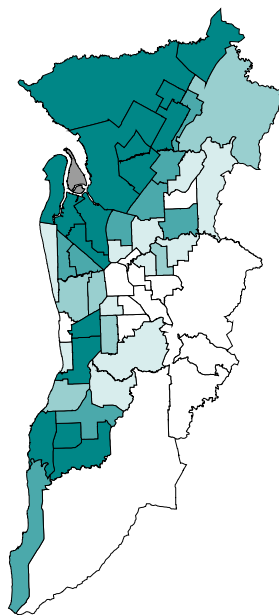
Maps 79 to 80 show the rate of the count of admissions where the length of stay was three days or less, and Maps 81 to 82 show the proportion of the total admissions where the length of stay was three days or less.

Two thirds (66.5%, 61,375) of total admissions had a length of stay of three days or less. This was very similar between those being admitted from the Adelaide area (65.1%, 58,243) and Regional areas of South Australia (69.4%, 35,528).

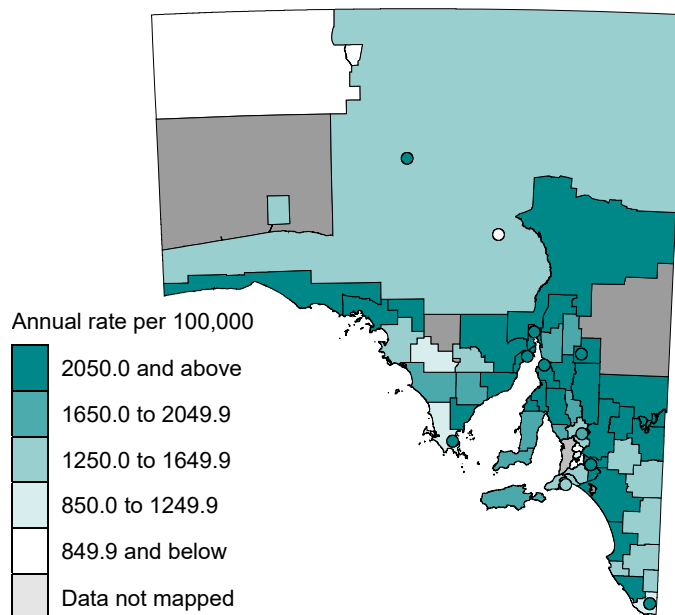
Broadly, areas which have high rates of diabetes related admissions (total count – maps 77-78) also have high rates of where these admissions lasted for three days or less (maps 79-80). Broadly, these are also the more disadvantaged areas (see maps 1-2).

While multiple factors influence length of stay, it is interesting that, in Adelaide, areas with a high proportion of admissions which were three days or less clustered to the north and east of the CBD (maps 81-82). This spatial distribution does not match with where overall higher rates or areas of greater disadvantage are observed. However, it seems plausible that these areas would fall into the catchment of the Royal Adelaide Hospital and perhaps also some of the more north-eastern areas might fall into the catchment of Modbury Hospital. While we have not specifically investigated catchment populations in this work, the high proportion of admissions which were three days or less in these areas may be due in part to in-hospital factors. The catchment for Flinders Medical Centre and Noarlunga Hospital would cover more of the southern suburbs where the proportion of admissions which were three days or less appeared to be much lower.

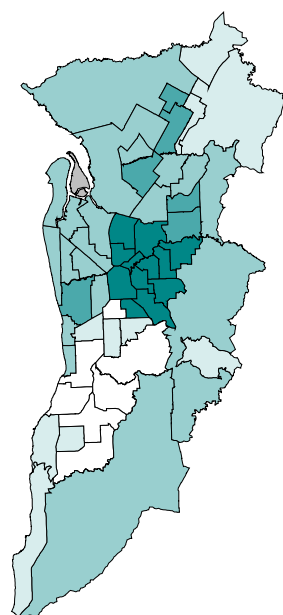
Map 79: Public acute hospital admissions related to diabetes, persons, rate per 100,000 where length of stay 3 days or less, Adelaide, 2013/14 and 2014/15



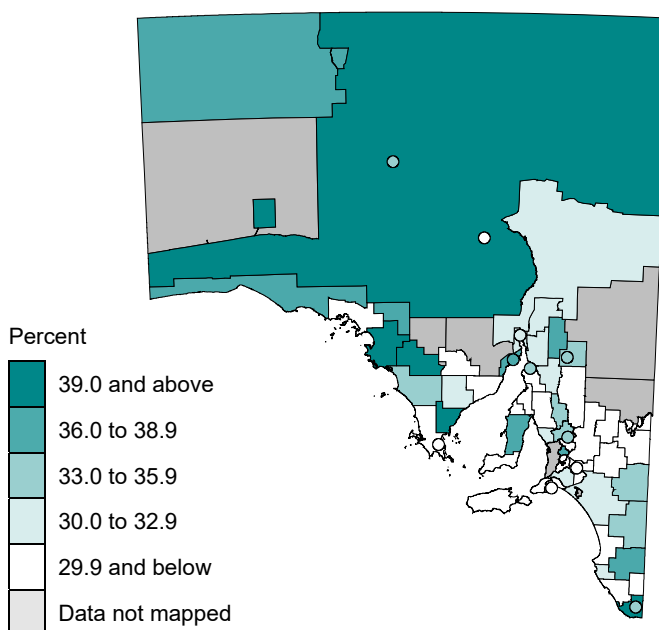
Map 80: Public acute hospital admissions related to diabetes, persons, rate per 100,000 where length of stay 3 days or less, Regional South Australia, 2013/14 and 2014/15



Map 81: Percent of admissions related to diabetes where length of stay 3 days or less, persons, Adelaide, 2013/14 and 2014/15



Map 82: Percent of admissions related to diabetes where length of stay 3 days or less, persons, Regional South Australia, 2013/14 and 2014/15



Frequent admissions

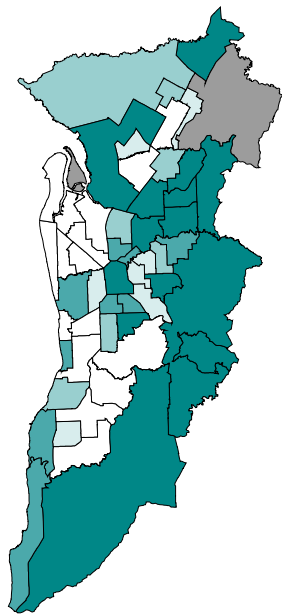
Frequent admissions have been defined as three or more admissions (emergency or elective) in the data period. It is important to note that this is an arbitrary cut off and does not take account of admissions that may have occurred either before or after the defined two-year period. There were 125,265 people who had three or fewer diabetes related admissions and 8,972 who had more than three admissions. Maps 83-84 show the rate of people in a given area who had three or fewer diabetes related hospital admissions in the time period. Given the small number with more than three admissions these data have not been mapped, although a comparison with Maps 77 and 78 highlights the different distributions.

In the Adelaide area, Adelaide Hills - Balance has the highest proportion (97.2%) of people having three or fewer diabetes related hospital admissions in the data period. Other areas where this proportion is high is Adelaide (95.5%), Onkaparinga Hills (95.2%), Mount Barker - Central (95.0%), Tea Tree Gully - Central (94.9%) / Hills (94.4%) (Map 83). Areas with the lowest proportion of individuals who had three or fewer diabetes related admissions were Port Adelaide Enfield - Port (84.6%) / Coast (86.6%), Marion - Central (87.3%) / North (87.5%) and Charles Sturt - Inner West (87.9%).

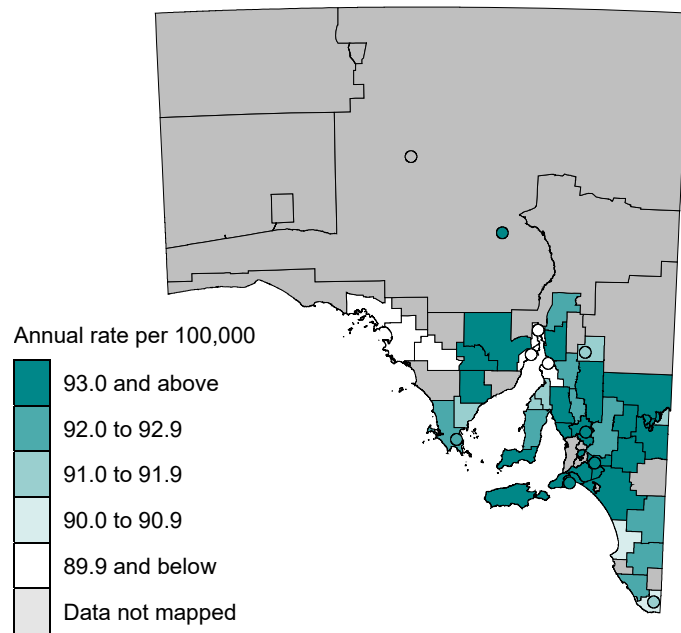
In Regional areas of Adelaide, Karoonda East Murray, Kimba, Roxby Downs, Unincorporated Whyalla and the Unincorporated Riverland all individuals had three or fewer diabetes related admissions in the data period (Map 84). Areas with the lowest proportion of individuals who had three or fewer diabetes related admissions were Wudinna (86.5%), Ceduna (88.3%), Port Pirie - City (88.6%), Port Augusta (88.7%) and Whyalla (88.7%).

There are many reasons to explain why frequent admissions occur. An individual may have frequent admissions if their condition is poorly controlled either through lack of self-management or poor monitoring, management or access to primary care leading to crises or disease progression. It may also be that the individual has been discharged from hospital care too quickly when the person is not able to live fully independently or does not have support available thereby necessitating another admission.

Map 83: Three or fewer diabetes related admissions in data period, person based rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 84: Three or fewer diabetes related admissions in data period, person based rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Admissions related to diabetes, by admission type

Overall, for South Australia, the age-standardised rate of diabetes related emergency admissions was 1,793.3 per 100,000. This accounted for nearly two thirds (65.3%, 60,192) of all admissions. Rates of diabetes related emergency admissions were higher in Regional South Australia (1,984.4 per 100,000) compared to the Adelaide area (1,678.2 per 100,000). Overall, for South Australia, the age-standardised rate of diabetes related elective admissions was 954.5 per 100,000. Rates of diabetes related elective admissions were higher in Regional South Australia (1,278.3 per 100,000) compared to the Adelaide area (788.6 per 100,000).

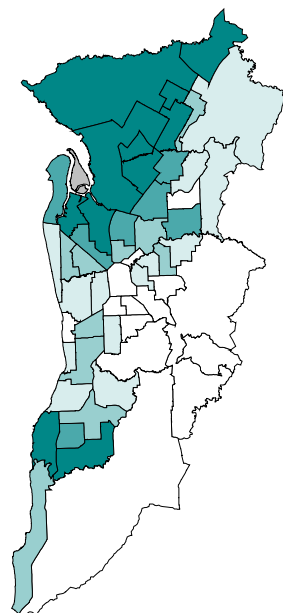
The highest rates of diabetes specific emergency admissions in the Adelaide area were to the outer north in Playford - West Central (5,218.5 per 100,000) and Elizabeth (4,257.0 per 100,000) and Salisbury - Central (3,187.5 per 100,000) and Inner North (3,048.0 per 100,000), as well as in Onkaparinga - Hackham (3,025.6 per 100,000), in the outer south (Map 85). The lowest rates were in Adelaide Hills - Central (430.2 per 100,000) and Ranges (437.3 per 100,000), Tea Tree Gully - Central (434.6 per 100,000) and Burnside - North-East (528.3 per 100,000) and South West (543.5 per 100,000).

For regional areas of South Australia, the highest rates of diabetes related emergency admissions were in Unincorporated West Coast (6,933.9 per 100,000), Unincorporated Riverland (6,009.1 per 100,000), Ceduna (5,220.0 per 100,000), Port Augusta (4,830.6 per 100,000) and Peterborough (4,630.4 per 100,000) (Map 86). The lowest rates were in Whyalla (515.0 per 100,000), Roxby Downs (708.4 per 100,000), Lower Eyre Peninsula (848.5 per 100,000), The APY Lands (927.5 per 100,000) and Karoonda East Murray (968.1 per 100,000).

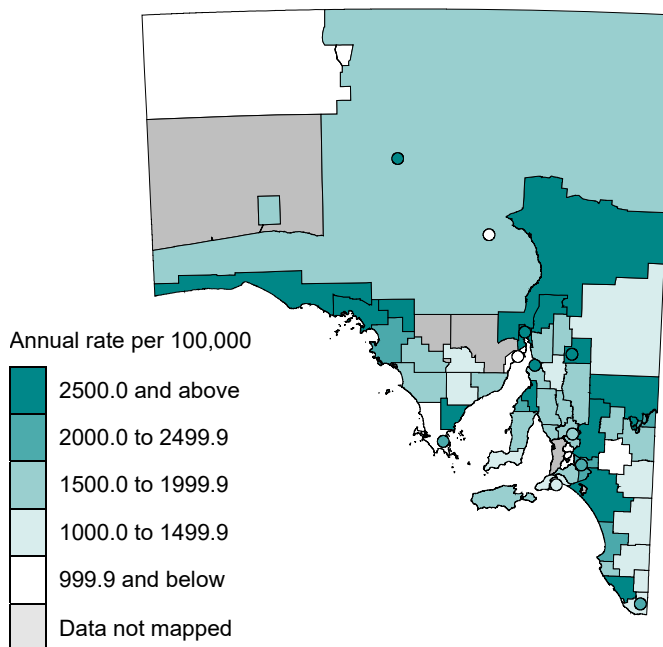
In the Adelaide area, with regard to elective admissions, the highest rates were observed from Onkaparinga - Hackham (2,091.7 per 100,000) / Morphett (1,832.3 per 100,000) / North Coast (1,757.3 per 100,000), in the outer south; Playford - West Central (1,810.9 per 100,000) / Elizabeth (1,572.8 per 100,000), in the outer north; and in Port Adelaide Enfield - Port (1,572.2 per 100,000) / Park (1,374.1 per 100,000), in the north west (Map 87).

In Regional South Australia, the highest rates of diabetes specific elective admissions were seen in Whyalla (4,947.7 per 100,000), Unincorporated Whyalla (3,170.9 per 100,000), Port Pirie - Balance (3,089.2 per 100,000)/ City (2,371.0 per 100,000), Flinders Ranges (2,483.3 per 100,000) and Port Augusta (2,270.3 per 100,000) (Map 88).

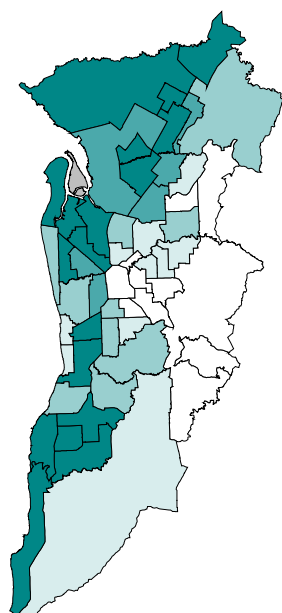
Map 85: Emergency admissions related to diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15



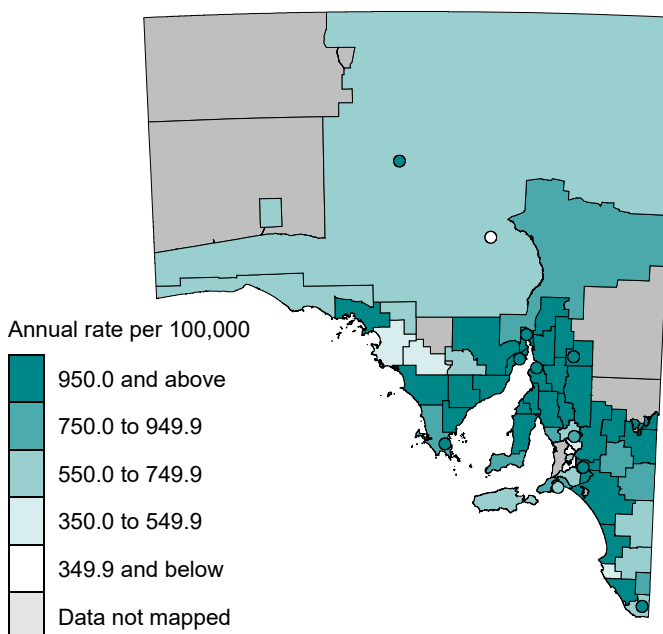
Map 86: Emergency admissions related to diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Map 87: Elective admissions related to diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15



Map 88: Elective admissions related to diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Admissions related to complications of diabetes, by admission type

Admissions related to complications of diabetes are defined as admissions where a diagnosis recorded in any position on the hospital record for an admission is Type 1 or 2 diabetes with kidney complication, ophthalmic complication, neurological complication, circulatory complication or multiple complications.

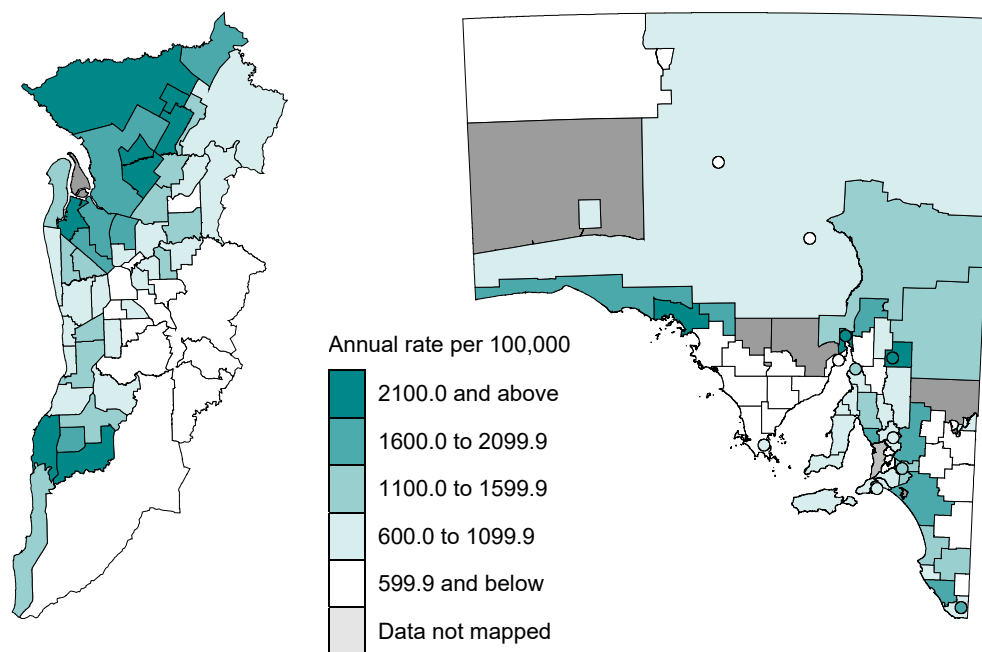
Overall, in South Australia, the rate of emergency admissions related to complications of diabetes was 1,183.9 per 100,000. There were 39,739 emergency admissions related to these reasons in the data period studied. The rate was slightly higher from the Adelaide area (1,222.3 per 100,000) compared to Regional South Australia (1,044.7 per 100,000).

From the Adelaide area, the highest rates observed were in Playford - West Central (4,408.7 per 100,000) and Elizabeth (3,487.0 per 100,000), Salisbury - Central (2,771.5 per 100,000) and Inner North (2,685.0 per 100,000) and Onkaparinga - Hackham (2,660.8 per 100,000) (Map 89). From Regional South Australia, the highest rates observed were in Port Augusta (4,235.1 per 100,000), Ceduna (2,189.4 per 100,000) and Peterborough (2,167.6 per 100,000) (Map 90).

For elective admissions related to complications of diabetes, the overall rate for South Australia was 586.1 per 100,000. There were 19,672 elective admissions for these reasons in the data period studied. The rate was slightly higher from Regional South Australia (603.4 per 100,000) compared to the Adelaide area (557.7 per 100,000). The geographical distribution of where the higher rates are seen is very similar to that for emergency admissions related to complications of diabetes (Maps 91-92).

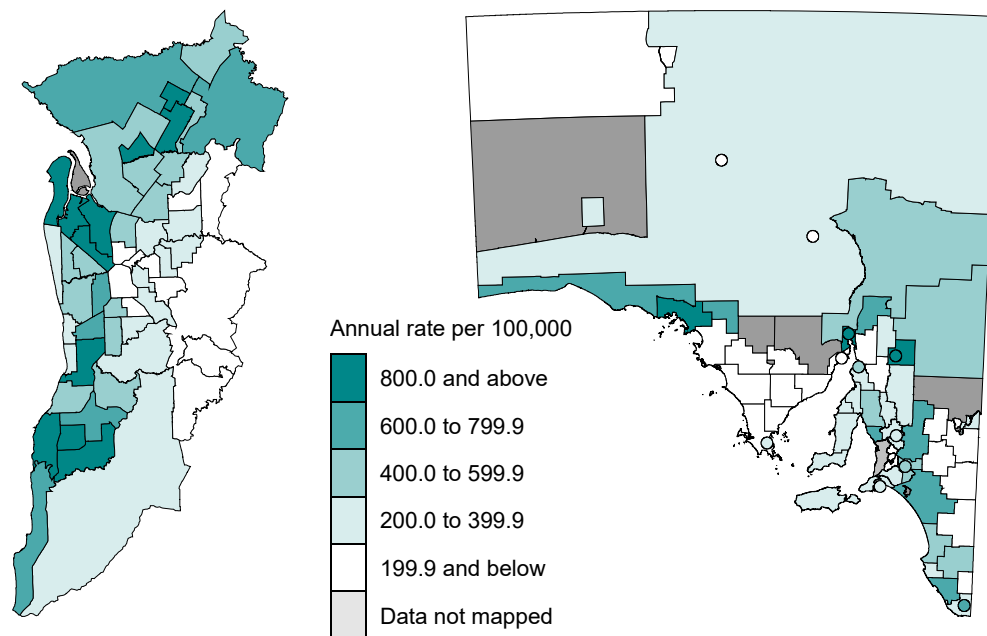
Map 89: Emergency admissions related to complications of diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15

Map 90: Emergency admissions related to complications of diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



Map 91: Elective admissions related to complications of diabetes, persons, rate per 100,000, Adelaide, 2013/14 and 2014/15

Map 92: Elective admissions related to complications of diabetes, persons, rate per 100,000, Regional South Australia, 2013/14 and 2014/15



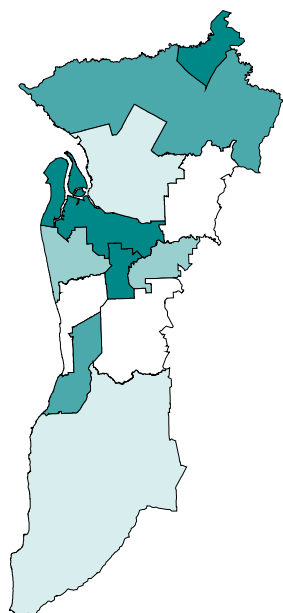
Diabetes related admissions of the Aboriginal population

Rates of diabetes related hospital admissions are substantially (2.13 times) higher for Aboriginal people than for the total population in South Australia (5,847.7 per 100,000 compared to 2,747.7 per 100,000). Diabetes related hospital admissions for Aboriginal people comprise 4.7% of the total (4,379 out of 92,229 admissions). Four out of every ten (41.1%, 1,629) diabetes related hospital admissions in Aboriginal people were from those living in Adelaide. Four out of every ten (41.4%, 1,815) diabetes related hospital admissions were males.

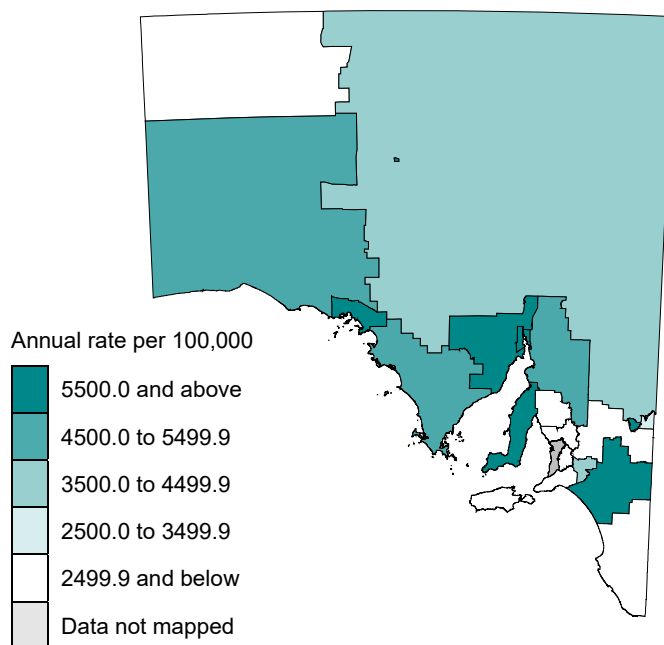
The highest rates of diabetes specific admissions for Aboriginal people were observed for Port Augusta (12,506.1 per 100,000) and Ceduna (11,455.2 per 100,000). In Adelaide, the areas with the highest rates were Adelaide - Prospect - Walkerville (8,596.9 per 100,000), Gawler (6,686.0 per 100,000) and Port Adelaide - Enfield (6,474.3 per 100,000) (Maps 93-94).

Port Augusta also observed the highest number of diabetes related hospital admissions for Aboriginal people (n=849) with Port Adelaide - Enfield the next highest (n=458). While the rate observed for Gawler was high, this was based on a smaller absolute number of admissions (n=54). While the standardised rates reflect population health need these absolute numbers reflect the numbers of hospital admissions and therefore impact upon the workload.

