The Brimbank Atlas of Health and Education

Mapping the influences on health and education in the Brimbank community

Prepared by the Public Health Information Development Unit for the Mitchell Institute for Health & Education Policy

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- Diana Hetzel developed and wrote Sections 1 and 2, and contributed to the 'context' statements, the summary and other text in Section 3;
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- John Glover developed and wrote Section 3, and managed the project.

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Section 1:

Context and purpose

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Background to the atlas and its place in the work of the Mitchell Institute

The Mitchell Institute of Health and Education Policy has been established by the Harold Mitchell Foundation and Victoria University to invest in research into health and education outcomes for individuals, communities and the nation, and to apply contemporary evidence to advice on health and education, and related public policy, for governments, business and community leaders and organisations and the public.

Education is recognised as a crucial path to physical and mental health, which is important for both individual wellbeing and participation in society, and for lifelong learning and education. However, in Australia, there has been little investment or policy attention to the relationship between health and education and the impact on individual wellbeing and economic participation.

In response to this policy gap, the Mitchell Institute Health and Education Indicators project has been established to create a unique set of measurements and information, and potentially an index, to broker and influence the understanding of health and education policy makers, the community and the media.

To undertake this project, a research and policy partnership has been established between:

- The Mitchell Institute;
- The Brimbank City Council;
- The Public Health Information Development Unit (PHIDU), The University of Adelaide; and
- The Victoria Institute for Strategic Economic Studies (VISES), Victoria University.

The development of this atlas by PHIDU provides the foundation data for the development of the suite of health and education indicators by VISES. In addition, the SportsSpatial team within the Institute for Sports, Exercise and Active Living has compiled a report, Physical Activity, Sport, and Health in the City of Brimbank, on the levels of engagement of Brimbank residents in organised sport and active recreation and leisure, providing a companion body of information to this atlas.

The Brimbank health and education atlas, and the Physical Activity, Sport, and Health in the City of Brimbank report provide Brimbank and the residents of the City with information about their community, which Mitchell Institute hopes will prove valuable to community leaders and organisations in planning and developing services and other supports, to enhance the health and education outcomes within the community. They will also provide Mitchell Institute and the City of Brimbank with information to guide targeted research strategies and projects and health and education interventions to improve or enhance health and education outcomes within the City's communities.

Furthermore, the data in these reports will be analysed, and a suite of health and education indicators selected that measure the links between health and education pathways and disadvantage at both the national and local levels. The Mitchell health and education indicators will incorporate significant life stage transition points – early childhood, adolescence, adulthood, prime age and senior years – and offer compelling evidence about the most significant opportunities for effective decision making and investment in health and education and related public policy. The Brimbank atlas and the Mitchell health and education indicators are intended to provide tools for communities in particular, as well as for policy makers, to enable them to design policies, services and investments to improve health and education outcomes for individuals and communities throughout Australia.

Introduction

Over more than three decades, numerous reports and studies have highlighted substantial variations in the health and education of the population, and significant gaps between those who are 'doing well' in Australia, and those who are not.[1-6]

In this atlas, these variations are referred to as 'inequalities[1]', reflecting the fact that such differences exist. The notion of 'inequality' implies a sense of two things being different, not the same. Numerous inequalities exist across the population and they tend to divide the community into different groupings.

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1 In the atlas, the term, 'inequality' refers to a difference, that is, 'not the same'.

There are many types of inequality – age, sex, ethnicity, social and economic position, ability, geographical area, remoteness and so on. Some dimensions of inequality are unavoidable and not amenable to change, such as age. Other inequalities occur as a result of differences in access to educational opportunities; material resources; safe working environments; effective services; living conditions in childhood; the experience of violence, racism and discrimination; and so on. Such inequalities can also alter expectations of what life offers in the future. Many inequalities are potentially avoidable and therefore, the fact that they occur implies a degree of unfairness or 'inequity'. Such inequities occur as a consequence of unjustifiable differences in opportunity, which result in unequal access to those resources and experiences that will optimise learning, development, health and wellbeing capacities, and lead to a fulfilling life.

There is mounting evidence of the significant impact of both economic and social inequalities on various groups in society, and government and community concern about the need to address those which are avoidable.[4-6] This atlas focuses on health and education, and the inequalities in these outcomes across the communities of the City of Brimbank. It highlights those communities and groups living in Brimbank who are doing well, and those where further effort is needed to improve health and educational outcomes.

A brief profile of Brimbank

Brimbank is a Local Government Area (LGA) in Victoria, which comprises 27 suburbs between 11 and 23 km west and northwest of Melbourne's city centre. Brimbank has an area of 123 km² and a population of 195,469 residents in 2013, making it the second most populous municipality in metropolitan Melbourne, and the largest in the Western Region.[7]

Brimbank lies within the area occupied by the Kurung-Jang-Balluk and Marin-Balluk clans of the Wurundjeri people (also known as the Woiwurung language group) who form part of the larger Kulin Nation.[7] Other groups who occupied land in the area include the Yalukit-Willam and Marpeang-Bulluk clans.[7] The peoples of the Kulin Nations are recognised as the traditional custodians of the land.[8]

A social history timeline of important events in Brimbank's history is presented in Figure 1.

The City of Brimbank was established on 15 December in 1994 after the merger of the former Cities of Keilor and Sunshine, during the amalgamations of local councils by the Kennett Liberal government. Brimbank is bounded by the City of Hume in the north, the Cities of Maribyrnong and Moonee Valley in the east, the Cities of Hobsons Bay and Wyndham in the south and the Shire of Melton in the west.[8] The suburbs in Brimbank are divided into five local Districts:

- Sydenham District - including the suburbs of Calder Park, Delahey, Keilor Downs, Keilor North, Sydenham and part of Hillside, Keilor Lodge and Taylors Lakes;
- Keilor District - including the suburbs of Keilor, Keilor Park and part of Keilor East, Tullamarine, Keilor Lodge and Taylors Lakes;
- St Albans District - including the suburbs of St Albans, Kings Park and Kealba;
- Deer Park District - including the suburbs of Albanvale, Cairnlea, Deer Park and Derrimut; and
- Sunshine District - including the suburbs of Albion, Ardeer, Sunshine, Sunshine North and Sunshine West, and part of Brooklyn.[8]

For the purposes of the atlas, Brimbank is divided into Population Health Areas (PHAs), which are described in detail in Section 3.

Brimbank is one of Victoria's most culturally diverse municipalities - the result of waves of migration over many years. More than 150 different languages are spoken across the municipality, with more than half the population speaking a language other than English; and the rate of new arrivals with low or no proficiency in English has increased in recent years.[8,269]

In some of Brimbank's neighbourhoods, there are significant access and equity issues due to high levels of social and economic disadvantage.[7] However, while Brimbank represents the second most disadvantaged Local Government Area (LGA) in Melbourne, the community has many strengths (including neighbourhood groups, clubs, service organisations and service provider agencies), combined with its social, economic, human and environmental capital.[8]

Figure 1: Social history timeline of important events in Brimbank's history

Date	Description
	The people of the Kulin Nations were the custodians of the land in the Port Phillip Bay region, including the current City of Brimbank, for over 40,000 years before European settlement.
1803	Charles Grimes, the first European to see the Sunshine Area.
1830s	Earliest settlers from England, Scotland and Ireland migrants arrived.
1840s	Keilor established.
1843	Livestock market collapsed. Boiling down works for the production of tallow established by Joseph Raleigh, a wealth merchant and grazer. He also set up the Meat Preserving Works.
1850s	Skilled migrants arrived during gold rush era, from Germany, England and Scotland - for example, blacksmiths, fruit and vegetable producers, and those with dairy skills.
1880	Land boom. Sunshine established as a settlement of Braybrook Junction.
1884	Rail Junction created. Victorian Railways began construction of a branch line from the Bendigo line, heading westwards towards Melton, Bacchus Marsh and Ballarat.
1885	Manufacturing industries established e.g. Albion Quarries, Braybrook Implement Co
1886	First land sales, and closure of the cannery (Meat Preserving Works).
1889	Wright & Edwards carriage works established.
1891	Manufacturers of railway rolling stock. Bendigo Line connected to Ballarat Line. Financial recession.
1893	Smelter & fireworks factory established.
1900s	Next wave of British migrants arrived to work at the new factories in Sunshine. Migrants from Italy and Spain found employment largely in the quarries and market gardens.
1902	Severe Australia-wide drought and closure of Braybrook Implement Works.
1904	Purchase of Braybrook Implement Works by the industrialist, Hugh Victor McKay.
1906	McKay relocated Harvester works to Sunshine. United effort by the Protectionist Party and the Australian Labour Party to introduce measures to guarantee workers to fair and reasonable wages and working conditions. *Excise Tariff (Agricultural Machinery) Act* established.
1907	The Harvester Judgement, setting the standard for industrial wage regulation (including for unskilled labourers) and minimum wages throughout Australia. Suburb of Braybrook Junction changed to Sunshine.
1908	Sunshine Railway disaster occurred.
1911	The Harvester strike (16 Feb – 9 May): 2000 employees of Sunshine Harvester Workers made up half of the strikers.
1920	Arrival of multinational and interstate manufacturing firms in Sunshine. Sunshine Harvester Works claimed to the largest manufacturing plant in the southern hemisphere. Maltese migrants began to arrive in Sunshine finding employment largely in the Albion Quarry.
1930	Economic Depression nation-wide.
1939-1945	End of World War 2. Post war migration from Britain and Europe, for example Ukrainian, Greek, Polish, Italian and Maltese migrants. Extraordinary suburban expansion, i.e. young couples, post war European immigrants and settlers from country Victoria moved into Sunshine.
1951	Municipality proclaimed the City of Sunshine on 16 May.
Mid – 1960's	Sunshine - the largest and fastest growing Industrial Centre outside Central Melbourne.
1970's	Progressive reduction of tariff protection dealt a considerable blow to Sunshine's manufacturing industries, leading to high unemployment especially among the younger population, and fostering a range of negative stereotypes about the area's increasing material and cultural impoverishment. Vietnamese refugees and migrants commenced settlement in Brimbank.
1985	City of Sunshine received Medal (NU 20682) to commemorate Victoria sesquicentenary.
1986	Agriculture implement-manufacture at Sunshine ended, after Sunshine Harvester enterprise ceased production.
1990s	African communities commenced settlement in Brimbank.
1994	The City of Sunshine abolished, and Brimbank City formed.

The Brimbank Council has invested in its community by delivering high quality services; promoting employment, education and health opportunities; creating vibrant urban environments including the town centres, public realm and parks and gardens; and offering functional and efficient transport networks including road, public transport, cycling and pedestrian pathways.[240] All the strengths and assets of Brimbank need to be considered, not only its more challenging statistics. A selection of both is contained in Section 3.

Outline of the atlas

This atlas provides a range of information for decision-makers, planners, service providers, researchers and communities. It is hoped its production will bring a better understanding of the complex interactions between individuals and families, their environments and social structures over a lifetime, and how these factors influence the health, education and ultimately, the flourishing of current and future generations of Brimbank residents.

In order to do this, a number of indicators have been chosen to describe different aspects of the population, and, by using them, to highlight differences, especially in health and education outcomes, across the community. The indicators have also been selected to cover the lifespan; and the atlas offers a perspective on understanding inequalities across life and tracing outcomes at one stage of life, to the accumulation of experiences which occurred at earlier stages.[50]

In general, indicators are useful for:

- informing people about social issues, including use and access to services, or outcomes in education and health;
- monitoring such issues to identify change, both between groups in the population, and over time; and
- assessing progress toward set goals and targets, or achievement of policy objectives.

These purposes suggest that indicators need to:

- reflect the values and goals of those who will use and apply them;
- be accessible and reliably measured in all of the communities of interest;
- be easily understood, particularly by those who are expected to act in response to the information;
- be measures over which we have some control, individually or collectively, and are able to change; and
- move individuals, communities and governments to action.

The indicators, presented in this atlas and an associated atlas on the World Wide Web (available at http://tinyurl.com/Brimbank-atlas-Mi), have been selected because they describe the extent of inequality in health and educational access, participation and outcomes, in the context of the demographic and socioeconomic composition of Brimbank. They are also those for which available and reliable data can be mapped to show variations by area - across Brimbank, and compared with the western metropolitan region, the capital city of Melbourne, country Victoria, and Australia as a whole. However, indicators only act as sign-posts for issues warranting further investigation. The measurement and comparability of health inequalities across populations is an inexact science. Some of the challenges include the different distributions of disease; variation in the availability and quality of data; variation in the comparability of self-reported information about specific health conditions due to diagnosis bias or avoidance; the comparability of self-reported overall health or education measures; and issues in measuring ethnicity, socioeconomic status, and the mechanisms underlying inequalities, such as discrimination or acculturation.[29,30]

Therefore, while the indicators used in the atlas represent areas where considerable disparities are apparent, they can provide only a partial picture of the existing social and economic inequalities in health and education in Brimbank. However, the information contained in the atlas highlights these inequalities and their impact on different sections of the Brimbank population, and in doing so, provides a basis for further work.

Taking a place-based approach

It is increasingly recognised that there is a clear association between the health and wellbeing of individuals and communities, and where they live. Place can influence health and wellbeing, both positively and negatively, directly and indirectly.[242,243]

Place-based interventions target specific neighbourhoods or communities, and are a promising way to bring people, sectors and services together in a locality. Sectors that have applied place-based approaches include economic development, environmental sustainability, homelessness and housing strategy, poverty and social exclusion, regional development and public health.[242]

A place-based approach assumes that geographical context matters, where context is understood in terms of its social, cultural, historical and institutional characteristics.[245] The active role of local stakeholders is critical to the success of place-based approaches and requires local government, business and other bodies to shape local policy actively.[262,263] Thus, successful place-based approaches put the development of human capital and the promotion of innovation at their centre.[255]

Place-based approaches share a common set of characteristics, which contribute to their success. Such approaches:

- are designed to meet the unique needs of locations;
- engage stakeholders across all sectors in collaborative decision-making;
- seize opportunities, particularly local skills and resources;
- evolve and adapt to new learning and stakeholder interests;
- encourage collaborative action by crossing organisational borders and interests;
- pull together assets and knowledge through shared ownership; and
- encourage new behaviours and "norms" in a location.[242]

Place-based approaches impact the conditions that influence health and wellbeing in communities, and are set in the context of the broader social, political and economic factors that shape health that need to be addressed at regional, state and national levels.[242,243]

As part of a place-based approach, community development can identify the assets and strengths of communities, and the abilities and insights of local residents become resources for addressing a neighbourhood's challenges.[261-3] This does not mean that disadvantaged neighbourhoods do not need outside help, but rather that any genuinely local project can be resident-led, with agencies outside the City acting in a support role.[264]

Aims of the atlas

The Brimbank atlas aims:

- to describe a number of factors that have important influences on health and education for the Brimbank community;
- to identify significant inequalities in health and education across the Brimbank community, and to assess possible trends in such inequalities over time; and
- by mapping these indicators, to provide information in a form that will support discussion and action by communities and organisations at local, regional, state and national levels.

It is hoped that people will draw on the atlas to understand the extent of inequalities across Brimbank and identify trends over time, to develop place-based interventions that will reduce these disparities, and to track emerging issues of concern to particular communities in Brimbank. The atlas design will also offer other communities the opportunity to consider in depth the health and education outcomes within their communities, and to use the Mitchell health and education indicators to guide community and service planning and development, and specific health and education interventions, to achieve improvements for their communities.

A note about terms used in the Atlas

In the atlas, 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, welfare, housing, transport and so forth. It is not used in the context of 'social' as in 'social skills', 'social capital', '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 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 health and other outcomes for disadvantaged communities.[1]

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 change. 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.

[1]In discussing the maps, reference is also made to 'poor health outcomes for the population of the most disadvantaged areas'. This is not to imply that the same health outcomes (e.g., a high premature death rate) apply to everyone living in the named areas: clearly, the average rate for an area is comprised of a range of rates across the area.

Section 2:

Understanding what determines our health and education

In this section …

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Introduction

Over the last four decades, there have been substantial social and economic changes in Australia, especially in the areas of wealth, work, health, education, technology, resources for families, community supports and the interplay between them.[9] These changes have been underway across Australia, and in other wealthy nations. Examples include:

- the effects of rising life expectancies, delayed childbearing, population ageing, overseas migration and increasing cultural diversity;[9,10]
- marked alterations in the nature and availability of work, and in opportunities for the employment of young people, with globalisation and technological advances placing greater demands on education and skills development;[11,12]
- rapid technological change bringing new ways of learning, communicating and interacting across communities;[12]
- increasing challenges in balancing work or the lack of it, with child-rearing and family responsibilities;[13,14,17]
- changes in the economy, especially in sectors such as manufacturing, retailing and financial services, with significant economic hardship and joblessness for many affected households;[15,16]
- pressures on affordable housing, particularly public housing;[18,19]
- the impact of climate variability on urban, rural and remote communities;[20]
- a rise in those adversely affected by alcohol, drugs, gaming and gambling, mental ill-health and various forms of interpersonal violence;[21,22]
- a greater awareness of the effects of harmful stress on children, young people and their families as a result of serious family problems and relationship breakdown;[23] and
- the persistence of significant inequalities in health and education and other outcomes across populations, especially for Aboriginal and Torres Strait Islander peoples, refugees and other disadvantaged communities.[24,25]

This has led to what has been described as 'modernity's paradox', a term which questions whether today's communities are developing in a positive and healthy way, given the rapid social and technological changes, which are without precedent in their scope and effects.[26,27] These changes have heightened the need for up-to-date skills and knowledge, especially in communities such as Brimbank with its high proportion of residents born overseas, many of whom are without secondary school completion or formal post-school qualifications.[28]

The complexities of modern society also require people to be physically and emotionally healthy – capable, open to new ideas, socially engaged and adept at doing things differently. Those who cannot anticipate, adapt to change and contribute are likely to become increasingly marginalised in social and economic life.[27] As individuals, families and communities attempt to make the transition but fall behind, inequalities in economic and social outcomes increase, with the longer term effects across generations as yet unknown.[27]

Therefore, we need to understand better the complex interactions between individuals, their families, the benefits and pressures exerted by their environments and social structures over a lifetime, and how these factors influence the health, education and, ultimately, the overall wellbeing of current and future generations of Australians, including the communities living in Brimbank. This reflects the growing awareness of the multidimensional nature of community wellbeing, which includes material resources; education and skills; culture and kinship; moral and spiritual values; community engagement; socioeconomic position; opportunities for employment; levels of health and disability; and social, community and personal assets.[36] Determining assets as well as needs gives fuller understanding of communities and helps to build resilience, increase social cohesion and develop better ways of providing effective services.[37] Furthermore, healthy and skilled communities are essential for economic growth and development.[38]

To this end, this section of the atlas examines those factors which have been identified as important in contributing to the overall wellbeing of individuals and populations, in the context of their social, cultural, economic, historical and physical environments.

The notion of flourishing

Wellbeing can be described in different ways, but most definitions incorporate the idea of 'flourishing': individuals flourish when they are functioning well in their interactions with the world, and they experience positive emotions as a result.[39] A flourishing life involves healthy relationships, autonomy, competence and a sense of purpose, as well as feelings of happiness and satisfaction.[39] Human flourishing can be understood as 'the desired and dignified good life for which we all ought to strive'.[48,49]

While the term is often applied to individuals, it can also be used to describe communities. Flourishing communities are those where everyone has someone to talk to, neighbours look out for each other, and people take pride in where they live, volunteer to help others, and feel able to influence decisions about their local area.[37] Residents of all abilities can access open green space and feel safe doing so, and there are opportunities and places to bring people together as a community.[37] A flourishing community is one in which members have high levels of wellbeing, which are sustained over time, and one which builds on its strengths and assets to maximise opportunities to increase wellbeing and social and economic development further.[39]

Community flourishing is the overall state of a community in terms of environmental sustainability, social and economic factors and the wellbeing of its residents.[39,45] It has to do with the way a community functions - indeed, with the 'healthiness' of the community as a whole.[40] The wellbeing of a community is reflected by its ability to generate and use assets and resources effectively to support the quality of life of its members as individuals, and the community as a whole, in the face of challenges and barriers within its environment.[40,44] Community flourishing also describes reciprocal relationships between people and their environment with the goal of sustainability.[41] Reciprocity and continuous interaction between people and the social, economic and physical environments that comprise their community, are essential to bring about change and to enhance the wellbeing of individuals and the community itself.[40]

As a concept, community flourishing represents not only subjective elements (for example, satisfaction with life, positive and negative emotions), but also more objective components, such as capabilities and fair allocations of resources and opportunities.[40,43,44,47] Communities provide support, order, and a framework for their members to use to help make sense of their lives. The resilience of a community is reflected in its ability to address adversity and, in doing so, extend community capacity.[42,47] A flourishing community can be thought of as continually creating, promoting and improving its physical, economic and social environments, and expanding on community skills and resources, which enable its members to be the best that they can be.[45,46]

Thus, the use of the term 'flourishing' relates to all aspects of human development, including health, learning, functioning and capability.[31,47] A capability approach 'focuses on the ability of human beings to lead lives they have reason to value and to enhance the substantive choices they have'.[47] The idea of human capabilities is a more expansive notion than human capital, because it encourages aspects that are wider than those associated with merely increasing productivity or economic growth, and underpins what makes a 'good society'.[48,53,65]

Health is regarded as a human right; and the 'capabilities approach' to eradicating inequality, social exclusion and poverty focuses on achieving positive 'freedoms', such as being able to access health care and education, enjoy recreational activities, own property, and seek employment.[47,55] These freedoms enable people to have a level of control or agency over their lives, by having the ability to freely make choices regarding their life.[47]

As freedom from poverty involves more than freedom from insufficient income, so positive health transcends mere freedom from illness.[56,57] The World Health Organization (WHO) adopted this perspective when it defined health in 1948 as "*a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity*".[58] This emphasised people's personal and social resources and ability to make choices in life, identify and realise aspirations, satisfy needs, acquire knowledge and skills, and change and cope with their environment, although some researchers have claimed that to achieve such a state is more ideal than realistic for most of the population.[57] The WHO's prerequisites for

health for all include equal opportunities for all, satisfaction of basic needs (adequate food and income, basic education, safe water and sanitation, decent housing, secure work, a satisfying role in society), peace and freedom from fear of war - and incorporate current perspectives on sustainability.[59]

The 1986 Ottawa Charter for Health Promotion moved beyond the original WHO definition, which regarded health as a state, towards viewing it as a dynamic process.[11] It defined health as "a means to an end which can be expressed in functional terms as a resource which permits people to lead an individually, socially and economically productive life." This definition also holds that "health is a resource for everyday life, not the object of living"; and it explicitly ties health to capabilities and positive attributes of freedom.[60]

Determining health across the life span

Health is a multidimensional phenomenon, which is also described as a dynamic, emergent capacity that develops continuously over the lifespan in a complex, non-linear process of development.[11,51,52,268] There many different factors or 'determinants' which influence health across the life span, and contribute to flourishing individuals and communities.[61,62] These can be illustrated as different 'layers of influence', starting with the individual, and extending to aspects of families, kinship and cultural groups, neighbourhoods and the wider community (Figure 2).[52] This model is one of many, which link influences from various domains – including society-wide factors (e.g., socioeconomic, cultural, environmental), middle-level factors (e.g., access to health care, education and other human services) and personal factors (e.g., tobacco use, genes, age), to explain the origins of health.[51,86,267]

The 'social determinants of health' are social and economic factors that influence health: "*the circumstances, in which people are born, grow up, live, work and age, and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics*".[51,65,86]

Examples of the social determinants of health include income and income distribution, education, social safety networks, employment and working conditions, unemployment and job security, early childhood development, gender and identity, kinship and culture, food insecurity, housing, social exclusion, racism and discrimination, access to services, Aboriginal status, and disability.[64] Many social determinants can potentially be modified to improve individual and community health, and reduce inequalities in health development across a community.[52,62-65]

Figure 2: Key Determinants of Health[52]

As illustrated above, health results from multiple factors that operate together within genetic, biological, behavioural, social, cultural, environmental and economic contexts that have differing influences at various times over the life span, and over generations. Protective influences and risk factors have a greater impact on health development during sensitive and critical developmental periods, especially early in life when biological and behavioural regulatory systems are being programmed and implemented.[268] For example, family context has a greater effect on the wellbeing of infants and young children early in life, while peer group and neighbourhood factors and individual health-related behaviours become more important as older children move into adolescence and early adulthood.[63] The life pathways of individuals that result are the product of the interplay of cumulative risk and protective factors, along with other wider social and economic influences.[63,267]

Risk and protective factors can occur independently, or may cluster together in socially patterned ways.[63] Taking a 'life course approach' to health means looking at the long-term effects of physical, emotional and social exposures to risk and protective factors during gestation, infancy, childhood, adolescence, young adulthood and later adult life.[66-68,268] It acknowledges all the biological, behavioural and psychosocial pathways that operate over an individual's lifespan, as well as across generations, to influence the development of health.[27,69] Thus, the path that leads to any particular outcome can be very different for different individuals and communities.