**Map 93: Diabetes related admissions,
Indigenous population, rate per 100,000,
Adelaide, 2013/14 and 2014/15**



**Map 94: Diabetes related admissions,
Indigenous population, rate per 100,000,
Regional South Australia, 2013/14 and 2014/15**



Premature mortality

Premature mortality due to diabetes

Context: *Premature death is not an inevitable consequence of diabetes. Globally, there has been a decrease in premature deaths due to diabetes. A major contributor to this trend may be improvements in treatment of diabetes, particularly in relation to modifiable risk factors – including improved cholesterol levels, controlled blood pressure and blood glucose and reduced smoking rates. Improved screening to detect diabetes and reduce the risk of progression of diabetes complications may have also contributed to improved outcomes. Premature deaths due to diabetes are classified as ‘potentially avoidable in the context of the present health system’ according to nationally agreed definitions. [23]*

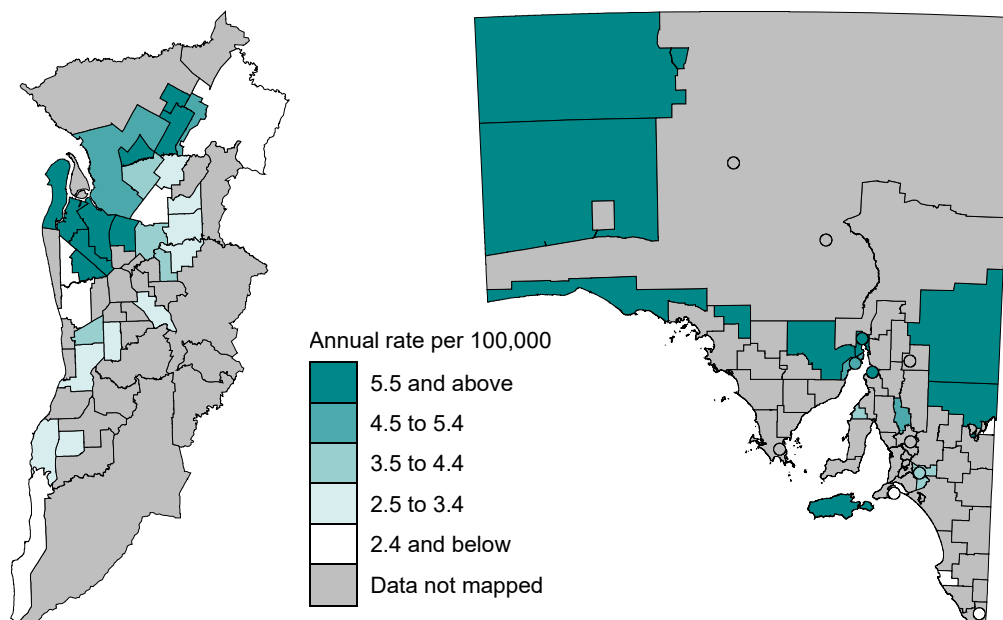
Overall, the premature mortality rate (under 75 years) due to diabetes was 6.2 per 100,000 in South Australia for the period 2009-2013. The actual number of premature deaths due to diabetes was 470 over this time period. The rate was higher in Regional South Australia (7.5 per 100,000) than it was for Adelaide (5.6 per 100,000). It was not possible to map many areas due to small numbers.

Nearly two-thirds of the premature deaths due to diabetes over this time period were in Adelaide (63.0%, 296 deaths). In Adelaide, the area with the highest premature mortality rates due to diabetes were in the northwest of Charles Sturt - North-East (14.9 per 100,000) and Inner East (10.9 per 100,000) and Port Adelaide Enfield - Park (12.8 per 100,000)/ Inner (11.2 per 100,000)/ Coast (11.1 per 100,000)/ Port (11.0 per 100,000) and the outer north in Playford - West Central (20.2 per 100,000) and Elizabeth (13.7 per 100,000) and Salisbury - Inner North (12.0 per 100,000) (Map 95). Rates for many of the least disadvantaged in Adelaide were not able to be mapped for this indicators due to small numbers.

In Regional Adelaide, The APY lands had the highest rate of premature deaths due to diabetes (114.3 per 100,000 although based on a relatively small number) (Map 96). Other areas also observed to have high premature mortality rates due to diabetes were Kangaroo Island (23.3 per 100,000), Port Augusta (21.7 per 100,000), Port Pirie - City (14.0 per 100,000) and the Clare & Gilbert Valleys (10.6 per 100,000).

Map 95: Premature mortality due to diabetes, persons, rate per 100,000, Adelaide, 2009 to 2013

Map 96: Premature mortality due to diabetes, persons, rate per 100,000, Adelaide, 2009 to 2013



Premature mortality due to circulatory system diseases

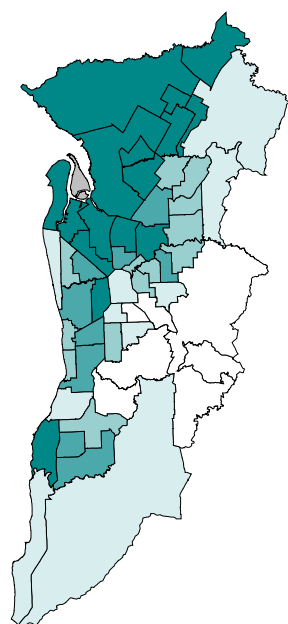
Context: *Macro-vascular complications of diabetes include some circulatory diseases such as heart disease, heart attacks and ischaemic stroke. Premature deaths due to circulatory system illnesses have fallen in Australia. This is due in part to the same reasons as the fall in premature deaths due to diabetes (improved prevention, detection and treatment) and also because of higher survival rates when people have an acute event.* [42]

Overall, the premature mortality rate (under 75 years) due to circulatory disease was 52.1 per 100,000 in South Australia for the period 2009–2013. The actual number of premature deaths due to circulatory disease was 3,951 over this time period. The rate was almost one fifth higher in Regional South Australia (58.4 per 100,000) than it was for Adelaide (48.9 per 100,000).

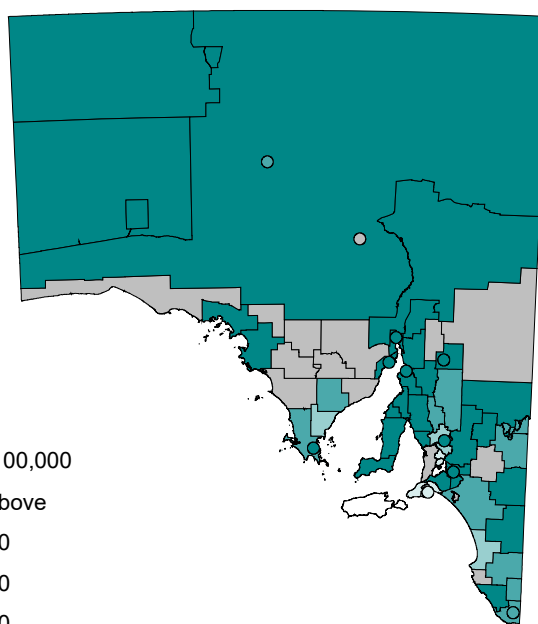
Nearly two-thirds of the premature deaths due to circulatory disease over this time period were in Adelaide (65.0%, 2,570 deaths). In Adelaide, the areas with the highest premature mortality rates due to circulatory disease were in the outer north, in Playford - Elizabeth (93.0 per 100,000)/ West Central (85.4 per 100,000)/ East Central (72.5 per 100,000) and Salisbury - Inner North (74.9 per 100,000); the north-west, in Port Adelaide Enfield - Park (84.2 per 100,000) and Port (71.8 per 100,000) and Charles Sturt - North-East (73.8 per 100,000); and also in West Torrens - East (72.6 per 100,000) (Map 97).

In Regional South Australia, the APY lands had the highest rate of premature deaths due to cardiovascular disease (288.3 per 100,000). Other areas also observed to have high premature mortality rates due to cardiovascular disease were Port Augusta (102.7 per 100,000), Unincorporated Far North (90.5 per 100,000), Loxton Waikerie - West (82.9 per 100,000), Port Pirie - City (81.9 per 100,000) and Wakefield (81.5 per 100,000) (Map 98).

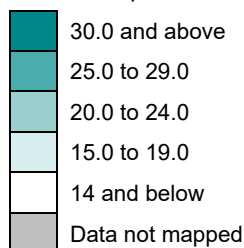
Map 97: Premature mortality due to circulatory diseases, persons, rate per 100,000, Adelaide, 2009 to 2013



Map 98: Premature mortality due to circulatory diseases, persons, rate per 100,000, Adelaide, 2009 to 2013



Annual rate per 100,000



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Summary of diabetes indicators

The following tables present a visual summary of a selection of indicators presented in the maps above, by SLA in the Adelaide and regional areas of South Australia. There are four tables, two summarising indicators for the Adelaide area and two for Regional South Australia.

In Table 2, indicators are presented which provide some contextual information on community characteristics at SLA level, along with information describing lifestyle risk factors, prevalence of diabetes and related cardiovascular diseases, and diabetes related services provided under the Medical Benefits Scheme and Pharmaceutical Benefits Scheme (see text box for further details of the indicators).

For each indicator, the data were divided into thirds based on the rank of their percentage or rate within the group of SLAs presented (i.e., Adelaide or Regional South Australia). For all except the ISRD (which has been reversed to aid interpretation), the highest third was assigned the darkest shade. Where data were not available, cells are shaded grey.

In examining the tables for the Adelaide area, there seems to be evidence that more disadvantaged areas are those which have the greatest health need due to diabetes. These are the areas which have the highest prevalence of risk factors, highest prevalence of diabetes and other related conditions, the highest rate of services delivered under the Medical Benefits Scheme and Pharmaceutical Benefits Scheme and the highest rates of hospitalisation for diabetes. The SLAs are Port Adelaide Enfield, Charles Sturt, Salisbury, Playford and Onkaparinga Local Government Areas.

In the regional areas, there is not such an obvious geographical pattern where high rates on all indicators are observed. However, there are areas, such as Port Augusta, Port Pirie, Peterborough and Berri & Barmera, which appear to be high need areas from this data. The lack of such an obvious geographical pattern may be at least partly due to poor access to medical care as evidenced by low rates of Medical Benefits Scheme Services, low rates of ED attendances and low rates of hospitalisation in areas where there is a high estimated prevalence of risk factors and diabetes. It is also notable that there are numerous areas in Regional South Australia with relatively small numbers of admissions, and other areas where data is unable to be published due to very small numbers.

Key to indicators in Table 2 and Table 4

1. IRSD: SEIFA Index of Relative Socio-economic Disadvantage, 2011
2. Indigenous status
3. Non-English speaking countries of birth
4. Children assessed as being developmentally vulnerable
5. Learning or earning
6. Unemployment
7. Households receiving rent assistance
8. Homes with no Internet connection
9. Fair/poor health
10. Current smokers
11. Alcohol used at risk levels
12. Obesity prevalence
13. Diabetes prevalence
14. High cholesterol prevalence
15. High blood pressure prevalence
16. Circulatory disease prevalence
17. Services under the Medical Benefits Scheme (i) completed diabetes cycles of care (ii) diabetes education service (iii) glycosylated haemoglobin
18. Items dispensed under the Pharmaceutical Benefits Scheme (i) blood glucose test strips (ii) oral antidiabetic agents (iii) fast acting insulins (iv) intermediate and long acting insulins (v) statins

Key to indicators in Table 3 and Table 5

1. IRSD: SEIFA Index of Relative Socio-economic Disadvantage, 2011
2. Indigenous status
3. Non-English speaking countries of birth
4. Children assessed as being developmentally vulnerable
5. Learning or earning
6. Unemployment
7. Households receiving rent assistance
8. Homes with no Internet connection
9. Fair/poor health
10. Current smokers
11. Alcohol used at risk levels
12. Obesity prevalence
13. Diabetes prevalence
14. High cholesterol prevalence
15. High blood pressure prevalence
16. Circulatory disease prevalence
17. Emergency department attendances (i) persons (ii) male (iii) female
18. Diabetes specific hospitalisations (i) all admissions (ii) emergency admissions only (iii) emergency admissions for diabetes related complications
19. Premature mortality (i) diabetes (ii) circulatory disease

Table 2: Comparison table of selected indicators in Statistical Local Areas, Adelaide (Part 1)

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemploy ment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Services under the Medical Benefits Scheme			18.Items dispensed under the Pharmaceutical Benefits Scheme				
																	Completed diabetes cycle of care	Diabetes Education Service	Glycosylated haemoglobin	Blood Glucose Test Strips	Oral antidiabetic agents	Fasting acting insulins	Intermediate and long acting insulins	Statins
Adelaide (C)	1013	1.6	32.1	34.1	87.1	6.1	25.0	12.7	15.3	14.1	3.3	17.7	6.4	38.7	12.2	17.1	6.9	4.7	58.9	23.4	398.5	10.0	32.9	1119.8
Adelaide Hills (DC) - Central	1099	0.7	7.0	15.6	85.9	2.7	6.2	11.5	9.6	11.1	3.5	20.2	5.1	36.1	11.1	16.1	8.3	2.7	36.0	5.3	138.2	9.2	14.5	729.4
Adelaide Hills (DC) - North	1063	0.6	5.7	20.4	84.8	3.6	8.9	17.1	12.9	15.1	3.9	28.2	5.6	36.3	11.7	16.1	6.7	1.9	37.3	3.4	145.6	9.5	19.3	805.5
Adelaide Hills (DC) - Ranges	1098	0.7	7.7	15.8	85.8	2.7	6.5	12.0	9.9	11.2	3.5	20.4	5.2	36.1	11.1	16.1	8.4	5.4	36.0	5.5	180.8	9.0	15.2	773.1
Adelaide Hills (DC) Bal	1050	0.6	5.7	20.3	84.8	3.6	8.9	17.0	12.8	15.0	3.9	28.1	5.6	36.3	11.7	16.1	6.8	0.9	37.5	11.7	227.2	9.4	22.2	898.3
Burnside (C) - North-East	1082	0.4	20.0	14.8	90.0	2.5	11.1	16.3	10.8	10.0	3.3	18.4	5.6	34.5	11.2	16.8	9.9	4.9	45.5	7.3	213.7	7.9	21.4	860.0
Burnside (C) - South-West	1081	0.4	16.1	16.3	90.5	2.5	10.5	16.6	10.1	10.6	3.3	16.9	5.1	36.7	10.7	16.6	7.0	3.0	37.1	4.5	172.6	9.1	14.6	798.5
Campbelltown (C) - East	1034	0.6	24.9	19.4	86.5	5.3	13.2	23.4	16.2	14.6	3.6	27.1	7.9	33.7	11.5	18.6	12.6	12.4	58.9	15.7	334.7	10.5	25.6	1050.5
Campbelltown (C) - West	980	0.6	28.4	23.7	85.5	5.6	14.8	25.5	16.7	14.6	3.6	25.8	7.9	34.0	10.6	17.8	15.0	10.3	59.0	18.3	379.9	11.6	31.2	985.2
Charles Sturt (C) - Coastal	1033	1.0	15.3	20.4	83.5	4.2	11.5	24.7	15.3	15.9	3.8	27.6	6.3	35.4	10.9	18.7	9.8	1.8	52.7	10.7	282.4	9.9	22.8	967.9
Charles Sturt (C) - Inner East	968	1.7	22.8	25.2	81.1	6.3	16.7	28.0	18.6	18.2	3.9	29.9	9.1	34.2	11.0	18.7	13.8	2.1	73.0	21.4	477.5	11.6	33.4	1123.2
Charles Sturt (C) - Inner West	963	1.5	21.5	23.0	82.0	6.0	14.2	28.6	18.2	17.2	3.9	29.1	8.2	33.7	11.2	18.8	13.7	2.0	66.8	20.3	443.8	11.2	32.6	1061.4
Charles Sturt (C) - North-East	931	2.4	25.4	23.3	81.1	7.5	19.7	29.0	20.1	18.9	4.0	30.6	11.5	33.8	11.3	18.4	11.2	3.0	70.4	30.5	560.3	10.2	36.5	1139.5
Gawler (T)	966	1.8	4.5	22.9	79.3	6.6	24.7	23.9	16.2	19.8	4.1	29.9	6.4	34.6	11.3	18.6	23.9	0.8	68.0	5.7	342.4	16.3	40.0	1098.4
Holdfast Bay (C) - North	1042	0.6	9.3	17.2	83.9	4.6	16.1	21.5	13.2	13.8	4.1	25.6	5.6	34.8	10.5	16.8	5.6	2.1	41.5	4.2	174.8	9.4	16.1	838.5
Holdfast Bay (C) - South	1036	0.6	9.3	16.9	83.9	4.6	15.6	20.8	13.0	13.8	4.0	25.7	5.6	34.6	10.6	16.9	6.1	3.4	45.7	5.4	215.3	11.9	19.2	972.3
Marion (C) - Central	977	1.7	15.3	18.8	80.1	8.5	16.9	25.1	16.3	17.9	3.8	28.8	5.9	33.9	10.7	18.6	8.2	3.4	58.0	6.5	317.9	14.5	28.3	1041.8
Marion (C) - North	975	1.4	16.0	20.3	80.1	8.0	16.8	28.2	16.4	16.3	3.7	29.1	7.1	34.8	11.9	19.0	7.1	2.7	56.2	7.3	326.0	9.7	26.0	1109.5
Marion (C) - South	1066	0.6	10.2	15.5	83.8	4.3	10.8	12.4	12.0	14.0	3.7	27.6	5.5	32.7	11.8	17.4	14.9	1.6	61.7	7.5	270.2	17.5	26.5	975.4
Mitcham (C) - Hills	1087	0.5	10.6	13.4	88.1	3.6	9.1	13.4	10.3	11.6	3.4	22.6	5.2	38.3	12.0	16.8	15.5	2.5	56.2	3.3	208.2	10.0	16.0	887.3
Mitcham (C) - North-East	1078	0.6	11.2	14.8	89.2	3.2	12.8	18.0	11.6	12.1	3.5	22.5	5.2	34.1	10.8	17.1	6.1	2.2	42.0	6.1	178.4	10.7	16.4	874.5
Mitcham (C) - West	1042	0.8	15.3	19.6	88.6	4.2	15.1	20.3	13.1	12.8	3.5	24.0	5.5	35.7	10.9	17.9	8.5	1.8	59.8	7.3	292.7	12.0	26.4	950.4
Mount Barker (DC) - Central	1024	1.0	4.4	15.5	80.8	5.9	15.7	17.4	13.4	16.5	3.8	30.2	5.8	34.9	11.9	18.3	10.8	2.1	48.6	6.3	260.5	14.3	25.9	1022.8
Mount Barker (DC) Bal	1052	1.0	4.3	16.7	81.3	4.8	11.7	15.4	12.5	15.9	4.2	29.9	5.2	35.5	11.7	17.8	7.5	2.5	38.6	4.8	194.5	13.5	22.7	730.0
Norw. P'ham St Ptrs (C) - East	1005	0.7	23.9	21.2	87.3	4.5	13.9	25.4	16.5	14.5	3.8	27.0	8.9	34.1	10.9	18.8	12.3	9.1	58.2	16.2	382.6	6.9	26.6	1006.6
Norw. P'ham St Ptrs (C) - West	1043	0.6	19.2	16.8	88.7	4.0	13.2	19.1	13.4	13.0	4.1	20.9	7.1	34.6	11.8	18.8	6.9	5.1	39.2	6.2	255.0	9.0	17.2	874.3
Onkaparinga (C) - Hackham	921	2.9	6.7	31.0	72.0	14.7	22.5	23.3	19.1	24.1	4.2	34.2	8.0	34.6	11.5	18.5	20.1	1.4	78.7	6.8	412.2	16.7	43.9	1138.7
Onkaparinga (C) - Hills	1054	0.7	4.4	13.1	86.3	3.9	9.7	16.5	12.9	14.9	3.9	27.4	5.3	37.6	11.7	17.2	11.0	0.5	54.9	3.7	191.2	10.8	21.9	876.2
Onkaparinga (C) - Morphett	944	2.1	7.8	30.2	72.7	12.3	17.3	23.6	18.0	22.1	4.4	34.2	8.1	35.3	10.9	19.0	18.0	1.7	76.6	6.8	371.0	16.7	36.7	1126.3
Onkaparinga (C) - North Coast	902	3.4	7.1	30.5	71.5	17.8	26.1	26.2	19.9	25.8	4.5	34.1	7.7	34.7	11.1	18.5	17.6	1.0	70.6	7.2	402.0	14.8	41.7	1184.7
Onkaparinga (C) - Reservoir	1077	0.5	8.3	14.8	86.7	3.9	8.4	11.0	12.3	13.6	3.5	26.2	5.3	35.0	11.1	16.1	14.4	1.8	62.4	2.7	218.4	12.1	24.1	1011.9
Onkaparinga (C) - South Coast	979	1.8	4.9	24.2	73.0	10.8	24.9	19.2	16.4	20.8	4.2	33.6	5.7	34.4	11.4	18.5	14.1	0.7	58.4	4.3	287.6	9.1	26.6	1046.4
Onkaparinga (C) - Woodcroft	1037	1.0	7.0	17.6	82.0	5.6	13.9	15.7	14.6	17.1	3.9	30.6	5.7	35.4	11.4	18.0	15.9	1.8	72.8	6.9	300.8	15.6	29.1	1064.7
Playford (C) - East Central	981	2.5	8.5	33.4	75.3	9.4	31.8	20.7	18.7	21.9	4.2	35.3	7.8	35.1	12.6	18.7	14.6	4.7	84.3	13.6	525.5	16.3	48.6	1377.0
Playford (C) - Elizabeth	748	4.8	9.4	44.1	64.0	22.5	32.6	33.2	24.8	29.8	4.8	35.0	9.7	33.9	11.8	19.4	14.4	4.2	83.9	16.8	571.0	20.5	63.3	1339.4
Playford (C) - Hills	1064	1.0	6.5	28.0	82.9	4.1	29.6	13.3	13.8	15.1	3.9	29.4	6.2	36.9	11.8	16.6	11.9	4.5	62.5	27.7	421.2	15.9	38.2	1059.1
Playford (C) - West	960	2.4	8.5	31.9	76.0	9.0	31.4	19.9	18.7	21.6	4.1	35.6	7.9	35.4	12.8	18.7	21.5	1.9	72.9	17.2	482.9	14.3	45.6	1246.2
Playford (C) - West Central	809	5.7	8.0	42.7	63.4	20.9	35.2	27.6	24.2	29.4	4.3	39.0	10.2	34.5	12.5	18.7	9.9	3.3	83.9	25.0	541.3	14.7	60.0	1339.3
Port Adel. Enfield (C) - Coast	975	3.4	7.6	29.5	79.0	6.5	15.2	25.3	15.9	20.4	4.7	30.1	6.3	33.9	10.2	17.5	13.4	2.3	59.5	18.7	381.1	12.4	34.5	1137.6
Port Adel. Enfield (C) - East	974	2.6	23.5	24.8	79.1	6.3	19.9	23.2	16.3	16.8	3.7	28.7	7.1	34.6	12.4	18.8	13.1	4.3	56.9	15.9	400.6	10.8	34.0	1017.0
Port Adel. Enfield (C) - Inner	880	3.2	31.7	34.0	77.0	12.2	23.1	31.4	21.2	20.2	4.0	34.9	12.8	33.9	11.5	18.4	11.4	8.1	59.9	15.8	421.0	9.5	31.8	988.9
Port Adel. Enfield (C) - Park	847	3.4	33.8	28.1	78.9	11.7	19.4	33.0	24.0	21.5	4.3	34.4	14.8	33.7	10.9	19.4	11.2	3.7	73.4	41.8	624.6	11.3	41.3	1175.5
Port Adel. Enfield (C) - Port	898	3.4	33.8	28.1	78.9	11.7	19.4	33.0	24.0	21.5	4.3	34.4	14.8	33.7	10.9	19.4	11.4	3.0	69.8	34.6	572.9	12.6	37.0	1130.4
Prospect (C)	1042	0.9	19.4	20.4	86.6	4.7	15.4	19.2	13.4	13.4	3.3	24.0	6.2	35.1	11.5	17.2	9.4	5.9	53.5	16.7	329.8	8.6	25.0	1001.0

See over for continuation of table and for Legend and Note.

Table 2: Comparison table of selected indicators in Statistical Local Areas, (Part 1) continued

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemploy ment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Services under the Medical Benefits Scheme			18.Items dispensed under the Pharmaceutical Benefits Scheme				
																	Completed diabetes cycle of care	Diabetes Education Service	Glycosylated haemoglobin	Blood Glucose Test Strips	Oral antidiabetic agents	Fasting acting insulins	Intermediate and long acting insulins	Statins
Salisbury (C) - Central	879	2.9	19.3	34.5	72.5	11.9	24.0	24.8	21.1	22.4	4.2	36.7	10.3	34.3	12.1	18.3	14.5	1.2	74.3	21.0	505.4	14.8	49.8	1136.8
Salisbury (C) - Inner North	887	2.9	19.4	34.1	72.8	11.6	23.9	24.2	20.9	22.2	4.2	36.5	10.2	34.3	12.1	18.1	21.4	1.9	101.6	25.3	749.4	17.3	63.2	1621.8
Salisbury (C) - North-East	962	2.1	13.1	26.4	76.8	8.7	17.9	22.3	17.9	20.7	4.3	34.4	6.8	34.9	11.0	18.4	17.0	2.3	75.8	12.3	434.1	16.6	41.1	1169.9
Salisbury (C) - South-East	959	2.2	17.5	21.3	78.6	6.8	16.1	21.2	16.4	18.8	3.9	32.2	6.8	34.6	11.7	18.4	16.4	3.3	67.8	13.2	464.6	15.0	36.2	1205.8
Salisbury (C) Bal	1023	2.1	22.1	27.5	76.0	8.0	20.6	20.4	17.8	18.7	3.7	32.6	10.3	34.8	12.1	18.2	10.2	1.6	50.9	14.4	367.7	8.2	27.4	816.6
Tea Tree Gully (C) - Central	1035	1.0	8.3	18.6	82.2	4.0	11.3	15.6	13.7	16.7	3.7	29.6	6.1	34.4	11.8	18.7	15.0	3.1	58.3	4.6	344.3	12.3	32.5	1117.6
Tea Tree Gully (C) - Hills	1067	0.9	8.1	17.7	82.5	3.8	10.7	16.2	13.6	16.6	3.8	29.1	6.0	35.4	11.6	18.4	11.0	3.5	39.4	5.6	196.8	10.5	25.5	884.2
Tea Tree Gully (C) - North	1049	0.9	7.6	14.4	83.1	3.4	9.7	13.8	13.3	15.9	3.6	30.9	6.1	35.6	11.4	17.3	12.9	2.6	59.3	8.6	309.0	14.1	31.0	1125.0
Tea Tree Gully (C) - South	1018	1.3	15.5	18.6	81.6	5.0	13.4	21.9	14.8	16.9	3.8	28.4	6.1	36.0	11.6	18.0	9.9	4.1	48.8	7.6	304.5	10.3	27.0	997.2
Unincorp. Western	n.a.	..	..	..	..	..	..	..	18.1	32.3	5.0	34.7	8.6	36.8	13.4	19.7	0.0	0.0	152.3	0.0	2042.7	0.0	0.0	4499.0
Unley (C) - East	1064	0.5	15.5	11.1	87.4	3.0	11.9	17.7	12.0	10.8	3.5	20.1	5.4	33.2	11.2	16.6	7.7	2.5	42.8	4.9	203.3	9.1	18.6	839.0
Unley (C) - West	1066	0.5	15.3	18.2	87.6	3.6	13.4	16.3	11.5	10.9	3.2	19.8	7.5	35.2	10.4	15.4	7.5	2.9	49.2	7.7	234.2	7.5	17.8	836.5
Walkerville (M)	1065	0.9	19.4	20.4	86.6	4.7	15.4	19.2	13.4	13.4	3.3	24.0	6.2	35.1	11.5	17.2	5.6	5.0	37.6	3.3	194.3	8.4	17.3	756.7
West Torrens (C) - East	980	1.3	25.4	22.4	83.6	5.4	18.2	25.7	17.7	16.9	3.6	29.0	8.3	34.7	11.0	18.2	7.1	2.7	52.1	6.7	389.6	11.2	27.0	1006.3
West Torrens (C) - West	1013	1.0	21.8	19.7	85.3	4.5	15.5	24.1	15.3	16.0	3.6	27.8	6.2	35.1	10.6	17.6	7.5	2.3	54.9	8.6	316.8	10.2	21.9	986.1

Legend



NOTE: The colours assigned have been reversed for IRSD (indicator 1).