The timing and sequence of biological, cognitive, psychological, emotional, cultural and historical events and experiences all influence the development of health in individuals, communities and across populations.[61,70,268] For example, populations historically subjected to long-term mass trauma can exhibit a higher prevalence of disease, even several generations after the original trauma occurred.[73,75] Thus, the life course of individuals is embedded in and shaped by historical times and the places they experience over their lifetime.[72]

The key determinants of health are described in more detail below, and are reflected in many of the indicators included in Section 3. Numerous determinants overlap, and more remains to be learned about the specific ways in which these factors influence individual and community health.

1. Wealth and socioeconomic position

These are among the most important individual-level determinants, as one's overall health tends to improve at each step up the economic and social hierarchy. Thus, people with a higher income generally enjoy better health and longer lives than people with a lower income.[76] The rich are healthier than those with mid-level incomes, who are in turn healthier than those who are poor. This is known as 'the social gradient'.[27]

In Australia, many indicators of wellbeing vary by socioeconomic position - for example, health risk behaviours (such as smoking, physical inactivity); a range of chronic diseases (such as type 2 diabetes, cardiovascular disease, some cancers); and mortality.[24] It has been suggested that socioeconomic factors have the largest impact on health and wellbeing, accounting for up to 40% of all influences compared with health behaviours (30%), clinical care (20%) and the physical environment (10%).[239]

A gradient also exists for other outcomes – from coping behaviours, to literacy and mathematical achievement.[27,77] A gradient is evident whether one looks at differences in current socioeconomic status or in that of family of origin. These effects seem to persist throughout the life course, from birth, through adulthood and into older age, and for some outcomes, to the next generation.[27,66]

For most people in Australia, this difference in wellbeing is not due primarily to the lack of money for food, clothing or shelter. Thus, the important factors in explaining differences appear to be not only material conditions, but also the social advantages and power attached to those conditions. In mature economies such as Australia, these are major influences on health and wellbeing, both for individuals and for communities.

2. Culture and kinship

The concept of culture reflects a shared identity based on factors such as common language, related values and attitudes, and similarities in beliefs, lived histories, and experiences.[129] For many people, the expression of these aspects of their culture is an enabling and protective factor for their health.[78] Culture, spirituality and kinship have overarching influences on beliefs and practices related to health,

wellbeing and healing, including concepts of wellbeing and knowledge of the causes of health and illness and their remedy.[80]

However, ethnic minority groups can face serious risks to their health and wellbeing because of conflicting values from more dominant cultures, which contribute to discrimination, loss or devaluation of language and culture, marginalisation, poor access to culturally appropriate care and services, and lack of recognition of skills and training, for the minority culture.[81] This results in avoidable and unfair inequalities in power, resources or opportunities across different cultural groups in society, with consequent adverse effects on health and wellbeing.

Racism, discrimination and social exclusion are expressed through beliefs, prejudices, media perceptions, behaviours and practices; and can be based on race, ethnicity, gender identity, sexual preference, disability, culture or religion.[82] Such phenomena have direct impacts on health, and indirect effects are mediated through various forms of social and economic inequality.[81,83] These concepts are clearly applicable to Australian society, and include the effects of racism, stigma and discrimination on Aboriginal and Torres Strait Islander peoples, people living with disability or mental health problems, refugees and recently arrived migrants, amongst other minority groups in society.[82,84,251]

3. Education and training

Education increases opportunities for choice of occupation and for income and job security, and also equips people with the skills and ability to control many aspects of their lives – key factors that influence flourishing throughout the life course.[87] Participation in schooling and/or training is also a major protective factor across a range of risk factors for young people, including substance misuse and homelessness.[85]

In Australia, evidence shows that health improves with increasing levels of educational attainment.[27,88] Educational attainment and participation are also steeply graded according to socioeconomic position.[27,88,129] The pervasive socioeconomic inequalities in adult learning outcomes (and many other markers) have their roots in socioeconomic inequalities in early child development.[27,89] That is, during the earliest years of life, differences in the extent of benefit provided by children's environments lead to differences in early developmental outcomes; and the effects of these early inequalities translate into inequalities in learning, development and wellbeing in later childhood, adolescence, and adulthood.[27,89]

Communities with large proportions of educated, skilled members have heightened health and social and economic capital, with benefits evident at three levels: individual, local community and regional.[90-92] While learning improves an individual's skills and knowledge, it also contributes to their self-efficacy and sense of control, and allows them to participate more effectively in the community as a whole.[92,93] Learning contributes to individuals' sense of belonging and better places them in a position to add to the combined resources of the community such that the shared sense of flourishing is improved.[93] In this way, education also supports economic growth and productivity, as skilled workers are better able to take up opportunities in existing and emerging industries.[93]

4. Employment and working conditions

Employment in satisfying work contributes to individual health.[94] For employed people, those who have more control over their work and fewer stress-related demands in their jobs are likely to be healthier.[94,95] Workplace hazards and injuries are significant causes of disability and related health problems.[94] Furthermore, those who do not have access to secure and fulfilling work are less likely to have an adequate income; and unemployment and under-employment are generally associated with reduced life opportunities, greater likelihood of social exclusion from the community and poorer health.[94-97]

While many of the most disadvantaged households are in Australia's remote Aboriginal communities, there are also concentrations of highly disadvantaged households within some neighbourhoods in urban and regional communities, such as Brimbank.[98] These concentrations of disadvantage are often reinforced by the uneven distribution of access to employment and other opportunities apparent in more affluent areas. Access to employment is critical to levels of labour force participation and to the flow-on effects for household income and wealth, and community flourishing.

In some communities, the changing nature of industry has left localities with fewer job opportunities.[45] Structural change is continuing to reduce job opportunities in manufacturing, and increasing job opportunities in government and the services' sector. Concentrations of different types of employment and the variation in transport connections to these jobs can leave already disadvantaged communities marginalised from such job opportunities, or make other communities vulnerable to increasing rates of unemployment – with significant consequences for the wellbeing of these communities, and their members.

5. The physical environment

Another significant determinant of health is the safety, quality and sustainability of the physical environment (which includes the natural and built environments, such as housing), that provides the basic necessities for life, such as clean air, water and food; and raw materials for clothing, shelter and industry. Features of the natural and built environments also provide different opportunities for social interaction, safe recreation and play, tourism, transportation, employment and housing. For example, a lack of access to transport or adequate housing is a risk factor for poorer wellbeing and social exclusion of people and their communities, as is pollution of the air, water or soil.[99] The effects of changes in climatic conditions, altered cycles of flooding and drought, and the disruption of ecosystems on communities pose further challenges for health and wellbeing, and are likely to affect populations unequally.[100-102]

Physical environments that undermine safety, weaken the creation of social ties, and are violent are unhealthy and socially excluding. By contrast, a healthy environment, endowed with safe public spaces and generous natural settings, provides opportunities for social integration and leisure activities, and enhances community wellbeing.[102,103]

6. Social support networks

Access to support from families, friends and communities is associated with better health.[104] Aspects of this determinant shape people's daily experiences, and include individual and neighbourhood socioeconomic characteristics, a sense of connectedness, community norms, and spiritual and cultural beliefs and practices.[104] Sources of support help people to deal with crises and difficulties as they arise, to maintain a sense of control over their lives, to enhance their resilience to life's challenges, and to feel able to contribute as members of a community.[105] Shared principles and values, meaningful consultation about significant issues, trust-building, and reciprocity and collaboration can yield positive outcomes for communities and their members.[108] Studies have consistently demonstrated people who are socially isolated or disconnected from others have between two and five times the risk of dying from all causes compared to those who maintain strong ties with family, friends and community.[106,107]

Researchers also describe the quality of the social context of everyday life ('social quality') as having four conditional factors: socioeconomic security, social cohesion, social inclusion and social empowerment.[105] These factors are underpinned by the rule of law, human rights and social justice, social recognition and respect, social responsiveness and individuals' capacities to participate as citizens within their communities.[105]

7. Early life factors

Early life is a time when individuals are particularly vulnerable to risk and protective influences.[27,88] Developmental vulnerability has its origins in a child's biological risks, and prenatal and early childhood experiences and environment, and the complex interactions between these.[267] Children who are developmentally vulnerable risk not achieving their true human capability over their life course.[267,268]

Experiences at the beginning of life are also reflected in health outcomes during the middle and end of the life span.[61,66] There is strong evidence of the effects of supportive early experiences on an individual's cognitive function, growth, the ability to learn, physical and mental health, and resilience in later life.[27,89] Exposure to neglect, trauma, violence and abuse in childhood and beyond, carries a risk of poorer physical and mental health throughout life, with adverse consequences for later learning, development, relationships and overall wellbeing.[73,75]

A life course view highlights the sequencing of events across an entire lifetime.[74,267,268] There is also evidence for intergenerational effects; for example, the socioeconomic status of a child's grandfather may predict the child's cognitive

and emotional development at 14 years of age.[69]

Research has shown that supportive, high quality early child development programs enhance the wellbeing of children, their families (particularly those who are disadvantaged and marginalised), and also their communities.[89] Such interventions can also have positive effects on the economy of a community as a whole, by raising its stock of human capability, enhancing current and future productivity and mitigating disadvantage.[27,109]

8. Individual behaviours and practices

Personal behaviours, practices, and coping mechanisms can promote or compromise health.[110] Factors such as physical inactivity, tobacco smoking, use of drugs and harmful alcohol consumption, unhealthy food habits, exposure to violence and trauma, and gambling have obvious impacts. However, many of these health behaviours reflect decisions that are patterned by an individual's and their community's economic, cultural and social circumstances.[27,110]

People on low incomes have access to fewer alternatives to help reduce stresses and cope with life's challenges. As a result, they may be more likely to take up readily available and more economically accessible choices, such as tobacco use.[111] Not surprisingly therefore, smoking behaviour is steeply graded according to socioeconomic status, resulting in those who are the most disadvantaged having the poorest smoking-related health outcomes.[111] Not only does the prevalence of smoking increase with socioeconomic disadvantage, but the average number of cigarettes smoked per week also increases with growing disadvantage.[112]

Personal attributes and risk conditions interactively shape health and wellbeing. However, people who suffer from adverse social and material living conditions can also experience higher levels of physiological and psychological stress.[113] Stressful experiences arise from coping with conditions of low income, homelessness or poor quality housing, food insecurity, unsafe communities, hazardous working conditions, unemployment or under-employment, and various forms of discrimination based on Aboriginal and Torres Strait Islander status, mental illness, disability, religion, gender, or ethnicity.[113, 114] A lack of supportive relationships, social isolation, and a mistrust of others further increases stress and poor health, at both an individual and a community level.[113,114]

9. Access to effective services

The timely use of effective services is a determinant of individual health, especially the accessibility of preventive and primary health care services and education and training, which are universally available, high quality, safe, affordable and culturally relevant.[116,117] For certain populations who are socially or culturally marginalised or geographically remote, lack of access to and availability of appropriate services continue to be important influences on their health and wellbeing.[116]

Inadequate social infrastructure, such as a lack of services, has significant long-term consequences and associated costs for new and existing communities.[118] A 'spiral of decline' can occur when there are poor quality, unresponsive or absent local services, or effective services are downgraded or relocated elsewhere, with resulting negative impacts on the health of communities and their members.[119]

10. Gender and sexual identity

While not excluding biological differences, a gendered approach considers the critical roles that social and cultural factors and power relations between men and women play in promoting and protecting or impeding health and wellbeing for individuals.[64,120] The overall goal should be to achieve equitable resource distribution, community flourishing, and social inclusion and participation by all community members.

For many gay, lesbian, bisexual, transgender and intersex Australians, poorer health and wellbeing can arise as a result of the considerable stress of experiencing discrimination, trauma and social exclusion.[121,122] Gender- and sexuality-specific health needs for individuals include the adequacy and appropriateness of health care and other support services, because the health of both males and females is shaped by the inclusiveness of communities and the fair distribution of available resources.[123]

11. Disability

Understanding the distinction between individual and social models of disability is critical to recognising disability as a key determinant of wellbeing.[124] When disability is

only thought of as a personal tragedy or a form of biological deficit, action tends to focus on medical responses of care, cure or prevention. By contrast, social model approaches focus not on presumed deficiencies of an individual, but on the social processes that cause people with perceived impairments to experience inequalities and social exclusion as a minority group in the community.[125] A social model of disability acknowledges that the causes of social disparities operate beyond the level of the individual, and both structural and cultural forces play a part in the collective experience of inequality and the social exclusion of those living with disability.[125] When the experience of disability is identified as discrimination, exclusion or injustice, policy responses are more likely to focus on human rights and the removal of barriers to inclusion.

People with disabilities experience significantly poorer health outcomes than their non-disabled peers; and these negative health outcomes extend to aspects of wellbeing unrelated to the specific health conditions associated with their disability.[126] Poorer health outcomes may also be experienced by family members who care for their disabled children, siblings or adult relatives.[127]

People with certain impairments may be more likely to die at a younger age than the average for the population, as a result of the biological impact of the impairment on the body's capacity for survival. However, less access to health care, fulfilling employment, safe and supportive communities, and welfare resources can also affect survival chances adversely.[125,128] These broader inequalities, including those linked to socioeconomic background, underlie the social patterning of the health and life experiences of people who live with disability, and their families.[126]

Communities that are disability-friendly can improve the health of all members. For example, the cultural and artistic life of a community flourishes when people with disabilities and older people are able to contribute their skills and talents both as artists and as patrons.[128] Social participation in arts and culture opportunities can also strongly influence individual health and foster a greater sense of community cohesion.[128]

12. Biologic factors and genetic inheritance

Genetic inheritance, the functioning of individual body systems and the processes of growth and ageing are also powerful determinants of health and wellbeing. A person's genetic endowment was once thought to be pre-determined and not amenable to change. However, recent evidence indicates that the ways that genes are expressed can be shaped by a person's physical, psychological and social environments; and social relationships and environments may influence the expression of DNA throughout one's lifetime.[132]

A growing body of research is revealing that external factors affect wellbeing and development not only via psychosocial mechanisms, but through epigenetics as well. 'Epigenetics' refers to regulation of the genome: the mechanisms that can change a gene's function, without altering its sequence.[130] New research has also shown that early life experiences can produce changes in the genes that affect brain development; and these changes may help explain, for example, why abuse and neglect early in life result in a high risk for suicidal behaviour many years later.[131,133]

To summarise, the factors discussed above play important roles in the health and wellbeing of populations. The health of populations is the product of the intersecting influences from these different domains, influences that are dynamic and that vary in their impact depending upon when in the life course they occur and upon the effects of preceding and subsequent factors.[134] Whether a gene is expressed can be determined by environmental exposures and also by behavioural patterns. The nature and consequences of behavioural choices are affected by socioeconomic and cultural circumstances.[134,135] Genetic predisposition, behaviour and living conditions determine the health care that will be needed, and one's socioeconomic circumstances may affect the health care one receives.[134]

Linking health and education

There is a large and persistent relationship between education and health, both of which are multi-dimensional concepts. This remains even when other important factors, such as income, are taken into account.[87,93,136,137] For example, there is a strong graded association

between educational attainment and life expectancy, although it is not clear if this is a causal relationship.[252,253,265] The causal pathway that links health and education is complex and not yet fully understood, and there is substantial variation across countries and cohorts in the extent to which education predicts better health.[270] However, there are a number of inter-related ways in which education is posited to influence health.[265]

These are:

- through healthier knowledge and behaviours - educated populations are better positioned to be health literate, to access health information and understand the implications of risky health behaviours, and available health care options, to make choices that optimise their own and their children's health, and to traverse the health care system effectively and manage illness;
- through employment and income - more educated individuals are likely to be in higher paid employment with healthier, safer working conditions. Higher incomes provide the ability to pay for out-of-pocket health expenses, private health insurance, choice of health practitioner and access to a wider range of preventive health and care options, as well as other resources, which are health-enhancing. Greater income also offers the means to move away from social environments and neighbourhoods, which can compromise health (such as those affected by high levels of pollution, stress or crime); and
- via social and psychological factors that affect health - these include one's sense of control, self-efficacy, problem-solving and mastery skills; subjective social status, and position in the social hierarchy; and social support networks. These influence health through pathways broadly related to stress, health-related behaviours, and the availability of practical and emotional support when needed.[93,133,138-141,252,253,265]

Health and education are also linked through the life course across generations.[27,93,143,144,252] Parents' educational attainment shapes their children's health and educational outcomes, both of which influence their children's health as adults, through the same pathways experienced by their parents.[27,93,142,143] For families who are disadvantaged in terms of their health, socioeconomic resources and educational attainment, this may perpetuate an intergenerational cycle of poorer health, less education and skill acquisition, fewer employment choices and reduced life chances.[145] Similarly, for those who are advantaged, the intergenerational transmission of educational success can ameliorate health, educational, economic and social inequalities.[188]

Early life is recognised as a particularly important stage, since it is the period when the foundations of future development are established.[26,27,143] Early experiences and the state of development that they produce affect health, learning and behaviour across the balance of the life course.[154] By the second decade of life, early experiences influence the risk of school failure, teen pregnancy and criminality.[154] By the third and fourth decades of life, early life influences obesity, blood pressure and depression; by the fifth and sixth decades, coronary heart disease and diabetes; and by later life, premature ageing and memory loss.[155] Social factors, from the most intimate experiences within the family to the most global, affect early human development in tangible and highly interdependent ways.[154] Taken together, these factors function like 'complex ecological systems' in nature.[54,154]

Numerous studies show that childhood circumstances have long-term effects on both adult health, learning, development and socioeconomic circumstances.[26,27] Longitudinal research following a group of people born in 1958 indicated that detrimental experiences in childhood often led to social exclusion in adulthood: social housing was more common if an individual's parents had lived in local authority housing, and those who were poor as children generally had lower incomes as adults.[146] It also revealed that parental interest in schooling was a powerful predictor of educational success. Furthermore, anxious children faced a higher risk of depression as adults, while low educational test scores correlated powerfully with, amongst other things, a doubling of the risk of depression.[146]

However, wellbeing in adulthood is not solely determined during childhood, for education, training and living and working conditions in adult life also influence health.[147] For some health outcomes, influences may accumulate across the whole life course, involving factors in childhood, adulthood and early old age.[148] For others, experiences early in life may be

important, or the relationship may be conditional, where factors from different stages in the life course have to occur sequentially before the later life effect is produced.[148] The experience of earlier or current disadvantage can influence interlinked pathways through childhood, during which resources may be accumulated or lost, and health, learning and development optimised or compromised.[265] These pathways relate to physical and emotional health, health behaviours, social identities, and cognition and learning.[145]

Differences in educational attainment have been identified as one of the main determinants of socioeconomic inequalities in health; and tackling educational inequalities remains one of the most politically acceptable policy solutions to communities.[145,149]

Supporting diverse Brimbank communities

There are a number of groups within the Brimbank community who have particular needs, are more likely to be vulnerable to adverse health and educational outcomes, and who can be considered as 'priority populations'. As they are all significantly socioeconomically disadvantaged, there is some overlap between the groups.

Socioeconomic disadvantage takes many forms. For some, it is the inability to obtain the essentials of life such as shelter and adequate food; for others, it is a matter of low income; for others, a problem of discrimination and exclusion from opportunities in society.[150] Defining disadvantage only in terms of poverty or low income minimises the importance, for example, of access to culturally appropriate services, safe environments, and the quality of housing or level of education that is available.[151] A complete definition needs to extend beyond a lack of economic resources to encompass many of the serious environmental, structural and social issues faced by individuals, their families and their communities.[152] These can include under- and unemployment, homelessness or unstable accommodation, discrimination and racism, unsupported lone parenthood, educational under-achievement, admission into state care, violence and abuse, and behavioural and mental health problems.

For many disadvantaged groups, the impact of social inequality limits their capacity to influence change, participate as citizens, and makes them more vulnerable to experience poorer health and fewer opportunities for educational achievement and secure employment. Some of these population groups include Aboriginal and Torres Strait Islander peoples; people living with disability and their families; young people with experience of the care and protection system; people caring for family members with disabilities; and migrants and refugees from a range of different cultures and ethnic backgrounds and for whom English is not their first language. Many of these may have not only interrupted learning experiences, but may also have been excluded from education, while others may be living with the impact of experiences of trauma, loss and dislocation.[153]

Triggers of vulnerability are contingent and complex, and there are no necessary or sufficient causes for people to become vulnerable.[256] The causal role of risk factors (acting singly or in combination) is still poorly understood, especially their interaction with individual (protective) and wider social factors.[256] Therefore, in order to meet the needs of priority populations in Brimbank, they must be identified as a priority and the extent and nature of their particular needs determined at a more local level.

For some of these groups, there are only population-level data available for this atlas rather than data at a small area level; for others, they may appear 'hidden' if their locations, needs and challenges are undescribed (for more information, see Section 3). A lack of quantitative and qualitative information about these priority populations can make it difficult to plan and deliver services and effective interventions which may improve their life opportunities, and their health, learning and development needs. Gathering information from local community members themselves, community elders and leaders, practitioners, service providers, non-government agencies, and local and state governments can be a useful starting point to identifying the community's diverse capacities, assets and needs, and likely resources to strengthen further these different populations in Brimbank.

Aboriginal and Torres Strait Islander peoples

While Aboriginal[2] peoples do not make up a large proportion of the community of Brimbank, the substantial social, political and economic disadvantage experienced by Australia's first inhabitants is well documented. Key social and economic indicators such as poverty, employment, housing, education, justice and health show that Aboriginal peoples, as a group, are at significantly higher risk of poorer life outcomes than non-Aboriginal Australians, and represent the most disadvantaged populations in our nation.[156]

In order to understand Aboriginal wellbeing today, the impact of colonisation, lost and stolen generations of families and social exclusion on the innumerable cultures of the peoples inhabiting Australia before 1770, needs to be recognised.[157,158] Therefore, from a social and political perspective, for there to be improvement in Aboriginal wellbeing, a process of reconciliation, that acknowledges the past in the light of the present, has to be embraced across all the sectors of society, including improvements in attitudes, practices and the sharing of power.[159,160] Brimbank is committed to reconciliation, and has developed a Reconciliation Action Plan in consultation with Aboriginal and Torres Strait Islander residents and local Aboriginal and Torres Strait Islander service providers and community groups.[170]

Most indicators of Aboriginal wellbeing, such as the ones included in this atlas, tend to reflect a 'deficit' model, highlighting problems and the extent of disadvantage experienced over a lifetime, and between generations. While it is essential to illustrate poorer outcomes and unmet need for appropriate resources and services, this approach overlooks the strengths and capabilities that the majority of Aboriginal peoples demonstrate in caring for their families, communities, their environments, and their lands; and fails to represent the holistic nature of Aboriginal cultures and histories.[161,162]

For Aboriginal peoples, the idea of wellbeing is broader and more inclusive than standard concepts of health.[11] However, neither the term "health" nor the term "wellbeing" fully captures the Aboriginal concept of living a life of value.[271] An understanding of this is drawn from the definition proposed by the National Aboriginal Health Strategy (NAHS) Working Party in 1989:

Not just the physical well-being of the individual but the social, emotional and cultural well-being of the whole community. This is the whole-of-life view and it also includes the cyclical concept of life-death-life.[163]

The NAHS definition notes that achieving wellbeing is an attribute of communities as well as the individuals within a community; and it identifies cultural wellbeing, along with physical, social, spiritual and emotional wellbeing, as equally important.[163,271] Land, culture and community identity are central to Aboriginal perceptions of wellbeing.[164] While Aboriginal cultures are numerous and diverse, they are dynamic and evolving.[164] For example, over fifty per cent of Aboriginal people in Australia identify with a cultural grouping, and at least eleven per cent speak an Aboriginal language at home.[165]

The NAHS definition emphasises a holistic approach, and highlights the importance of many of the determinants of wellbeing identified earlier in this section. Social and emotional wellbeing (and mental health) form part of this holistic view. With respect to social and emotional wellbeing, the following definition reflects Aboriginal perceptions:

This definition is about being well and being able to grow and develop within the context of family, community, culture and broader society to achieve optimal potential and balance in life. From the Aboriginal and Torres Strait Islander view, it must also incorporate a strengths approach, recognising the importance of connection to land, culture, spirituality, ancestry, family and community. Also, acknowledging the inherent resilience in surviving profound and ongoing adversity – yet retaining a sense of integrity, commitment to family, humour, compassion and respect for humanity.[208]

An understanding of Aboriginal wellbeing encompasses a far broader interpretation of 'community', which has family and kin relationships at its centre; and the family relationship or kinship system is not necessarily confined to a geographic area, and

2 Throughout this atlas, the word 'Aboriginal' is used to refer to both Aboriginal and Torres Strait Islander peoples.

the connections are not weakened by distance.[166] Thus, an Aboriginal community's social capabilities and functioning are fundamental to enhancing individual and collective knowledge and wellbeing, engaging in social and economic development, and in resolving local issues.[161] Furthermore, Aboriginal Australians experience wellbeing when they are able to determine all aspects of their life.[163,271] As Aboriginal culture is not something that can be easily understood by non-Aboriginal people, it must be respected, and acknowledged appropriately.[166]

In addition to the determinants outlined in the previous section which apply to all peoples, a number of key determinants of Aboriginal wellbeing are included here. Each is embedded in the overall social structure, in political, economic and educational systems, in diverse cultural requirements, and in local community and Aboriginal and non-Aboriginal peoples' actions.[158,167,168]

There is a strong thread of interdependence between them, and the nature of the inter-relationships is also complex. For example, post-secondary educational attainment is linked to year 10 and 12 retention and attainment.[169] These, in turn, are related to household income, parental education and employment, and so forth. However, whilst higher educational attainment is typically considered to be linked to good health, the association between schooling and Aboriginal health is less well understood. Research suggests that participation in mainstream education may have a detrimental impact because of the potential for cultural and linguistic alienation in an environment where Aboriginal people are usually in the minority.[171] It is the quality and cultural appropriateness of an education, which is relevant to the impact of education on health and social outcomes for Aboriginal Australians, not education *per se*. Further research is needed to ascertain whether higher educational attainment leads to better Aboriginal health.[172]

Key determinants for Aboriginal wellbeing include the following:

- Early life factors - these influence growth, the ability to learn, physical and mental health, and resilience in later life, and can have effects across generations. The extent of disadvantage experienced by Aboriginal communities and by individual families impacts particularly on their youngest and most vulnerable members. Factors such as low birthweight, failure to thrive and the effects of trauma can have serious consequences for children's health, learning and development.[173] Parents in communities experiencing such adversity may suffer high rates of emotional distress that also affect their children, especially when families are left without healing and resolution.[168] A 'both ways' approach to service design and delivery, which values and respects practices from both Aboriginal and non-Aboriginal cultures, is most likely to succeed;[174,175]
- Physical, social and emotional health - maternal health, nutrition, early attachment, cultural identity, and good physical and emotional health in childhood support early development, readiness to learn, social efficacy, educational attainment, and adult participation in the work force.[167] A lack of control over one's life can be replicated in biological responses to stress that can be pathways to poor physical and mental health and further disadvantage.[176,177] Health-harming levels of stress can occur as a result of the lived experiences of Aboriginal peoples in a dominant culture in which they are socially, culturally and economically disadvantaged, and where racism and discrimination are endemic.[178,179,251] This is evident in a broad range of outcomes that can result from unresolved grief and loss, trauma and abuse, interpersonal violence, removal from family, substance use, family breakdown, cultural dislocation, racism and discrimination, and social disadvantage.[209] Aboriginal peoples and communities must have control over their lives to progress self-determination, and enhance their wellbeing; but they must be supported to do so, in an environment of mutual respect;[178]
- Social support and community networks - the central importance of family and kin is a valued form of social and cultural capital in many Aboriginal families and communities; and extended family formation serves a fundamental role in wellbeing.[180] Aboriginal community networks can provide a source of support and enhance the wellbeing of their members. Dense bonding networks reinforce, and are reinforced by, Aboriginal

norms of identity, sharing and reciprocity (which may not always be beneficial).[181] However, while Aboriginal people can have strong and dense bonding networks, they may have sparse bridging and linking networks, especially to resources and expertise located in the dominant culture.[181] The repeated experience of racism and the lack of opportunities that entrenched intergenerational disadvantage brings can serve to undermine the development of trusting relationships beyond an Aboriginal community.[178]

- Housing, shelter and connections to country - in non-remote areas, Aboriginal people are more likely to access accommodation in the public rental sector, than non-Aboriginal people who are more likely to own or be purchasing their home.[165] This again reflects their greater economic disadvantage, and also highlights the presence of racial discrimination in sections of the private rental market.[182] However, there is much heterogeneity within the Aboriginal populations, and not all families use public housing;
- Income, employment and socioeconomic position - Aboriginal peoples, as a group, are widely recognised as being financially disadvantaged, and low levels of income are also a strong indicator of relative disadvantage in areas such as educational attainment, labour force participation, housing and health.[156] Employment is not only dependent on what you know (skills, knowledge, qualifications – human capital) but also on whom you know (social relations and acquaintances – social capital).[181] Furthermore, not all the people in one's immediate social network may be equally effective at providing information and facilitating employment, and some may negatively influence motivation to engage with education or seek employment opportunities.[181]
- Learning, education and training - like all students, Aboriginal students come to formal educational settings as experienced, active learners with skills and capacities, which need to be appropriately recognised and acknowledged in mainstream settings.[183,184] Factors linked to Aboriginal students' individual life experiences have a direct impact on their capacity to engage with school and learn, and these interact with each other.[185,210] These include having basic material and personal support needs met; their experience of the formal learning environment; their foundation skills such as communication, English language skills and social interaction; personal and cultural identity; Aboriginal role models; social behaviour and engagement with school; learning support needs; and life and vocational goals and aspirations.[186] Many of these are influenced by family, community, cultural and social contexts. For example, past negative experiences of school, and those of parents and other family members, may impact on pre-school and school attendance patterns.[186,187] Issues which can affect educational experience include institutional, peer and teacher-based racism in formal learning environments; ineffective racial harassment policies; ineffective grievance procedures; lack of respect and value for all cultures; poor communication processes with individuals, peers, parents and communities; confusion about the roles of Aboriginal education workers; the need for cultural awareness training of teachers and counsellors; the need for support structures such as dedicated spaces for Aboriginal students' homework and tutoring assistance; population mobility; and poverty.[189] In contrast, schools with high Aboriginal attendance levels attribute their success to well-trained, culturally sensitive teachers who can build a rapport with Aboriginal students and their families, offer additional support and develop individualised learning plans.[190,210]

None of these policy areas in isolation will achieve the improvement in health and wellbeing needed, but they have the capacity to address the existing intergenerational cycle of disadvantage, which is present for many Aboriginal peoples as a legacy of colonisation and its aftermath.[191] The poverty and inequality that they experience is a contemporary reflection of their historical treatment as peoples.[191]

Refugee and recently arrived migrant groups

Migrants to Australia have made and continue to make substantial contributions to Australia's stock of human capability, and social and produced capital.[257] The migrant presence has also substantially increased the range and viability of available cultural and recreational

activities for all Australians.[257] This is exemplified by the bridging capital between those with different cultural heritages, although some seek these opportunities more than others. With respect to bonding capital, migrants from particular ethnic groups also act as bonding agents for the next wave of migrants, assisting their cultural and economic integration in a multitude of ways that are immeasurable and hence largely invisible.[257] Migrants contribute in positive ways to the productive diversity of Australia through investment in housing, in the transformation of urban areas, the creation of new businesses, the supply of products, the provision of new and different skills, and through other types of entrepreneurial activities.[257]

While many migrants entering Australia are skilled, some are humanitarian or preferential family groups from refugee camps. Refugees are defined by the United Nations' *Convention relating to the Status of Refugees* as people who 'are outside their county of nationality or their usual country of residence and are unable or unwilling to return or to seek the protection of that country due to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion'.[203] In addition to those people who enter Australia under visa categories that identify them specifically as refugees, there are others of the same backgrounds who have been through similar experiences in those countries, and whose profile is therefore like that of a refugee.[204] They may have similar difficulties as refugees when interacting with health, education and training and other service systems.

Refugees face a range of challenges when they settle in Australia. Many current refugees are culturally and ethnically diverse and come from countries at a greatly different stage of economic development than Australia; and for them, the process of resettlement, adjustment and assimilation is often more complex and multifaceted. Unemployed refugees, those in receipt of welfare benefits, refugees with non-transferable occupational skills, older refugees whose social roles have changed (e.g., women providing income, men who cannot) and those whose standard of living is markedly lower than it was at home, form the highest risk groups.[254] On the other hand, success in the new land, and the achievement of material conditions, either higher than at home or better than one's initial expectations, tend to facilitate their adjustment.[254]

With respect to education, while many students from refugee backgrounds achieve success, there is evidence that numerous people arriving in Australia under the refugee and humanitarian program are also failing to attain a level of education that will ultimately allow for their successful integration into the Australian community.[204,266] Severe disruption to, or an absence of formal education and poor proficiency in English before arriving in Australia, along with significant emotional, developmental and physical traumas, are major barriers for many in achieving qualifications within the mainstream education and training system.[266] The impacts depend on a number of factors, such as the resilience of the individual, access to and the quality of family and community support, and the societal environment of the host country. When any of these fail, disengagement and long-term unemployment can lead to marginalisation and social exclusion, long-term welfare dependency, and ultimately, considerable difficulty in ever participating fully in the new society.[204,266]

The significant issues that new arrivals must contend with can be overwhelming, from trying to find affordable housing, enrolling children in school, looking for work and/or getting overseas qualifications recognised, finding family members and negotiating a whole new system and culture, while trying to work through any traumas they have. Both newly arrived adults and children may be coming to terms with loss of self-identity, uncertainty about the future, and loss of family and culture.[269] They are likely to have had little control over the events that forced them to leave. Research indicates that the quality of support provided in the early period of settlement and beyond has a significant bearing on how well refugees are able to face the practical and emotional challenges of re-establishing their lives in a new country.[204]

The physical and emotional health effects from refugee life experiences are likely to affect individuals' education and learning.[205] During resettlement, these experiences may lead to individuals displaying post-traumatic stress disorder (PTSD) symptoms.[206] Therefore, students from refugee backgrounds attending educational courses can be affected by the mental health-related burdens resulting from

their refugee life experiences, in addition to the consequences of disrupted or no educational histories.[266] However, while therapeutic approaches are needed, these should not be allowed to become a 'deficit-focused' basis for an individual's educational experience.[207,211]

Furthermore, teachers and other students are often unfamiliar with the historical and political circumstances of intra-national conflict and forced migration, as well as ethnic and cultural differences within national borders.[207] Even within the same country of origin, individuals from different regions may have different educational needs. Refugee status is a legal and bureaucratic category, which encompasses people from a wide range of national, cultural, linguistic, and ethnic backgrounds, with different experiences of forced migration. It is not 'refugee-ness' that determines educational success but the ways that pre- and post-settlement issues and needs are identified and addressed.[207,211] This means that one or other elements affecting the educational progress of refugee students may well be shared with other priority groups, such as migrants, new arrivals, Aboriginal students and students from low socioeconomic backgrounds.[207]

Therefore, in contrast to many learning theories that advocate for the use of past experiences, the previous experiences of students from refugee backgrounds may actively work against the process of participating in learning.[213] However, such education experiences may serve as a basis from which individuals can transform their lives through securing new capabilities to engage more productively in social and economic life.[214] Therefore, the issue of readiness to learn for people from refugee backgrounds is not simply one of possessing the capacities to participate in the experiences, but also includes both physical and psychological dissonances that the students might encounter during learning. Other barriers, including English proficiency, style of Australian education, and family obligations and expectations, may prevent younger refugees from progressing through the education system.[212,215,269]

In general, people from migrant and refugee backgrounds demonstrate high levels of strength, resilience, resourcefulness and persistence.[207,216] At the same time, they regularly experience marginalisation in relation to housing, health, education, employment and access to social and recreational opportunities as they resettle in Australia.[266] These result when community structures do not take account of their strengths and needs. This undermines the basic human rights of these people as well as their capacity as individuals to be fulfilled. This, in turn, negatively impacts on the capacity of Australian society to be the best that it can be.[192]

For refugee and migrant young people, a socially cohesive society includes a welcoming environment where they can form trusting relationships; participate fully in community activities; and feel supported by peers and family.[216] It also allows them to formulate achievable goals in their lives. They are able to retain their cultural heritage while also feeling connected to the broader society.[212] Finally, they have full and equal access to the various institutions (such as education and employment) and the benefits of society (material benefits such as housing and income, and social benefits such as decision-making, citizenship and community participation and support).[216,266]

Low income and jobless households

The material standard of living enjoyed by individuals and households depends primarily on their command of economic resources, both in the immediate and longer terms. Income varies across the life span and does not alone determine material quality of life.[192] Other factors are the extent of unfulfilled financial commitments (financial stress), and the level of accumulated wealth, which can buffer the income of an individual or household.

It has been estimated that a full-time job is needed to produce sufficient income to raise people above the poverty line in Australia.[193] Un- and underemployment continue to be major causes of poverty in Australia, and employment only provides a way out of poverty when it comes in the form of a full-time job.[194] As many of the new jobs emerging through the last two decades have been either part-time or casual, they have not been sufficient, by themselves, to protect many workers and their families from poverty.[193]

Jobless families include not only those who are unemployed but also those not participating in the paid labour market. Around two-thirds of these families are lone parents, and more than 80% of lone parents are women.[195] In Australia, jobless families are about six times more likely

to be in poverty than working families; and 70% of all poor children live in jobless households, the highest level in the OECD.[195]

Thus, households with low incomes and/or no adult in employment or education and training face disadvantage across many domains of life. There are reduced opportunities to engage in a range of activities, including formal and informal avenues of learning and education, for all members of these households. For the adults, there may be limited prospects of increasing skills and competencies; and the stress generated as a result of having low income and no employment can have adverse effects on family cohesion and wellbeing and physical and mental health.[196]

For children and young people, living in a jobless household can have many unfavourable consequences, and may lead to the intergenerational transmission of economic disadvantage. Unemployment has been linked to truancy and non-completion of schooling, family break up, spouse abuse, substance use, illness and premature death.[197] Furthermore, a child's learning and development depends on access to economic resources during the first fifteen years of life, and future income, socioeconomic position and relative economic success can suffer.[196] Children and young people also need role models to follow if they are to proceed to education and training opportunities beyond school.[197] This is made more difficult if such models are not evident in the home. The transmission of joblessness across generations undermines both equality of outcomes and equality of opportunity.[195]

Joblessness can generate tension and conflict in families, with resulting poor health, family disruption, housing instability and social exclusion, resulting from the loss of social and employment contacts in the workplace.[198] However, while poor health and disability are more prevalent among jobless families and are significant additional barriers for some households, many jobless lone parents have good health and do not experience severe disability.[195]

People who are homeless or have insecure housing

People experiencing homelessness have a diverse range of circumstances and needs, but are among Australia's most socially and economically disadvantaged.[192] They are a heterogeneous group, with complex needs requiring a wide range of service responses, in addition to the provision of shelter.[199] Aboriginal peoples are more likely to experience homelessness than other Australians, and are over-represented in all age groups.

Children, young people and adults experience adverse educational, health and social consequences as a result of being homeless. Homeless children and young people may suffer emotional and behavioural problems such as depression, low self-esteem, anger and aggression and are likely to have disrupted schooling.[200] Their parents are also at risk of depression and stress and may be unable to provide their children with the care and support they need. Relationship breakdown and family violence are also common reasons for parents with children seeking assistance from welfare and other agencies.[192]

In addition to physical and mental health problems, homeless people are also at risk of other negative life outcomes. They often live within hostile environments, and are therefore more likely to be subjected to acts of violence, crime and abuse.[201,202] Furthermore, homeless persons are highly marginalised, alienated, and stigmatised, which can lead to degraded social and other skills, and inadequate emotional or cognitive stimulation.[201]

With respect to education and learning, it has been estimated that only about a third of homeless teenagers retain some connection with school, with the rest not in any employment, education or training.[217] Indeed, the main barrier to homeless young people achieving a stable continuum in their lives is their difficulty in maintaining links to education, which is exacerbated by the financial burden of education fees, in addition to the stresses associated with being homeless.[218]

A number of recent initiatives in Australia challenge the conventional, welfare-driven approaches that have characterised many of the youth homeless responses in Australia.[219] Long-term accommodation and support are provided, in contrast to the traditionally funded short-term crisis approaches. Safe, affordable accommodation is integrated with learning, skills for independence, health and wellbeing, and family mediation, with education and the development of life skills being at the centre of the response, and

housing being simply a means to achieving that end.[219] Importantly, they provide a safe, secure environment for young people, designed to keep them away from the street and to keep the street out of their new (and often first) home.[220]

Children and young people in the care and protection system

For children with experience of the care and protection system, their health, learning and development are influenced not only by their family circumstances, and the efforts of foster and relative carers and child welfare agencies, but also by the support provided by other agencies, such as the school and health systems.[221] Education makes a significant contribution to the development and wellbeing of children and young people, and is an important gateway to future employment and life opportunities.[227] For many children and young people in the care of the state, school may be their safest and most stable environment, providing social connectedness, development of capabilities and relationships and friendship.[222,223]

Children under guardianship have ability and can succeed.[224] However, a history of interrupted school attendance due to relocation and unstable placements, in addition to disabilities, learning difficulties, disrupted relationships and attachments, emotional and behavioural problems, and poverty, can mean that the educational needs of children and young people in the care of the state are not met.[225,226] Furthermore, lost educational opportunities have a cumulative effect on children in care as they move through the various stages of learning and development.[224] These factors have consequences for their prospects for future employment and wellbeing. There is also a link between poor academic achievements and higher than average rates of homelessness, criminality, drug abuse, and unemployment amongst care leavers. Education remains a significant gateway through which young people can pass from care to adulthood, to employment and to effectively participating in community life.[225]

Currently, many students in out-of-home care have poorer learning outcomes, particularly in literacy and numeracy; suffer from educational gaps, and learning and other disabilities; have specific issues relating to development at key stages of schooling; and may exhibit a range of problematic behaviours.[227] They are less likely to continue within mainstream education beyond the period of compulsion; are more likely to be older than other children and young people in their grade level; on average attend a larger number of primary and high schools than other students; and miss substantial periods of school through changes of placement.[225] Factors underpinning non-attendance relate to instability and a lack of continuity in placements, and poor relationships within the school, with some teachers (e.g., low expectations and lack of understanding) and peers (e.g., exclusion, bullying and being older than peers).

There are systemic barriers which impact on the learning and developmental outcomes of children and young people in care, and both the child welfare and the education systems can contribute to poor educational outcomes for children in care.[229,230] Issues such as frequently changing staff, lost or incomplete records or no individual education plan, minimal monitoring of educational progress, a paucity of specialised and remedial services, lack of engagement, and frequent changes in schools all contribute, as do higher rates of being kept back a year and of absenteeism, tardiness, truancy and school dropout.[225,231] These students may also have greater needs for extra help, as the prevalence of disabilities is high. Lack of access to effective support services has a cumulative impact on children as they move through the various stages of education and development, from preschool, primary school and secondary school, through to vocational and tertiary education.