Table 3: Comparison table of selected indicators in Statistical Local Areas, Adelaide (Part 2)

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemploy ment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Emergency Department attendances			18.Hospitalisations - primary diagnosis of diabetes			19.Premature mortality	
																	persons	male	female	All admissions	Emergency admissions only	Diabetes related complication - emergency admission	Diabetes	Circulatory disease
Adelaide (C)	1013	1.6	32.1	34.1	87.1	6.1	25.0	12.7	15.3	14.1	3.3	17.7	6.4	38.7	12.2	17.1	452.1	438.5	462.0	82.0	79.7	20.9	3.9	35.2
Adelaide Hills (DC) - Central	1099	0.7	7.0	15.6	85.9	2.7	6.2	11.5	9.6	11.1	3.5	20.2	5.1	36.1	11.1	16.1	183.4	211.1	153.6	39.2	27.8	3.9	0.9	17.6
Adelaide Hills (DC) - North	1063	0.6	5.7	20.4	84.8	3.6	8.9	17.1	12.9	15.1	3.9	28.2	5.6	36.3	11.7	16.1	234.6	209.0	259.6	145.1	109.5	14.8	2.5	35.8
Adelaide Hills (DC) - Ranges	1098	0.7	7.7	15.8	85.8	2.7	6.5	12.0	9.9	11.2	3.5	20.4	5.2	36.1	11.1	16.1	112.8	156.5	64.4	38.5	29.2	4.9	1.1	18.6
Adelaide Hills (DC) Bal	1050	0.6	5.7	20.3	84.8	3.6	8.9	17.0	12.8	15.0	3.9	28.1	5.6	36.3	11.7	16.1	196.2	170.7	223.4	122.7	112.2	43.1	2.6	37.9
Burnside (C) - North-East	1082	0.4	20.0	14.8	90.0	2.5	11.1	16.3	10.8	10.0	3.3	18.4	5.6	34.5	11.2	16.8	156.8	113.1	197.7	36.5	30.7	11.6	1.7	34.7
Burnside (C) - South-West	1081	0.4	16.1	16.3	90.5	2.5	10.5	16.6	10.1	10.6	3.3	16.9	5.1	36.7	10.7	16.6	221.4	235.5	210.7	39.8	30.2	3.7	5.3	28.0
Campbelltown (C) - East	1034	0.6	24.9	19.4	86.5	5.3	13.2	23.4	16.2	14.6	3.6	27.1	7.9	33.7	11.5	18.6	373.2	373.9	373.9	91.1	78.1	19.5	6.1	42.9
Campbelltown (C) - West	980	0.6	28.4	23.7	85.5	5.6	14.8	25.5	16.7	14.6	3.6	25.8	7.9	34.0	10.6	17.8	455.1	479.2	435.2	188.7	174.3	77.3	7.6	51.4
Charles Sturt (C) - Coastal	1033	1.0	15.3	20.4	83.5	4.2	11.5	24.7	15.3	15.9	3.8	27.6	6.3	35.4	10.9	18.7	442.7	328.7	554.8	110.7	96.2	31.6	1.9	35.2
Charles Sturt (C) - Inner East	968	1.7	22.8	25.2	81.1	6.3	16.7	28.0	18.6	18.2	3.9	29.9	9.1	34.2	11.0	18.7	638.5	720.2	562.9	119.7	91.4	29.3	10.9	54.7
Charles Sturt (C) - Inner West	963	1.5	21.5	23.0	82.0	6.0	14.2	28.6	18.2	17.2	3.9	29.1	8.2	33.7	11.2	18.8	586.5	562.4	612.1	139.3	116.6	30.5	3.9	46.9
Charles Sturt (C) - North-East	931	2.4	25.4	23.3	81.1	7.5	19.7	29.0	20.1	18.9	4.0	30.6	11.5	33.8	11.3	18.4	768.2	583.5	948.7	326.7	178.9	48.9	14.9	73.8
Gawler (T)	966	1.8	4.5	22.9	79.3	6.6	24.7	23.9	16.2	19.8	4.1	29.9	6.4	34.6	11.3	18.6	913.5	713.5	1104.7	199.5	176.4	34.4	3.3	59.4
Holdfast Bay (C) - North	1042	0.6	9.3	17.2	83.9	4.6	16.1	21.5	13.2	13.8	4.1	25.6	5.6	34.8	10.5	16.8	390.8	436.7	354.3	91.9	78.1	26.9	2.9	47.2
Holdfast Bay (C) - South	1036	0.6	9.3	16.9	83.9	4.6	15.6	20.8	13.0	13.8	4.0	25.7	5.6	34.6	10.6	16.9	720.9	720.2	727.2	132.1	108.8	14.9	2.7	42.9
Marion (C) - Central	977	1.7	15.3	18.8	80.1	8.5	16.9	25.1	16.3	17.9	3.8	28.8	5.9	33.9	10.7	18.6	671.0	576.1	760.5	195.5	109.0	38.4	5.0	55.8
Marion (C) - North	975	1.4	16.0	20.3	80.1	8.0	16.8	28.2	16.4	16.3	3.7	29.1	7.1	34.8	11.9	19.0	566.5	602.8	539.6	184.1	122.4	38.8	8.7	57.5
Marion (C) - South	1066	0.6	10.2	15.5	83.8	4.3	10.8	12.4	12.0	14.0	3.7	27.6	5.5	32.7	11.8	17.4	546.6	512.0	578.6	127.5	103.5	30.2	2.5	36.5
Mitcham (C) - Hills	1087	0.5	10.6	13.4	88.1	3.6	9.1	13.4	10.3	11.6	3.4	22.6	5.2	38.3	12.0	16.8	411.7	327.9	492.1	66.2	43.8	9.3	2.3	21.7
Mitcham (C) - North-East	1078	0.6	11.2	14.8	89.2	3.2	12.8	18.0	11.6	12.1	3.5	22.5	5.2	34.1	10.8	17.1	323.8	250.6	391.5	75.9	70.6	21.6	2.6	29.2
Mitcham (C) - West	1042	0.8	15.3	19.6	88.6	4.2	15.1	20.3	13.1	12.8	3.5	24.0	5.5	35.7	10.9	17.9	438.5	449.7	431.8	72.4	59.7	22.2	5.0	39.1
Mount Barker (DC) - Central	1024	1.0	4.4	15.5	80.8	5.9	15.7	17.4	13.4	16.5	3.8	30.2	5.8	34.9	11.9	18.3	356.9	411.4	304.3	184.3	154.6	24.3	4.4	31.9
Mount Barker (DC) Bal	1052	1.0	4.3	16.7	81.3	4.8	11.7	15.4	12.5	15.9	4.2	29.9	5.2	35.5	11.7	17.8	215.7	232.6	195.7	115.4	103.7	29.7	3.1	22.8
Norw. P'ham St Ptrs (C) - East	1005	0.7	23.9	21.2	87.3	4.5	13.9	25.4	16.5	14.5	3.8	27.0	8.9	34.1	10.9	18.8	432.7	494.6	384.6	129.7	113.6	37.6	3.7	48.1
Norw. P'ham St Ptrs (C) - West	1043	0.6	19.2	16.8	88.7	4.0	13.2	19.1	13.4	13.0	4.1	20.9	7.1	34.6	11.8	18.8	295.2	240.0	347.0	60.5	52.4	21.2	3.9	40.8
Onkaparinga (C) - Hackham	921	2.9	6.7	31.0	72.0	14.7	22.5	23.3	19.1	24.1	4.2	34.2	8.0	34.6	11.5	18.5	1197.9	1043.1	1349.5	304.7	206.7	82.0	5.4	53.2
Onkaparinga (C) - Hills	1054	0.7	4.4	13.1	86.3	3.9	9.7	16.5	12.9	14.9	3.9	27.4	5.3	37.6	11.7	17.2	409.9	333.4	486.5	30.8	27.2	11.2	1.6	30.0
Onkaparinga (C) - Morphett	944	2.1	7.8	30.2	72.7	12.3	17.3	23.6	18.0	22.1	4.4	34.2	8.1	35.3	10.9	19.0	998.2	982.9	1013.2	212.7	147.8	61.9	6.2	56.0
Onkaparinga (C) - North Coast	902	3.4	7.1	30.5	71.5	17.8	26.1	26.2	19.9	25.8	4.5	34.1	7.7	34.7	11.1	18.5	1009.4	907.9	1108.2	266.2	164.6	54.9	5.9	71.8
Onkaparinga (C) - Reservoir	1077	0.5	8.3	14.8	86.7	3.9	8.4	11.0	12.3	13.6	3.5	26.2	5.3	35.0	11.1	16.1	432.8	394.5	470.2	77.8	69.3	19.4	0.9	25.9
Onkaparinga (C) - South Coast	979	1.8	4.9	24.2	73.0	10.8	24.9	19.2	16.4	20.8	4.2	33.6	5.7	34.4	11.4	18.5	829.8	720.8	935.8	153.5	123.3	33.9	3.3	37.9
Onkaparinga (C) - Woodcroft	1037	1.0	7.0	17.6	82.0	5.6	13.9	15.7	14.6	17.1	3.9	30.6	5.7	35.4	11.4	18.0	577.0	477.2	675.0	198.8	118.2	32.9	1.3	38.2
Playford (C) - East Central	981	2.5	8.5	33.4	75.3	9.4	31.8	20.7	18.7	21.9	4.2	35.3	7.8	35.1	12.6	18.7	685.4	604.5	764.0	179.8	149.2	51.1	10.8	72.5
Playford (C) - Elizabeth	748	4.8	9.4	44.1	64.0	22.5	32.6	33.2	24.8	29.8	4.8	35.0	9.7	33.9	11.8	19.4	1023.5	968.4	1078.5	361.9	297.1	98.8	13.7	93.0
Playford (C) - Hills	1064	1.0	6.5	28.0	82.9	4.1	29.6	13.3	13.8	15.1	3.9	29.4	6.2	36.9	11.8	16.6	279.7	294.8	260.5	29.3	14.5	0.0	1.9	34.2
Playford (C) - West	960	2.4	8.5	31.9	76.0	9.0	31.4	19.9	18.7	21.6	4.1	35.6	7.9	35.4	12.8	18.7	817.4	754.4	875.8	164.3	131.3	29.5	8.4	67.9
Playford (C) - West Central	809	5.7	8.0	42.7	63.4	20.9	35.2	27.6	24.2	29.4	4.3	39.0	10.2	34.5	12.5	18.7	1017.1	834.0	1192.6	400.7	347.6	94.9	20.2	85.4
Port Adel. Enfield (C) - Coast	975	3.4	7.6	29.5	79.0	6.5	15.2	25.3	15.9	20.4	4.7	30.1	6.3	33.9	10.2	17.5	685.7	640.4	730.6	245.2	144.9	31.6	11.1	62.1
Port Adel. Enfield (C) - East	974	2.6	23.5	24.8	79.1	6.3	19.9	23.2	16.3	16.8	3.7	28.7	7.1	34.6	12.4	18.8	489.0	386.3	593.0	158.6	103.8	31.8	7.7	66.1
Port Adel. Enfield (C) - Inner	880	3.2	31.7	34.0	77.0	12.2	23.1	31.4	21.2	20.2	4.0	34.9	12.8	33.9	11.5	18.4	604.8	591.7	619.9	211.3	186.5	67.0	11.2	68.4
Port Adel. Enfield (C) - Park	847	3.4	33.8	28.1	78.9	11.7	19.4	33.0	24.0	21.5	4.3	34.4	14.8	33.7	10.9	19.4	743.9	747.4	744.2	236.1	191.6	64.4	12.8	84.2
Port Adel. Enfield (C) - Port	898	3.4	33.8	28.1	78.9	11.7	19.4	33.0	24.0	21.5	4.3	34.4	14.8	33.7	10.9	19.4	883.4	852.3	915.1	462.3	196.3	77.9	11.0	71.8
Prospect (C)	1042	0.9	19.4	20.4	86.6	4.7	15.4	19.2	13.4	13.4	3.3	24.0	6.2	35.1	11.5	17.2	438.1	496.3	384.4	138.0	130.5	46.5	2.8	55.3

See over for continuation of table and for Legend and Note.

Table 3: Comparison table of selected indicators in Statistical Local Areas, Adelaide (Part 2) continued

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemploy ment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Emergency Department attendances			18.Hospitalisations - primary diagnosis of diabetes			19.Premature mortality	
																	persons	male	female	All admissions	Emergency admissions only	Diabetes related complication - emergency admission	Diabetes	Circulatory disease
Salisbury (C) - Central	879	2.9	19.3	34.5	72.5	11.9	24.0	24.8	21.1	22.4	4.2	36.7	10.3	34.3	12.1	18.3	983.9	883.0	1083.5	301.2	270.2	76.2	8.9	58.9
Salisbury (C) - Inner North	887	2.9	19.4	34.1	72.8	11.6	23.9	24.2	20.9	22.2	4.2	36.5	10.2	34.3	12.1	18.1	633.1	569.9	697.5	293.1	180.5	47.2	12.0	74.9
Salisbury (C) - North-East	962	2.1	13.1	26.4	76.8	8.7	17.9	22.3	17.9	20.7	4.3	34.4	6.8	34.9	11.0	18.4	504.8	444.4	564.3	135.3	108.4	23.1	5.5	46.9
Salisbury (C) - South-East	959	2.2	17.5	21.3	78.6	6.8	16.1	21.2	16.4	18.8	3.9	32.2	6.8	34.6	11.7	18.4	678.3	700.9	654.9	207.1	178.7	42.4	4.6	53.2
Salisbury (C) Bal	1023	2.1	22.1	27.5	76.0	8.0	20.6	20.4	17.8	18.7	3.7	32.6	10.3	34.8	12.1	18.2	465.8	398.4	534.9	175.0	151.3	29.9	9.3	69.6
Tea Tree Gully (C) - Central	1035	1.0	8.3	18.6	82.2	4.0	11.3	15.6	13.7	16.7	3.7	29.6	6.1	34.4	11.8	18.7	367.7	353.0	381.6	35.1	22.7	15.0	5.5	39.5
Tea Tree Gully (C) - Hills	1067	0.9	8.1	17.7	82.5	3.8	10.7	16.2	13.6	16.6	3.8	29.1	6.0	35.4	11.6	18.4	406.7	399.2	412.8	78.9	79.4	12.0	4.9	34.1
Tea Tree Gully (C) - North	1049	0.9	7.6	14.4	83.1	3.4	9.7	13.8	13.3	15.9	3.6	30.9	6.1	35.6	11.4	17.3	453.8	382.1	524.6	103.4	86.3	19.8	2.7	39.4
Tea Tree Gully (C) - South	1018	1.3	15.5	18.6	81.6	5.0	13.4	21.9	14.8	16.9	3.8	28.4	6.1	36.0	11.6	18.0	511.7	508.2	516.7	235.7	181.8	44.8	5.5	42.1
Unincorp. Western	n.a.	..	..	..	..	..	..	..	18.1	32.3	5.0	34.7	8.6	36.8	13.4	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unley (C) - East	1064	0.5	15.5	11.1	87.4	3.0	11.9	17.7	12.0	10.8	3.5	20.1	5.4	33.2	11.2	16.6	266.8	243.9	287.9	72.7	72.5	18.0	2.3	25.0
Unley (C) - West	1066	0.5	15.3	18.2	87.6	3.6	13.4	16.3	11.5	10.9	3.2	19.8	7.5	35.2	10.4	15.4	313.1	296.8	328.1	63.7	46.1	8.8	2.7	34.2
Walkerville (M)	1065	0.9	19.4	20.4	86.6	4.7	15.4	19.2	13.4	13.4	3.3	24.0	6.2	35.1	11.5	17.2	653.8	554.8	748.8	95.7	60.5	16.8	2.0	39.7
West Torrens (C) - East	980	1.3	25.4	22.4	83.6	5.4	18.2	25.7	17.7	16.9	3.6	29.0	8.3	34.7	11.0	18.2	363.8	456.8	280.0	171.9	88.6	36.9	3.3	72.6
West Torrens (C) - West	1013	1.0	21.8	19.7	85.3	4.5	15.5	24.1	15.3	16.0	3.6	27.8	6.2	35.1	10.6	17.6	522.6	569.6	481.2	144.5	117.2	30.4	4.5	51.7

Legend

Highest third

Middle third

Lowest third

Data not available

NOTE: The colours assigned have been reversed for IRSD (indicator 1).

Table 4: Comparison table of selected indicators in Statistical Local Areas, Regional South Australia (Part 1)

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemploy ment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Services under the Medical Benefits Scheme			18.Items dispensed under the Pharmaceutical Benefits Scheme				
																	Completed diabetes cycle of care	Diabetes Education Service	Glycosylated haemoglobin	Blood Glucose Test Strips	Oral antidiabetic agents	Fasting acting insulins	Intermediate and long acting insulins	Statins
Alexandrina (DC) - Coastal	974	1.4	4.2	22.9	73.7	6.4	26.8	26.4	16.1	19.7	4.8	31.3	5.3	37.1	10.6	20.2	9.8	0.6	67.9	5.0	301.1	12.0	23.7	1162.9
Alexandrina (DC) - Strathalbyn	1004	1.3	3.5	14.3	77.8	4.4	15.2	21.5	14.8	18.0	4.1	32.6	5.5	35.9	11.2	18.1	6.2	..	60.5	6.9	253.6	11.7	26.1	897.0
Anangu Pitjantjatjara (AC)	593	89.4	0.8	80.0	51.3	35.6	0.0	70.8	..	..	..	..	..	..	..	..	0.0	0.0	5.3	4.5	102.3	..	..	181.8
Barossa (DC) - Angaston	994	0.8	3.0	18.1	80.8	3.8	12.3	24.5	14.9	17.9	4.1	31.3	5.7	35.6	10.9	17.8	24.9	0.8	65.0	12.4	309.7	13.7	33.1	956.4
Barossa (DC) - Barossa	1036	0.9	3.1	11.7	81.7	4.1	12.3	19.4	14.0	17.2	4.1	30.2	5.7	35.4	11.5	18.5	15.4	1.0	51.8	2.4	222.3	11.6	21.1	933.5
Barossa (DC) - Tanunda	1027	0.8	3.1	22.2	80.2	3.7	12.7	26.9	15.4	18.4	4.1	31.8	5.7	35.6	10.6	17.5	21.0	0.0	56.7	11.9	214.3	13.5	23.9	795.9
Barunga West (DC)	954	1.9	3.3	30.6	78.1	7.0	16.1	30.3	17.6	22.1	4.9	32.3	5.9	37.6	10.7	18.9	42.4	0.0	86.4	6.6	367.8	6.0	28.8	1171.8
Berri & Barmera (DC) - Barmera	895	5.8	7.4	33.8	73.6	7.5	19.9	31.9	19.5	23.8	4.5	33.2	7.3	33.3	11.3	18.9	13.1	19.3	38.6	6.1	486.2	14.4	55.7	1386.7
Berri & Barmera (DC) - Berri	909	5.8	7.4	33.8	73.6	7.5	19.9	31.9	19.5	23.8	4.5	33.2	7.3	33.3	11.3	18.9	24.6	2.9	34.8	6.1	386.6	13.5	44.5	1135.7
Ceduna (DC)	932	24.2	2.5	32.8	67.6	8.1	12.7	30.8	..	..	..	..	..	..	..	..	16.5	..	28.1	23.6	317.6	2.2	20.9	1166.6
Clare and Gilbert Valleys (DC)	1002	1.3	2.8	27.5	83.3	4.7	12.3	24.8	14.1	18.2	4.2	31.7	5.4	36.1	11.0	18.0	19.1	..	55.4	6.2	282.5	9.8	31.6	886.8
Cleve (DC)	1018	1.2	1.3	..	78.8	2.4	10.2	28.5	15.0	18.4	4.4	33.5	5.4	36.9	11.2	18.7	..	0.0	65.4	..	292.6	7.7	31.7	963.8
Coober Pedy (DC)	870	18.7	10.3	46.4	68.6	7.1	11.4	30.9	..	..	..	..	..	..	..	..	10.7	0.0	41.2	18.4	409.0	13.8	45.3	630.1
Copper Coast (DC)	927	2.7	2.6	26.8	77.5	10.9	21.9	33.1	19.7	23.8	4.8	35.1	6.4	35.9	11.0	19.2	26.4	0.5	69.3	16.3	422.7	12.1	42.6	1177.9
Elliston (DC)	991	2.3	2.0	..	84.5	3.8	12.0	29.6	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	..	0.0	67.5	8.1	309.3	19.1	20.7	1138.7
Flinders Ranges (DC)	955	20.8	3.6	34.2	67.9	9.9	15.8	33.7	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	..	..	67.3	11.8	368.0	11.7	50.5	999.2
Franklin Harbour (DC)	975	1.2	1.3	..	78.8	2.4	10.2	28.5	15.0	18.4	4.4	33.5	5.4	36.9	11.2	18.7	..	0.0	36.4	16.4	421.7	3.7	21.6	1130.5
Goyder (DC)	942	2.1	3.0	23.4	83.5	8.3	16.0	31.2	17.4	22.3	4.9	32.6	5.8	36.9	11.0	18.9	20.9	..	46.8	8.5	311.5	13.5	42.5	906.1
Grant (DC)	1018	2.3	3.8	23.3	79.4	4.2	11.9	25.9	15.9	19.7	4.4	35.1	6.2	35.8	11.9	18.2	12.8	..	58.1	5.7	281.8	12.0	25.2	947.7
Kangaroo Island (DC)	983	1.4	4.0	27.0	82.6	4.9	13.9	26.3	15.5	19.3	4.4	31.4	7.1	33.6	11.8	19.8	18.5	0.0	30.4	2.1	223.2	12.5	20.0	805.0
Karoonda East Murray (DC)	986	5.3	3.1	..	77.6	5.5	12.0	30.9	17.2	22.1	4.6	34.1	6.0	36.4	11.6	20.7	..	..	45.2	15.6	265.2	6.4	32.5	831.1
Kimba (DC)	1045	1.2	1.3	..	78.8	2.4	10.2	28.5	15.0	18.4	4.4	33.5	5.4	36.9	11.2	18.7	15.9	0.0	53.8	..	306.4	7.9	44.9	1012.7
Kingston (DC)	975	1.2	4.7	..	85.2	2.5	11.0	27.6	15.7	20.8	4.7	31.8	5.3	37.4	13.2	20.5	11.4	..	25.8	..	274.3	6.8	30.5	942.5
Light (RegC)	1026	1.4	3.0	20.2	82.2	4.8	15.5	20.9	15.7	19.0	4.4	32.4	5.9	37.9	12.2	18.9	28.1	0.0	66.9	8.1	346.6	13.9	34.6	1127.4
Lower Eyre Peninsula (DC)	1015	3.5	2.4	17.4	81.1	4.8	13.4	29.1	15.8	19.7	4.5	29.9	6.0	33.8	10.8	18.7	12.2	..	51.4	14.7	255.2	8.8	24.0	953.5
Loxton Waikerie (DC) - East	954	2.2	5.0	23.6	78.5	4.4	18.4	28.1	16.7	20.0	4.7	33.3	6.4	33.4	11.4	18.4	21.1	..	68.3	15.8	336.7	9.7	24.3	1058.8
Loxton Waikerie (DC) - West	936	2.6	5.6	18.1	76.4	5.1	16.6	32.3	18.4	21.3	4.6	33.4	6.5	36.4	11.3	19.1	26.3	1.0	41.5	5.6	350.2	8.3	29.2	890.2
Mallala (DC)	980	2.1	4.7	24.6	80.4	4.8	12.8	19.4	17.0	20.1	4.4	33.6	6.3	35.4	12.1	18.7	26.7	0.8	67.0	17.6	402.8	13.7	47.6	1004.8
Maralinga Tjarutja (AC)	692	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.0	0.0	..	0.0	746.1	0.0	..	860.5
Mid Murray (DC)	937	2.8	3.7	31.1	78.8	6.1	15.6	30.2	17.9	21.1	4.6	33.5	7.3	34.6	11.5	19.4	21.7	15.0	55.8	5.9	308.6	12.2	37.9	1058.5
Mount Gambier (C)	927	2.7	5.3	17.3	76.6	6.1	18.8	28.2	16.8	21.5	4.5	33.7	6.9	33.5	12.0	18.2	23.3	0.2	82.0	3.1	388.9	17.5	39.6	1328.3
Mount Remarkable (DC)	983	4.4	3.0	32.5	82.2	7.9	9.7	35.0	18.7	22.1	5.1	32.2	6.7	36.8	11.1	19.5	14.3	5.8	52.2	7.6	312.1	4.9	29.1	995.6
Murray Bridge (RC)	901	6.2	7.2	33.4	71.2	8.3	22.9	32.2	19.5	24.4	4.6	36.4	7.5	33.9	12.3	20.0	24.7	1.0	64.3	7.7	440.3	12.0	40.5	1239.2
Naracoorte and Lucindale (DC)	996	1.8	5.8	20.0	76.7	3.5	13.3	26.4	14.8	17.5	4.3	32.2	5.7	37.5	11.3	19.5	4.8	11.8	45.8	1.8	238.1	10.1	19.8	952.3
Northern Areas (DC)	982	2.1	2.5	17.2	77.2	5.8	12.3	30.3	16.0	20.4	4.7	32.4	5.5	37.2	11.2	19.5	17.4	2.4	87.2	9.7	389.9	14.5	44.1	947.5
Orroroo/Carrieton (DC)	993	4.3	3.0	..	82.1	7.9	9.8	34.9	18.6	22.1	5.1	32.2	6.7	36.8	11.1	19.5	6.6	0.0	70.6	18.4	215.6	8.1	33.4	828.8
Peterborough (DC)	798	4.4	3.0	32.7	82.3	8.0	9.7	35.0	18.7	22.1	5.1	32.2	6.7	36.8	11.1	19.5	10.4	3.1	95.2	13.9	470.0	12.2	56.8	1274.8
Port Augusta (C)	906	20.8	3.6	34.2	67.9	9.9	15.8	33.7	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	5.2	0.6	61.1	14.5	550.8	16.5	55.9	1139.7
Port Lincoln (C)	950	7.1	3.8	22.8	72.0	8.1	18.2	27.2	16.6	21.8	4.6	32.8	6.2	33.7	12.2	20.2	20.9	..	64.9	8.3	344.7	16.1	47.6	1197.0
Port Pirie C Dists (M) - City	873	4.1	3.8	32.2	73.4	14.4	20.2	37.7	21.6	26.0	5.0	35.4	7.9	33.3	11.4	19.5	20.9	23.0	56.8	5.7	528.8	15.9	62.1	1462.6
Port Pirie C Dists (M) Bal	974	2.2	2.6	18.2	76.9	6.3	12.9	30.7	16.4	20.7	4.7	32.6	5.6	36.9	11.2	19.5	24.4	8.1	71.5	8.9	490.0	18.8	47.1	1135.1
Renmark Paringa (DC) - Paringa	976	2.2	5.0	23.6	78.5	4.4	18.4	28.1	16.7	20.0	4.7	33.3	6.4	33.4	11.4	18.4	18.3	0.0	43.2	3.8	313.6	10.4	31.6	1196.1
Renmark Paringa (DC) - Renmark	902	2.7	9.6	28.8	74.6	7.6	19.6	33.7	19.7	23.0	4.6	33.9	8.5	33.5	11.1	19.0	25.8	..	44.5	12.0	399.3	10.6	34.9	1204.2
Robe (DC)	1013	1.2	4.7	..	85.2	2.5	11.0	27.6	15.7	20.8	4.7	31.8	5.3	37.4	13.2	20.5	5.9	0.0	24.5	..	247.1	13.0	18.4	1196.3
Roxby Downs (M)	1096	2.2	6.0	30.7	78.1	0.8	4.3	6.6	9.6	14.9	3.5	29.6	7.2	38.4	14.2	15.2	14.9	..	48.5	9.8	195.1	12.0	20.7	615.2

See over for continuation of table and for Legend and Note.