Children and young people in care have a right to participate in education and realise their potential. They must have access to a range of educational options in the public and non-government sectors that are responsive to their needs, if they are to progress successfully into vocational and higher education opportunities, and future employment.[230]

People living with disabilities and their families

Disability can take many forms – physical, intellectual, emotional, learning, sensory and so forth – and clearly has a significant impact on the health, learning and development of the individuals so affected, their siblings and families. People living with disability include those who were born with disability and those

who acquire disability through accident, ageing or illness during their life. Their carers and families can experience high rates of mental health problems, poorer physical health, employment restrictions, financial hardship and relationship breakdown.[232] Compared to Australians without disability, people with disability are more likely to live in poverty, to have fewer educational qualifications, to be out of work and to experience inequality.[233] Just under one in five people report some form of disability.[233] The prevalence of disability among Aboriginal Australians is higher than for other Australians at all ages, and rates of severe disability are at least twice as high.[156]

Australia's ratification of the *United Nations Convention on the Rights of Persons with Disabilities* in 2008 reflects the nation's commitment to promoting and supporting the equal and active participation by people with disability in economic and social life.[233] Understanding the prevalence of disability in the Australian population, and the socioeconomic characteristics and needs and unmet needs of people with disability, is important in informing policies, planning services, and removing barriers to participation.[233]

The Convention includes Article 24, which recognises the right to education and requires measures to ensure equal access to education. People with disabilities and special needs need be considered in the provision of all education programs, from preschool, childcare and early childhood education, to post-school education and employment. Most students with disabilities are able to develop and learn and should be encouraged and given the necessary support to do so. They may require assistance with or access to assistive technologies in relation to education and training, and their family members may require respite and other support services. Support is particularly critical in transitional stages of schooling, such as when a student is moving from primary school to high school or from a more supported special education setting into a mainstream school.[235]

People living with disabilities are often at risk of being stigmatised, abused, exploited, neglected or rejected by others.[234] They need educators with positive attitudes to counteract society's prejudices, and with specialised training to maximise opportunities for learning, so they are able to achieve, and are prepared for post-school life. Failing to provide an appropriate education limits their potential to lead productive, independent adult lives to the extent that this is possible. In 2012, only 36% of people with a disability aged 15 to 64 years reported having completed year 12, compared to 60% of those without a disability.[233] Post-school educational inequalities for those with disability are also present, with only 15% completing a bachelor degree or higher qualification (compared to 26% for those without a disability).[233] Furthermore, educational achievements and outcomes from VET programs are also relatively poor for students reporting a disability, although there is considerable variability between types of disability.[236] In 2003, VET students reporting a disability had generally low educational attainment levels, with almost half having only completed Year 10 or lower.[237]

The needs of people, especially children and young people, caring for family members with a disability are also important. Adequate supports for the whole family may be required, and to prevent children having to take on inappropriate caring roles. This includes recognising children who are both primary and secondary carers. Children and young people with caring roles face significant challenges maintaining school attendance, completing their schooling and further education and training, and participating in the social and sporting activities of their peers.[238] Similarly, children with a sibling with a disability can miss out on opportunities through the demands on parental time, and emotional and economic resources; and may need support to cope with the perceived stigma or attitudinal issues from their peers at school or in the community. As a result, they can feel isolated and at risk of a range of emotional, learning and physical health problems, which can continue into adulthood. Siblings are often overlooked both within their family and by agencies, even though they are likely to have the longest relationship of anyone with the person living with disability.[238]

Conclusion

While reducing inequalities in health and education outcomes are important public policy challenges, we do not yet have sufficiently robust knowledge of which

interventions are effective, in which locations and for which populations, to 'level up' the gradients in specific inequalities. Further work is needed to monitor and evaluate alternative policies and their impacts and determine if, how and why particular populations from different socioeconomic groups respond to such policies.[247] Causes of unintended, differential impacts of current and new public policies also need to be determined.[247]

However, there is a growing body of knowledge that can provide some direction for developing policies to reduce the determinants of health and education inequalities in modern societies.[244,247,248,251,258] The socioeconomic environment is a powerful and potentially modifiable factor, and public policy is a key instrument to improve this environment, particularly in areas such as education and training, early childhood development, housing, taxation and social security, work environments, urban design, pollution control, and health care.[63,251,259,260]

A focus on the social and economic contexts of life in no way implies that other factors such as genetics, behaviours or use of services do not contribute to determining health, learning and wellbeing; rather, this highlights a greater understanding in recent years of the hidden social factors that underpin differences in the likelihood of having a healthy and fulfilling life, both for individuals and for populations.

At the neighbourhood level, asset-based community development approaches offer empowering strategies for residents and community-based organisations to determine the best ways to proceed and act locally.[261,262] The asset-based approach values the capacity, skills, knowledge, and relationships in a community, rather than focusing solely on problems and needs.[261] As a result, a community can be galvanised and people can become more active agents in their own and their families' lives.[261]

Investing in a population-focused approach to addressing socioeconomic inequalities in health and education offers a number of benefits: increased prosperity, because a well-functioning, skilled and healthy population is a major contributor to a vibrant economy; reduced expenditures on health, education and social problems; and overall community stability and wellbeing for the population.

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Section 3

Indicators of health and wellbeing, and education and child development for Brimbank

In this section …

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Introduction

Information presented in this section describes a range of health and education outcomes, and the links between health and education, in the Brimbank community. In the absence of individual-level data, the approach taken to describe these links, or associations, is to compare the characteristics of the population living in geographic areas within Brimbank City (the Local Government Area LGA), referred to in this atlas as 'Brimbank', or 'the City'). Presenting data for the communities living in these small areas can assist in identifying inequalities in outcomes that exist between the communities.

The information, presented as a series of indicators, highlights these inequalities and draws attention to the influence of social, economic and environmental factors on health and wellbeing, and education child development outcomes. The ensuing picture is one of significant differences in outcomes across Brimbank's population, and in comparison with other areas for which the data are presented.

More detail as to the particular indicators that we were able to present, and to the selection of the set in this atlas, is provided under the heading 'Selection of Indicators', below.

The value of indicators

One way to describe health and education outcomes, and the links between health and education, is through the use of indicators, both at a point in time, and by tracking their movement over time. Indicators are summary measures of chosen events (for example, the percentage of children under 15 years of age living in families where no parent has a job) derived from data collections that record all cases, or a representative sample, of the events in a population.

Describing geographic variations in indicators of outcomes, and of inequalities in those outcomes, provides information which can be used to understand the links between health and education. It can also be used to support progress towards reducing such inequalities.

Selection and presentation of indicators

The indicators selected for inclusion in the atlas are listed in Tables 1 and 2, below; the tables provide a comparison between the value for each indicator in Brimbank LGA and the two Brimbank Statistical Local Areas (SLAs), namely Brimbank - Keilor and Brimbank - Sunshine, with the value for Melbourne (see box 'Areas mapped', overleaf, for a definition of 'Melbourne'); the Australian figure is also shown for comparison.

For some of these indicators, reliable data are available, which can be mapped to show variations between areas within Brimbank City and its SLAs. These indicators, which are underlined in Table 1 and Table 2, comprise the majority of the information presented in this section.

The indicators are shown in two groups – one which we have identified as largely being 'contextual' indicators (Table 1), and the other which comprises more directly indicators of health and wellbeing, and education and child development (Table 2).

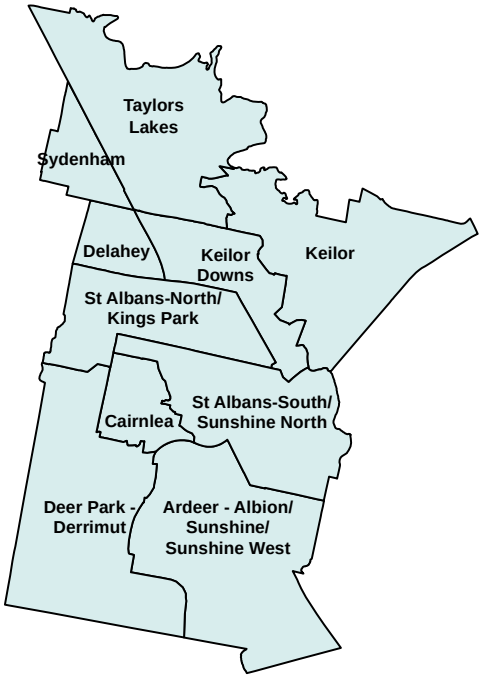
We recognise that the designation of some indicators as 'contextual', and others as 'direct', is somewhat artificial, as some are both. For example, we have shown the indicators for 'children in families with mothers with low educational attainment', and 'learning or earning at ages 15 to 19 years' as contextual indicators. Clearly, there are strong links between these indicators and outcomes in both education and health. However, we believe that these two indicators, together with the others in this set, provide a sound framework within which to view more traditionally-recognised indicators of health and wellbeing, and education and child development outcomes.

Each of the indicators is introduced with a brief note as to its relevance to health and wellbeing, and education and child development. This statement is followed by a brief definition of the composition of the indicator and 'Key points', drawn from the data. The data are presented in tables, a map and a chart. One table shows details of the indicator: the number of people represented, this number as a percentage or rate, and the relationship between the percentage or rate in the area and the comparable figure for Australia. These

details are shown for the SLAs of Brimbank - Keilor and Brimbank - Sunshine, the LGA of Brimbank, Melbourne - West, Melbourne (see the box, 'Areas mapped' for a definition of these two areas), Victoria and Australia.

The map and the other table comprise the 14 areas with Brimbank City to which data are mapped, areas referred to as Population Health Areas, or PHAs (see Map 1 and the box, 'Areas mapped'). In the table, the relationship between the percentage or rate in the PHA and the comparable figure for Brimbank City is shown, thus highlighting variations within the City.

Map 1: Population Health Areas, Brimbank



A graph is presented for the majority of indicators, showing where the two Brimbank City SLAs rank in comparison with other SLAs in Melbourne.

The description of the indicator concludes with details of any correlations, at the SLA or PHA level across Melbourne, with the other indicators presented in the atlas.

The key map pages on the last sheets in the atlas can be opened out to lie alongside the maps of the indicators, enabling identification of the suburbs and SLAs (second to last sheet) and the PHAs (last sheet) in Brimbank City.

Both indicator sets are included in an interactive version of the atlas which is available at http://tinyurl.com/Brimbank-atlas-Mi.

Areas mapped

The data for Brimbank are mapped to Population Health Areas (PHAs). PHAs are aggregations of the Statistical Areas Level 2 (SA2) spatial area introduced by the Australian Bureau of Statistics (ABS) on 1 July 2011.[1] As SA2s are much smaller than the areas which they replaced, Statistical Local Areas (SLAs), it was not possible to obtain data for some important datasets, either because the number of cases would be too small to be reliable, or because the data custodians believe the data could reveal confidential information about the person for whom the event was recorded. Examples are low birthweight babies and child mortality. As a result, PHAs were developed for the publication of population health data across Australia: for Brimbank, the 14 SA2s have been aggregated into ten PHAs (Map 1).

As noted, the data are also provided for the areas of 'Melbourne' (the Greater Capital City Statistical Area of Melbourne, or Greater Melbourne) and 'Melbourne - West' (the Statistical Areas Level 4 (SA4, the western region of Melbourne)), as described by the ABS.[1]

Under the geographical classification used by the ABS prior to July 2011, there were two SLAs in Brimbank LGA – namely Brimbank - Keilor and Brimbank - Sunshine. Where available, data have been published for these and other SLAs across Melbourne.

The key maps at the end of the atlas show the boundaries for the SLAs and PHAs in Brimbank.

*The only mismatch of any consequence in this instance is that the SA2 of Kings Park is split between the two SLAs, with 61% of the population of its area in Keilor, and 39% in Sunshine.

Data gaps and limitations

Traditionally, data about health and wellbeing and education and child development tend to describe difficulties and problems in a community, such as low literacy levels, aspects of ill health, or lack of education.

This has resulted in the availability of richer datasets that focus on more negative data and far fewer that highlight a community's strengths and more positive attributes, such as resilience.[2,3]

As well as having needs and problems, communities such as Brimbank have social, cultural and material assets. Identifying and mobilising these through asset-mapping can help overcome the challenges they face. A growing body of evidence shows that when there is a focus on what communities have (their assets) as opposed to what they do not have (their needs), a community's efficacy in addressing its own needs increases as does its capacity to obtain external support.[4]

The asset-mapping approach values the capacity, skills, knowledge, relationships, experience and connections in a community. An asset can be any of the following:

- the practical skills, capacity and knowledge of local residents;
- the passions and interests of local residents that give them energy for change;
- the networks and connections – known as 'social capital' – in a community, including friendships and neighbourliness;
- the effectiveness of local community and voluntary associations;
- the resources of public, private and civil society organisations that are available to support a community; and
- the physical and economic resources of a place that enhance wellbeing.[4]

As there are limited available data which reflect the assets of Brimbank, the indicators in this Section tend to focus more on problems and challenges.

Furthermore, particular data that would be useful in better understanding the influences on health, wellbeing, education and child development outcomes are not available, such as nutritional intake and food security; exposure to pollutants; prevalence of learning disabilities in school-aged children; and so forth. There are also important data about the population that are missing, such as detailed information about refugees, carers, homelessness or the extent of bullying, racism or discrimination experienced by various minority groups in the population.

Another limitation is that, as it is the intention that similar atlases be produced for other communities across Australia, the indicators included are those for which data are available, or likely to be available, at the small area level nationally. Unfortunately, this limits the data that could be potentially included in the atlas for Brimbank, as there are many rich datasets not available nationally, which describe the characteristics of the Victorian population at a sub-state level.

Interpreting data about an area

Readers should note that the areas referred to represent the location of the usual address (at the PHA, SLA or LGA level) of the person about whom the event (e.g., infant deaths, education participation) is recorded.

Throughout the atlas, the geographic distribution at the PHA level generally highlights areas with socioeconomically disadvantaged populations, or poorer outcomes, using the darker shades.

However, just as there are differences between PHAs, there are variations, and sometimes substantial variations, within a PHA. As such, the figures for a PHA represent the average of the different population groups within the PHA. This observation is even more relevant to the larger areas, the SLAs and the LGA.

Correlation analysis

A correlation analysis has been undertaken to illustrate the extent of association at the SLA level in Melbourne between the indicators in this atlas for which data were available by SLA.

The results of the strongest correlations are discussed under each indicator; the tables in Appendix B include correlations at the SLA level both for data which have been mapped at the PHA level, and for other indicators in Tables 1 and 2 that were not mapped.

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

Terminology

In discussing the extent to which percentages or rates vary from the Australian or other figures, the following terms are used:

- "Notable", referring to a rate ratio from 1.10 to <1.20 (a difference of from 10% to <20%), or from 0.90 to <0.80 (a difference of from -10% to <-20%);
- "Marked", referring to a rate ratio from 1.20 to <1.50 (a difference of from 20% to <50%),

or from 0.80 to <0.50 (a difference of from -20% to <-50%);

- "Substantial", referring to a rate ratio of 1.50 or above (a difference of 50% or more), or of 0.50 and below (a difference of greater than 50%).

Age distribution of the population

As the demographic profile of the Brimbank City population is well covered in the Council's own publications (e.g., The Diverse Communities of Brimbank[5]), the following discussion is limited to a comparison of the population's age profile at various geographic levels.

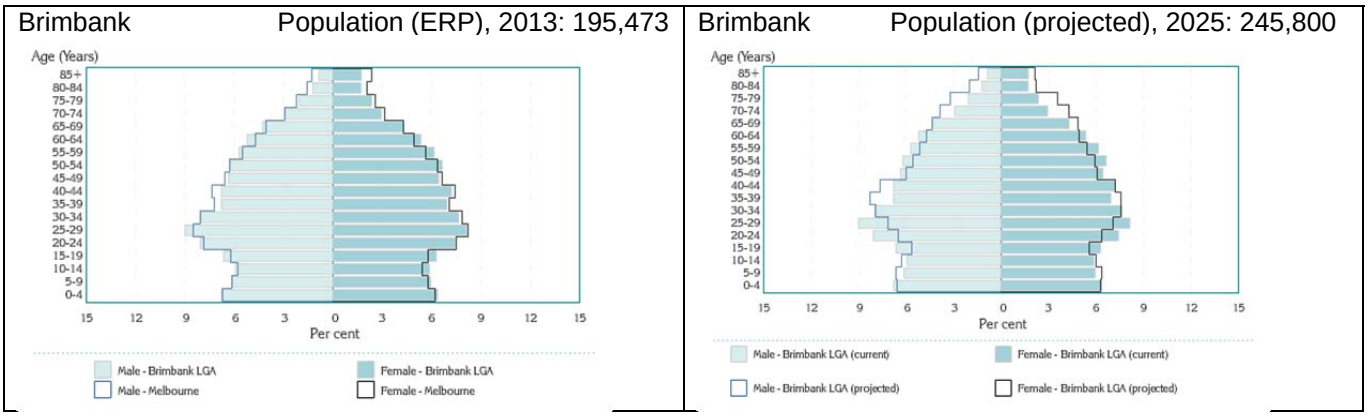
The age profile in Brimbank City in 2013 had many similarities to the profile in Melbourne (Figure 3).

However, differences start to be seen when the two SLAs are viewed separately (Figure 4). For example, the relatively larger population at younger ages in Brimbank - Keilor is more evident, with higher proportions of the population aged from 10 to 19 years (to 24 years for males) and from 45 to 69 years (males and females); and relatively fewer adults from 25 to 44 years, and fewer people at older ages.

The profile of the population in Brimbank - Sunshine is more similar to that in Melbourne, although with relatively more children at ages 0 to 4 years; and more people from 25 to 39 years. There were, however, relatively fewer people in the majority of age groups at 40 years and above.

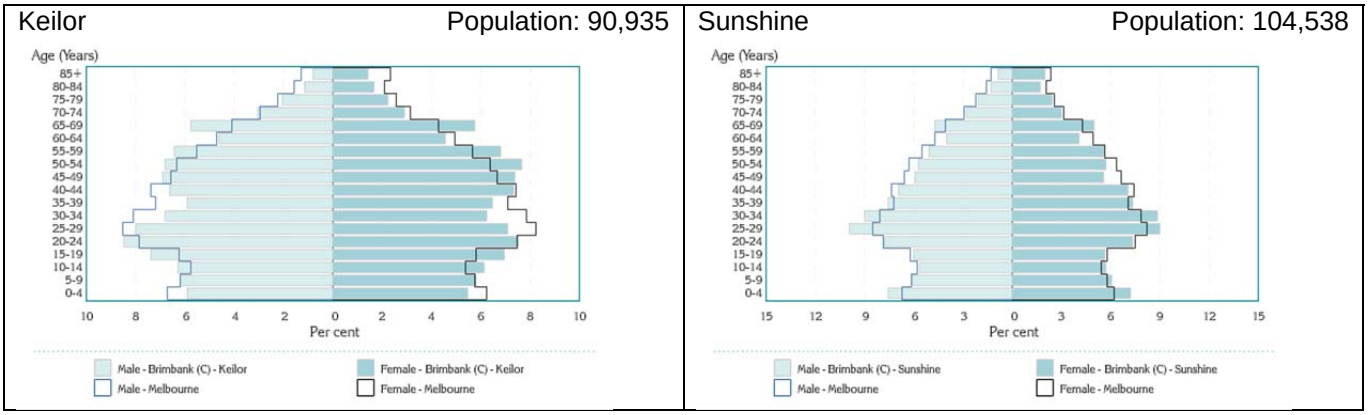
The other graph in Figure 3 shows that the population in Brimbank is projected to become more stable by 2025, as the population ages, and birth rates stabilise. Over this 12-year period, the population will grow steadily, by an average of 2.1% per annum, or by 26.0% from 2013 to 2025.

Figure 3: Age profile in Brimbank LGA compared with Melbourne, 2013; and projected to 2025



Source: 2013 Estimated Resident Population, 2011; 2025 populations are customised projections prepared for the Australian Government Department of Social Services by the Australian Bureau of Statistics.

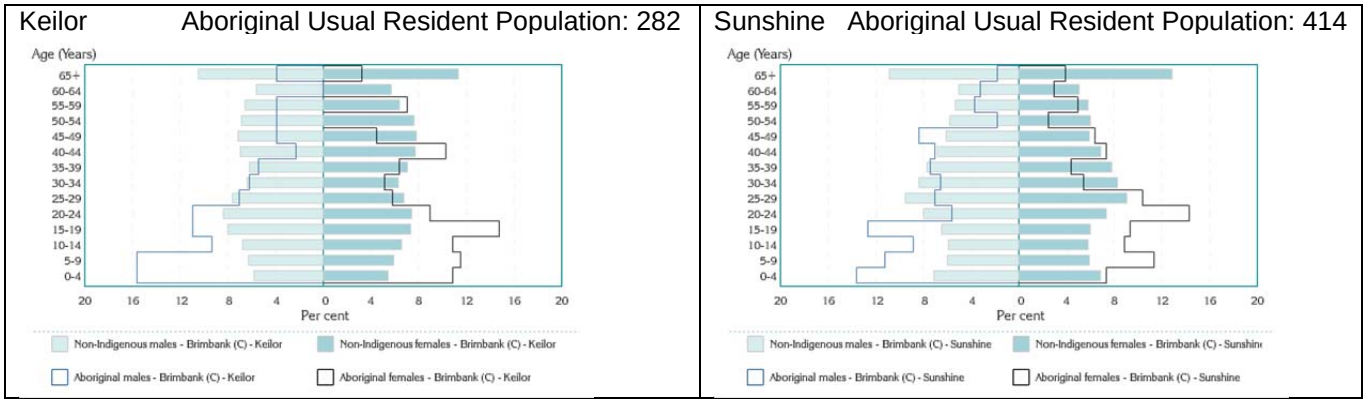
Figure 4: Age profiles in Brimbank SLAs compared with Melbourne, 2013



Source: 2013 Estimated Resident Population

Despite the small numbers overall and in some age groups, it is clear that the Aboriginal populations in both the Keilor and Sunshine SLAs in 2011 had markedly higher proportions of their population at younger ages, and lower proportions at older ages (Figure 5). This is in keeping with the pattern seen elsewhere in Australia.

Figure 5: Age profiles in Brimbank SLAs by Indigenous status, 2011



Source: 2011 Census Community Profiles, Basic Community profile for Brimbank (C) - Keilor and - Sunshine, accessed 8 April at http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/communityprofile/205101181?opendocument&navpos=220

At the PHA level, Ardeer - Albion/ Sunshine/ Sunshine West, St Albans - North/ Kings Park and St Albans - South/ Sunshine North have age profiles that are most similar to each other and to the overall Brimbank City profile (Figure 6). In Sydenham, there are relatively more people under 50, and fewer from 50 years and over, than in the City overall. Cairnlea and Delahey also have relatively more children and young people, and more adults – in Cairnlea, from 35 years to 44 years for males, and 30 to 49 years for females; and, in Delahey, from 45 to 59 years for males and from 40 to 54 years for females.

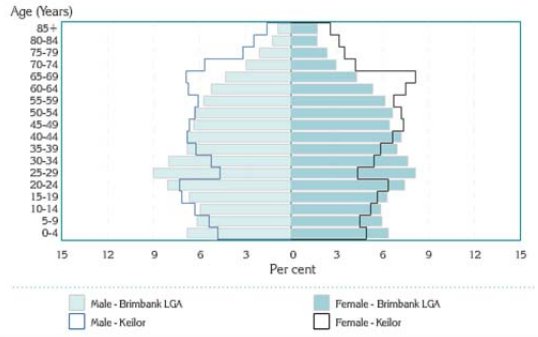
Keilor and Keilor Downs PHAs have relatively fewer children, and more adults from 45 years of age; in Keilor, the markedly higher proportions continue through to the 85 years and over age group.

In Taylors Lakes, the profile shows higher proportions of established families, with teenagers to young adults living at home.

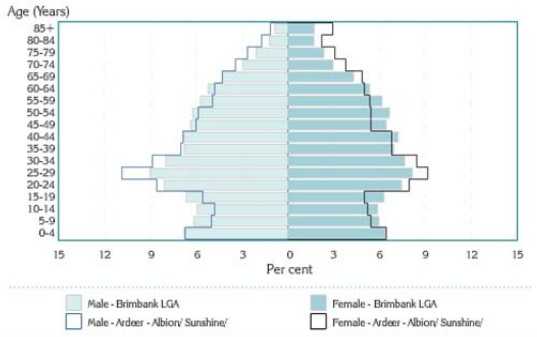
In Deer Park - Derrimut, the families are younger, with markedly higher proportions of children in the 0 to 4 year age group, when compared with Brimbank City overall.

Figure 6: Age profiles in Brimbank PHAs compared with Brimbank LGA, 2013

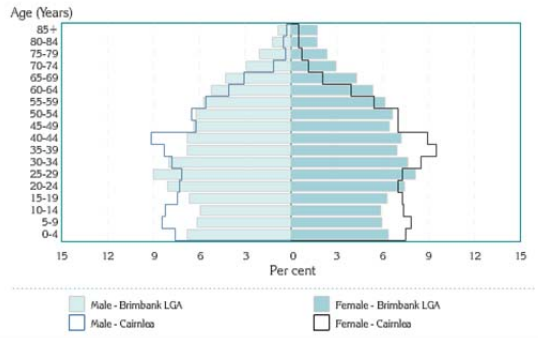
Keilor: 8,610



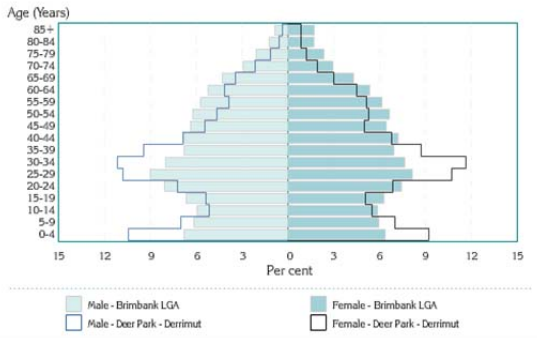
Ardeer - Albion/ Sunshine/ Sunshine West: 35,333



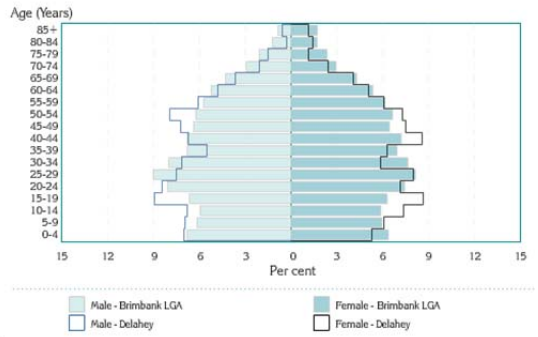
Cairnlea: 9,820



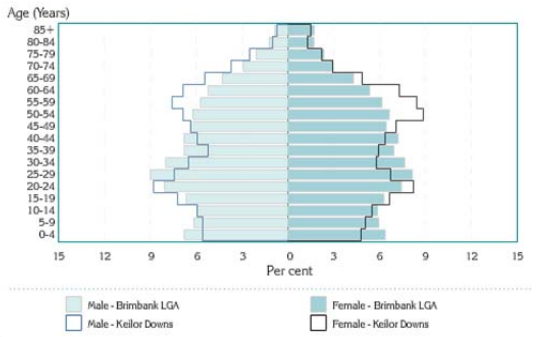
Deer Park - Derrimut: 25,366



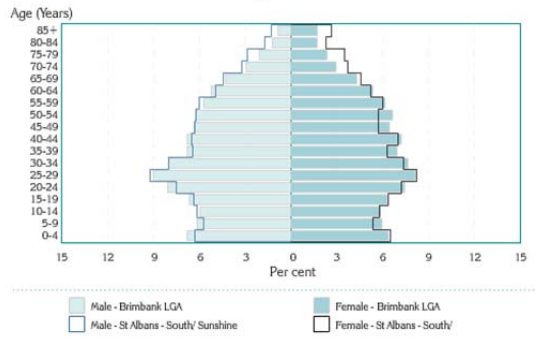
Delahey: 8,739



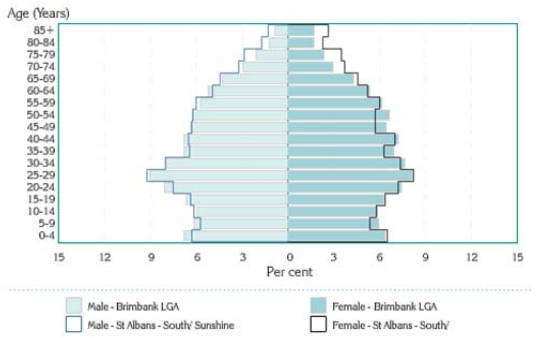
Keilor Downs: 13,906



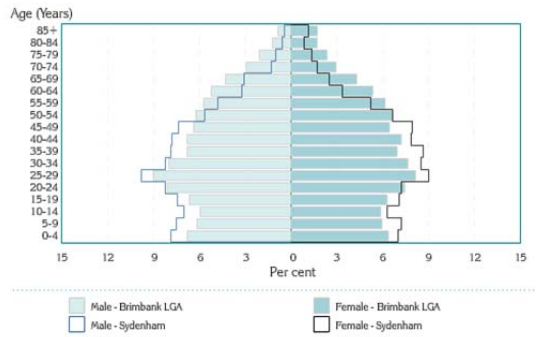
St Albans - North/ Kings Park: 34,166



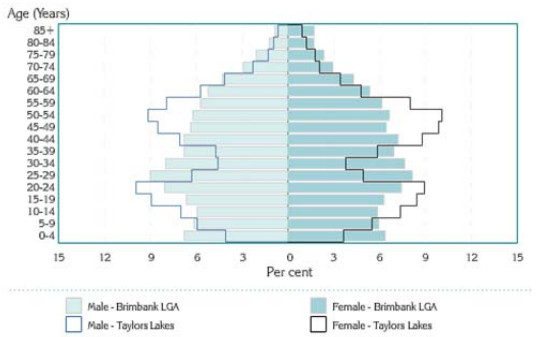
St Albans - South/ Sunshine North: 28,537



Sydenham: 12,271



Taylors Lakes: 18,725



Source: PHA populations compiled in PHIDU from ABS ERP populations by Statistical Areas Level 2; Brimbank population from 2013 Estimated Resident Population.

Comparison tables

The following tables provide, in summary form, the data for the Brimbank SLAs and LGA that we could also obtain for areas across Australia. Table 1 comprises the contextual indicators and Table 2 comprises the health and wellbeing, and education and child development indicators. Each of the tables shows the percentage or rate for each indicator, and is shaded to demonstrate the extent to which the percentage or rate in each SLA or the LGA differs from that in Melbourne. Areas shaded in green indicate a good outcome, and those shaded in grey indicate a poorer outcome; note that some indicators have not been shaded. Defining indicators as representing 'good' or 'poor' outcomes is, in a number of instances, somewhat arbitrary. For example, we have said that having a relatively high proportion of people in occupations of managers or professionals represents a 'good' outcome, whereas having relatively high proportions of people working as labourers is a 'poor' outcome. This allocation was made in the context of having sufficient resources to ensure access to adequate housing, transport etc., as well as the degree of control over one's life that we know leads to better health outcomes.

We acknowledge that while for most indicators the table delivers a clear message, in some instances the comparisons are not necessarily clear. For example, we have shaded '% managers or professionals' as a 'good outcome', and, as proportions in Brimbank are 10% or more below the Melbourne figure, the cells are shown as white. Thus, the absence of managers and professionals is not immediately clear.

Indicators that have been mapped at the PHA level later in this section have been underlined in these tables.

There are a number of other important indicators of the health and wellbeing of the population in Brimbank that are not available at the small area level across Australia. Some of these, drawn from the report, The Diverse Communities of Brimbank[5], are shown overleaf in Table 3.

The contextual indicators, for which Brimbank had substantially poorer outcomes, when compared with Melbourne, are the extent to which:

- children under 15 years of age lived in jobless families, or whose mothers had low educational attainment; and
- people reported having poor proficiency in English were unemployed, or were working as labourers, lived in a household without access to the Internet at home, relied on government support as their main source of income for the last two years, or were aged 15 years and over, and were living with disability (Table 1).

These adverse outcomes were generally more evident in Sunshine than in Keilor.

The indicators for health, wellbeing, education, and child development, suggest generally poorer outcomes for the population of Brimbank, although only hospitalisations for ambulatory care-sensitive conditions (ACSCs) at ages 0 to 14 years; the estimated prevalence of diabetes mellitus and circulatory system diseases; and the infant death rate are at levels of 50% or more above the average rates for Melbourne (Table 2).

However, such poor outcomes are evident for both SLAs. In Keilor, rates of 50% or more above the Melbourne average are evident for hospitalisations for ACSCs at ages 0 to 14 years (for all conditions, for asthma, and for dental conditions), and at ages 15 years and over (for type 2 diabetes; the estimated prevalence of diabetes mellitus; and infant deaths. In Sunshine, similarly adverse outcomes were found for people who reported their health as fair or poor (rather than excellent, very good, or good), the estimated prevalence of diabetes mellitus and for NAPLAN test results for reading and numeracy, for children in Years 3 and 9.

None of the indicators showed there was a substantially better outcome for the population of Brimbank or the SLAs of Keilor and Sunshine, when compared with Melbourne. However, for several indicators, the outcome was within ten per cent of the Melbourne average: these results are shaded in light green in the following tables. The most elevated rate was found for participation in vocational education and training of people living in Sunshine, a rate which was 22% above the Melbourne average.

Table 1: Contextual indicators, Brimbank and comparators

All indicators expressed as percentages, other than the IRSD (expressed as an index)

Indicator	Brimbank			Melbourne	Australia
	Keilor	Sunshine	LGA		
Summary measures of socioeconomic disadvantage					
IRSD	961	894	926	1018	1002
Children under 15 years of age in jobless families	17.4	26.1	22.0	11.8	13.9
Children under 15 years of age whose mothers had low educational attainment	19.2	25.5	22.6	14.5	22.2
Learning or earning at ages 15 to 24 years	74.7	70.2	72.5	77.5	73.1
Birthplace and language proficiency (*indicators not all shaded*)					
Recent arrivals from countries in which English is not the predominant language	5.1	8.9	7.1	5.1	3.3
Longer term residents from countries in which English is not the predominant language	31.6	36.3	34.1	18.3	11.7
English proficiency reported as being poor	8.5	13.5	11.1	4.4	2.6
Five main countries of birth (excluding Australia) (*indicators not shaded*)					
Vietnam	5.9	13.4	9.8	1.7	0.9
India	4.3	4.2	4.2	2.7	1.4
Malta	2.8	3.1	2.9	0.5	0.2
Philippines	2.2	3.4	2.9	0.8	0.8
Italy	2.4	1.6	2.0	1.7	0.9
Five main (non-English) languages spoken at home (*indicators not shaded*)					
Vietnamese	8.8	19.1	14.2	2.1	1.1
Maltese	3.1	3.4	3.3	0.4	0.2
Greek	3.4	2.9	3.2	2.8	1.2
Italian	4.1	2.3	3.2	2.8	1.4
Macedonian	3.7	2.1	2.9	0.7	0.3
Aboriginal and Torres Strait Islander peoples	0.3	0.4	0.4	0.5	2.5
Labour force					
Unemployed (Census)	7.0	9.5	8.3	5.5	5.6
Unemployed youth (Census)	12.4	16.2	14.2	12.3	12.2
Female labour force participation (Census)	52.4	46.3	49.2	56.8	56.1
People working as managers or as professionals	22.6	20.4	21.5	36.6	34.2
People working as labourers	12.1	16.0	14.0	8.0	9.4
Housing and transport					
Social housing	2.3	2.6	2.4	3.0	4.7
Low income households under financial stress from rent or mortgage	21.0	24.7	23.0	17.2	17.3
No motor vehicle at dwelling on Census night	4.0	6.4	5.3	5.5	5.4
Internet access at home					
No Internet access	16.0	19.5	17.9	11.4	12.8
Broadband access (for households with Internet access)	70.6	64.6	67.5	74.6	71.3
Community strengths					
Voluntary work through an organisation	9.7	8.4	9.0	15.8	17.8
Can get support in times of crisis from outside of household*	90.0	88.3	89.2	92.2	92.1
Provide support to relatives living outside the household*	29.0	28.2	28.6	29.0	30.8
Feeling very safe/safe walking alone in local area after dark*	43.3	41.9	42.6	46.0	47.3
Personal and financial stressors:					
Government support as main source of income in last 2 yrs*	35.9	44.5	40.4	26.7	27.6
Access to services: financial and transport barriers:					
Delayed medical consultation because could not afford it*	14.4	15.6	15.0	13.9	14.2
Delayed purchasing prescribed medication due to cost*	13.0	14.2	13.6	10.7	11.0
Have difficulty accessing services*	25.5	25.7	25.6	25.9	29.7
People living with disability, who are living in the community:					
0 to 14 years	2.0	2.2	2.1	1.9	2.0
15 to 64 years	3.2	3.4	3.3	2.2	2.5
65 years and over	22.2	23.8	23.1	14.8	13.2
Total	5.0	5.6	5.3	3.8	3.9

*Indicates data are modelled estimates: see Appendix C for details.

Notes: Key to shading is on opposite page.

Shading for the IRSD has been **reversed**, with scores of 50% or more **below** the Melbourne average (greater disadvantage) shaded in darker shades.

Indicators underlined have been mapped at the PHA level.

Indicators for recent and longer term arrivals and for countries of birth and languages have not been shaded.

Source: See Appendix A.

Table 2: Health and wellbeing, and education and child development indicators, Brimbank and comparators

Hospitalisations expressed as a rate per 1,000 population, infant deaths per 1,000 births and premature mortality per 100,000 population; all other indicators expressed as percentages

Indicator	Brimbank			Melbourne	Australia
	Keilor	Sunshine	LGA		
Health and wellbeing					
Mothers and babies					
- Low birthweight babies	8.1	7.1	7.5	6.8	6.6
- Women smoking during pregnancy	9.2	9	9	9.4	13.7
- Childhood immunisation at five years of age	91.9	90.0	90.9	91.2	90.0
Hospitalisations for ambulatory care-sensitive conditions					
- 0-14 years: total	28.4	20.6	24.1	18.6	..
- 0-14 years: asthma	12.2	7.8	9.7	5.8	..
- 0-14 years: dental conditions	7.7	4.7	6.1	4.5	..
- 15 years and over: total	38.2	23.4	30.3	27.8	..
- 15 years and over: type 2 diabetes	14.4	7.9	10.9	8.4	..
- 15 years and over: angina	1.4	0.9	1.2	1.1	..
- 15 years and over: COPD	3.0	2.4	2.7	2.7	..
Health status					
- Self-assessed health status reported as 'fair' or 'poor'*	18.9	21.6	20.3	13.9	14.6
- Prevalence of diabetes mellitus*	7.9	9.6	8.8	5	5.4
- Prevalence of circulatory system diseases*	16.6	16.7	16.6	16.4	17.3
- Infant death rate	5.0	5.7	5.4	3.3	3.9
- Child mortality	..	18.9	14.5	15.8	19.1
- Premature mortality (deaths before 75 years of age)					
-- Males	260.5	318.8	290.3	263.9	299.1
-- Females	162.9	194.9	179.3	163.1	183.2
-- External causes	24.3	28.2	26.3	24.2	30.1
Health risks					
- Prevalence of high or very high psychological distress: males*	8.2	12.8	10.6	10.1	8.8
- Prevalence of high or very high psychological distress: females*	15.8	16.3	16	12.3	12.7
- Smoking: males*	23.7	27.1	25.5	19.8	20.3
- Smoking: females*	14.3	14.6	14.5	14.3	15.7
- Obesity: males*	25.9	25.7	25.8	23.7	27.5
- Obesity: females*	32.0	33.2	32.6	25.3	27.5
Education and child development					
Participation in preschool	39.9	34.6	36.9	47.5	43.9
Participation in vocational education and training	6.5	9.5	8.0	7.8	7.8
Young people aged 16 years participating in full-time secondary school education	81.5	79.0	80.3	82.9	79.1
School leavers admitted to university	41.3	40.6	41.0	40.4	31.3
Early school leavers	32.0	34.9	33.5	27.0	34.3
NAPLAN: children with results below the national minimum standard in					
- reading outcomes in Year 3	6.4	7.2	6.8	4.7	..
- reading in Year 9	7.0	11.2	9.0	7.1	..
- numeracy outcomes in Year 3	6.2	7.6	7.0	4.7	..
- numeracy outcomes in Year 9	4.7	7.0	5.8	4.2	..
Highest level of education:					
- Bachelor Degree or higher	12.8	12.8	12.8	23.0	18.8
- Advanced Diploma or lower	22.4	19.1	20.7	23.5	26.1
AEDI: children who are developmentally					
- on track in the Physical health and wellbeing domain	78.0	80.0	79.1	81.7	81.2
- on track in the Language and cognitive skills (school-based) domain	78.2	76.7	77.4	84.5	82.6
- vulnerable on one or more domains	26.6	28.5	27.7	19.3	22.0

Note: Indicators underlined have been mapped at the PHA level.

*Indicates data are modelled estimates: see Appendix C for details.

Source: See Appendix A.

Good outcome
50% or more above Melbourne average
30-49% above Melbourne average
10-29% above Melbourne average
within +/- 10% of Melbourne average
10% or more below Melbourne average

Poor outcome
50% or more above Melbourne average
30-49% above Melbourne average
10-29% above Melbourne average
within +/- 10% of Melbourne average
10% or more below Melbourne average

A selection of indicators of the health and wellbeing of the population in Brimbank, from the report *The Diverse Communities of Brimbank*[5] is shown below.

Table 3: Selected indicators for Brimbank City, compared with Melbourne and Victoria

Topic/ indicator	Brimbank	North West Metropolitan	Victoria
Alcohol-related harms (rate per 10,000 population)[1]:			
Alcohol related hospitalisations – 2009/10	37.71	43.00	55.33
Breastfeeding (per cent)[2]:			
Fully or partially breastfed infant on discharge - 2011/12	87.1	..	88.7
Fully or partially breastfed infant at 6 months of age - 2011/12	41.3	..	47.8
Child wellbeing services (per cent)[3]:			
Attendance at final Maternal & Child Health visit for 3.5 year old children - 2012	38.9	..	64.4
Family violence (rate per 100,000 population)[4]:			
Recorded family violence incidents - 2012/13	1,004	1,052	1071
Crime (rate per 100,000 population)[4]:			
Person-related	1,231.6	1,163.3	1026.7
Property-related	6,500.0	6,005.5	4640.7
Nutrition (per cent):			
Proportion of people eating recommended daily serves of fruit & vegetables[5]	2.2	..	5.2
Food insecurity (Running out of food in last 12 months & not able to afford more)[6]	4.9	5.8	5.6

Note: North West Metropolitan Region is the State Government region and differs from the Melbourne - West area referred to later in this Section.

Sources for Table 3:

1. Matthew S, Jayasekara H, Lloyd B. The Victorian Alcohol Statistical Series: Alcohol-related harms and use across Victorian Local Government Areas 2000/01 - 2009/10. Available at: http://docs.health.vic.gov.au/docs/doc/1060B05228B45EB1CA257B09000865EC/$FILE/Alcohol%20Statistics%20Series%20Manuscript%2013%20June%202011%20submission%20-%20Final%20version%20Nov%202012.pdf. Accessed 23 January, 2014.
2. Department of Education and Early Childhood Development. Victorian Child and Adolescent Monitoring System (VCAMS) - Indicator 2.1 Proportion of infants who were breastfed. Available at: http://www.education.vic.gov.au/childhood/providers/support/pages/mchannualreportarchive.aspx. Accessed 10 January, 2014.
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4. Victoria Police. Victoria Police Crime Statistics. Available at: http://www.police.vic.gov.au/content.asp?Document_ID=782 Accessed 7 September, 2013.
5. Department of Health Victoria. *Victorian Population Health Survey 2011-12: selected preliminary survey findings* 2013.
6. Community Indicators Victoria. Create a Live Report - Food Security Indicator, Brimbank LGA. Available at: http://www.communityindicators.net.au/node/add/report. Accessed 28 January, 2014.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Australian Statistical Geography Standard (ASGS). [Website]. At http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Australian+Statistical+Geography+Standard+(ASGS) (accessed 17 April 2014).
2. Cameron J, Gibson K. Shifting focus: alternative pathways for communities and economies - a resource kit. Melbourne: Latrobe City and Monash University, 2001.
3. Kretzmann J, McKnight J. Introduction. In: Kretzmann J, McKnight J, Building communities from the inside out: a path toward finding and mobilizing a community's assets. Illinois, USA: Institute for Policy Research, 1993.
4. Foot J, Hopkins T. A glass half-full: how an asset approach can improve community health and well-being. London UK: Improvement and Development Agency (IDeA), 2009.
5. Brimbank City Council (BCC). The diverse communities of Brimbank. Melbourne: BCC, 2010.

Contextual indicators at the Population Health Area level

Summary measure of socioeconomic disadvantage

The ABS Index of Relative Socio-economic Disadvantage (IRSD) is a powerful indicator of the socioeconomic disadvantage faced by numerous sub-population groups across Australia. It is based on the social and economic characteristics of the population in each area, and is a useful summary measure, reflecting the patterns of disadvantage seen in many individual indicators of social inequality.[1]

Indicator definition: The IRSD is one of four socioeconomic indexes for areas compiled by the ABS, using data from the 2011 Census about the population living in an area, and their characteristics. The index has a base of 1000 for Australia: scores above 1000 indicate relative lack of disadvantage and those below indicate relatively greater disadvantage.

Key points

- The IRSD score for Brimbank shows that it is among the ten most disadvantaged capital city LGAs in Australia.
- The most disadvantaged areas are located in the central and southern parts of the City, with high levels of disadvantage in and around St Albans.

Geographic variation

The IRSD score calculated for Brimbank at the 2011 Census shows it being relatively disadvantaged when compared with Australia overall, and more disadvantaged when compared with Melbourne (Table 4). The index score of 926 places it in the ten most disadvantaged capital city LGAs in Australia.

Within Brimbank, the SLA of Sunshine has a lower score (894) than in Keilor (961), a score which places it in the twenty most disadvantaged capital city SLAs. Staff of the Brimbank Council pointed out that the SA2s of St Albans - North, with an IRSD score of just 845, and Kings Park (with an overall IRSD of 854) do not really fit with the socioeconomic profile of the Keilor SLA. We have estimated that, had these areas been included in the Sunshine SLA, the difference in the relative scores would have been even greater, at around 883 in Sunshine and 1023 in Keilor. This is another example of the averaging of measures across areas.

Table 4: IRSD, Brimbank and comparators, 2011

Region	Index score
Brimbank - Keilor	**961**
Brimbank - Sunshine	**894**
Brimbank City	**926**
Melbourne - West	*979*
Melbourne	*1020*
Country Victoria	*978*
Victoria	*1010*
Australia	**1000**

The IRSD paints a picture of the distribution of the population at the PHA level across Brimbank that will be seen repeatedly throughout this atlas (Map 2 and Table 5). The most disadvantaged communities under this measure are in the central and southern parts of Brimbank, with very low scores in St Albans - South/ Sunshine North (839) and St Albans - North/ Kings Park (849); the next lowest was in Ardeer - Albion/ Sunshine/ Sunshine West (882). Index scores of above the Australian average were calculated for Taylors Lakes (1056), Keilor (1056) and Sydenham (1010).