Table 4: Comparison table of selected indicators in Statistical Local Areas, Regional South Australia (Part 1) continued

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemploy ment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Services under the Medical Benefits Scheme			18.Items dispensed under the Pharmaceutical Benefits Scheme				
																	Completed diabetes cycle of care	Diabetes Education Service	Glycosylated haemoglobin	Blood Glucose Test Strips	Oral antidiabetic agents	Fasting acting insulins	Intermediate and long acting insulins	Statins
Southern Mallee (DC)	988	5.5	3.1	31.2	77.4	5.4	11.7	31.0	17.2	22.1	4.6	34.2	5.8	36.6	11.6	20.8	2.9	0.0	69.5	2.5	315.1	10.1	26.2	1086.8
Streaky Bay (DC)	989	24.0	2.5	32.7	67.7	8.0	12.7	30.8	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	10.2	0.0	19.4	29.9	318.6	2.3	9.3	1080.9
Tatiara (DC)	996	1.2	4.7	16.2	85.2	2.5	11.0	27.6	15.7	20.8	4.7	31.8	5.3	37.4	13.2	20.5	6.8	1.4	38.9	3.8	333.7	6.8	20.9	1063.3
The Coorong (DC)	949	5.5	3.1	31.2	77.4	5.4	11.7	31.0	17.2	22.1	4.6	34.2	5.8	36.6	11.6	20.8	9.7	..	46.1	11.1	415.4	18.1	45.0	1352.4
Tumby Bay (DC)	980	2.3	2.0	15.7	84.5	3.8	12.0	29.6	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	21.0	0.0	68.7	6.6	359.1	11.4	38.2	1335.2
Unincorp. Far North	923	18.7	10.1	46.0	68.7	7.1	11.4	30.7	9.6	14.9	3.5	29.6	7.2	38.4	14.2	15.2	8.0	0.0	48.9	9.0	189.3	8.9	22.1	547.5
Unincorp. Flinders Ranges	961	18.8	10.1	46.0	68.6	7.2	11.6	30.9	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	..	..	49.9	6.4	442.8	4.3	26.6	655.9
Unincorp. Lincoln	1016	..	..	..	..	..	..	..	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	..	0.0	..	0.0	2063.7	0.0	0.0	2755.6
Unincorp. Murray Mallee	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Unincorp. Pirie	..	18.7	10.3	..	68.6	7.1	11.4	30.9	..	..	..	..	..	..	..	0.0	0.0	0.0	..	0.0	48.1	47.4	57.2	822.9
Unincorp. Riverland	954	13.3	9.0	..	..	..	15.4	31.3	19.5	23.8	4.5	33.2	7.3	33.3	11.3	18.9	..	..	..	199.1	0.0	..	..	1001.5
Unincorp. West Coast	871	24.2	2.5	..	67.6	8.1	12.7	30.8	..	..	..	..	..	..	..	0.0	14.6	0.0	23.5	..	245.7	15.1	27.7	984.0
Unincorp. Whyalla	775	20.8	3.6	..	67.9	9.9	15.8	33.7	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	22.3	..	105.1	..	923.2	..	80.0	2098.9
Unincorp. Yorke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Victor Harbor (C)	968	1.4	4.2	23.6	71.5	7.1	29.1	27.9	16.5	20.3	5.0	31.0	5.3	37.9	10.4	20.5	16.5	..	45.0	3.8	268.6	11.8	21.5	1086.1
Wakefield (DC)	942	1.9	3.3	30.7	78.1	7.0	16.1	30.2	17.6	22.1	4.9	32.3	5.9	37.6	10.7	18.9	27.1	0.6	99.0	11.2	318.3	15.2	51.5	938.1
Wattle Range (DC) - East	968	1.3	2.7	18.9	79.7	3.9	12.1	29.2	15.9	19.8	4.5	32.5	7.2	34.9	11.5	18.4	10.5	..	74.1	5.3	260.2	8.3	16.7	818.6
Wattle Range (DC) - West	937	2.3	3.6	21.2	77.3	5.8	13.2	31.8	17.6	21.6	4.6	33.8	6.9	36.4	11.3	18.6	20.9	0.5	61.1	9.5	377.7	15.8	37.2	1276.7
Whyalla (C)	905	5.5	6.5	25.4	70.0	9.9	12.1	30.1	18.9	24.0	4.4	35.9	7.9	33.3	11.1	18.8	13.5	4.9	71.7	6.6	565.4	17.7	56.1	1347.6
Wudinna (DC)	1023	2.3	2.0	..	84.3	3.7	11.9	29.6	..	..	..	..	..	..	..	..	21.0	0.0	45.9	15.0	425.2	19.1	58.0	896.1
Yankalilla (DC)	972	1.4	4.2	23.6	71.5	7.1	29.0	27.9	16.5	20.3	5.0	31.0	5.3	37.9	10.4	20.5	19.2	4.6	32.4	16.9	303.7	10.7	33.0	1333.5
Yorke Peninsula (DC) - North	950	3.8	2.7	25.0	82.7	8.1	14.1	34.4	17.5	21.8	4.9	30.5	5.4	36.6	10.9	19.4	26.0	..	46.7	13.1	390.6	11.5	33.2	1231.0
Yorke Peninsula (DC) - South	956	3.8	2.7	25.0	82.7	8.1	14.1	34.4	17.5	21.8	4.9	30.5	5.4	36.6	10.9	19.4	16.2	1.2	39.6	25.5	293.3	7.8	30.5	934.5

Legend

	Highest third
	Middle third
	Lowest third
	Data not available

NOTE: The colours assigned have been reversed for IRSD (indicator 1).

Table 5: Comparison table of selected indicators in Statistical Local Areas, Regional South Australia (Part 2)

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemployment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Emergency Department attendances			18.Hospitalisations - primary diagnosis of diabetes			19.Premature mortality	
																	persons	male	female	All admissions	Emergency admissions only	Diabetes related complication - emergency admission	Diabetes	Circulatory disease
Alexandrina (DC) - Coastal	974	1.4	4.2	22.9	73.7	6.4	26.8	26.4	16.1	19.7	4.8	31.3	5.3	37.1	10.6	20.2	355.6	359.6	349.5	133.4	92.0	17.3	4.8	36.8
Alexandrina (DC) - Strathalbyn	1004	1.3	3.5	14.3	77.8	4.4	15.2	21.5	14.8	18.0	4.1	32.6	5.5	35.9	11.2	18.1	422.5	428.1	414.3	151.6	131.9	..	..	71.6
Anangu Pitjantjatjara (AC)	593	89.4	0.8	80.0	51.3	35.6	0.0	70.8	..	..	..	..	..	..	..	0.0	0.0	0.0	0.0	..	..	0.0	114.3	288.3
Barossa (DC) - Angaston	994	0.8	3.0	18.1	80.8	3.8	12.3	24.5	14.9	17.9	4.1	31.3	5.7	35.6	10.9	17.8	491.9	477.6	506.1	222.4	183.0	..	..	51.3
Barossa (DC) - Barossa	1036	0.9	3.1	11.7	81.7	4.1	12.3	19.4	14.0	17.2	4.1	30.2	5.7	35.4	11.5	18.5	435.5	366.1	509.1	151.4	134.2	..	..	45.4
Barossa (DC) - Tanunda	1027	0.8	3.1	22.2	80.2	3.7	12.7	26.9	15.4	18.4	4.1	31.8	5.7	35.6	10.6	17.5	346.1	490.7	212.2	129.0	130.4	..	..	60.3
Barunga West (DC)	954	1.9	3.3	30.6	78.1	7.0	16.1	30.3	17.6	22.1	4.9	32.3	5.9	37.6	10.7	18.9	772.8	1117.6	384.9	179.9	146.6	..	..	69.1
Berri & Barmera (DC) - Barmera	895	5.8	7.4	33.8	73.6	7.5	19.9	31.9	19.5	23.8	4.5	33.2	7.3	33.3	11.3	18.9	524.7	467.1	584.0	370.3	246.4	0.0	..	48.1
Berri & Barmera (DC) - Berri	909	5.8	7.4	33.8	73.6	7.5	19.9	31.9	19.5	23.8	4.5	33.2	7.3	33.3	11.3	18.9	825.0	792.6	857.2	239.3	197.9	42.0	..	55.3
Ceduna (DC)	932	24.2	2.5	32.8	67.6	8.1	12.7	30.8	..	..	..	..	..	..	..	0.0	523.1	276.3	788.2	439.0	354.0	102.9	..	64.0
Clare and Gilbert Valleys (DC)	1002	1.3	2.8	27.5	83.3	4.7	12.3	24.8	14.1	18.2	4.2	31.7	5.4	36.1	11.0	18.0	246.4	190.8	302.5	130.6	95.6	..	10.6	55.5
Cleve (DC)	1018	1.2	1.3	..	78.8	2.4	10.2	28.5	15.0	18.4	4.4	33.5	5.4	36.9	11.2	18.7	..	0.0	..	..	0.0	..	..	57.4
Coober Pedy (DC)	870	18.7	10.3	46.4	68.6	7.1	11.4	30.9	..	..	..	..	..	..	..	0.0	..	..	..	261.0	177.1	0.0	..	56.6
Copper Coast (DC)	927	2.7	2.6	26.8	77.5	10.9	21.9	33.1	19.7	23.8	4.8	35.1	6.4	35.9	11.0	19.2	102.6	113.9	90.6	306.1	187.6	45.1	8.1	67.6
Elliston (DC)	991	2.3	2.0	..	84.5	3.8	12.0	29.6	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	..	..	..	325.7	235.7	..	..	..
Flinders Ranges (DC)	955	20.8	3.6	34.2	67.9	9.9	15.8	33.7	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	294.3	..	..	449.7	314.1	..	..	79.6
Franklin Harbour (DC)	975	1.2	1.3	..	78.8	2.4	10.2	28.5	15.0	18.4	4.4	33.5	5.4	36.9	11.2	18.7	0.0	0.0	0.0	..	..	0.0	..	..
Goyder (DC)	942	2.1	3.0	23.4	83.5	8.3	16.0	31.2	17.4	22.3	4.9	32.6	5.8	36.9	11.0	18.9	368.4	..	..	136.8	107.0	0.0	..	53.5
Grant (DC)	1018	2.3	3.8	23.3	79.4	4.2	11.9	25.9	15.9	19.7	4.4	35.1	6.2	35.8	11.9	18.2	127.4	..	..	43.2	..	..	..	57.9
Kangaroo Island (DC)	983	1.4	4.0	27.0	82.6	4.9	13.9	26.3	15.5	19.3	4.4	31.4	7.1	33.6	11.8	19.8	336.6	430.1	224.1	149.2	143.5	46.0	23.3	23.1
Karoonda East Murray (DC)	986	5.3	3.1	..	77.6	5.5	12.0	30.9	17.2	22.1	4.6	34.1	6.0	36.4	11.6	20.7	642.0	..	..	..	0.0	0.0	..	..
Kimba (DC)	1045	1.2	1.3	..	78.8	2.4	10.2	28.5	15.0	18.4	4.4	33.5	5.4	36.9	11.2	18.7	..	..	..	..	0.0	..	..	..
Kingston (DC)	975	1.2	4.7	..	85.2	2.5	11.0	27.6	15.7	20.8	4.7	31.8	5.3	37.4	13.2	20.5	..	..	0.0	..	..	..	..	43.7
Light (RegC)	1026	1.4	3.0	20.2	82.2	4.8	15.5	20.9	15.7	19.0	4.4	32.4	5.9	37.9	12.2	18.9	466.1	417.8	514.8	91.6	84.0	19.1	..	47.1
Lower Eyre Peninsula (DC)	1015	3.5	2.4	17.4	81.1	4.8	13.4	29.1	15.8	19.7	4.5	29.9	6.0	33.8	10.8	18.7	232.9	..	..	132.2	114.8	..	..	53.6
Loxton Waikerie (DC) - East	954	2.2	5.0	23.6	78.5	4.4	18.4	28.1	16.7	20.0	4.7	33.3	6.4	33.4	11.4	18.4	592.0	779.8	393.2	306.7	249.6	51.5	..	57.1
Loxton Waikerie (DC) - West	936	2.6	5.6	18.1	76.4	5.1	16.6	32.3	18.4	21.3	4.6	33.4	6.5	36.4	11.3	19.1	344.1	..	..	134.2	63.2	..	..	82.9
Mallala (DC)	980	2.1	4.7	24.6	80.4	4.8	12.8	19.4	17.0	20.1	4.4	33.6	6.3	35.4	12.1	18.7	613.6	536.1	692.6	87.3	80.6	..	..	62.6
Maralinga Tjarutja (AC)	692	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	..	..
Mid Murray (DC)	937	2.8	3.7	31.1	78.8	6.1	15.6	30.2	17.9	21.1	4.6	33.5	7.3	34.6	11.5	19.4	656.4	604.3	708.1	150.4	110.6	..	..	65.7
Mount Gambier (C)	927	2.7	5.3	17.3	76.6	6.1	18.8	28.2	16.8	21.5	4.5	33.7	6.9	33.5	12.0	18.2	384.3	371.6	396.7	176.0	144.2	34.0	4.8	57.6
Mount Remarkable (DC)	983	4.4	3.0	32.5	82.2	7.9	9.7	35.0	18.7	22.1	5.1	32.2	6.7	36.8	11.1	19.5	525.8	461.9	592.9	73.1	..	0.0	..	71.0
Murray Bridge (RC)	901	6.2	7.2	33.4	71.2	8.3	22.9	32.2	19.5	24.4	4.6	36.4	7.5	33.9	12.3	20.0	484.0	270.2	704.0	359.9	328.5	30.3	7.1	72.8
Naracoorte and Lucindale (DC)	996	1.8	5.8	20.0	76.7	3.5	13.3	26.4	14.8	17.5	4.3	32.2	5.7	37.5	11.3	19.5	70.4	..	..	210.5	199.7	51.6	..	51.9
Northern Areas (DC)	982	2.1	2.5	17.2	77.2	5.8	12.3	30.3	16.0	20.4	4.7	32.4	5.5	37.2	11.2	19.5	865.2	827.7	899.8	288.1	101.6	..	..	60.1
Orroroo/Carrieton (DC)	993	4.3	3.0	..	82.1	7.9	9.8	34.9	18.6	22.1	5.1	32.2	6.7	36.8	11.1	19.5	..	..	..	..	0.0	..	..	..
Peterborough (DC)	798	4.4	3.0	32.7	82.3	8.0	9.7	35.0	18.7	22.1	5.1	32.2	6.7	36.8	11.1	19.5	770.2	..	..	461.1	427.3	..	..	70.0
Port Augusta (C)	906	20.8	3.6	34.2	67.9	9.9	15.8	33.7	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	977.5	976.6	970.2	688.2	507.2	145.2	21.7	102.7
Port Lincoln (C)	950	7.1	3.8	22.8	72.0	8.1	18.2	27.2	16.6	21.8	4.6	32.8	6.2	33.7	12.2	20.2	383.2	427.0	339.5	175.6	157.6	48.9	..	59.3
Port Pirie C Dists (M) - City	873	4.1	3.8	32.2	73.4	14.4	20.2	37.7	21.6	26.0	5.0	35.4	7.9	33.3	11.4	19.5	1226.9	902.7	1543.7	320.7	284.8	22.8	14.0	81.9
Port Pirie C Dists (M) Bal	974	2.2	2.6	18.2	76.9	6.3	12.9	30.7	16.4	20.7	4.7	32.6	5.6	36.9	11.2	19.5	425.9	455.3	389.1	128.4	78.5	..	..	64.2
Renmark Paringa (DC) - Paringa	976	2.2	5.0	23.6	78.5	4.4	18.4	28.1	16.7	20.0	4.7	33.3	6.4	33.4	11.4	18.4	297.5	..	..	..	..	..	..	56.4
Renmark Paringa (DC) - Renmark	902	2.7	9.6	28.8	74.6	7.6	19.6	33.7	19.7	23.0	4.6	33.9	8.5	33.5	11.1	19.0	309.2	351.0	268.5	240.5	199.0	..	..	57.4
Robe (DC)	1013	1.2	4.7	..	85.2	2.5	11.0	27.6	15.7	20.8	4.7	31.8	5.3	37.4	13.2	20.5	..	0.0	..	..	..	..	..	..
Roxby Downs (M)	1096	2.2	6.0	30.7	78.1	0.8	4.3	6.6	9.6	14.9	3.5	29.6	7.2	38.4	14.2	15.2	..	..	..	..	0.0	..	..	..

See over for continuation of table and for Legend and Note.

Table 5: Comparison table of selected indicators in Statistical Local Areas, Regional South Australia (Part 2) continued

Statistical Local Area	1.IRSD	2.Indigenous status (%)	3.Non-English speaking countries of birth (%)	4.Children assessed as development ally vulnerable (%)	5.Learning or earning (%)	6.Unemployment (%)	7.Households receiving rent assistance (%)	8.Homes with no Internet connection (%)	9.Fair/poor health	10.Current smokers	11.Alcohol use at risky levels	12.Obesity prevalence	13.Diabetes prevalence	14.High cholesterol prevalence	15.High blood pressure prevalence	16.Circulatory disease prevalence	17.Emergency Department attendances			18.Hospitalisations - primary diagnosis of diabetes			19.Premature mortality	
																	persons	male	female	All admissions	Emergency admissions only	Diabetes related complication - emergency admission	Diabetes	Circulatory disease
Southern Mallee (DC)	988	5.5	3.1	31.2	77.4	5.4	11.7	31.0	17.2	22.1	4.6	34.2	5.8	36.6	11.6	20.8	318.4	..	..	..	..	..	65.1	
Streaky Bay (DC)	989	24.0	2.5	32.7	67.7	8.0	12.7	30.8	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	..	..	0.0	350.4	351.6	0.0	..	61.2
Tatiara (DC)	996	1.2	4.7	16.2	85.2	2.5	11.0	27.6	15.7	20.8	4.7	31.8	5.3	37.4	13.2	20.5	88.0	169.3	0.0	267.6	240.0	..	..	59.0
The Coorong (DC)	949	5.5	3.1	31.2	77.4	5.4	11.7	31.0	17.2	22.1	4.6	34.2	5.8	36.6	11.6	20.8	207.5	..	..	324.0	262.6	39.4	..	58.1
Tumby Bay (DC)	980	2.3	2.0	15.7	84.5	3.8	12.0	29.6	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	220.6	..	..	141.7	126.2	0.0	..	46.0
Unincorp. Far North	923	18.7	10.1	46.0	68.7	7.1	11.4	30.7	9.6	14.9	3.5	29.6	7.2	38.4	14.2	15.2	408.2	..	..	..	..	..	..	90.5
Unincorp. Flinders Ranges	961	18.8	10.1	46.0	68.6	7.2	11.6	30.9	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	1315.0	765.3	2258.4	531.0	386.3	..	..	..
Unincorp. Lincoln	1016	..	..	..	..	..	..	..	15.6	18.8	4.5	28.8	6.0	33.8	10.3	18.1	0.0	0.0	0.0	0.0	0.0	0.0	..	..
Unincorp. Murray Mallee	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Unincorp. Pirie	..	18.7	10.3	..	68.6	7.1	11.4	30.9	..	..	..	..	..	..	0.0	0.0	0.0	0.0	0.0	..	..	..	..	..
Unincorp. Riverland	954	13.3	9.0	..	..	..	15.4	31.3	19.5	23.8	4.5	33.2	7.3	33.3	11.3	18.9	..	..	0.0	0.0	0.0	0.0	..	..
Unincorp. West Coast	871	24.2	2.5	..	67.6	8.1	12.7	30.8	..	..	..	..	..	..	0.0	1116.5	..	..	1240.4	933.3	0.0	..	..	
Unincorp. Whyalla	775	20.8	3.6	..	67.9	9.9	15.8	33.7	17.8	25.8	4.5	33.5	7.0	33.9	11.8	18.8	0.0	0.0	0.0	..	..	..	..	..
Unincorp. Yorke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Victor Harbor (C)	968	1.4	4.2	23.6	71.5	7.1	29.1	27.9	16.5	20.3	5.0	31.0	5.3	37.9	10.4	20.5	363.8	369.7	357.3	131.5	122.4	28.7	4.9	35.5
Wakefield (DC)	942	1.9	3.3	30.7	78.1	7.0	16.1	30.2	17.6	22.1	4.9	32.3	5.9	37.6	10.7	18.9	298.9	231.9	369.8	172.7	142.1	43.2	..	81.5
Wattle Range (DC) - East	968	1.3	2.7	18.9	79.7	3.9	12.1	29.2	15.9	19.8	4.5	32.5	7.2	34.9	11.5	18.4	..	..	..	201.1	141.3	..	..	53.2
Wattle Range (DC) - West	937	2.3	3.6	21.2	77.3	5.8	13.2	31.8	17.6	21.6	4.6	33.8	6.9	36.4	11.3	18.6	541.4	430.3	654.2	166.8	163.4	37.4	..	59.9
Whyalla (C)	905	5.5	6.5	25.4	70.0	9.9	12.1	30.1	18.9	24.0	4.4	35.9	7.9	33.3	11.1	18.8	257.2	333.6	177.5	278.1	27.3	..	9.8	75.1
Wudinna (DC)	1023	2.3	2.0	..	84.3	3.7	11.9	29.6	..	..	..	..	..	..	..	..	..	0.0	..	..	..	0.0	..	..
Yankalilla (DC)	972	1.4	4.2	23.6	71.5	7.1	29.0	27.9	16.5	20.3	5.0	31.0	5.3	37.9	10.4	20.5	481.8	380.8	585.1	126.3	114.5	0.0	..	36.9
Yorke Peninsula (DC) - North	950	3.8	2.7	25.0	82.7	8.1	14.1	34.4	17.5	21.8	4.9	30.5	5.4	36.6	10.9	19.4	274.7	278.8	266.9	239.3	147.5	66.3	..	69.2
Yorke Peninsula (DC) - South	956	3.8	2.7	25.0	82.7	8.1	14.1	34.4	17.5	21.8	4.9	30.5	5.4	36.6	10.9	19.4	106.2	..	..	149.1	114.6	..	..	64.5

Legend

Highest third

Middle third

Lowest third

Data not available

NOTE: The colours assigned have been reversed for IRSD (indicator 1).

Analysis by socioeconomic status and remoteness

Socioeconomic status

The following charts describe variations in rates of diabetes healthcare activity and in related prescribing for Adelaide (Figures 8 to 13) and for Regional South Australia (Figures 14 to 19), by socioeconomic status, where areas are grouped into five groups (quintiles), based on the Index of Relative Socio-economic Disadvantage (indicator definitions are those used in the summary tables on the previous pages). A rate ratio is given to describe the magnitude of variation between the least disadvantaged and most disadvantaged quintiles. A rate ratio of 1 shows that the rate in the most and least disadvantaged quintiles is the same. A rate ratio of more than 1 shows there is a higher rate in the most disadvantaged quintile, e.g., a rate ratio of 2 would indicate there is double the activity in the least disadvantaged compared to the most disadvantaged quintile. Where the rate ratio is more or less than 1, this shows there may be some inequity to service provision across population groups when looked at by level of disadvantage. When comparing between charts, please note that the scales are not consistent.

Key points from these analyses of variation by quintile of disadvantage follow.

- The most disadvantaged quintile has consistently higher rates of activity than the least disadvantaged quintile in Adelaide, apart from the indicator relating to provision of a Diabetes Education Service.
- Broadly, dose-response relationships are observed as level of disadvantage increases for the Adelaide profiles. There are however some exceptions, such as the cost of oral antidiabetic medications.
- The pattern observed is largely the same in regional areas of South Australia, with the most disadvantaged quintile having the highest rates across the range of indicators. The pattern is not as clear for services delivered under the Medical Benefits Scheme or for the average cost per item measures for the Pharmaceutical Benefits Scheme items.
- The rate of prescribing diabetes related items under the Pharmaceutical Benefits Scheme are largely similar between Adelaide and Regional South Australia across the quintiles of disadvantage. However, in the most disadvantaged quintile in Adelaide the rate of prescribing Blood Glucose Test Strips was approximately double that of the same quintile for Regional South Australia.
- The rate of ED presentations for endocrine and related reasons was higher across all quintiles of disadvantage in Regional South Australia compared to Adelaide.
- In the more disadvantaged quintiles, higher rates of hospital admissions for diabetes specific diagnoses are evident in Regional South Australia compared to Adelaide.
- The greatest variation in activity between the most and least disadvantaged quintiles of the population for Adelaide is in elective admissions for diabetes (although overall small numbers) as well as hospital admissions for complications of diabetes and for premature mortality due to diabetes.
- The greatest variation in activity between the least and most disadvantaged quintiles for the population in Adelaide is in elective admissions for diabetes and its complications (although overall numbers are fairly small).