Map 2: IRSD, by PHA in Brimbank, 2011

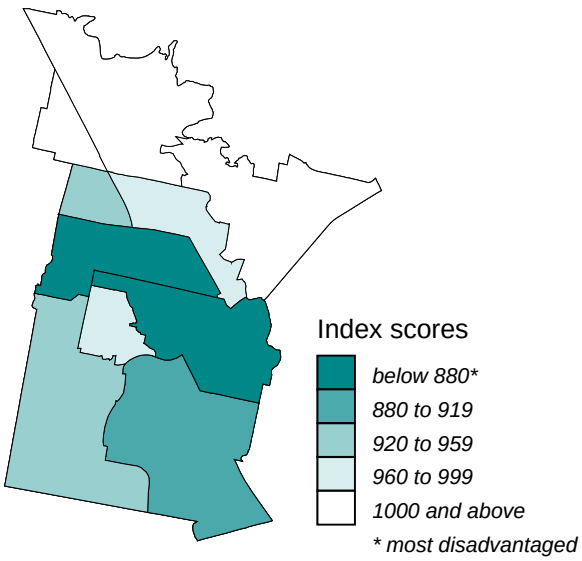


Table 5: IRSD, by PHA in Brimbank, 2011

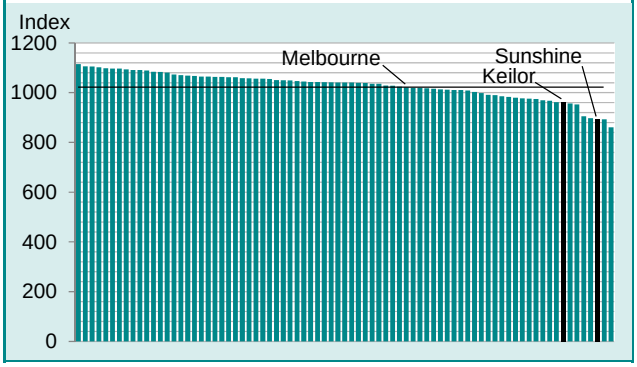
PHA	Index score
Keilor	1055
Ardeer - Albion/ Sunshine/ Sunshine West	882
Cairnlea	980
Deer Park - Derrimut	948
Delahey	936
Keilor Downs	985
St Albans - North/ Kings Park	849
St Albans - South/ Sunshine North	839
Sydenham	1010
Taylors Lakes	1056
Brimbank City	**926**

The IRSD scores in St Albans - South/ Sunshine North and St Albans - North/ Kings Park are among the lowest of the capital city scores at the PHA level across Australia, with St Albans - South/ Sunshine North ranked seventeenth (of 648 metropolitan PHAs) and St Albans - North/ Kings Park ranked twenty-second.

Regional comparisons

When compared with other areas in Melbourne, both of the Brimbank City SLAs had index scores in 2011 that were among the most disadvantaged of the Melbourne SLAs, with only Hume - Broadmeadows (with an index score of 860) and Greater Dandenong Balance (893) with lower scores than Brimbank - Sunshine (Figure 7).

Figure 7: IRSD, by SLA in Melbourne, 2011



Correlations

There are very strong inverse correlations at the SLA level across Melbourne between this indicator and many indicators of socioeconomic disadvantage (as measured by the IRSD).

High rates of children assessed as being developmentally vulnerable on one or more domains of the AEDC were also very strongly correlated at the SLA level across Melbourne with greater relative socioeconomic disadvantage under this measure.

In contrast, there are very strong correlations between high scores under the IRSD (i.e. relative lack of disadvantage) and good outcomes for the education and child development indicators of preschool participation and children assessed as being developmentally on track in the physical health and wellbeing, and the language and cognitive skills domains of the AEDC.

For the domain of health and wellbeing, there are very strong associations between low scores under the IRSD (i.e. greater relative disadvantage) and the indicators for self-assessed fair or poor health, high or very high psychological distress for females, and the estimated prevalence of diabetes mellitus, and male smokers. There is a strong inverse correlation with hospitalisations for ambulatory care-sensitive conditions, indicating relatively poorer access to adequate and timely primary health care by these disadvantaged communities.

Proportions for these indicators are similarly elevated in the Brimbank SLAs.

Understanding correlations with the IRSD

The IRSD is constructed such that the lower the score the greater the level of disadvantage; hence, an inverse (negative) correlation between the IRSD and another indicator indicates an association with disadvantage and a positive correlation indicates an association with a relative lack of disadvantage.

To simplify the commentary in the text, rather than referencing correlations as being with the IRSD, and writing 'an inverse correlation', we have generally referenced correlations as being with 'socioeconomic disadvantage'; thus, an inverse correlation with the IRSD can be referenced as that indicator being (positively) correlated with socioeconomic disadvantage.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Socio-Economic Indexes for Areas (SEIFA), 2011. (Technical paper: ABS Cat. no. 2033.0.55.001). Canberra: ABS, 2013.

Children in jobless families

Families where no parent is employed ("jobless families") not only experience substantial economic disadvantage but may also have reduced social opportunities that affect their wellbeing and health.

Children who live without an employed parent may be at higher risk of experiencing financial hardship and other disadvantage in the short to medium term. They may not have a role model of employment to follow, and so the joblessness of the parent(s) may mean that such children are more likely to have outcomes such as welfare dependency in the long term.[1] In some families, the reason the parent is without a job may be to care for children or to undertake study to try to improve the future economic prospects of the household. However, most of the children living without an employed parent live in lone-parent households with limited resources.[2]

Indicator definition: children under 15 years of age in families where no parent is in employment, as a percentage of all families with children under 15 years of age (see the notes in Appendix A).

Key points

- Some 7,200 children under 15 years of age in Brimbank were estimated to be living in families where no parent was employed.
- In some areas in the City, up to one third of children were living in jobless families, with implications for the level of resources available in the community, and for the provision of services by government and other agencies.

Geographic variation

More than one in five children aged less than 15 years in Brimbank at the 2011 Census were living in jobless families (Table 3). This is substantially higher than the Australian average, as shown by the rate ratio of 1.58 (i.e., there are 58% more children in this population group in Brimbank than across Australia as a whole).

Of the SLAs, Sunshine has the highest proportion (26.1%) of children in these families; although lower, the proportion in Keilor (17.4%) was still above the average across Melbourne, of 11.8%.

As a result, some 7,200 children in Brimbank less than 15 years of age were estimated to be living in families where no parent was in employment.

Table 6: Children in jobless families, Brimbank and comparators, 2011

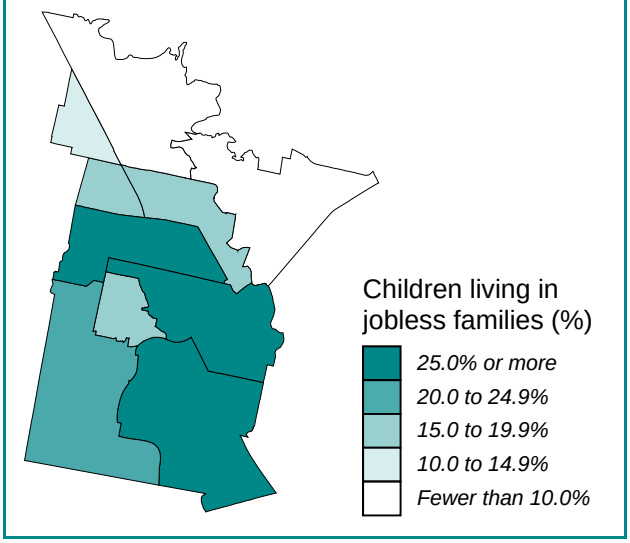
Region	No.	%	RR#
Brimbank - Keilor	**2,704**	**17.4**	**1.26**
Brimbank - Sunshine	**4,499**	**26.1**	**1.88**
Brimbank City	**7,203**	**22.0**	**1.58**
Melbourne - West	*19,634*	*16.1*	*1.16*
Melbourne	*81,703*	*11.8*	*0.85*
Country Victoria	*38,060*	*14.8*	*1.06*
Victoria	*119,798*	*12.7*	*0.91*
Australia	**541,792**	**13.9**	**1.00**

RR is the ratio of the percentage in the area to the percentage for Australia

Very high proportions of children in these families were recorded in the PHAs of St Albans - North/ Kings Park (33.4%), St Albans - South/ Sunshine North (30.8%) and Ardeer - Albion/ Sunshine/ Sunshine West (29.4%) (Map 3 and Table 7).

The concentration of children in these families across much of Brimbank represents a major challenge for the community, with the majority of families likely to have limited economic resources, and for government and other agencies, in providing services and support.

Map 3: Children in jobless families, by PHA in Brimbank, 2011



In contrast, Taylors Lakes and Keilor had the lowest percentages of children less than 15 years of age in Brimbank living in jobless families, of 5.9% and 6.9%, respectively.

Table 7: Children in jobless families, by PHA in Brimbank, 2011

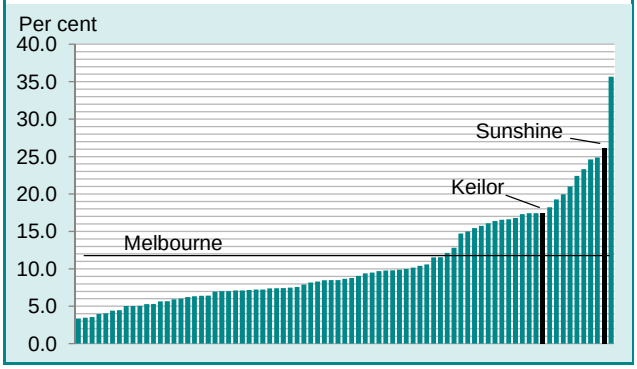
PHA	No.	%	RR#
Keilor	90	6.9	0.31
Ardeer - Albion/ Sunshine/ Sunshine West	1,522	29.4	1.34
Cairnlea	342	16.3	0.74
Deer Park - Derrimut	913	20.1	0.91
Delahey	315	18.3	0.83
Keilor Downs	350	16.5	0.75
St Albans - North/ Kings Park	1,847	33.4	1.52
St Albans - South/ Sunshine North	1,374	30.8	1.40
Sydenham	250	10.2	0.46
Taylors Lakes	196	5.9	0.27
Brimbank City	**7,203**	**22.0**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

When compared with other areas in Melbourne, both of the Brimbank City SLAs were in the highest 20% of SLAs for this population group; only Hume - Broadmeadows (35.7%) had a higher proportion than that in Sunshine (26.1%) (Figure 8).

Figure 8: Children in jobless families, by SLA in Melbourne, 2011



Correlations

There are very strong correlations at the SLA level across Melbourne between this indicator and many other indicators of socioeconomic disadvantage. These were most evident with high proportions of low income households with financial stress from rent or mortgage payments, unemployment, and children in families where the mother has low educational attainment. A very strong inverse correlation indicated that there was a low proportion of the population involved in learning or earning at ages 15 to 24 years.

Very strong inverse correlations showed that children in these families had relatively lower levels of preschool participation; and that relatively fewer children were developmentally on track in the physical health and wellbeing, or in the language and cognitive skills domains of the AEDC. Not surprisingly, given these findings, relatively more children were developmentally vulnerable on one or more domains of the AEDC.

For the health and wellbeing indicators, there were very strong correlations with this indicator and those for self-assessed fair or poor health, high or very high psychological distress, the estimated prevalence of diabetes mellitus, and male smokers. Strong correlations were found for hospitalisations for ambulatory care-sensitive conditions for children and adults, the latter indicating relatively poorer access to adequate and timely primary health care.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Hancock K, Edwards B, Zubrick S. Echoes of disadvantage across the generations? The influence of long-term joblessness and separation of grandparents on grandchildren. Melbourne, Victoria: Australian Institute of Family Studies, 2013.
2. Australian Bureau of Statistics (ABS). Labour Force, Australia: labour force status and other characteristics of families, June 2011. (ABS Cat. no. 6224.0.55.001). Canberra: ABS, 2011.

Children in families with mothers with low educational attainment

Strong relationships between education and health outcomes exist in many countries, favouring the survival and health of children born to educated parents, especially mothers; but the pathways are culturally and historically complex and vary between and within countries.[1-3] A lack of successful educational experiences of parents may lead to low aspirations for their children; and may be related to parents' attitudes, their ability to manage the complex relationships which surround a child's health and education, and their capacity to control areas of their own lives.[4-7]

Indicator definition: Children aged less than 15 years living in families where the female parent's highest level of schooling was year 10 or below, or where the female parent did not attend school, as a proportion of all children aged less than 15 years.

Key points

- Over 7,800 children under 15 years of age in Brimbank were living in families with mothers with low educational attainment.
- In some areas in the City, almost one third of children under 15 years of age were living in families where mothers had low educational attainment.

Geographic variation

More than one in five children in Brimbank aged less than 15 years were living in families with mothers with low educational attainment at the 2011 Census (Table 8). Although substantially higher than the Melbourne average (15.2%), it is, however, consistent with the Australian average (23.5%).

Sunshine SLA had a markedly higher proportion of these families than Keilor SLA, with 27.3% and 20.3%, respectively.

As a result, over 7,800 children under 15 years of age in Brimbank were living in families with mothers with low educational attainment.

Table 8: Children in families with mothers with low educational attainment, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**3,142**	**20.3**	**0.86**
Brimbank - Sunshine	**4,707**	**27.3**	**1.16**
Brimbank City	**7,849**	**24.0**	**1.02**
Melbourne - West	*23,785*	*19.5*	*0.83*
Melbourne	*106,878*	*15.2*	*0.65*
Country Victoria	*54,445*	*22.3*	*0.95*
Victoria	*161,323*	*17.0*	*0.72*
Australia	**918,436**	**23.5**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

High proportions of children living in these families were recorded in the PHAs of St Albans - North/ Kings Park (32.9%) and St Albans - South / Sunshine North (32.7%), followed by Ardeer - Albion/ Sunshine/ Sunshine West (28.7%) (Map 4 and Table 9).

Map 4: Children in families with mothers with low educational attainment, by PHA in Brimbank, 2011

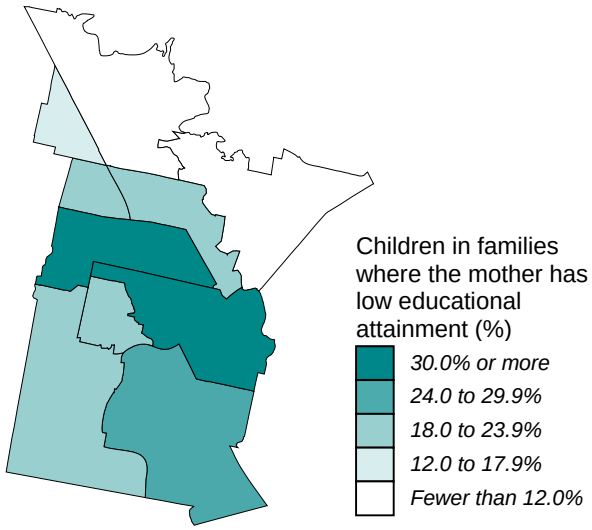


Table 9: Children in families with mothers with low educational attainment, by PHA in Brimbank, 2011

PHA	No.	%	RR#
Keilor	115	8.8	0.37
Ardeer - Albion/ Sunshine/ Sunshine West	1,482	28.7	1.19
Cairnlea	403	19.2	0.80
Deer Park - Derrimut	1,055	23.2	0.97
Delahey	406	23.6	0.99
Keilor Downs	390	18.4	0.77
St Albans - North/ Kings Park	1,820	32.9	1.37
St Albans - South/ Sunshine North	1,459	32.7	1.36
Sydenham	340	13.9	0.58
Taylors Lakes	379	11.4	0.48
Brimbank City	**7,849**	**24.0**	**1.00**

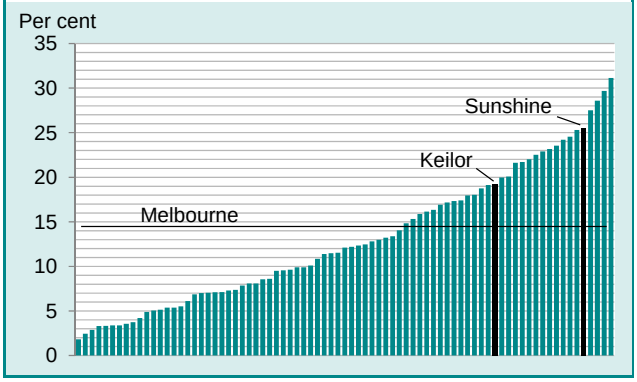
#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

In contrast, the proportions of this population group living in the PHAs of Keilor (8.8%), Taylors Lake (11.4%) and Sydenham (13.9%) were less than half of those with the highest proportions, highlighting the substantial regional variations in this indicator.

Regional comparisons

Sunshine had the fifth highest proportion of children aged less than 15 years living in these families, with 27.3%; and Keilor (20.3%) was ranked just inside of the twenty SLAs with the highest proportions among the 79 Melbourne SLAs (Figure 9).

Figure 9: Children in families with mothers with low educational attainment, by SLA in Melbourne, 2011



Correlations

There are very strong correlations at the SLA level across Melbourne between areas with high proportions of children aged less than 15 years living in families with mothers with low educational attainment and the indicators for children living in jobless families, Internet access at home, mothers smoking in pregnancy, adult smokers, adult obesity, and people working as labourers. Conversely, there were inverse correlations with high proportions of young people involved in learning or earning, and of high proportions of the workforce having the occupations of managers or professionals.

Very strong associations were also found with the education and child development indicators describing low levels of participation in preschool, and relatively few children were developmentally on track in the physical health and wellbeing, or the language and cognitive skills domains of the AEDC. In areas with high proportions of children in these families, there were relatively high rates of children who were developmentally vulnerable on one or more domains of the AEDC.

There were very strong correlations with this indicator and those for women smoking in pregnancy, self-assessed fair or poor health, adult smoking and obesity.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

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Learning or earning at ages 15 to 24 years

Young people who fail to engage in school, work or further education and training run a significant risk of school failure, unemployment, risky health behaviours, mental health problems, social exclusion, and economic and social disadvantage over the longer term.[1,2] In Victoria, there are an estimated 81,900 unemployed young people aged 15 to 24, and 14,000 who have not worked at all in 12 months.[3] The experience of unemployment harms a young person's financial and psychological wellbeing, and these effects are felt more severely by those who experience long-term unemployment.[3] Furthermore, those who experience unemployment while young are more likely to be unemployed, have poorer health and have lower educational attainment when they are older, than those who are not affected by unemployment while young.[3]

Indicator definition: Young people aged 15 to 24 years fully engaged in school, work or further education/ training. 'Fully engaged' includes people who reported at the 2011 Census that they were in full-time work or in full-time education, or in part-time work combined with part-time education. The remaining youth population, those who are 'not fully engaged' includes people who were working part-time (but not studying), unemployed (regardless of whether studying part-time), studying part-time (and not working) and not in the labour force (except those who were full-time students).[4]

Key points

- Despite a relatively high proportion of the youth population of Brimbank being fully engaged in education or work, almost 20,000 young people were not learning or earning.
- There is a marked regional variation within Brimbank in the extent to which young people were fully engaged in education or work at the 2011 Census.

Geographic variation

Almost three in every four young people aged 15 to 24 years in Brimbank were fully engaged in education or work at the 2011 Census. This is consistent with the Australian figure (73.1%), although below the average across Melbourne, of 77.5%.

The proportion in the SLA of Keilor was higher than in Sunshine, with 74.7% and 70.2%, respectively.

Despite the high proportion fully engaged in education or work, it is of concern that some 18% of young people in Brimbank were not so engaged (Table 10).

Table 10: Learning or earning at ages 15 to 24 years, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	10,174	74.7	1.02
Brimbank - Sunshine	9,434	70.2	0.96
Brimbank City	19,608	72.5	0.99
Melbourne - West	*60,735*	*72.2*	*0.99*
Melbourne	*428,474*	*77.5*	*1.06*
Country Victoria	*120,353*	*72.5*	*0.99*
Victoria	*549,476*	*76.3*	*1.04*
Australia	**2,094,525**	**73.1**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

The extent of involvement of this group in education or work varies markedly across Brimbank, from 82.1% in Taylors Lakes, to a low 66.5% in Deer Park - Derrimut (Map 5 and Table 11). Keilor (80.8%) and Keilor Downs (75.7%) in the north, and Cairnlea (77.5%) in central Brimbank, also have relatively high rates of engagement. St Albans - North/ Kings Park (68.0%) and Ardeer - Albion/ Sunshine/ Sunshine West (69.1%) had the second and third lowest rates.

Map 5: Learning or earning at ages 15 to 24 years, by PHA in Brimbank, 2011

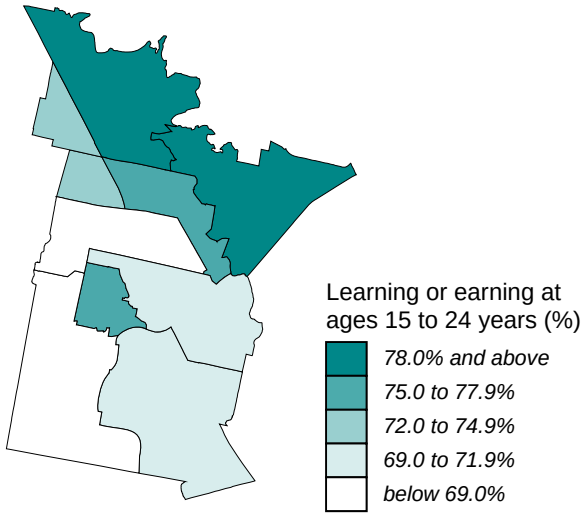


Table 11: Learning or earning at ages 15 to 24 years, by PHA in Brimbank, 2011

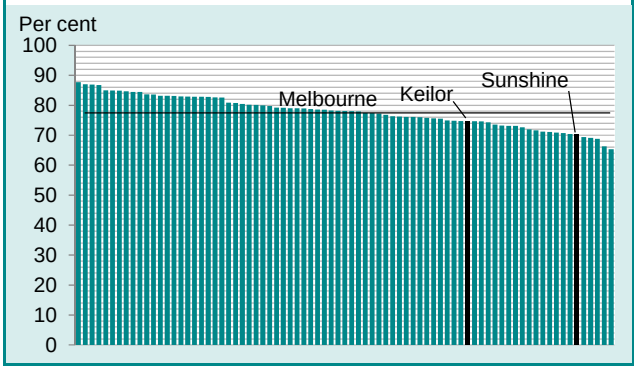
PHA	No.	%	RR#
Keilor	886	80.8	1.12
Ardeer - Albion/ Sunshine/ Sunshine West	3,179	69.1	0.95
Cairnlea	1,005	77.5	1.07
Deer Park - Derrimut	2,015	66.5	0.92
Delahey	1,006	73.0	1.01
Keilor Downs	1,679	75.7	1.05
St Albans - North/ Kings Park	3,133	68.0	0.94
St Albans - South/ Sunshine North	2,712	71.6	0.99
Sydenham	1,274	73.1	1.01
Taylors Lakes	2,706	82.1	1.13
Brimbank City	**19,595**	**72.4**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

Both of the Brimbank City SLAs had relatively fewer young people engaged in learning or earning than across Melbourne as a whole, with the level in Sunshine (70.2%) among the lowest of the SLAs (Figure 10).

Figure 10: Learning or earning at ages 15 to 24 years, by SLA in Melbourne, 2011



Correlations

There are very strong inverse correlations at the SLA level across Melbourne between this indicator and a number of the indicators of socioeconomic disadvantage. Thus, areas with relatively high proportions of their young people learning or earning had relatively fewer children living in jobless families, or in families where the mother has low educational attainment, or in households without Internet access at home.

Very strong correlations were also found between this indicator and those for education and child development, indicating relatively higher levels of participation in preschool, relatively more young people participating in full-time secondary education at age 16 years, and more children assessed as being developmentally on track in the language and cognitive skills domain of the AEDC.