Figure 7: Primary care: Medical Benefits Scheme, Adelaide

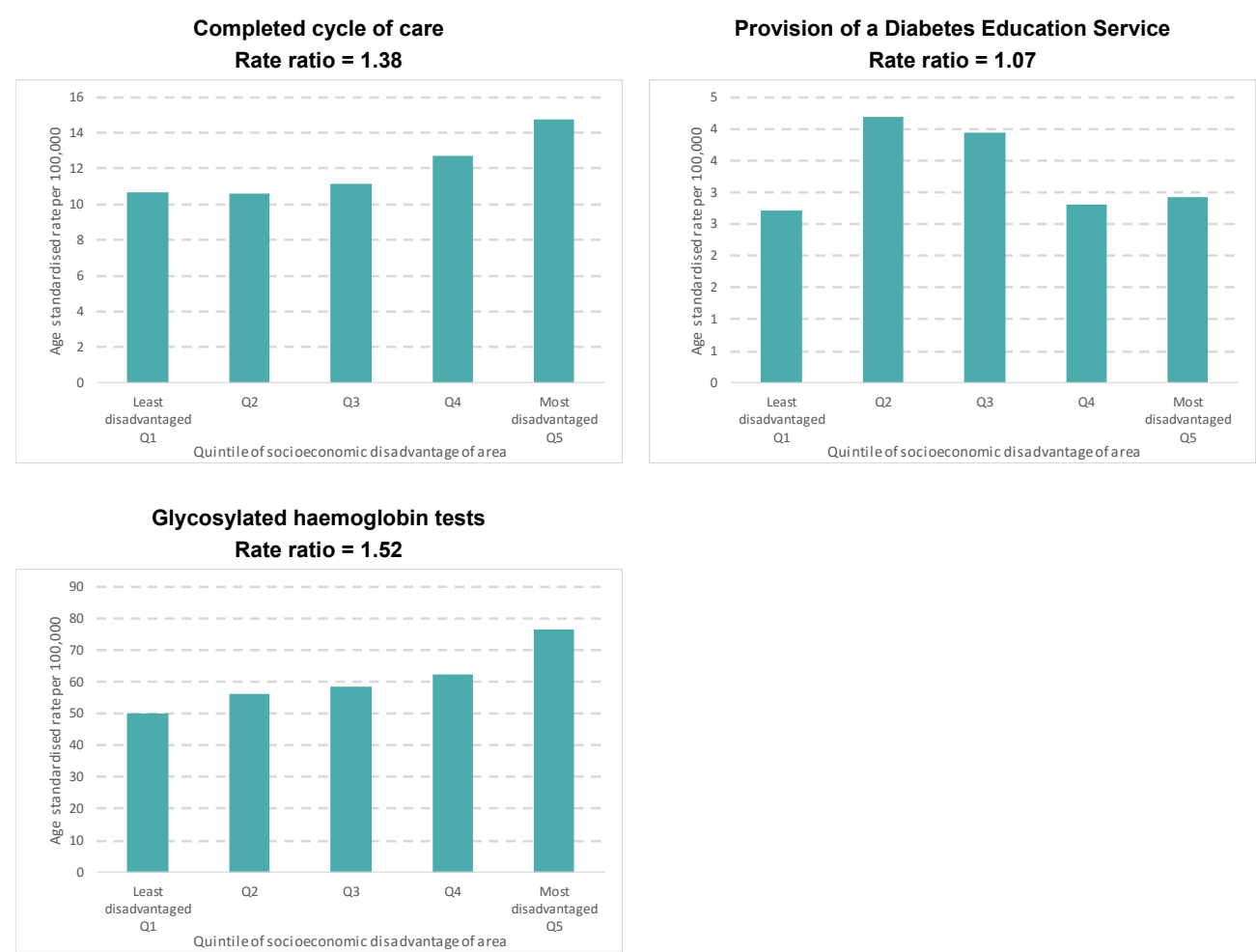
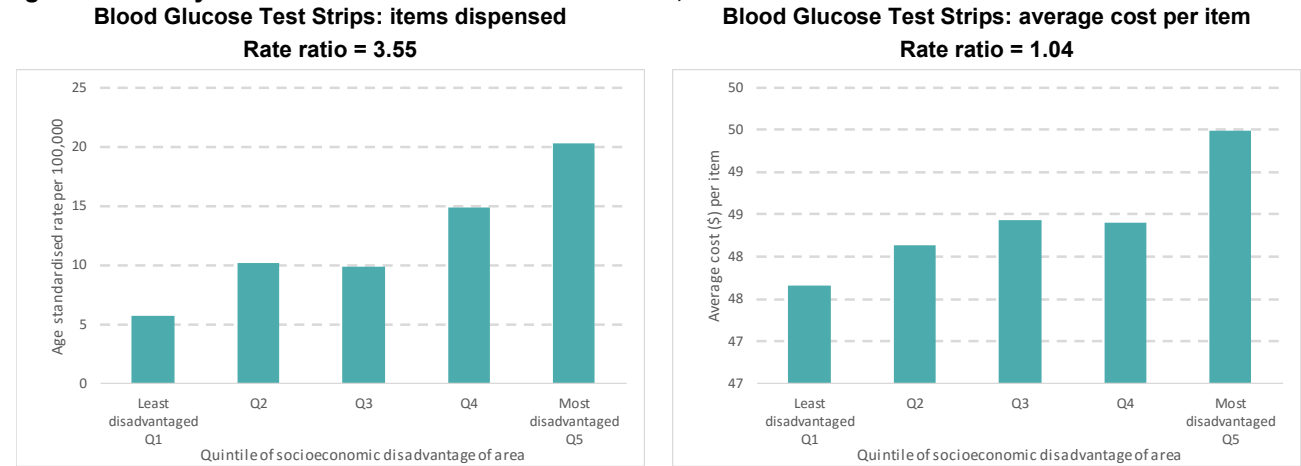
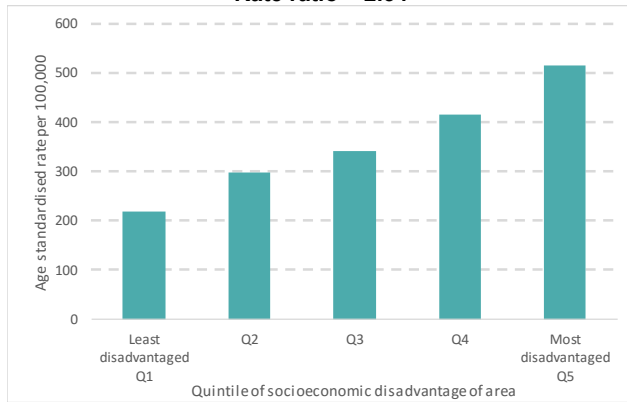


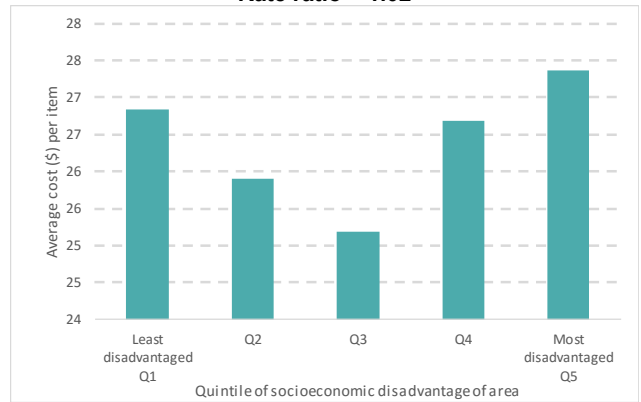
Figure 8: Primary care: Pharmaceutical Benefits Scheme, Adelaide



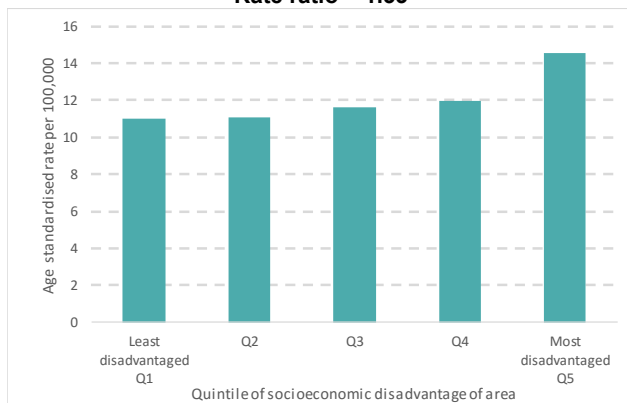
Oral antidiabetic medications: items dispensed
Rate ratio = 2.34



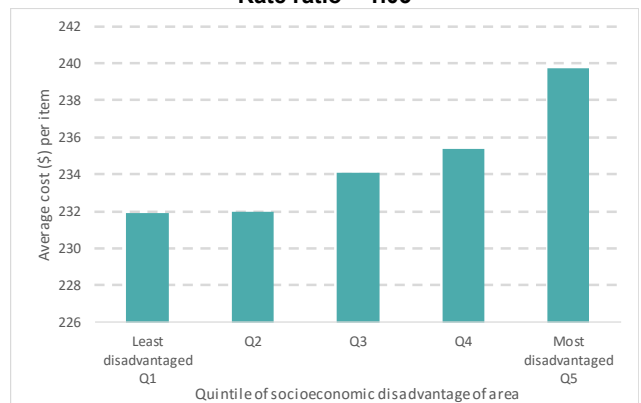
Oral antidiabetic medications: average cost per item
Rate ratio = 1.02



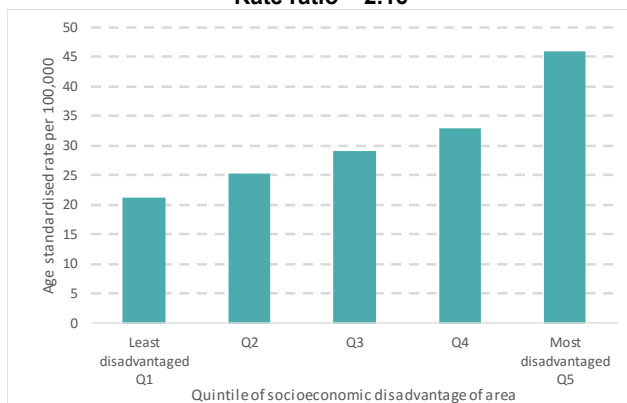
Fast acting insulins: items dispensed
Rate ratio = 1.33



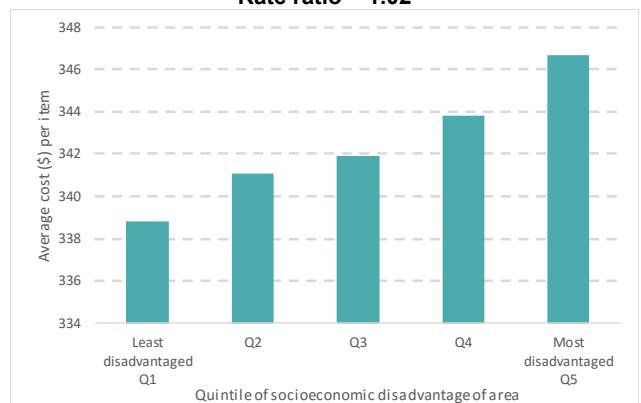
Fast acting insulins: average cost per item
Rate ratio = 1.03



Intermediate and long acting insulins: items dispensed
Rate ratio = 2.16



Intermediate & long acting insulins: average cost per item
Rate ratio = 1.02



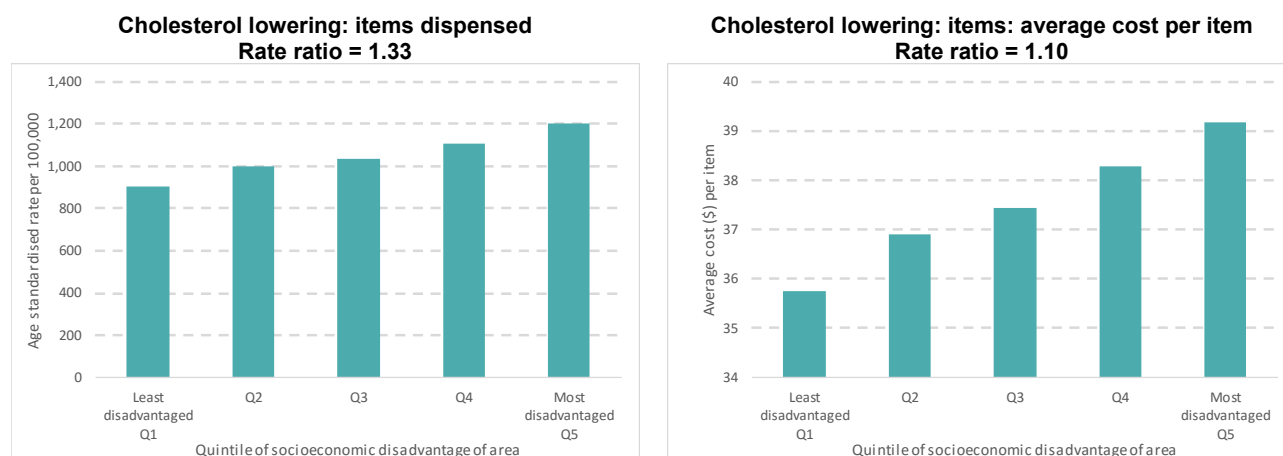


Figure 9: Emergency department attendances (endocrine, nutritional and metabolic system illness)

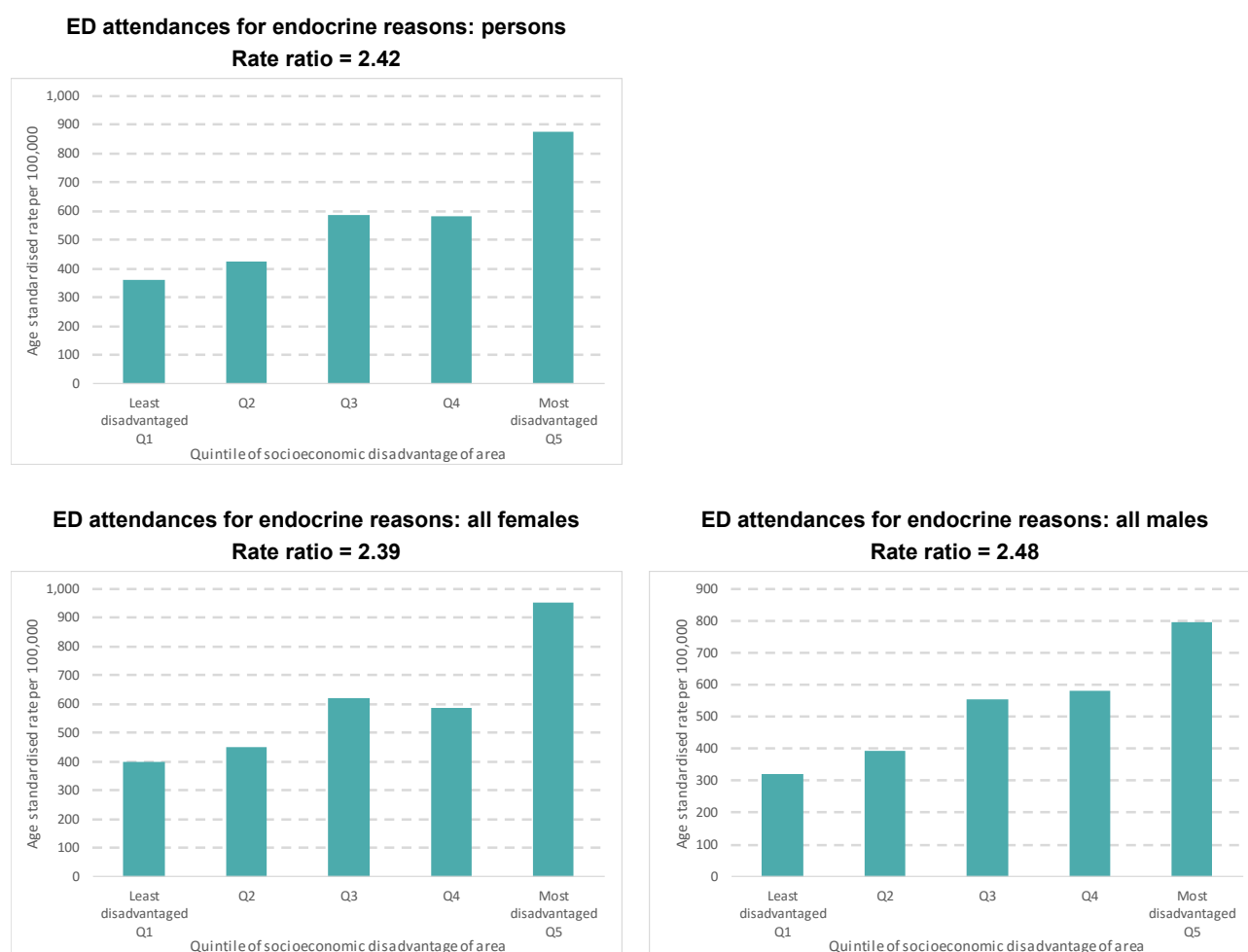


Figure 10: Hospitalisations with a primary diagnosis of diabetes, Adelaide

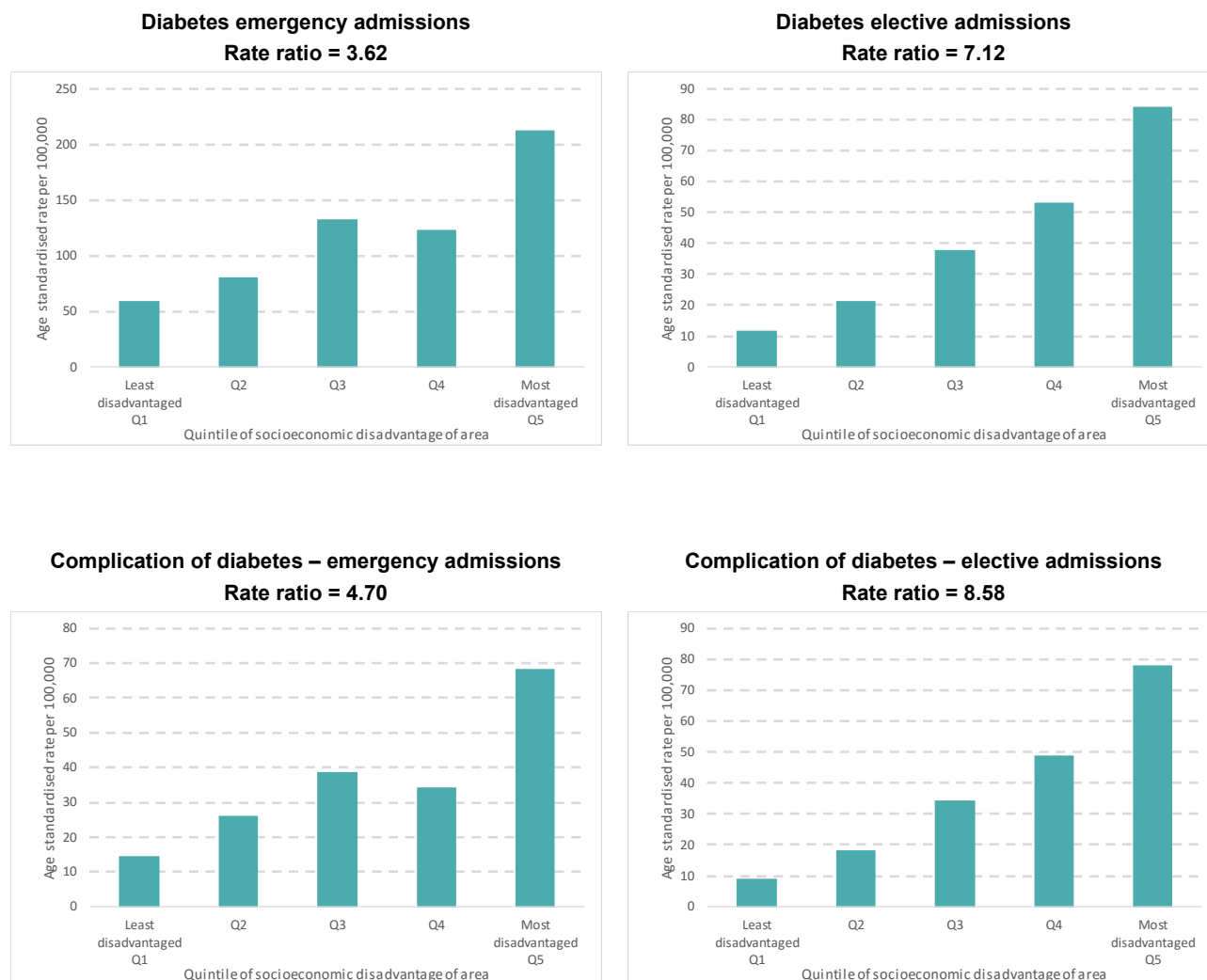
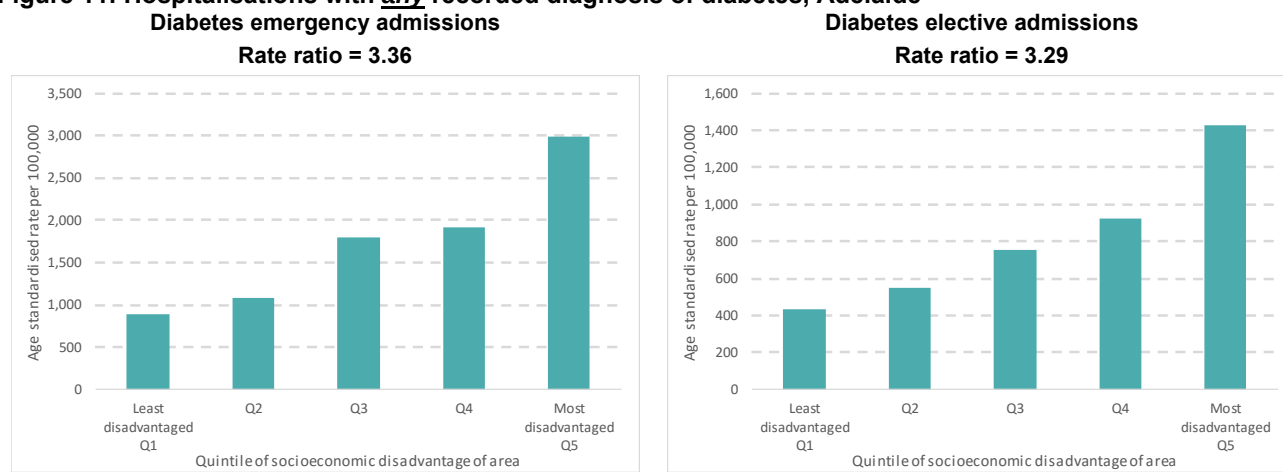
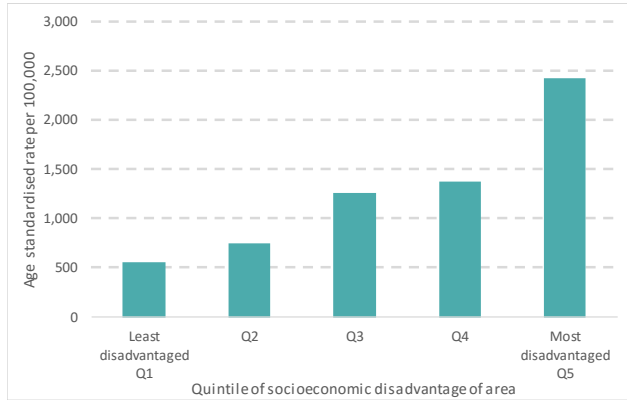


Figure 11: Hospitalisations with any recorded diagnosis of diabetes, Adelaide



Complication of diabetes – emergency admissions
Rate ratio = 4.37



Complication of diabetes – elective admissions
Rate ratio = 4.36

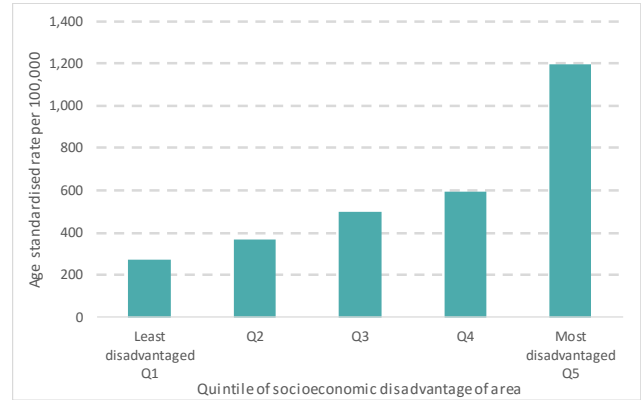
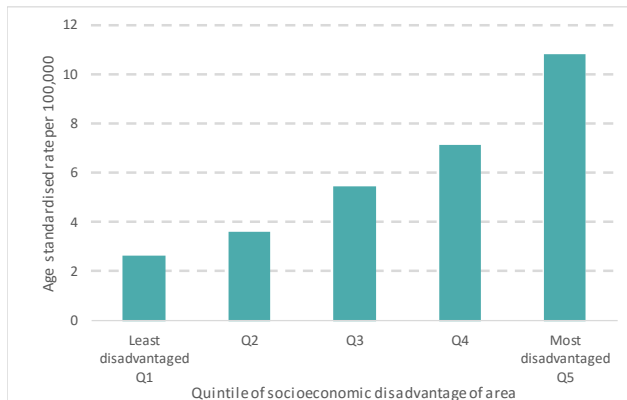


Figure 12: Premature mortality (<75 years), Adelaide
Premature mortality – diabetes
Rate ratio = 4.12