For the health and wellbeing indicators, a very strong inverse correlation was found with this indicator and those for self-assessed fair or poor health, and male smokers. There were also strong inverse correlations with the indicators for high or very high psychological distress, and hospitalisations for ambulatory care-sensitive conditions, the latter indicating relatively better access to adequate and timely primary health care and thus the avoidance of admission to hospital.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

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4. Australian Bureau of Statistics (ABS). Australian social trends, March 2010. (ABS Cat. no. 4102.0). Canberra: ABS, 2010. At http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features40Mar+2010 (accessed 17 April 2014).

Recent arrivals from countries in which English is not the predominant language

People born in countries in which English is not the predominant language and who have lived in Australia for less than five years (also referred to as recent arrivals) can face a number of difficulties. For many who arrive without proficiency in English, the combination of economic struggle with adjustment to a new language and a new cultural milieu can be expected to give rise to considerable stresses. Although a relatively small group, they also pose special challenges for deliverers of health, education, welfare and other community services.[1] Despite common experiences including those relating to migration and dislocation, this population is far from a homogeneous group. There is great diversity in language, culture, religion, socioeconomic status, education and age structure.[2] The most rapidly growing non-English speaking groups are from Asia (including from countries such as China, India, Viet Nam and Malaysia), and from Africa.[2] In Victoria, 23% of people spoke a language other than English at home in 2011, reflecting the degree to which different ethnic groups and nationalities are retaining their languages.[2]

Indicator definition: Comprises people born in countries in which English is not the predominant language (referred to below as NES (non-English speaking) countries), who arrived in Australia from 2007 to 2011, expressed as a proportion of the population.

Key points

- Brimbank has a high proportion of its population who were born in countries in which English is not the predominant language, and who have arrived in Australia since the beginning of 2007.
- People in this group have come from a diverse range of countries to settle in Australia.

Geographic variation

People born in countries in which English is not the predominant language, and who have arrived in Australia since the beginning of 2007, comprised 7.1% of the Brimbank population in 2011 (Table 12). This is more than twice the Australian average, as shown by the rate ratio of 2.16; it is also substantially above the level for Melbourne.

In the SLA of Sunshine, the difference is even greater, with close to one in every eleven people in this population group (8.9% of the population, 2.71 times the level in Australia).

Table 12: People born in NES countries (and resident for less than five years), Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**4,468**	**5.1**	**1.55**
Brimbank - Sunshine	**8,517**	**8.9**	**2.71**
Brimbank City	**12,985**	**7.1**	**2.16**
Melbourne - West	*36,873*	*6.0*	*1.82*
Melbourne	*202,608*	*5.1*	*1.54*
Country Victoria	*13,063*	*1.0*	*0.30*
Victoria	*216,247*	*4.0*	*1.23*
Australia	**705,593**	**3.3**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Although the proportion of the population in this group in Keilor (5.1%) was well above the average across Australia of 3.3%, it was the same as in Melbourne. It is of note that the population with these characteristics in Melbourne (5.1%) is markedly greater than the 'all capital cities' proportion (4.1%).

For people in this population group living in Sunshine, the main countries of birth were Vietnam (13.4%), India (4.2%), Philippines (3.4%), Malta (3.1%) and Italy (1.6%). Similarly, in Keilor, the birthplaces of this population group were Vietnam (5.9%), India (4.3%), Malta (2.8%), Italy (2.4%) and Macedonia (2.3%).

The distribution of this population group at the PHA level across Brimbank varies markedly, from just 0.7% in Keilor and 1.3% in Taylors Lakes, to 9.7% in St Albans - South/ Sunshine North and 10.8% in Ardeer - Albion/ Sunshine/ Sunshine West (Map 6 and Table 13). Sydenham (8.3%), St Albans - North/ Kings Park (8.2%) and Deer Park - Derrimut (7.8%) also had proportions above the Melbourne average.

Map 6: People born in NES countries (and resident for less than five years), by PHA in Brimbank, 2011

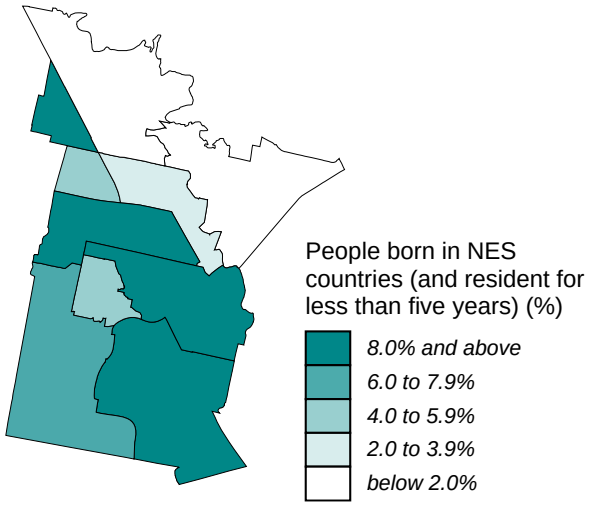


Table 13: People born in NES countries (and resident for less than five years), by PHA in Brimbank, 2011

PHA	No.	%	RR#
Keilor	56	0.7	0.09
Ardeer - Albion/ Sunshine/ Sunshine West	3,539	10.8	1.52
Cairnlea	401	4.5	0.64
Deer Park - Derrimut	1,725	7.8	1.10
Delahey	372	4.4	0.62
Keilor Downs	417	3.1	0.44
St Albans - North/ Kings Park	2,658	8.2	1.16
St Albans - South/ Sunshine North	2,602	9.7	1.37
Sydenham	961	8.3	1.17
Taylors Lakes	238	1.3	0.19
Brimbank City	**12,969**	**7.1**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

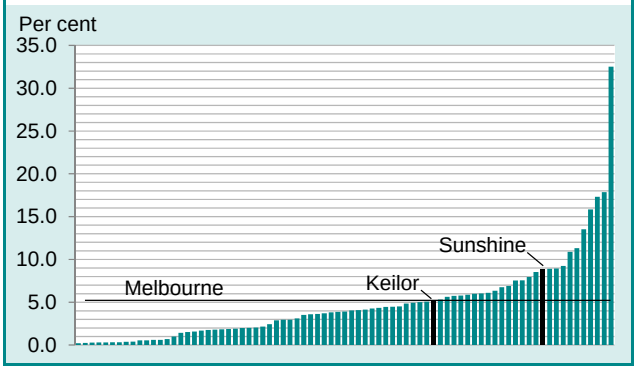
Regional comparisons

Figure 11 highlights the high proportions of this population group living in a relatively small number of SLAs, in particular in areas with high proportions of students from countries in which English is not the predominant language. The most evident examples are the Melbourne SLAs of

- Inner, where this population group represents 32.5% of the population, of whom the 2,251 students, under 30 years of age studying at a university or other tertiary institution, represent 44.5% of all people in this population group;
- Southbank-Docklands, where this population group represents 17.3%, of whom the 989 students under 30 years of age studying at a university or other tertiary institution, represent 33.4% of all people in this population group; and
- Remainder, where this population group represents 15.8% of the population, of whom the 5,373 students, under 30 years of age studying at a university or other tertiary institution, represent 55.6% of all people in this population group.

Several other areas have substantial numbers of these students; although relatively smaller, the data for Brimbank City show there to be 664 students in Sunshine and 266 students in Keilor.

Figure 11: People born in NES countries (and resident for less than five years), by SLA in Melbourne, 2011



Correlations

There are very strong correlations at the SLA level across Melbourne between this indicator and the level of unemployment and of dwellings without access to a motor vehicle. Strong correlations were also found between this indicator and longer term residents born in NES countries, people born overseas reporting poor proficiency in English and low income households under financial stress from rent or mortgage payments. There was also a strong correlation with the estimated prevalence of high or very high psychological distress.

Strong inverse correlations were found between this indicator and those for children living with disability, and for people with their highest level of education being an Advanced Diploma, Diploma or Certificate.

Similar outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

See *Data sources* on page 69, overleaf.

Longer term residents born in countries in which English is not the predominant language

People in this category were born in countries in which English is not the predominant language and arrived in Australia five or more years ago. In the post-war period (in particular from the 1950s), the majority of immigrants from non-English speaking countries came from Europe; more recently, the proportion of these immigrants from Europe has declined. In Victoria, culturally diverse older people may be excluded from social and economic participation because of social isolation, varying levels of English, low levels of literacy even in languages other than English, lack of information in languages other than English, no driver's license and lack of confidence using public transport.[3] Victorian non-English speaking seniors also tend to have low levels of health literacy and internet literacy, and are at a higher risk of poor health outcomes such as advanced dementia and depression.[3]

Indicator definition: Comprises people born in countries in which English is not the predominant language (referred to below as NES (non-English speaking) countries), who arrived in Australia before 2007, expressed as a proportion of the population.

Key points

- Longer term residents, who were born in countries in which English is not the predominant language, make up over one third of Brimbank's population.
- Residents in this group are spread widely across the City, comprising between 20% and 40% of the population at the PHA level.

Geographic variation

Melbourne and Brimbank have even higher proportions of these longer term residents than were seen in the previous indicator for those arrived in recent years, both overall and when compared with Australia (Table 14). In Brimbank, 34.1%, or just over one third of the population, were in this population group at the 2011 Census, almost three times the Australian proportion. This population group also comprises nearly twice the level in Melbourne (18.3%), although it is of note that the Melbourne proportion is markedly greater than the 'all capital cities' average (15.9%).

Table 14: People born in NES countries (and resident for five years or more), Brimbank and comparators, 2011

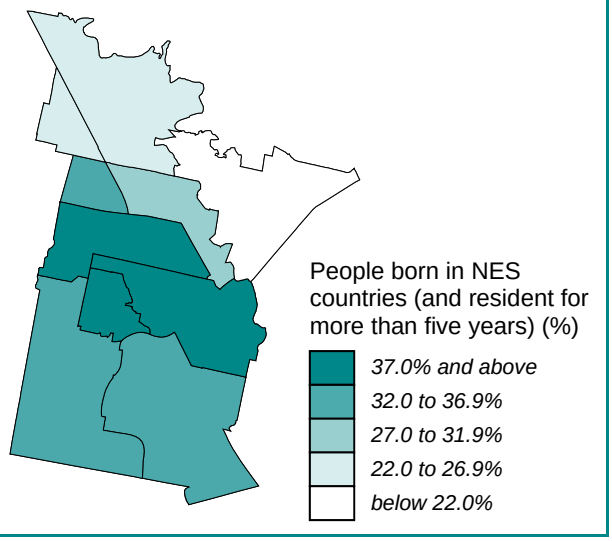
Region	No.	%	RR#
Brimbank - Keilor	**27,422**	**31.6**	**2.69**
Brimbank - Sunshine	**34,801**	**36.3**	**3.09**
Brimbank City	**62,223**	**34.1**	**2.91**
Melbourne - West	*142,035*	*23.1*	*1.96*
Melbourne	*730,124*	*18.3*	*1.56*
Country Victoria	*57,372*	*4.3*	*0.36*
Victoria	*788,083*	*14.7*	*1.25*
Australia	**2,524,300**	**11.7**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Both SLAs within Brimbank have high proportions, with 36.3% in Sunshine and 31.6% in Keilor; these SLAs are ranked seventh and 15th highest, respectively on this indicator at the SLA level across Australia.

All of the PHAs in Brimbank had at least one fifth of their population born in countries in which English is not the predominant language, and who arrived in Australia before 2007 (Map 7 and Table 15).

Map 7: People born in NES countries (and resident for five years or more), by PHA in Brimbank, 2011



The highest proportions, of one third or more of the population, were in St Albans - South/ Sunshine North (41.7%), Cairnlea (41.6%), St Albans - North/ Kings Park (39.9%), Delahey (36.8%) and Ardeer - Albion/ Sunshine/ Sunshine West (33.0%). Keilor had the lowest proportion (21.1%).

As noted above, the overall high numbers of this population group, and their widespread nature throughout the City, present challenges for the delivery of a range of services at the local level.

Table 15: People born in NES countries (and resident for five years or more), by PHA in Brimbank, 2011

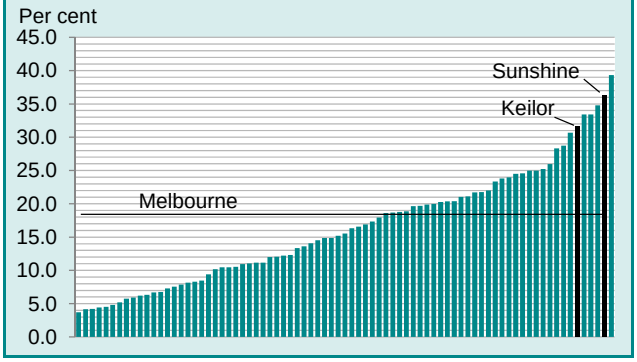
PHA	No.	%	RR#
Keilor	1,751	21.1	0.62
Ardeer - Albion/ Sunshine/ Sunshine West	10,820	33.0	0.97
Cairnlea	3,674	41.6	1.22
Deer Park - Derrimut	7,126	32.1	0.94
Delahey	3,103	36.8	1.08
Keilor Downs	4,277	31.8	0.93
St Albans - North/ Kings Park	12,932	39.9	1.17
St Albans - South/ Sunshine North	11,203	41.7	1.23
Sydenham	2,818	24.4	0.72
Taylors Lakes	4,532	25.3	0.74
Brimbank City	**62,236**	**34.1**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

When compared with other areas in Melbourne, both of the Brimbank City SLAs had among the highest proportions of this population group in 2011, with only Greater Dandenong Balance (39.3%), in the south-east of Melbourne, having a higher proportion (Figure 12).

Figure 12: People born in NES countries (and resident for five years or more), by SLA in Melbourne, 2011



Correlations

As is to be expected, there was a very strong correlation at the SLA level across Melbourne between this indicator and areas having high proportions of the population born overseas reporting poor proficiency in English. Strong correlations were also found with recent arrivals from NES countries, the level of unemployment, and low income households under financial stress from rent or mortgage payments.

Strong inverse correlations were found with female labour force participation, voluntary work and people having as their highest level of education, an Advanced Diploma, Diploma or Certificate.

In the area of health and wellbeing, there was a very strong correlation between this indicator and the estimated prevalence of diabetes mellitus, and a strong correlation with self-assessed fair or poor health.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Institute of Health and Welfare (AIHW). Australia's welfare, 2011. (AIHW Cat. no. AUS 142). Canberra: AIHW, 2011.
2. Australian Bureau of Statistics (ABS). Cultural diversity in Australia - reflecting a nation: stories from the 2011 Census, 2012-2013. (ABS Cat. no. 2071.0). Canberra: ABS, 2012.
3. Ethnic Communities' Council of Victoria (ECCV). Submission to the Inquiry into opportunities for participation of Victorian seniors to the Family and Community Development Committee. Carlton, Victoria: ECCV, 2011.

People born overseas reporting poor proficiency in English

For migrants born in predominantly non-English speaking countries, the rate at which they adapt to live in the host country is directly related to the rate at which they achieve proficiency in English. Their proficiency in English has profound implications for the ease with which they are able to access labour markets, develop social networks, become aware of and utilise services, and participate in many aspects of Australian society. Those people who are not proficient in spoken English are less likely to be in full-time employment and more likely not to be in the labour force.[1]

In 2011, almost half (49%) of longer-standing migrants and 67% of recent arrivals spoke a language other than English at home.[2] This probably reflects the main countries of birth for these two groups and also the amount of time spent in Australia. However, this does not provide an indication of their ability to speak English. Over half (51%) of longer-standing migrants reported speaking English very well, while 2.6% reported not speaking English at all. For recent arrivals, 43% reported speaking English very well and the proportion who reported not speaking English at all was 3.1%.[2]

Indicator definition: Comprises people born overseas who reported speaking English 'not well' or 'not at all', expressed as a proportion of the population aged five years and over.

Key points

- Brimbank has a high proportion of its population who reported at the 2011 Census that they spoke English 'not well' or 'not at all' – it is the fifth ranked LGA for this indicator across Australia and Sunshine is ranked equal fourth among Melbourne's SLAs.
- The data indicate a range of services is required to meet the particular needs of these communities.

Geographic variation

Just over one in ten people in Brimbank reported speaking English 'not well' or 'not at all' at the 2011 Census (Table 16). This was a substantially larger proportion of the population (aged five years and over) than across Australia as a whole (11.1% in Brimbank and 2.6% in Australia).

Table 16: People born overseas reporting poor proficiency in English, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**6,992**	**8.5**	**3.32**
Brimbank - Sunshine	**12,043**	**13.5**	**5.28**
Brimbank City	**19,035**	**11.1**	**4.34**
Melbourne - West	*36,029*	*6.4*	*2.48*
Melbourne	*162,826*	*4.4*	*1.70*
Country Victoria	*8,524*	*0.7*	*0.26*
Victoria	*171,580*	*3.4*	*1.34*
Australia	**513,583**	**2.6**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

As is the case for many of these social indicators, the proportion in the Sunshine SLA (13.5%) is higher than that in Keilor (8.5%); and it has the equal fourth highest proportion of this population group of all SLAs in Australia.

Melbourne has a larger proportion of its population in this group, at 4.4%, than in Australia overall (and more than the 'all capital cities' average, of 3.6%). However, the proportion in Brimbank is over two and a half times that in Melbourne; this is a larger difference than in the proportions of the population born in countries in which English is not the predominant language. It is also indicative of the need for a range of services to meet the particular needs of these communities.

As is to be expected, the areas within Brimbank with the highest proportions of their populations reporting poor proficiency in English are generally those noted in the previous two indicators, relating to people born overseas. The highest proportions, both of which are substantially above the Brimbank City average, are in St Albans - South/ Sunshine North (19.3%) and St Albans - North/ Kings Park (15.1%), with proportions of 12.8% and 12.1% in Ardeer - Albion/ Sunshine/ Sunshine West and Cairnlea, respectively (Map 8 and Table 17).

However, Sydenham, with a relatively high proportion of its population who had arrived in the five years before the 2011 Census (8.3%, 17% above the Brimbank average), had a relatively low proportion reporting poor proficiency in English (73% below the Brimbank average).

Map 8: People born overseas reporting poor proficiency in English, by PHA in Brimbank, 2011

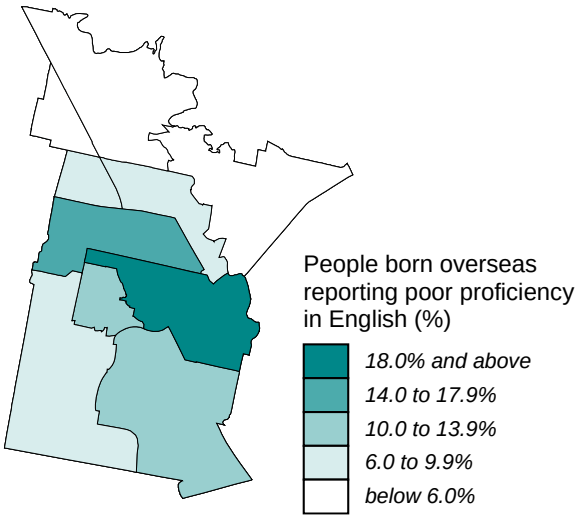


Table 17: People born overseas reporting poor proficiency in English, by PHA in Brimbank, 2011

PHA	No.	%	RR#
Keilor	229	2.9	0.26
Ardeer - Albion/ Sunshine/ Sunshine West	3,941	12.8	1.15
Cairnlea	984	12.1	1.09
Deer Park - Derrimut	1,655	8.2	0.74
Delahey	781	9.9	0.89
Keilor Downs	978	7.7	0.69
St Albans - North/ Kings Park	4,577	15.1	1.35
St Albans - South/ Sunshine North	4,853	19.3	1.73
Sydenham	442	4.1	0.37
Taylors Lakes	602	3.5	0.32
Brimbank City	**19,042**	**11.2**	**1.00**

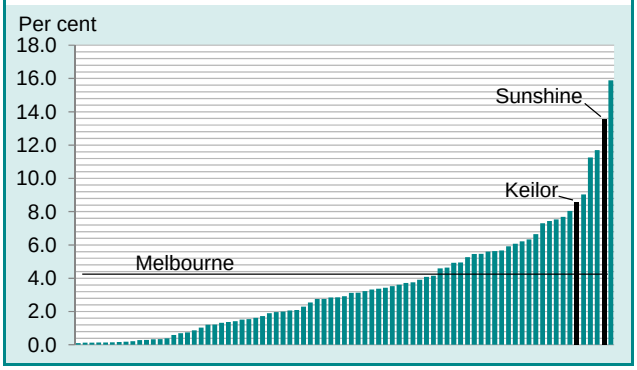
#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

As was the case for people born in countries for which English is not the predominant language, and who arrived in Australia before 2007, the proportions of people reporting poor proficiency in English for the Brimbank SLA was among the top six Melbourne SLAs.

Again, Sunshine, with 13.5% of its population in this group, had the second highest proportion after Greater Dandenong Balance (15.9%) (Figure 13).

Figure 13: People born overseas reporting poor proficiency in English, by SLA in Melbourne, 2011



Correlations

There are very strong correlations at the SLA level across Melbourne between high proportions of people born overseas reporting poor proficiency in English and high proportions of longer term residents born in NES countries, as well as with high levels of unemployment. A very strong correlation was also present for this indicator and the estimated prevalence of diabetes mellitus.

A strong correlation between this indicator and that for children assessed as being developmentally vulnerable on one or more AEDC domains highlights that children in these areas in their first year of school face a number of challenges. Adding to this point, there was also a strong inverse correlation between this indicator and the highest level of education in the adult population being an Advanced Diploma, Diploma or Certificate, indicating a relatively low level of post-school education.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Perspectives on migrants, 2007. (ABS Cat. no. 3416.0). Canberra: ABS, 2008.
2. Australian Bureau of Statistics (ABS). Cultural diversity in Australia - reflecting a nation: stories from the 2011 Census, 2012-2013. (ABS Cat. no. 2071.0). Canberra: ABS, 2012.

Aboriginal and Torres Strait Islander peoples

In 2011, the estimated resident Aboriginal and Torres Strait Islander population in Victoria was 47,333 (or 0.9% of the total Victorian population).[1] The Aboriginal and Torres Strait Islander population is considerably younger than the non-Indigenous population. In 2011, the median age for this population in Victoria was 21.7 years, almost 16 years less than the median age for the non-Indigenous population, of 37.3 years.[1] More than one in three (35.8%) Aboriginal people and Torres Strait Islanders in Victoria were aged less than 15 years, while just 5.0% were aged 65 years and over.[1] As a group, Aboriginal and Torres Strait Islander peoples are disadvantaged across all domains of wellbeing compared to their non-Indigenous counterparts.[2]

Indicator definition: The estimates of the Aboriginal and Torres Strait Islander population presented below are the 2011 Census of Population and Housing counts of the Usual Resident Population.

Key points

- There are relatively few Aboriginal and Torres Strait Islander peoples in Brimbank, where they represent less than one fifth of the proportion of the population for Australia.
- Aside from Keilor Downs, the larger numbers are in Sunshine SLA.

Geographic variation

The Aboriginal and Torres Strait Islander population (referred to as 'Aboriginal' in the following text) in Brimbank is relatively small (0.4%), being less than one fifth of the proportion across Australia (2.5%) (Table 18). However, it is consistent with the proportion in Melbourne, of 0.5%, but substantially lower that the 'all capitals' average, of 1.3%.