Premature mortality – circulatory
Rate ratio = 2.31

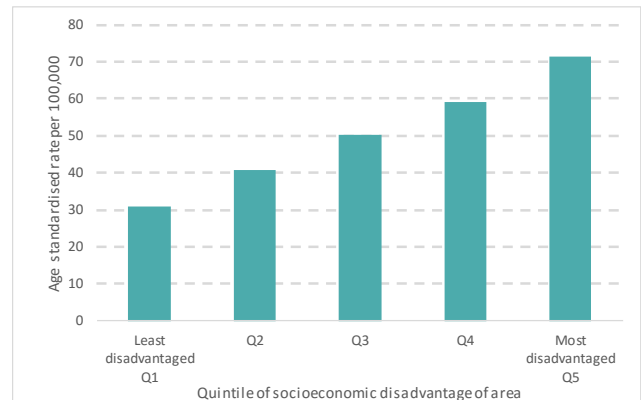


Figure 13: Primary care: Medical Benefits Scheme, Regional South Australia

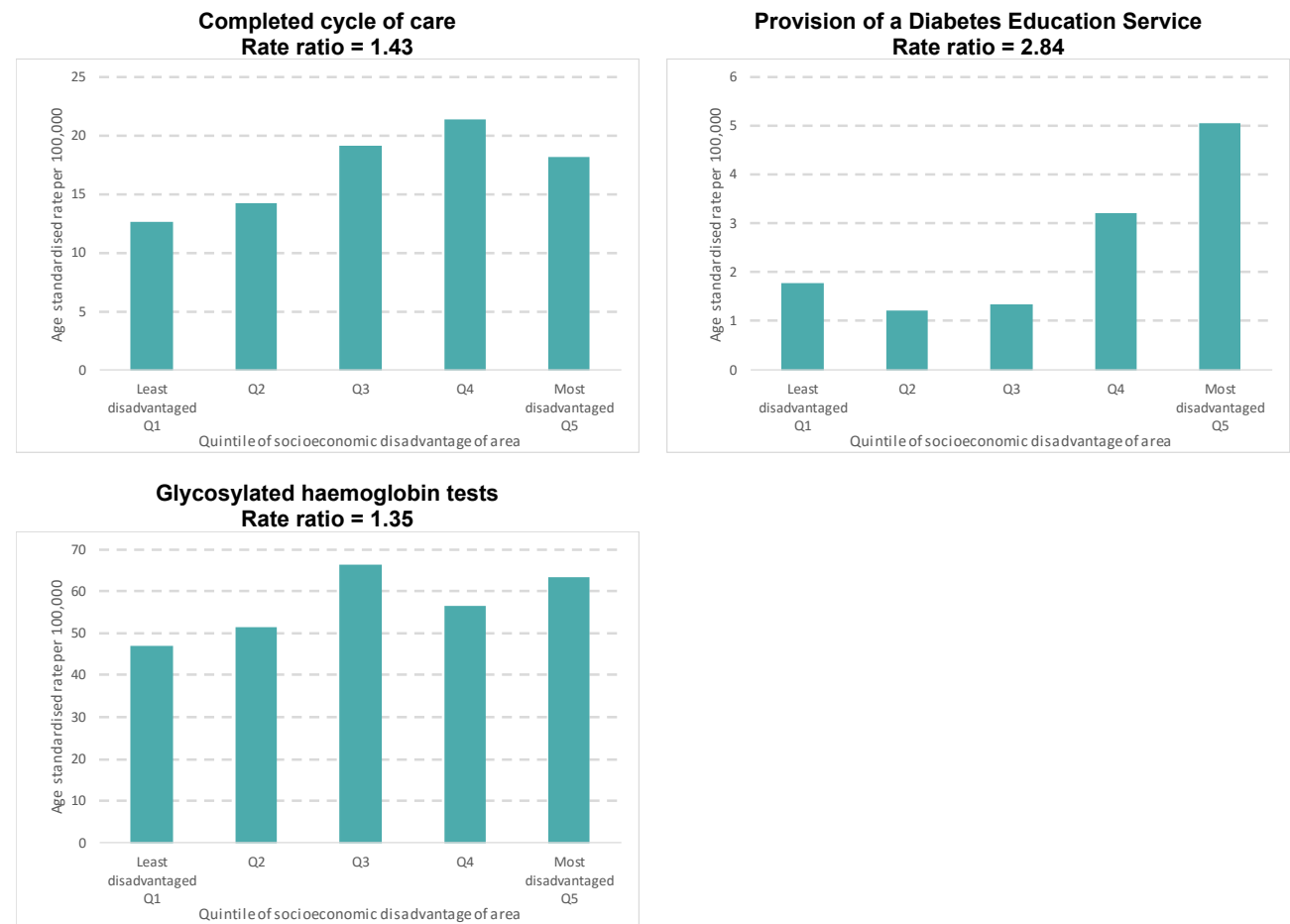
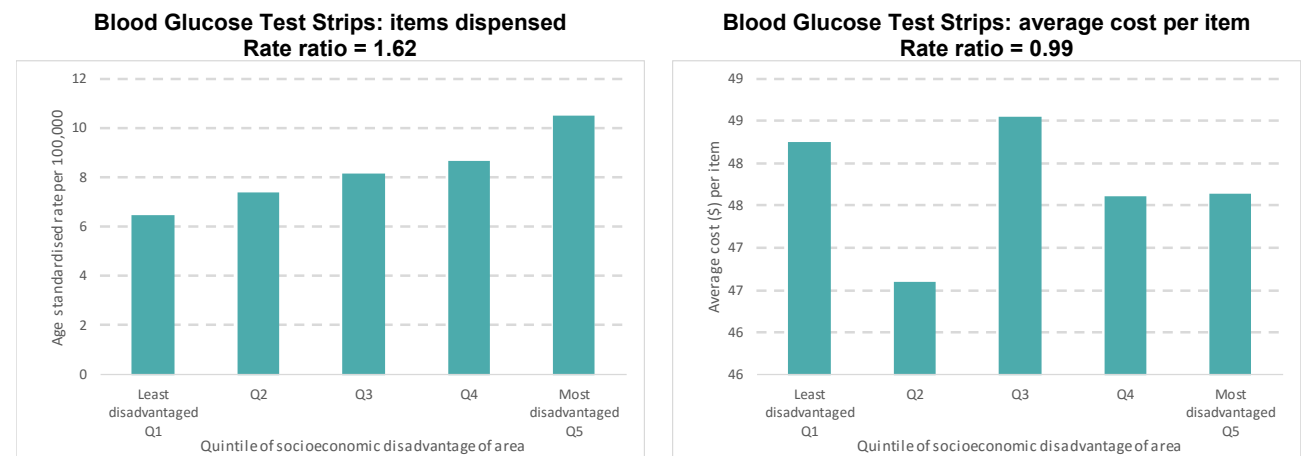
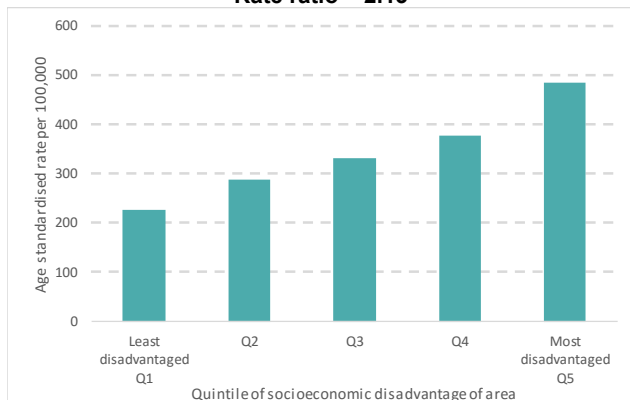


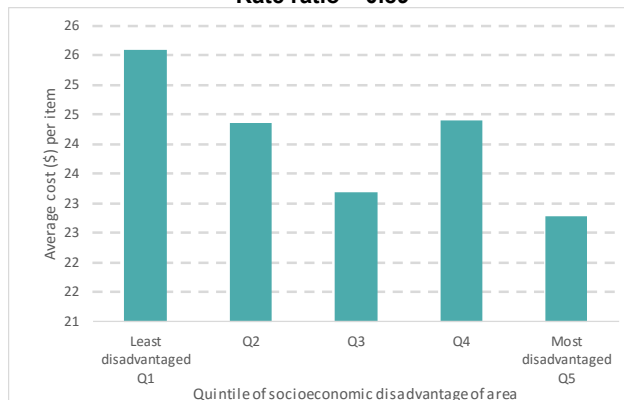
Figure 14: Primary care: Pharmaceutical Benefits Scheme, Regional South Australia



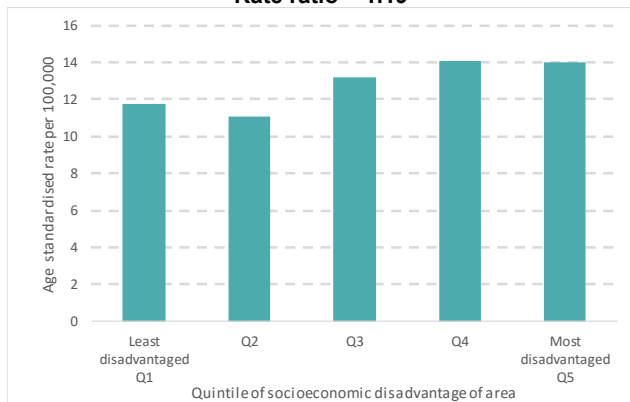
Oral antidiabetic medications: items dispensed
Rate ratio = 2.13



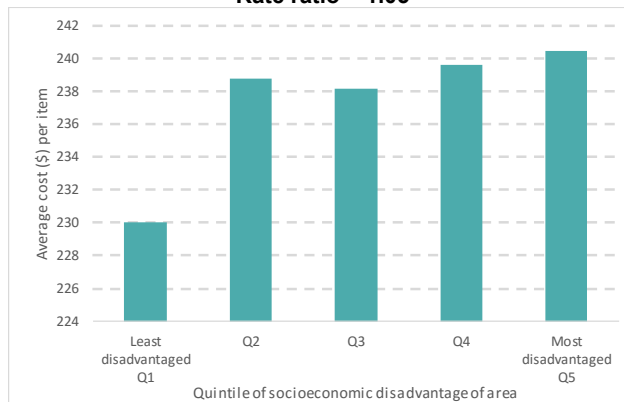
Oral antidiabetic medications: average cost per item
Rate ratio = 0.89



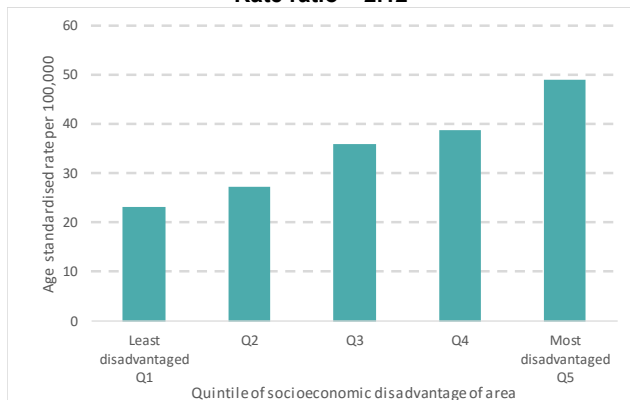
Fast acting insulins: items dispensed
Rate ratio = 1.19



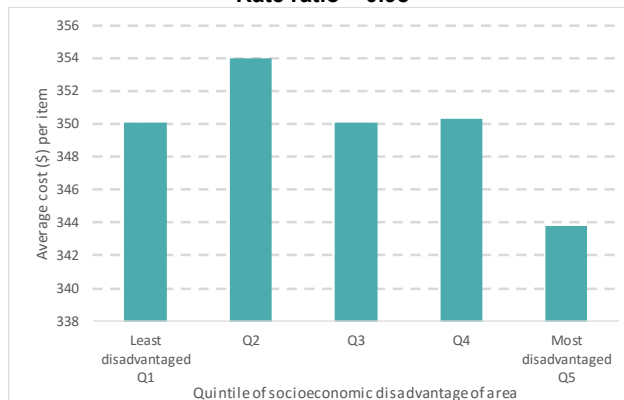
Fast acting insulins: average cost per item
Rate ratio = 1.05



Intermediate and long acting insulins: items dispensed
Rate ratio = 2.12



Intermediate & long acting insulins: average cost per item
Rate ratio = 0.98



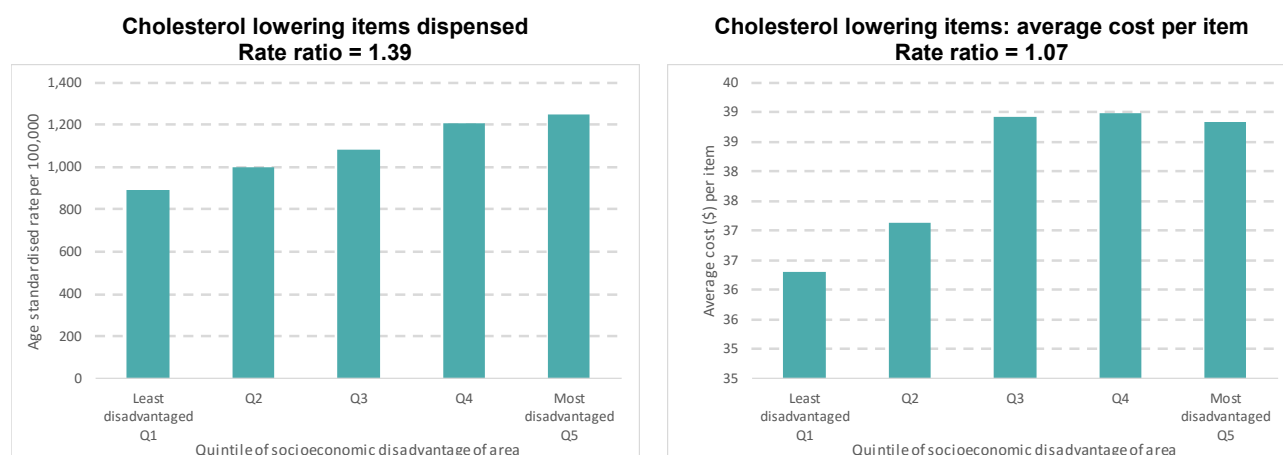


Figure 15: Emergency department attendances (endocrine, nutritional and metabolic system illness), Regional South Australia

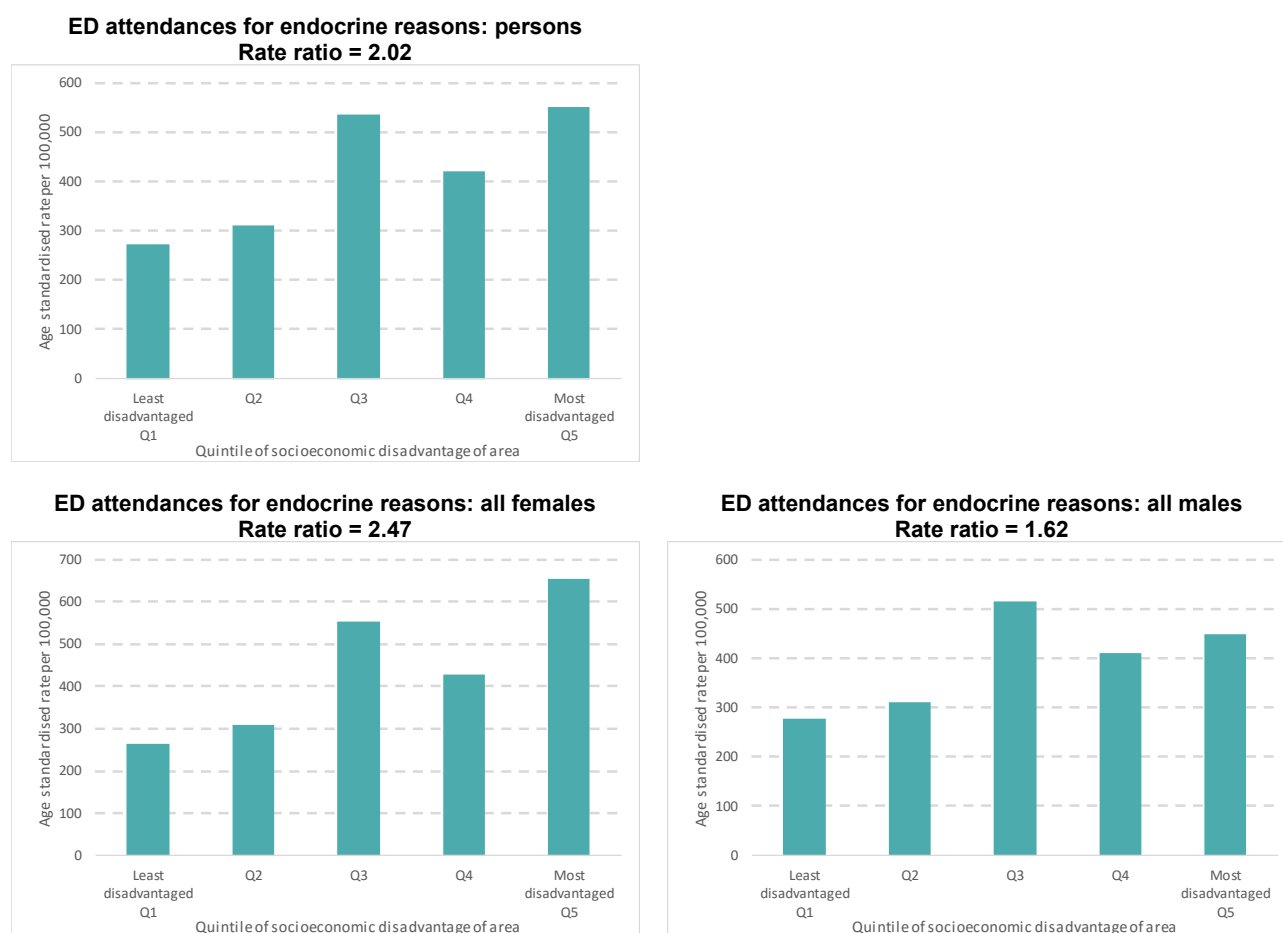
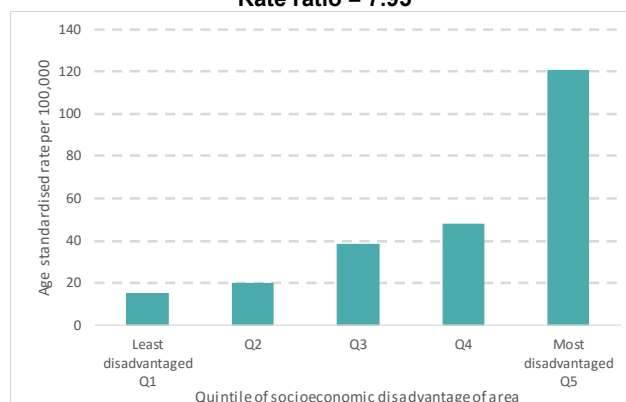


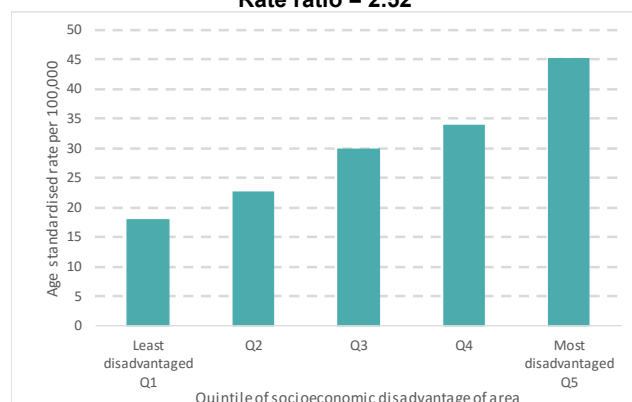
Figure 16: Hospitalisations with a primary diagnosis of diabetes, Regional South Australia
Diabetes emergency admissions
Rate ratio = 2.82



Diabetes elective admissions
Rate ratio = 7.95



Complication of diabetes – emergency admissions
Rate ratio = 2.52



Complication of diabetes – elective admissions
Rate ratio = 5.76

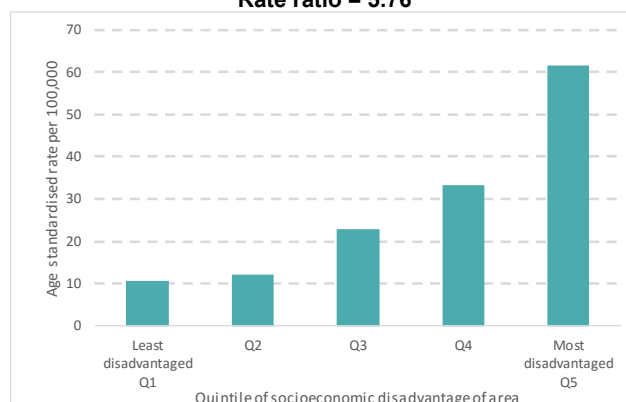
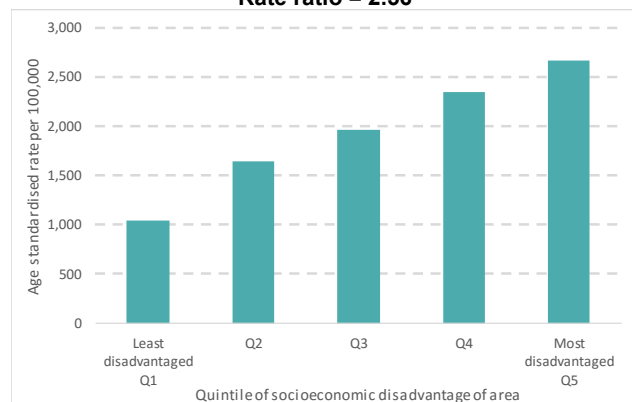
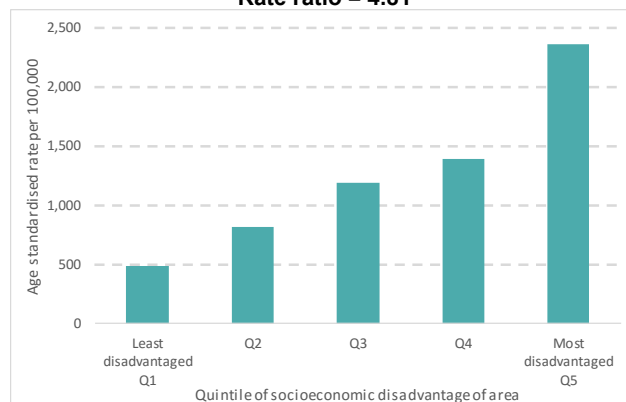


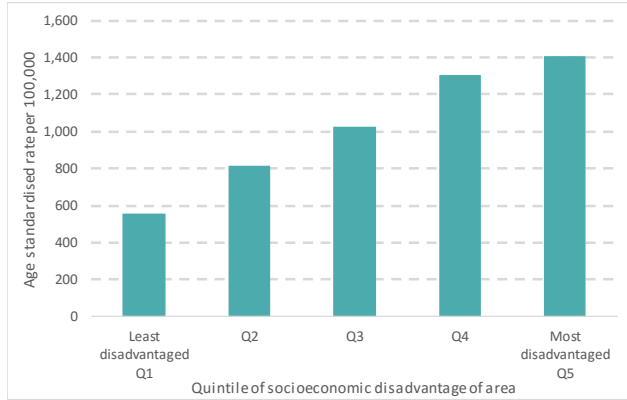
Figure 17: Hospitalisations with any recorded diagnosis of diabetes, Regional South Australia
Diabetes emergency admissions
Rate ratio = 2.56



Diabetes elective admissions
Rate ratio = 4.81



Complication of diabetes – emergency admissions
Rate ratio = 2.52



Complication of diabetes – elective admissions
Rate ratio = 4.42

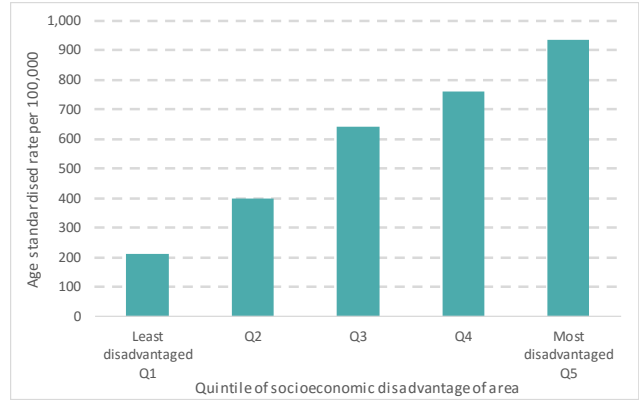
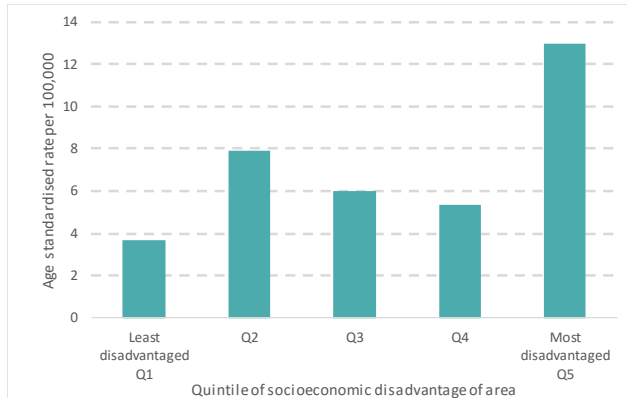
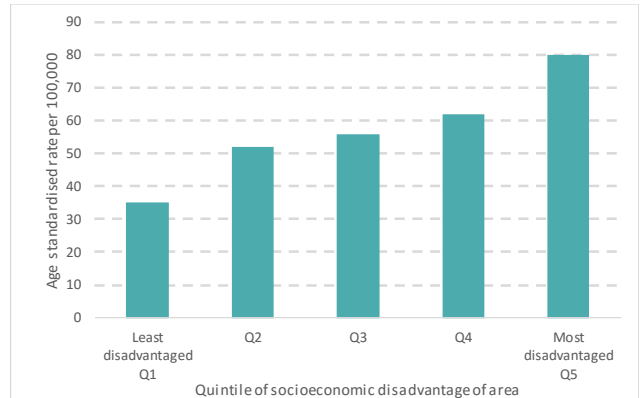


Figure 18: Premature mortality (<75 years), Regional South Australia

Premature mortality – diabetes
Rate ratio = 3.56



Premature mortality – circulatory
Rate ratio = 2.28



Remoteness

The following charts (Figures 20 to 25) describe the variation in rates of activity in diabetes healthcare activity and in related prescribing by category of remoteness, using the Australian Bureau of Statistics Remoteness Structure [45] (indicator definitions are those used in the summary tables in the previous pages). When comparing between charts, note that, while scales on the horizontal axis aim to be consistent for data displayed for the same indicator, the scale has been changed where necessary to enable data to be displayed clearly.

Key points from these analyses of variation by category of remoteness follow.

- Very Remote areas have the lowest rates of services provided under the Medical Benefits Scheme and the lowest rates of ED attendances for endocrine and related reasons (all persons).
- The highest rates of emergency hospital admissions specific to or related to diabetes were from Very Remote areas. However, for elective admissions (specific to or related to diabetes) the highest rates were observed from Outer Regional areas.
- The highest rates of premature death due to diabetes and also due to circulatory disease were observed to be from Very Remote areas.
- For indicators relating to the Pharmaceutical Benefits Scheme there is variation between categories of remoteness. Apart from for Blood Glucose Test Strips, the highest rates of prescribing appear to be from Outer Regional areas. For fast acting insulins the lowest rates of prescribing are from Major Cities, whereas for statins, the lowest rates of prescribing are from Very Remote areas.
- Variation in average cost per item of Pharmaceutical Benefits Scheme indicators by remoteness would not necessarily be expected. Therefore, further work to better understand the reasons for this may provide an interesting insight.

Figure 19: Primary care: Medical Benefits Scheme

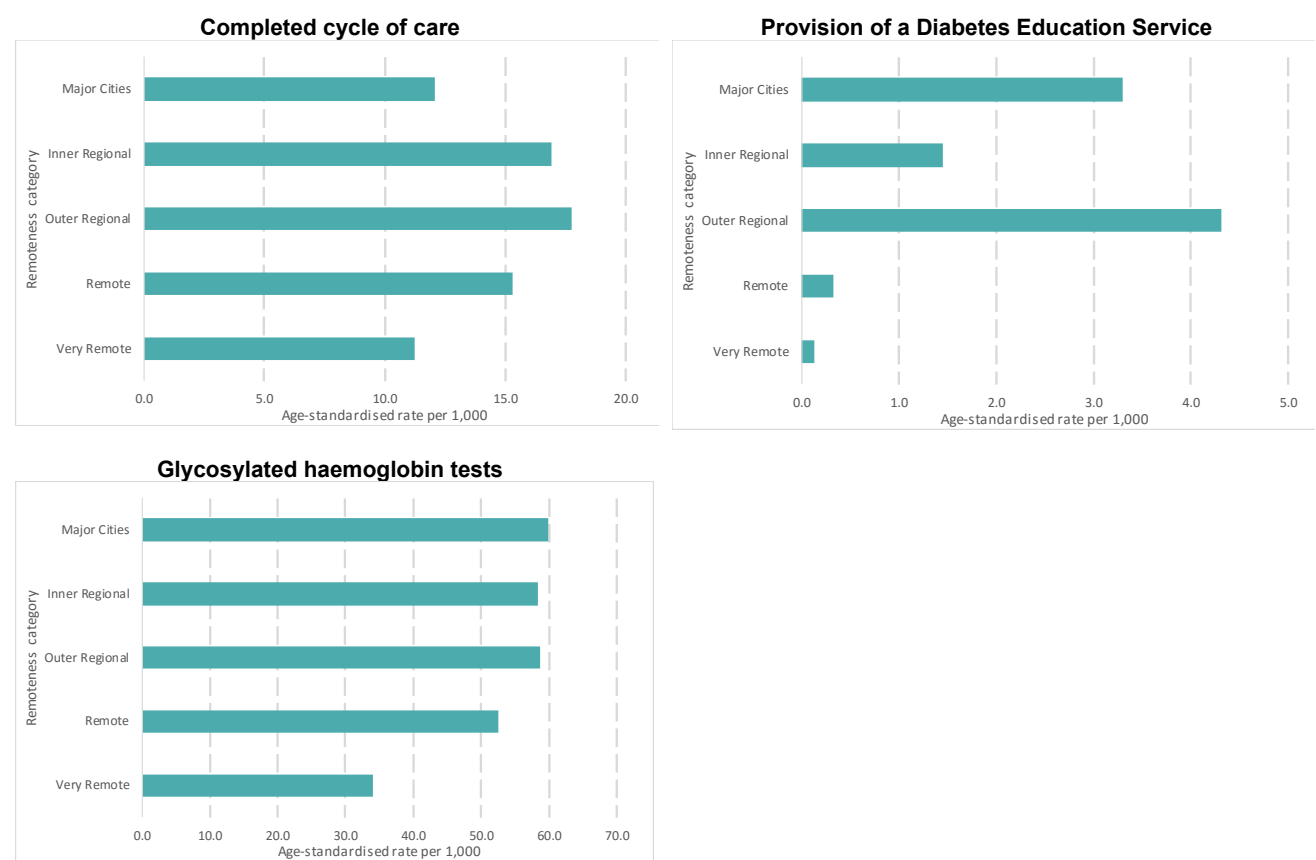
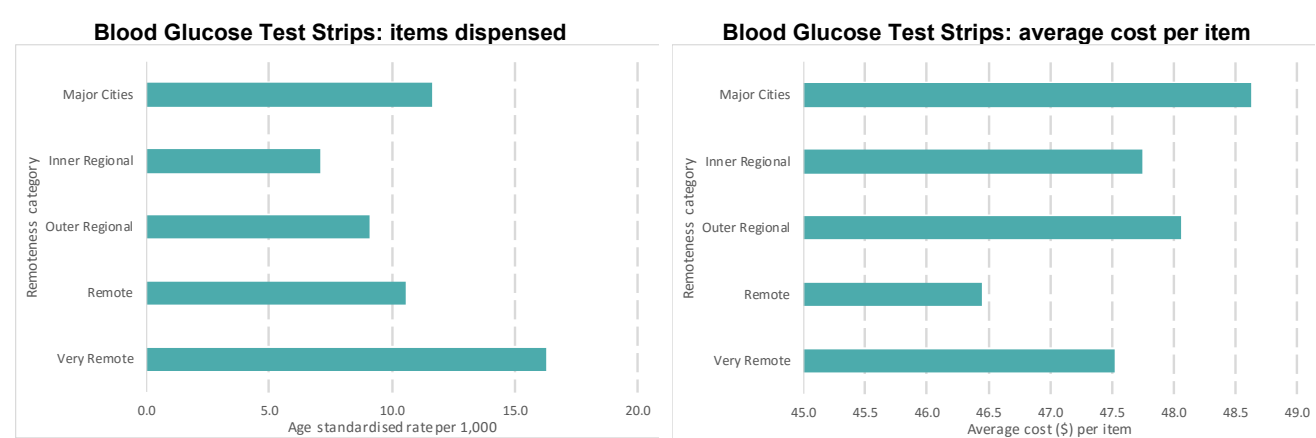
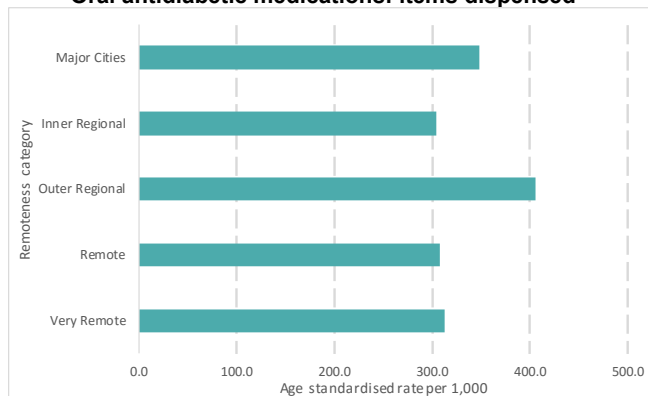


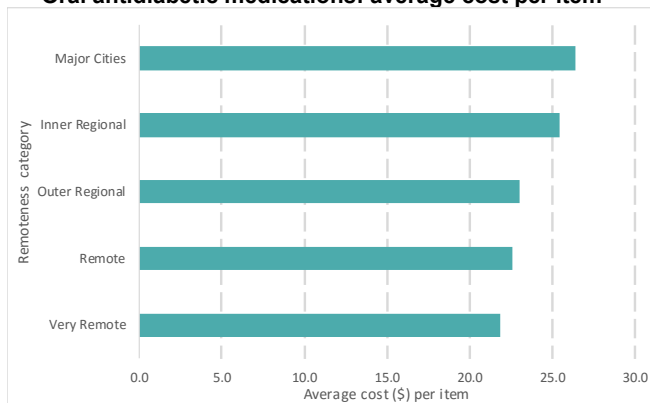
Figure 20: Primary care: Pharmaceutical Benefits Scheme



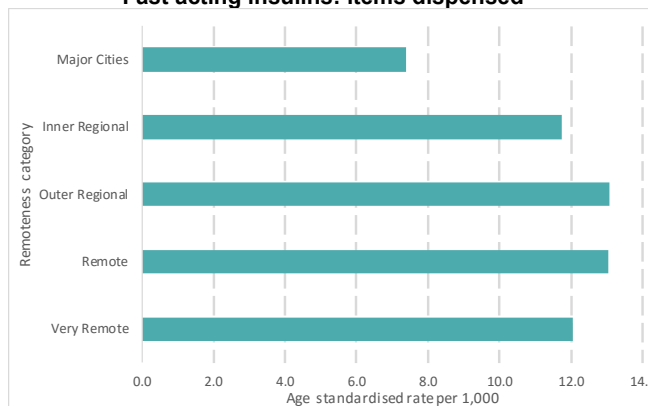
Oral antidiabetic medications: items dispensed



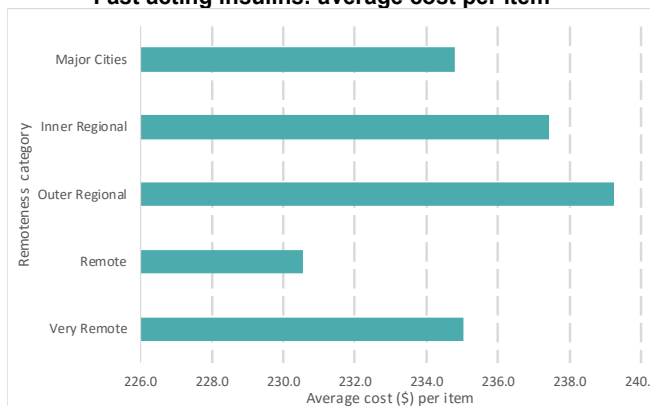
Oral antidiabetic medications: average cost per item



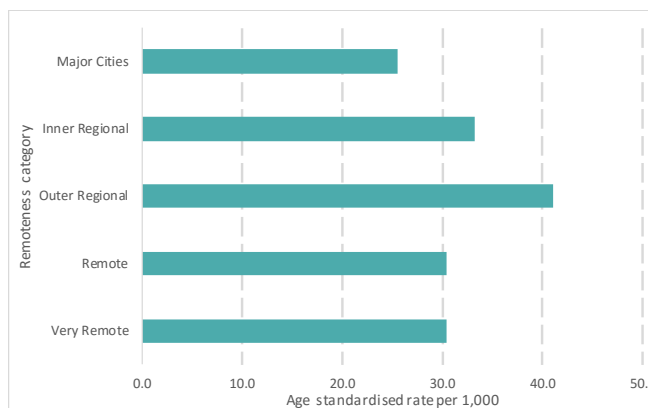
Fast acting insulins: items dispensed



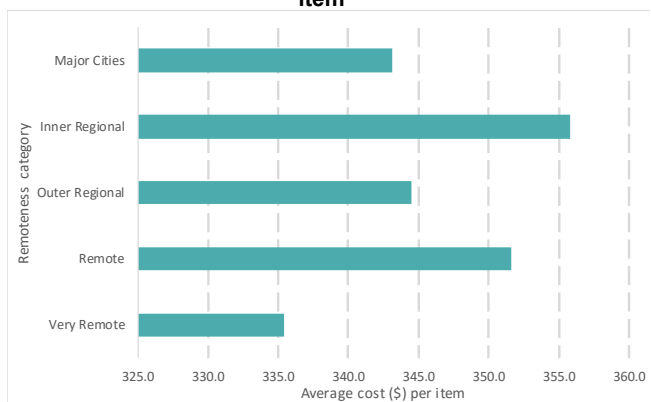
Fast acting insulins: average cost per item



Intermediate and long acting insulins: items dispensed



Intermediate and long acting insulins: average cost per item



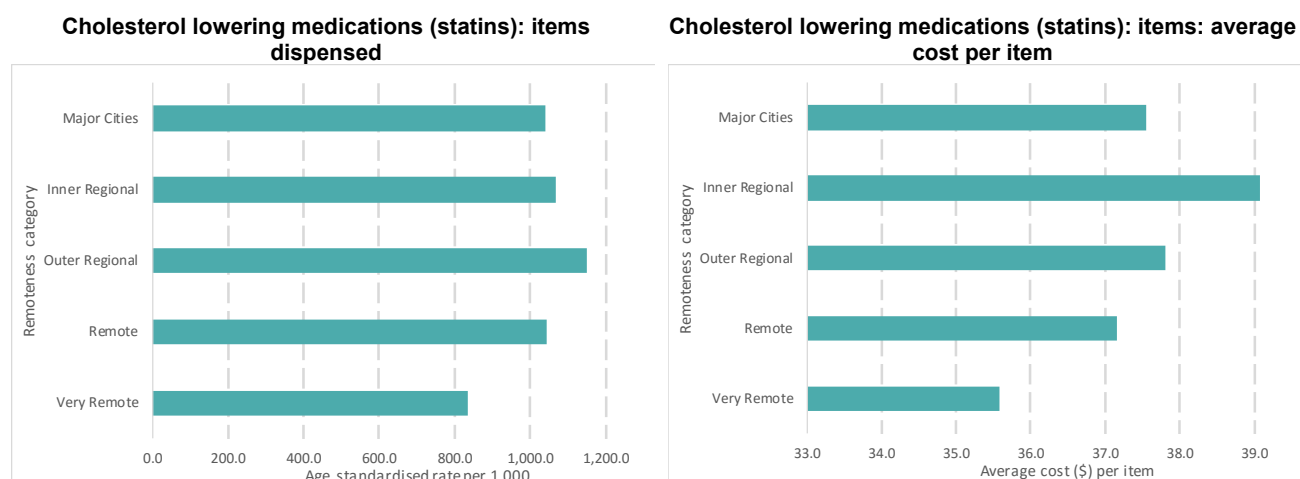


Figure 21: Emergency department attendances (endocrine, nutritional and metabolic system illness)

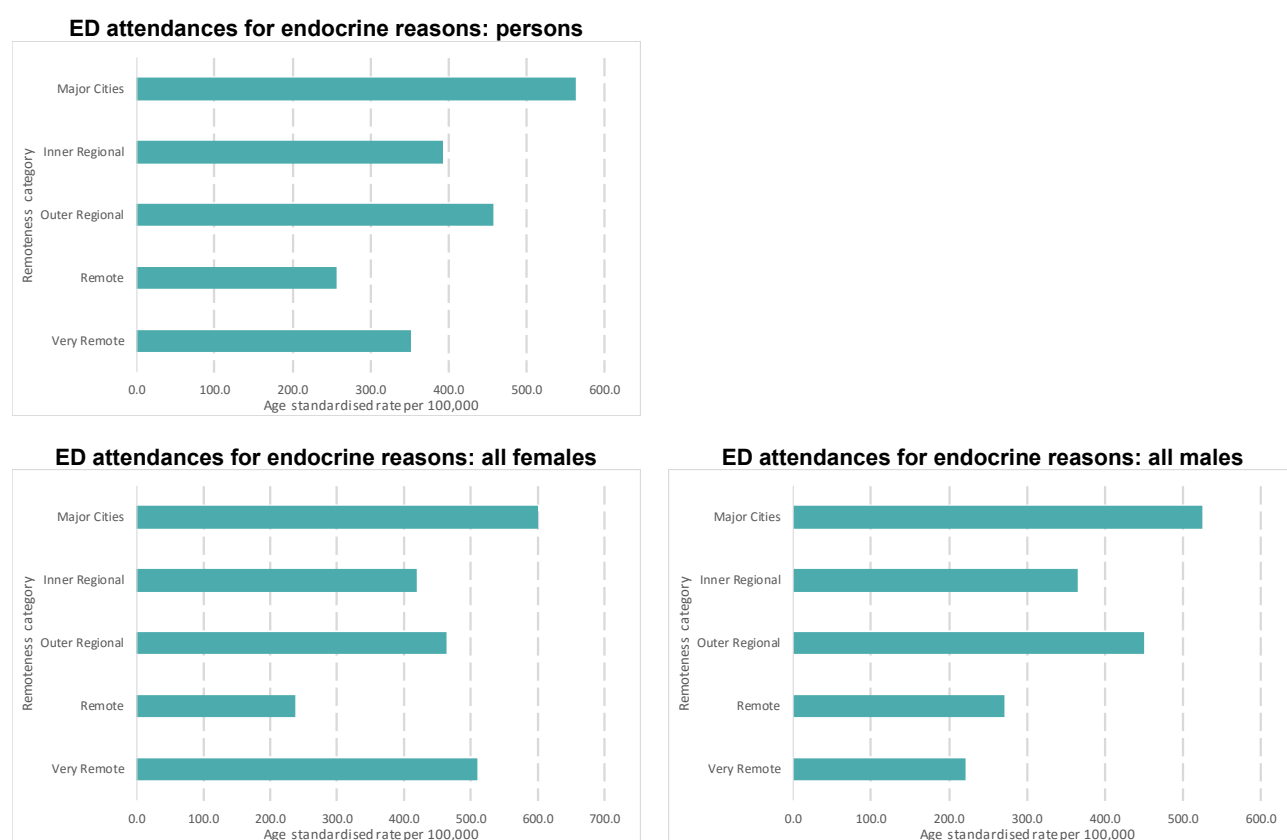


Figure 22: Hospitalisations with a primary diagnosis of diabetes

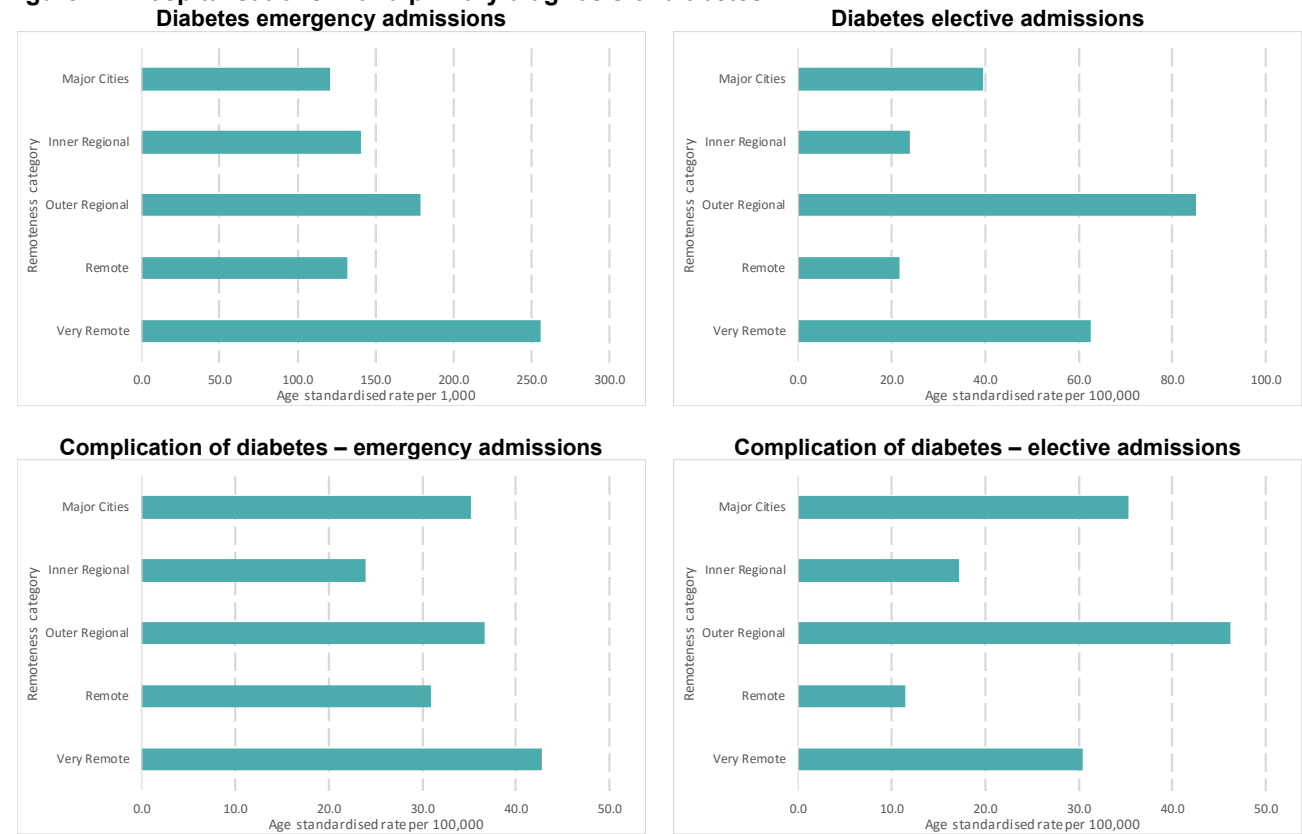
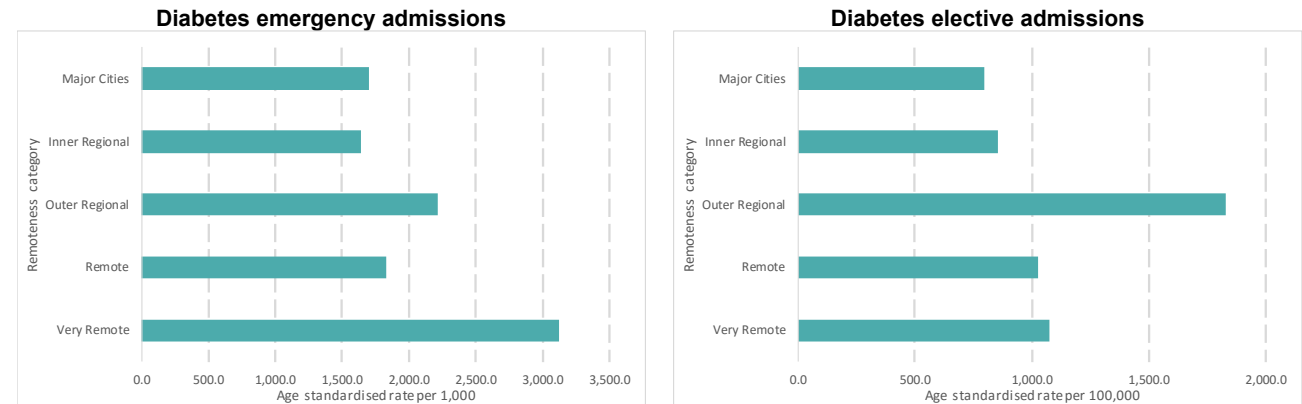
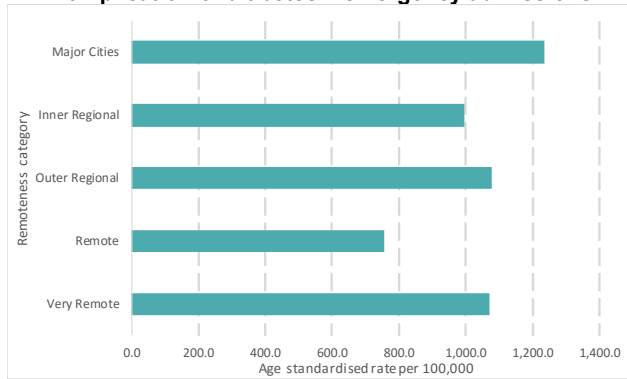


Figure 23: Hospitalisations with any recorded diagnosis of diabetes



Complication of diabetes – emergency admissions



Complication of diabetes – elective admissions

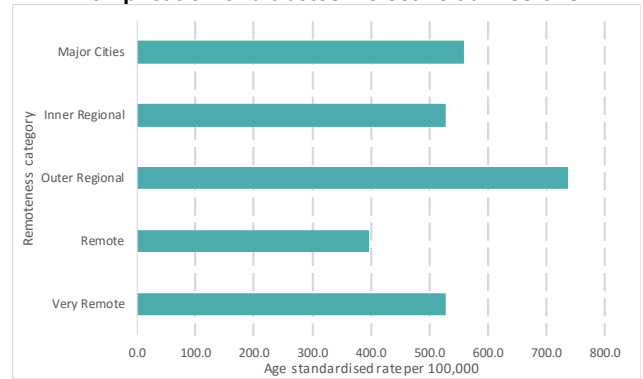
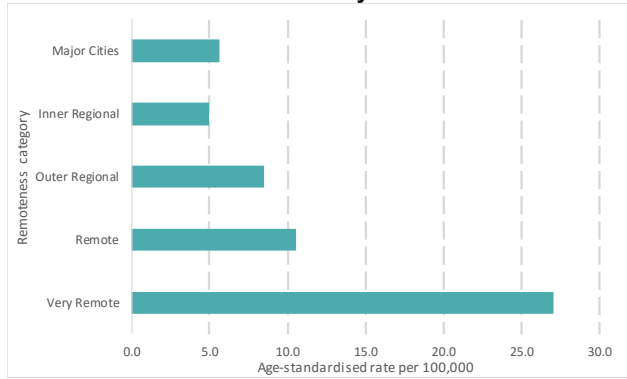
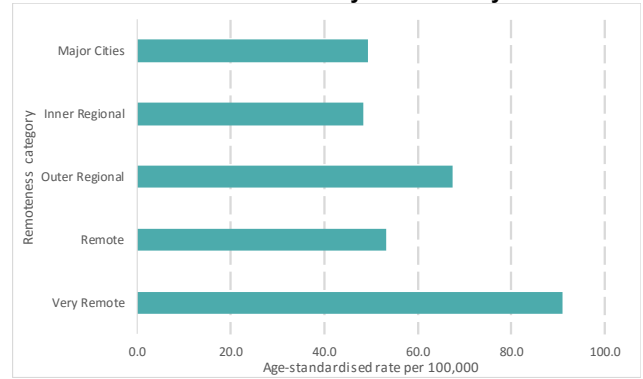


Figure 24: Premature mortality (<75 years)

Premature mortality – diabetes



Premature mortality – circulatory



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Correlation analysis

Introduction

A correlation analysis has been undertaken to illustrate the extent of association at the SLA level in Adelaide and Regional South Australia between the indicators in this atlas.

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 50% shared variation (r^2 greater than or equal to 0.50): 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 numbers (under 1000) indicate high levels of relative socioeconomic disadvantage under the IRSD and high numbers (above 1000) indicate low levels of relative socioeconomic disadvantage.

Note that correlation coefficients are generally lower in Regional South Australia, in part as a result of the smaller populations at the geographic area level.

Findings

In interpreting the correlation matrices, any two variables, which appear to be related to each other, must be carefully considered as to whether there is a plausible explanation underlying the association. In addition, care must be taken to ensure that two variables, which are independent of each other, are being compared. For instance, the correlation matrices examining associations at SLA level appear to show correlations between ED attendance for all persons (variable 25) with ED attendances for males and females (variables 26 and 27). The strong correlations identified here are therefore not surprising. It is also important to note that correlation between two variables does not imply causation, as relationships are likely to be more complex and involve a number of other contributing factors.

For the Adelaide area (Table 6), there are strong correlations between a number of the indicators. Interestingly, and plausibly, high prevalence of fair and poor self-reported health (variable 9) is highly correlated with high estimated unemployment, prevalence of obesity, current smoking and diabetes. It is also highly correlated with high rates of ED attendance for endocrine and related reasons, hospitalisations for diabetes specific reasons and premature death due to diabetes. Indicators related to ED presentations for endocrine and related reasons (variables 25 to 27) and hospitalisations for diabetes and its complications (variables 28 to 30) are also highly correlated.

For Regional South Australia (Table 7), correlations between these indicators are generally much weaker. However, modelled prevalence estimates of lifestyle risk factors and conditions appear highly correlated (variables 9 to 16). This is plausible both in terms of common factors which may have been used in statistical models to generate these estimates but also demonstrating that higher rates of these factors cluster in the same communities.

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Table 6: Correlation matrix for selected indicators for Statistical Local Areas in Adelaide

	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v13	v14	v15	v16	v17	v18	v19	v20	v21	v22	v23	v24	v25	v26	v27	v28	v29	v30	v31	v32
v1	1																															
v2	-.296*	1																														
v3	.063	.170	1																													
v4	-.064	.866**	.263*	1																												
v5	.962**	-.275*	.269*	-.043	1																											
v6	-.269*	.915**	.084	.847**	-.263*	1																										
v7	-.080	.773**	.147	.877**	-.082	.783**	1																									
v8	.011	.672**	.542**	.651**	.143	.656**	.551**	1																								
v9	-.542**	.849**	.360**	.748**	-.460**	.819**	.679**	.722**	1																							
v10	-.766**	.750**	-.134	.558**	-.787**	.743**	.538**	.348**	.837**	1																						
v11	-.661**	.593**	-.272*	.399**	-.687**	.574**	.365**	.299*	.665**	.855**	1																					
v12	-.505**	.707**	-.103	.564**	-.554**	.687**	.548**	.435**	.806**	.871**	.764**	1																				
v13	-.443**	.658**	.595**	.560**	-.312*	.581**	.445**	.653**	.857**	.568**	.435**	.580**	1																			
v14	.029	-.346**	-.303*	-.225	-.033	-.346**	-.220	-.588**	-.419**	-.202	-.219	-.316*	-.411**	1																		
v15	-.443**	.180	-.203	.138	-.525**	.146	.245	-.302*	.219	.422**	.235	.370**	.111	.282*	1																	
v16	-.542**	.534**	.226	.374**	-.491**	.522**	.399**	.531**	.755**	.708**	.604**	.678**	.582**	-.396**	.302*	1																
v17	.090	.429**	-.080	.476**	.048	.454**	.460**	.296*	.362**	.335**	.267*	.485**	.183	-.245	.088	.320*	1															
v18	.163	-.064	.520**	.110	.271*	-.040	.043	.213	.031	-.243	-.286**	-.223	.169	-.192	-.108	.041	-.066	1														
v19	.070	.699**	.204	.764**	.096	.712**	.719**	.605**	.642**	.430**	.286*	.570**	.454**	-.345**	.026	.394**	.774**	.003	1													
v20	-.140	.593**	.605**	.620**	-.008	.431**	.518**	.576**	.673**	.319*	.241	.378**	.761**	-.276*	.044	.344**	.229	.248	.561**	1												
v21	-.959**	.246	.021	.057	-.916**	.174	.086	-.056	.528**	.707**	.589**	.491**	.472**	-.009	.487**	.532**	-.029	-.122	-.001	.259*	1											
v22	.167	.527**	-.192	.574**	.113	.586**	.573**	.339**	.362**	.346**	.325*	.487**	.085	-.260*	.020	.234	.700**	-.149	.776**	.224	-.158	1										
v23	-.122	.843**	.125	.878**	-.110	.818**	.823**	.591**	.759**	.626**	.463**	.689**	.518**	-.327*	.225	.471**	.683**	-.004	.903**	.609**	.157	.767**	1									
v24	-.944**	.082	-.180	-.117	-.937**	.044	-.056	-.249	.339**	.632**	.544**	.390**	.244	.097	.493**	.423**	-.099	-.189	-.148	.024	.961**	-.214	.001	1								
v25	-.144	.773**	.082	.715**	-.135	.828**	.704**	.657**	.713**	.620**	.486**	.634**	.472**	-.396**	-.015	.518**	.594**	-.147	.741**	.362**	.077	.614**	.734**	-.032	1							
v26	-.150	.726**	.168	.675**	-.116	.794**	.627**	.703**	.713**	.587**	.458**	.604**	.494**	-.439**	-.082	.547**	.534**	-.103	.702**	.342**	.076	.555**	.677**	-.033	.962**	1						
v27	-.151	.752**	.048	.661**	-.148	.798**	.653**	.611**	.677**	.612**	.468**	.608**	.434**	-.386**	.026	.504**	.584**	-.194	.703**	.295*	.074	.568**	.696**	-.018	.977**	.920**	1					
v28	-.232	.833**	.248	.695**	-.184	.810**	.598**	.738**	.804**	.643**	.519**	.667**	.663**	-.463**	.021	.511**	.390**	-.050	.645**	.537**	.179	.503**	.722**	.023	.793**	.789**	.779**	1				
v29	-.225	.827**	.183	.743**	-.190	.832**	.650**	.697**	.777**	.647**	.493**	.671**	.586**	-.446**	.113	.481**	.398**	.013	.635**	.489**	.142	.517**	.758**	.002	.775**	.774**	.763**	.917**	1			
v30	-.270*	.771**	.292*	.716**	-.198	.822**	.608**	.724**	.798**	.623**	.485**	.621**	.638**	-.475**	.037	.550**	.379**	.109	.637**	.512**	.200	.484**	.713**	.046	.736**	.754**	.703**	.864**	.899**	1		
v31	-.121	.832**	.411**	.810**	-.044	.779**	.765**	.836**	.818**	.552**	.398**	.611**	.694**	-.499**	.025	.538**	.418**	.108	.727**	.628**	.120	.480**	.795**	-.075	.719**	.727**	.682**	.791**	.767**	.756**	1	
v32	.139	.791**	.219	.767**	.173	.659**	.753**	.624**	.664**	.293	.202	.436**	.581**	-.482**	.061	.101	.202	.094	.624**	.697**	-.158	.380	.702**	-.280	.574**	.498**	.611**	.700**	.719**	.647**	.817**	1

v1	IRSD
v2	Indigenous status
v3	Non-English speaking
v4	Developmentally vulnerable on one or more domain
v5	Learning or earning at ages 15 to 19 years
v6	Unemployed
v7	Households receiving rent assistance
v8	Private dwellings with no Internet connection
v9	Fair or poor self-assessed health
v10	Estimated prevalence current smokers (18 years and over)
v11	Estimated prevalence consuming alcohol risky to health (18 years and over)
v12	Estimated prevalence people who were obese (18 years and over)
v13	Diabetes (estimated prevalence)
v14	High cholesterol (estimated prevalence)
v15	High blood pressure (estimated prevalence)
v16	Circulatory disease (estimated prevalence)

v17	Completed cycles of diabetes care (MBS)
v18	Diabetes Education Service (MBS)
v19	Glycosylated haemoglobin tests (MBS)
v20	Blood Glucose Test Strips (PBS)
v21	Oral antidiabetic medications (PBS)
v22	Fast acting insulins (PBS)
v23	Intermediate to long acting insulins (PBS)
v24	Cholesterol lowering medications (statins) (PBS)
v25	ED presentations for endocrine and related reasons (persons)
v26	ED presentations for endocrine and related reasons (males)
v27	ED presentations for endocrine and related reasons (females)
v28	Inpatients, primary diagnosis, all admissions, diabetes (persons)
v29	Inpatients, primary diagnosis, emergency admissions, diabetes (persons)
v30	Inpatients, primary diagnosis, emergency admissions, diabetes complications (persons)
v31	Premature mortality due to circulatory system conditions
v32	Premature mortality due to diabetes

Legend		
	No, or weak, correlation:	< ± 0.30
	Moderate:	± 0.30 to ± 0.49
	Strong:	± 0.50 to ± 0.70
	Very strong:	> ± 0.70
	Not applicable:	1.00

Notes:
Inverse correlations shown as negative (-)
* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Table 7: Correlation matrix for selected indicators for Statistical Local Areas in Regional South Australia

	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v13	v14	v15	v16	v17	v18	v19	v20	v21	v22	v23	v24	v25	v26	v27	v28	v29	v30	v31	v32
v1	1																															
v2	-.448"	1																														
v3	-.279"	.052	1																													
v4	-.061	.522"	.262"	1																												
v5	.237	-.241	-.004	.111	1																											
v6	-.386"	.811"	-.028	.660"	.044	1																										
v7	.116	-.274"	.302"	.106	.310"	.035	1																									
v8	-.268"	.647"	.091	.483"	.297"	.800"	.168	1																								
v9	.442"	-.467"	.037	.003	.241	-.144	.447"	.031	1																							
v10	.438"	-.420"	.070	.027	.237	-.131	.424"	.029	.984"	1																						
v11	.518"	-.519"	-.041	-.040	.306"	-.224	.398"	-.046	.967"	.958"	1																					
v12	.527"	-.507"	.035	-.018	.303"	-.243"	.373"	-.074	.956"	.959"	.972"	1																				
v13	.452"	-.421"	.178	.078	.213	-.178	.344"	-.056	.923"	.932"	.903"	.943"	1																			
v14	.569"	-.532"	-.023	-.045	.334"	-.294"	.319"	-.130	.903"	.907"	.969"	.972"	.892"	1																		
v15	.549"	-.487"	.082	-.017	.316"	-.292"	.285"	-.142	.882"	.906"	.934"	.967"	.926"	.973"	1																	
v16	.538"	-.522"	-.020	-.055	.310"	-.256"	.387"	-.075	.954"	.952"	.990"	.981"	.902"	.978"	.955"	1																
v17	.207	-.280"	-.114	.015	-.167	-.111	.137	-.304"	.312"	.264"	.300"	.263"	.285"	.266"	.227	.260"	1															
v18	-.054	-.014	.208	.038	-.192	.096	.219	.152	.295"	.275"	.181	.196	.287"	.117	.145	.175	.025	1														
v19	.249"	-.319"	-.186	-.064	-.021	-.148	.051	-.229	.517"	.524"	.530"	.526"	.512"	.511"	.471"	.496"	.557"	.037	1													
v20	.160	.105	-.014	.255"	.132	.133	.136	.179	.109	.094	.100	.055	.066	.072	.027	.061	-.004	-.098	-.021	1												
v21	.047	-.116	-.205	-.138	-.547"	-.130	-.215	-.421"	.180	.189	.147	.124	.161	.094	.090	.127	.621"	.107	.571"	-.107	1											
v22	-.554"	-.076	.324"	-.056	.318"	.063	.252"	.071	.009	.021	-.019	.008	.016	-.025	-.008	-.012	-.035	.047	.106	-.138	-.153	1										
v23	-.316"	-.104	.232	.025	.143	.122	.306"	.135	.313"	.346"	.202	.236	.261"	.134	.158	.184	.054	.375"	.330"	.060	.109	.592"	1									
v24	.066	-.271"	-.152	-.237	-.269"	-.174	.160	-.291"	.451"	.439"	.418"	.377"	.376"	.336"	.317"	.399"	.624"	.248"	.605"	-.043	.802"	.107	.315"	1								
v25	.094	.006	.236	.196	-.016	.095	.309"	.151	.257"	.263"	.161	.171	.242	.098	.118	.141	.092	.352"	.111	.100	-.054	.034	.268"	.018	1							
v26	.134	-.084	.285"	.139	-.136	-.009	.337"	.126	.404"	.394"	.316"	.327"	.379"	.262"	.268"	.299"	.170	.391"	.131	.127	-.083	-.041	.202	.008	.818"	1						
v27	.036	.080	.139	.209	.114	.157	.183	.122	.062	.085	-.010	-.003	.060	-.060	-.035	-.026	-.008	.181	.065	.043	-.006	.084	.234	.007	.855"	.408"	1					
v28	-.151	.265"	.100	.105	.098	.224	.164	.221	-.130	-.083	-.212	-.211	-.133	-.272"	-.238	-.226	-.096	.065	-.003	.164	.022	.232	.290"	.096	.465"	.089	.648"	1				
v29	-.167	.258"	.097	.121	.113	.199	.166	.207	-.169	-.137	-.235	-.248"	-.167	-.291"	-.259"	-.252"	-.105	.023	-.081	.193	-.046	.207	.195	.040	.456"	.072	.645"	.960"	1			
v30	-.563"	.208	.292"	.009	.041	.135	.091	.140	-.063	.017	-.111	-.098	-.055	-.145	-.095	-.112	-.104	.034	.094	-.038	.071	.525"	.436"	.160	.095	-.008	.184	.371"	.343"	1		
v31	-.386"	.824"	-.060	.414"	-.387"	.664"	-.499"	.431"	-.374"	-.342"	-.380"	-.377"	-.309"	-.372"	-.347"	-.385"	-.133	-.067	-.141	-.106	.130	-.173	-.243"	-.170	-.083	-.128	-.009	-.037	-.027	.078	1	
v32	-.378"	.796"	-.111	.472"	-.390"	.743"	-.399"	.498"	-.203	-.191	-.258"	-.256"	-.210	-.286"	-.277"	-.279"	.003	-.011	.005	-.019	.203	-.151	-.105	-.046	.027	-.003	.050	.042	.025	.059	.872"	1

v1	IRSD
v2	Indigenous status
v3	Non-English speaking
v4	Developmentally vulnerable on one or more domain
v5	Learning or earning at ages 15 to 19 years
v6	Unemployed
v7	Households receiving rent assistance
v8	Private dwellings with no Internet connection
v9	Fair or poor self-assessed health
v10	Estimated prevalence current smokers (18 years and over)
v11	Estimated prevalence consuming alcohol risky to health (18 years and over)
v12	Estimated prevalence people who were obese (18 years and over)
v13	Diabetes (estimated prevalence)
v14	High cholesterol (estimated prevalence)
v15	High blood pressure (estimated prevalence)
v16	Circulatory disease (estimated prevalence)

v17	Completed cycles of diabetes care (MBS)
v18	Diabetes Education Service (MBS)
v19	Glycosylated haemoglobin tests (MBS)
v20	Blood Glucose Test Strips (PBS)
v21	Oral antidiabetic medications (PBS)
v22	Fast acting insulins (PBS)
v23	Intermediate to long acting insulins (PBS)
v24	Cholesterol lowering medications (statins) (PBS)
v25	ED presentations for endocrine and related reasons (persons)
v26	ED presentations for endocrine and related reasons (males)
v27	ED presentations for endocrine and related reasons (females)
v28	Inpatients, primary diagnosis, all admissions, diabetes (persons)
v29	Inpatients, primary diagnosis, emergency admissions, diabetes (persons)
v30	Inpatients, primary diagnosis, emergency admissions, diabetes complications (persons)
v31	Premature mortality due to circulatory system conditions
v32	Premature mortality due to diabetes

Legend		
	No, or weak, correlation:	< ± 0.30
	Moderate:	± 0.30 to ± 0.49
	Strong:	± 0.50 to ± 0.70
	Very strong:	> ± 0.70
	Not applicable:	1.00

Notes:
Inverse correlations shown as negative (-)
* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Appendices

Appendix 1: MBS schedule, selected item numbers

MBS service	Item group	MBS item numbers
Completed annual diabetes cycle of care	A43	2517 - 2526 and 2620 - 2635
Glycosylated haemoglobin tests	P2	66551
Diabetes Education Service	M3	10951, 81100, 81105, 81305

For more detailed information, visit the Department of Health's MBS Online website at:

<http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/Home>

Appendix 2: PBS classifications

PBS group	Anatomical Therapeutic Chemical (ATC) Code	Description
Blood Glucose Test Strips	V04CA	Test strips used in the monitoring of diabetes
Oral antidiabetic drugs	A10B	Oral antidiabetic drugs used to control blood glucose (the amount of sugar in the blood) in people with diabetes
Fast acting insulins	A10AB	Insulins are administered via subcutaneous injection to control blood glucose. Fast acting insulins work rapidly.
Intermediate and long acting insulins	A10AC, A10AD, A10AE	Insulins are administered via subcutaneous injection to control blood glucose. Intermediate and long acting insulins have a longer duration of action than fast acting insulins and are used as part of the regular management of diabetes.
Cholesterol lowering medications (statins)	C10AA	Statins are a group of medications taken regularly to lower cholesterol and reduce cardiovascular risk.

For more detailed information, visit the Department of Health's PBS Online website at:

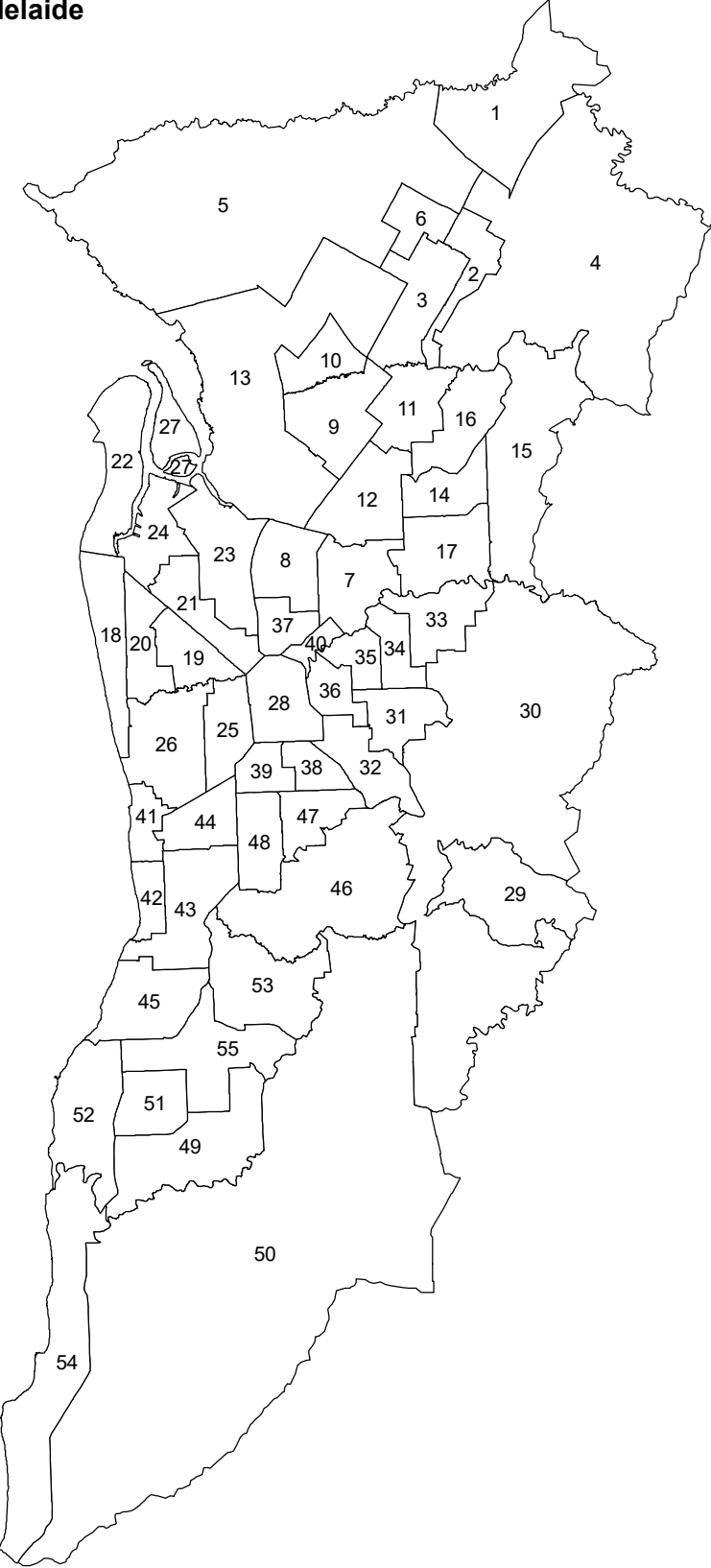
<http://www.pbs.gov.au/pbs/home>

Appendix 3: Emergency department and hospital admission codes

Activity type	Codes (ICD-10-AM and AR-DRG classifications)	Description
Emergency department	E00 – E90	Endocrine, nutritional and metabolic system illness. Presentations are included in this category, however, other reasons for presentation would also be included).
Hospital admissions*	E10 - E14	Diabetes specific hospital admissions includes admissions where these codes are recorded as the primary diagnosis Diabetes related hospital admissions includes admissions where these codes are recorded in any position
	Where x is 10-14 in the categories above:	These codes reflect the microvascular and macrovascular diabetic complications.
	Ex.2 (with kidney complication)	Admissions related to complications of diabetes is defined by any of these codes being recorded as the primary diagnosis (for diabetes specific hospital admissions) or where these codes are recorded in any position (diabetes related hospital admissions).
	Ex.3 (with ophthalmic complication)	
	Ex.4 (with neurological complication)	
	Ex.5 (with circulatory complication)	
	Ex.7 (with multiple complications)	

*All data excludes source of referral 4, A, X

Appendix 4: Key maps

Statistical Local Areas		Map ref	Statistical Local Areas	Map ref	Statistical Local Areas – Adelaide
Gawler (T)		1	Adelaide Hills (DC) - Central	29	
Playford (C) - East Central		2	Adelaide Hills (DC) - Ranges	30	
Playford (C) - Elizabeth		3	Burnside (C) - North-East	31	
Playford (C) - Hills		4	Burnside (C) - South-West	32	
Playford (C) - West		5	Campbelltown (C) - East	33	
Playford (C) - West Central		6	Campbelltown (C) - West	34	
Port Adel. Enfield (C) - East		7	Norw. P'ham St Ptrs (C) - East	35	
Port Adel. Enfield (C) - Inner		8	Norw. P'ham St Ptrs (C) - West	36	
Salisbury (C) - Central		9	Prospect (C)	37	
Salisbury (C) - Inner North		10	Unley (C) - East	38	
Salisbury (C) - North-East		11	Unley (C) - West	39	
Salisbury (C) - South-East		12	Walkerville (M)	40	
Salisbury (C) Balance		13	Holdfast Bay (C) - North	41	
Tea Tree Gully (C) - Central		14	Holdfast Bay (C) - South	42	
Tea Tree Gully (C) - Hills		15	Marion (C) - Central	43	
Tea Tree Gully (C) - North		16	Marion (C) - North	44	
Tea Tree Gully (C) - South		17	Marion (C) - South	45	
Charles Sturt (C) - Coastal		18	Mitcham (C) - Hills	46	
Charles Sturt (C) - Inner East		19	Mitcham (C) - North-East	47	
Charles Sturt (C) - Inner West		20	Mitcham (C) - West	48	
Charles Sturt (C) - North-East		21	Onkaparinga (C) - Hackham	49	
Port Adel. Enfield (C) - Coast		22	Onkaparinga (C) - Hills	50	
Port Adel. Enfield (C) - Park		23	Onkaparinga (C) - Morphett	51	
Port Adel. Enfield (C) - Port		24	Onkaparinga (C) - North Coast	52	
West Torrens (C) - East		25	Onkaparinga (C) - Reservoir	53	
West Torrens (C) - West		26	Onkaparinga (C) - South Coast	54	
Unincorp. Unincorporated Western		27	Onkaparinga (C) - Woodcroft	55	
Adelaide (C)		28			

Statistical Local Areas		Statistical Local Areas		Statistical Local Areas – Rest of South Australia	
Statistical Local Areas	Map ref	Statistical Local Areas	Map ref		
Metropolitan Adelaide	1	Wattle Range (DC) - East	41		
Barossa (DC) - Angaston	2	Wattle Range (DC) - West	42		
Barossa (DC) - Barossa	3	Cleve (DC)	43		
Light (RegC)	4	Elliston (DC)	44		
Mallala (DC)	5	Franklin Harbour (DC)	45		
Kangaroo Island (DC)	6	Kimba (DC)	46		
Adelaide Hills (DC) - North	7	Le Hunte (DC)	47		
Adelaide Hills (DC) Balance	8	Lower Eyre Peninsula (DC)	48		
Mount Barker (DC) - Central	9	Tumby Bay (DC)	49		
Mount Barker (DC) Balance	10	Unincorporated Lincoln	50		
Alexandrina (DC) - Coastal	11	Ceduna (DC)	51		
Alexandrina (DC) - Strathalbyn	12	Streaky Bay (DC)	52		
Victor Harbor (C)	13	Unincorporated West Coast	53		
Yankalilla (DC)	14	Whyalla (C)	54		
Barunga West (DC)	15	Unincorporated Whyalla	55		
Copper Coast (DC)	16	Northern Areas (DC)	56		
Yorke Peninsula (DC) - North	17	Orroroo/Carrieton (DC)	57		
Yorke Peninsula (DC) - South	18	Peterborough (DC)	58		
Unincorporated Yorke	19	Port Pirie C Dists (M)	59		
Clare and Gilbert Valleys (DC)	20	Balance	60		
Goyder (DC)	21	Unincorporated Pirie	61		
Wakefield (DC)	22	Flinders Ranges (DC)	62		
Berri & Barmera (DC) - Barmera	23	Mount Remarkable (DC)	63		
Berri & Barmera (DC) - Berri	24	Port Augusta (C)	64		
Loxton Waikerie (DC) - East	25	Unincorporated Flinders Ranges	65		
Loxton Waikerie (DC) - West	26	Anangu Pitjantjatjara (AC)	66		
Mid Murray (DC)	27	Maralinga Tjarutja (AC)	67		
Renmark Paringa (DC) - Paringa	28	Unincorporated Far North	68		
Renmark Paringa (DC) - Renmark	29	Murray Bridge (RC)	69		
Unincorporated Riverland	30	Peterborough (DC)	70		
Karoonda East Murray (DC)	31	Mount Gambier (C)	71		
Murray Bridge (RC)	32	Whyalla (C)	72		
Southern Mallee (DC)	33	Port Augusta (C)	73		
The Coorong (DC)	34	Coober Pedy (DC)	74		
Unincorporated Murray Mallee	35	Roxby Downs (M)	75		
Kingston (DC)	36	Victor Harbor (C)	76		
Naracoorte and Lucindale (DC)	37	Port Lincoln (C)	77		
Robe (DC)	38	Port Pirie C Dists (M) City	78		
Tatiara (DC)	39	Barossa (DC) - Tanunda			
Grant (DC)	40				

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