The SLA of Sunshine has the larger population, with 414 Aboriginal people, compared with 282 in Keilor.

Overall, Melbourne -West has a higher proportion of Aboriginal people, at 0.6%, than in Brimbank.

Table 18: Aboriginal and Torres Strait Islander peoples, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**282**	**0.3**	**0.12**
Brimbank - Sunshine	**414**	**0.4**	**0.16**
Brimbank City	**696**	**0.4**	**0.16**
Melbourne - West	*3,486*	*0.6*	*0.22*
Melbourne	*18,022*	*0.5*	*0.18*
Country Victoria	*19,684*	*1.5*	*0.57*
Victoria	*37,991*	*0.7*	*0.28*
Australia	**548,371**	**2.5**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

The largest numbers of Aboriginal people in Brimbank are in the PHAs of Ardeer - Albion/ Sunshine/ Sunshine West (170 Aboriginal people), St Albans - North/ Kings Park and St Albans - South/ Sunshine North (144 and 1401, respectively) and Deer Park - Derrimut (105), with a further 67 in Keilor Downs (Map 9 and Table 19).

Map 9: Aboriginal and Torres Strait Islander people, by PHA in Brimbank, 2011

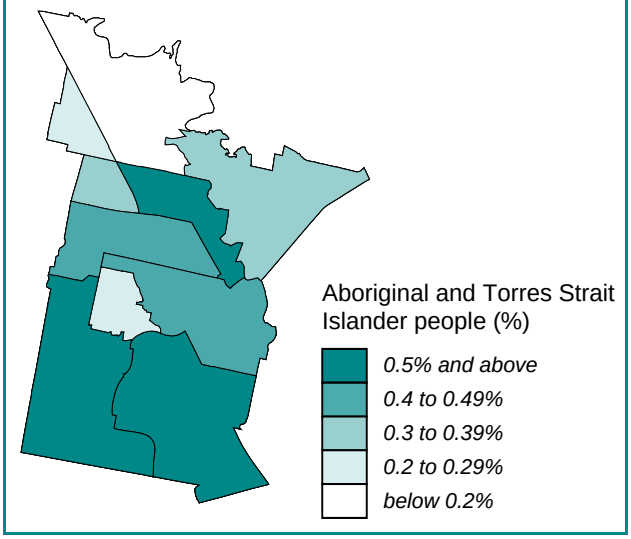


Table 19: Aboriginal and Torres Strait Islander peoples, by PHA in Brimbank, 2011

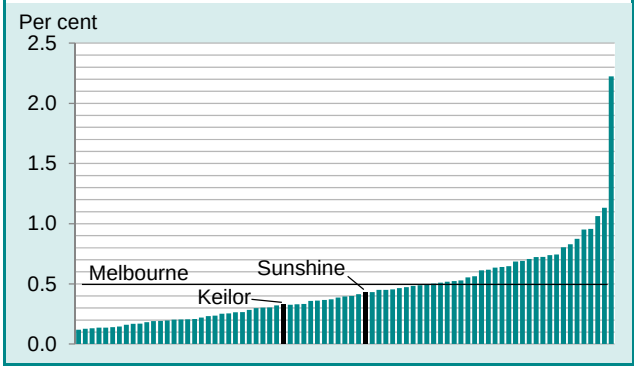
PHA	No.	%	RR#
Keilor	27	0.3	0.83
Ardeer - Albion/ Sunshine/ Sunshine West	170	0.5	1.33
Cairnlea	15	0.2	0.44
Deer Park - Derrimut	105	0.5	1.21
Delahey	29	0.3	0.88
Keilor Downs	67	0.5	1.28
St Albans - North/ Kings Park	144	0.4	1.14
St Albans - South/ Sunshine North	101	0.4	0.97
Sydenham	28	0.2	0.62
Taylors Lakes	26	0.1	0.37
Brimbank City	**712**	**0.4**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

Both of the Brimbank City SLAs had relatively low numbers of Aboriginal people in their populations in 2011 when compared with other SLAs in Melbourne (Figure 14).

Figure 14: Aboriginal and Torres Strait Islander peoples, by SLA in Melbourne, 2011



Correlations

There are strong correlations at the SLA level across Melbourne between this indicator and high proportions of children in families where the mother has low educational attainment, of people working as labourers, and of children living with disability. Strong inverse correlations were also found with learning or earning and people working as managers or professionals, indicating that there were relatively fewer people with these characteristics.

A strong correlation was found with the education and child development indicator of people who left school early (i.e., people who completed Year 10 or below or did not go to school); similarly, relatively fewer young people in these areas were participating in full-time secondary education, and relatively fewer people had a highest level of education of Bachelor Degree, or higher.

In the health and wellbeing area, a very strong correlation was found for this indicator and female smokers, and a strong correlation was found for women smoking in pregnancy, male smokers, and adult obesity.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Institute of Health and Welfare (AIHW). The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples: an overview, 2011. (AIHW Cat. no. IHW 42). Canberra: AIHW, 2011.
2. Australian Bureau of Statistics (ABS). Estimates of Aboriginal and Torres Strait Islander Australians, June 2011. (ABS Cat. no. 3238.0.55.001). Canberra: ABS, 2013.

Unemployment

Those people who do not have access to secure and satisfying work are less likely to have an adequate income; and unemployment and underemployment are generally associated with reduced life opportunities and poorer health and wellbeing. Although the relationship between unemployment and health and wellbeing is complex and varies for different population groups, there is consistent evidence from research that unemployment is associated with adverse health outcomes; and unemployment has a direct effect on physical and mental health over and above the effects of socioeconomic status, poverty, risk factors, or prior ill-health.[1,2]

Indicator definition: Comprises the number of people who reported in the 2011 Census of Population and Housing that they were unemployed, expressed as a proportion of the labour force. The Census data differ from those produced from Australia's official measure of unemployment, the monthly labour force statistics, which are not available for the small areas mapped in this atlas. See the box on page 77 for further information, and some updated statistics.

Key points

- Unemployment is at a substantially higher level in Brimbank when compared to the level across Australia, or for Melbourne.
- The unemployment rates are high by Australian standards in all but two PHAs.

Geographic variation

The level of unemployment in Brimbank under this measure (8.3%) is substantially higher than in Australia overall (5.6%), as shown by the rate ratio of 1.47 (Table 20). It is also substantially higher than the rate in Melbourne (5.5%), and markedly higher than in Melbourne - West (6.8%).

The unemployment rate of 9.5% in Sunshine is 69% above the Australian rate; although lower, the rate of 7.0% in Keilor is still high by Australian standards.

Table 20: Unemployment, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**2,929**	**7.0**	**1.25**
Brimbank - Sunshine	**3,972**	**9.5**	**1.69**
Brimbank City	**6,901**	**8.3**	**1.47**
Melbourne - West	*20,506*	*6.8*	*1.21*
Melbourne	*111,455*	*5.5*	*0.97*
Country Victoria	*32,693*	*5.2*	*0.92*
Victoria	*144,844*	*5.4*	*0.96*
Australia	**600,134**	**5.6**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Separate data show that 8,475 people in Brimbank were receiving an unemployment benefit in June 2012; this represented 6.4% of the population aged 15 to 64 years. The figures for Sunshine were 5,139 and 7.4%, and for Keilor, they were 3,336 and 5.3%.

At the PHA level, unemployment rates are relatively high across Brimbank, and are above the Australian and Melbourne rates in all but Keilor (3.9%) and Taylors Lakes (4.7%) (Map 10 and Table 21).

Very high unemployment rates were recorded in St Albans - South/ Sunshine North (11.4%), St Albans - North/ Kings Park (10.9%), Ardeer - Albion/ Sunshine/ Sunshine West (9.7%), Deer Park - Derrimut (8.2%), Delahey (7.9%) and Cairnlea (7.3%).

Map 10: Unemployment, by PHA in Brimbank, 2011

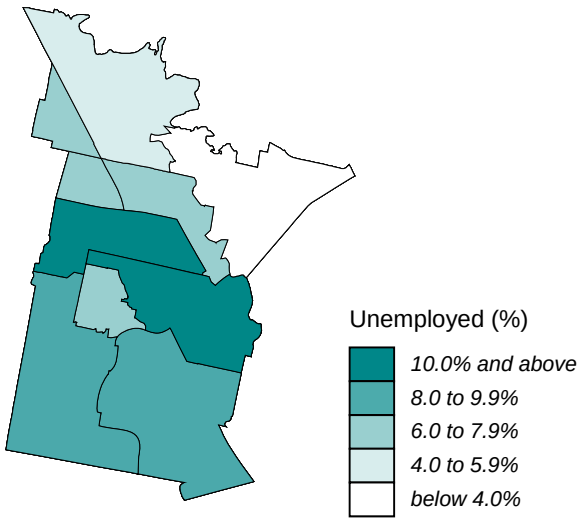


Table 21: Unemployment, by PHA in Brimbank, 2011

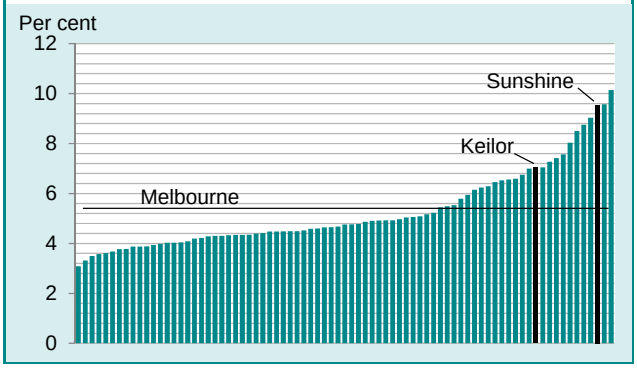
PHA	No.	%	RR#
Keilor	167	3.9	0.47
Ardeer - Albion/ Sunshine/ Sunshine West	1,371	9.7	1.17
Cairnlea	318	7.3	0.88
Deer Park - Derrimut	860	8.2	0.99
Delahey	312	7.9	0.95
Keilor Downs	436	6.4	0.77
St Albans - North/ Kings Park	1,414	10.9	1.32
St Albans - South/ Sunshine North	1,204	11.4	1.38
Sydenham	355	6.0	0.72
Taylors Lakes	464	4.7	0.56
Brimbank City	**6,901**	**8.3**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

The Brimbank City SLAs had among the highest unemployment rates in Melbourne in 2011. The rate of 9.5% in Sunshine was only exceeded in nearby Hume - Broadmeadows (9.6%), and in Melbourne - Inner (10.1%).

Figure 15: Unemployment, by SLA in Melbourne, 2011



Correlations

There are very strong correlations at the SLA level across Melbourne between high levels of unemployment and a number of indicators of socioeconomic disadvantage: these are unemployed youth, children living in jobless families, people from non-English speaking countries who recently arrived and those reporting poor proficiency in English, and low income households under financial stress from rent or mortgage payments.

Strong inverse correlations were found with the education and child development indicators, with relatively low levels of participation of children in preschool and of young people in secondary education. Relatively few children were developmentally on track in the physical health and wellbeing, or the language and cognitive skills domains of the AEDC; and relatively more children in these areas were developmentally vulnerable on one or more domains.

A very strong correlation was apparent for this indicator and self-assessed fair or poor health, the estimated prevalence of diabetes mellitus, and for high or very high psychological distress. Strong correlations were also found between unemployment and high rates of hospitalisations of children for ambulatory care-sensitive conditions, indicating relatively poorer access to adequate and timely primary health care for children.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Mathers CD, Schofield DJ. The health consequences of unemployment: the evidence. Medical Journal of Australia 1998; 168(4): 178-182.
2. Dollard MF, Winefield AH. Mental health: overemployment, underemployment, unemployment and healthy jobs. Australian e-Journal for the Advancement of Mental Health 2002: 1(3).

Table 22: Unemployment rate comparisons and updates

Area	ABS Census Aug 2011	DoE: SALM* 2011 June	DoE: SALM* 2011 Sept	DoE: SALM* 2013 Dec	ABS: LFS** 2011 Aug-Oct	ABS: LFS** 2013 Aug-Oct	ABS: LFS** 2013-14 Dec-Feb
Keilor	5.6	5.6	5.9	6.4	..	..	..
Sunshine	9.7	9.7	10.4	11.3	..	..	..
Brimbank	7.5	7.5	8.0	8.8	..	..	..
Melbourne - West	6.8	..	..	..	7.8	6.8	6.9
Melbourne	5.5	..	..	..	5.3	6.1	6.9
Victoria	5.4	..	..	..	5.2	5.8	6.7
Australia	5.6	..	..	..	5.1	5.6	6.3

*Small Area Labour Market estimates produced by Department of Education: accessed 28 March 2014 at http://employment.gov.au/small-area-labour-markets-publication

**ABS Labour Force Survey, Australia, Detailed - Electronic Delivery, Feb 201: accessed 28 March 2014 at http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6291.0.55.001Feb%202014?OpenDocument

Unemployed youth

Unemployment and its accompanying health effects are not distributed evenly through the population. Unemployment rates in Victoria are highest among young people: the rate in the 20 to 24 year age group being over twice that for people 25 years and over, and for those aged 15 to 19 years, over three times.[1] The experience of unemployment harms a young person's financial and psychological wellbeing, and these effects are felt more severely by those who experience long-term unemployment.[2] Furthermore, those who experience unemployment while young are more likely to be unemployed, have poor health and have lower educational attainment when they are older, than those who are not affected by unemployment while young.[2]

Indicator definition: Comprises the number of people aged 15 to 24 years who reported in the 2011 Census of Population and Housing that they were unemployed, as a proportion of the labour force of that age. The Census data differ from those produced from Australia's official measure of unemployment, the monthly labour force statistics, which are not available for the small areas mapped in this atlas. See the box (opposite) for further information.

Key points

- Youth unemployment in Brimbank is high, and Sunshine is above the national average rate.
- High rates are evident across much of the City.

Geographic variation

In 2011, the youth unemployment rate in Brimbank, calculated from Census data, was 16% above the rate in Australia (a rate ratio of 1.16), and similarly above the rate in Melbourne (Table 23).

Youth unemployment in Sunshine (16.2%) was one third higher than the Australian rate of 12.2%, whereas the rate in Keilor (of 12.4%) was consistent with the national rate.

Table 23: Youth unemployment, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**967**	**12.4**	**1.02**
Brimbank - Sunshine	**1,100**	**16.2**	**1.33**
Brimbank City	**2,067**	**14.2**	**1.16**
Melbourne - West	*6,569*	*13.7*	*1.13*
Melbourne	*39,896*	*12.3*	*1.01*
Country Victoria	*11,557*	*11.2*	*0.92*
Victoria	*51,649*	*12.1*	*0.99*
Australia	**213,806**	**12.2**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Data from the ABS Labour Force Survey (see the reference in Table 22, above) suggest that the unemployment rate in Melbourne - West remained relatively stable (at 13.1%, averaged over the three months from December 2013 to February 2014), while the rates in Melbourne (14.7%) and Victoria (14.4%) increased.

Separate data show that 1,774 young people in Brimbank were receiving an unemployment benefit in June 2012; this is well below the number reporting in the Census as being unemployed.

Only Keilor, Sydenham and Keilor Downs have youth unemployment rates below the Australian or Melbourne averages. The PHAs of St Albans - South/ Sunshine North (17.7%), St Albans - North/ Kings Park (16.1%) and Deer Park - Derrimut (16.7%) have the highest rates, with slightly lower rates in Ardeer - Albion/ Sunshine/ Sunshine West (15.5%), Cairnlea (15.1%) and Delahey (14.5%) (Map 11 and Table 24).

Map 11: Youth unemployment, by PHA in Brimbank, 2011

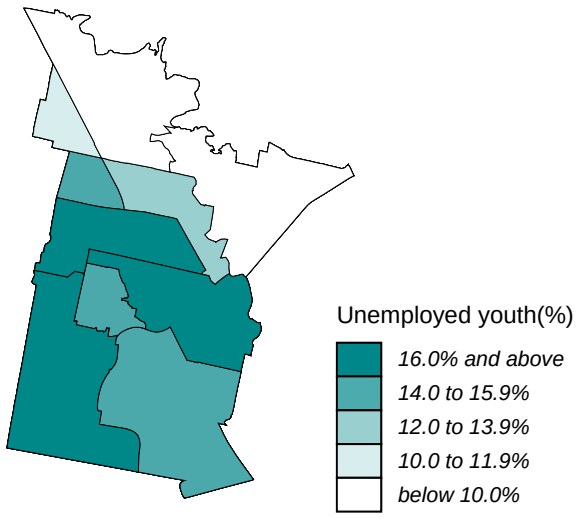


Table 24: Youth unemployment, by PHA in Brimbank, 2011

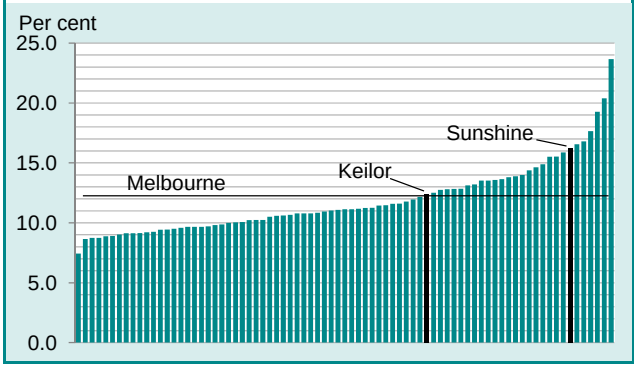
PHA	No.	%	RR#
Keilor	66	9.8	0.69
Ardeer - Albion/ Sunshine/ Sunshine West	369	15.5	1.09
Cairnlea	100	15.1	1.07
Deer Park - Derrimut	272	16.7	1.18
Delahey	106	14.5	1.02
Keilor Downs	166	12.5	0.88
St Albans - North/ Kings Park	365	16.1	1.14
St Albans - South/ Sunshine North	306	17.7	1.25
Sydenham	120	11.5	0.81
Taylors Lakes	192	9.0	0.64
Brimbank City	**2,062**	**14.1**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

There is a wide variation in youth unemployment rates at the SLA level across Melbourne, with the rate in Sunshine (16.2%) among the highest, as was the case for unemployment at all ages (Figure 16). The rate in Keilor is lower (12.4%), and consistent with the Melbourne rate, but is still more than twice the lowest rates.

Figure 16: Youth unemployment, by SLA in Melbourne, 2011



Correlations

There are very strong correlations at the SLA level across Melbourne between this indicator and unemployment (all ages), recent arrivals from NES countries and low income households under financial stress from rent or mortgage payments.

Strong inverse correlations were found with the education and child development indicators describing low levels of participation in preschool, and there being relatively fewer people with their highest level of education being an Advanced Diploma, Diploma or Certificate. Similarly, relatively more children in these areas were assessed as being developmentally vulnerable on one or more AEDC domains.

In the health and wellbeing area, strong correlations were present between high levels of youth unemployment and self-assessed fair or poor health and the estimated prevalence of diabetes mellitus. Strong correlations were also found with hospitalisations for ambulatory care-sensitive conditions of children, indicating relatively poorer access to adequate and timely primary health care, and for high or very high psychological distress.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Labour Force, Australia, detailed. (ABS Cat. no. 6291.0.55.001). Electronic Delivery, January 2014.
2. Brotherhood of St Laurence (BSL). On the treadmill: young and long-term unemployed in Australia. Melbourne: BSL, 2014.

Comparison of estimates of unemployment, and updates

As noted above, estimates of unemployment from the Census differ from those produced from Australia's official measure of unemployment, the monthly labour force statistics. Each quarter, the Department of Education produces estimates of the labour force at the SLA level. As can be seen from Table 22, the estimated unemployment rate for June 2011 was the same as the ABS Census figure. Later estimates, for December 2013, put the unemployment rate in Keilor at 6.4% (up from 5.6% in 2011) and, in Sunshine, at 11.3% (up from 9.7%).

ABS estimates at the regional (SA4) level from the Labour Force Survey are somewhat variable from month to month, but the three-month averages shown above suggest that the unemployment rate in Melbourne - West has remained relatively stable, while the rates in Melbourne and Victoria have increased.

Female labour force participation

The marked increase in female participation in paid work in Victoria, especially in part-time work, has been one of the most significant trends in Australian society over the last three decades, with participation increasing by over 30%.[1] Over the same period, male participation has declined by over ten per cent.[1] Women are both remaining in the work force longer (partly by delaying childbirth), and re-entering the workforce after childbirth, because of increased economic pressures on families and changes in social perceptions of the role of women. Labour force participation by women with infants and young children is also dependent upon them being able to access appropriate, affordable child care arrangements.[2]

Indicator definition: Comprises the number of females who reported in the 2011 Census of Population and Housing that they were employed, or unemployed and looking for work, expressed as a proportion of the labour force. The Census data differ from those produced from Australia's official measure of employment participation, the monthly labour force statistics, which are not available for the small areas mapped in this atlas.

Key points

- Female labour force participation is below the national average in both Keilor and Sunshine.
- Participation rates vary widely within Brimbank, from 40% to 63%.

Geographic variation

Participation of females living in Brimbank in the labour force is 12% below the Australian rate (a rate ratio of 0.88) (Table 25). It is also below the rates in Melbourne and Melbourne - West.

The differences in the socioeconomic make-up of the Sunshine and Keilor SLAs are reflected in the higher female labour force participation rate in Keilor (52.4%, compared with 46.3%).

Table 25: Female labour force participation, Brimbank and comparators, 2011

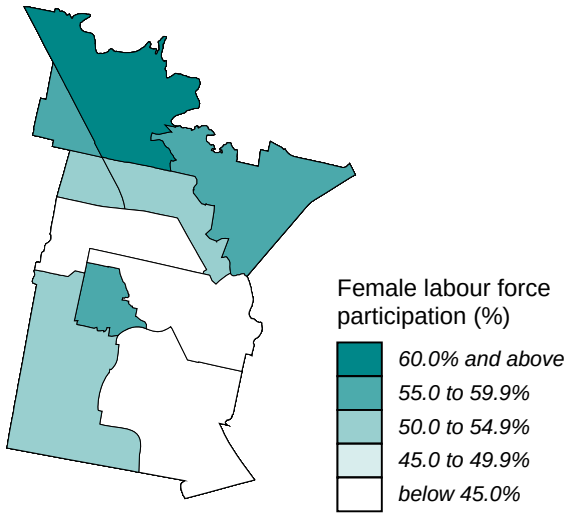
Region	No.	%	RR#
Brimbank - Keilor	**18,672**	**52.4**	**0.93**
Brimbank - Sunshine	**17,818**	**46.3**	**0.82**
Brimbank City	**36,590**	**49.2**	**0.88**
Melbourne - West	*135,990*	*55.4*	*0.99*
Melbourne	*950,920*	*56.8*	*1.01*
Country Victoria	*295,784*	*53.0*	*0.94*
Victoria	*1,248,044*	*55.8*	*0.99*
Australia	**4,971,658**	**56.2**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

There are substantial differences in female labour force participation rates at the PHA level within Brimbank, again reflecting the varying socioeconomic pattern at the community level (Map 12 and Table 26).

The highest rate is in Taylors Lakes, with almost two thirds (63.3%) of the female population aged 15 years and over in the labour force. Other areas with participation rates of 50% or higher, were Sydenham (59.0%), Cairnlea (58.1%), Keilor (55.7%), Keilor Downs (54.1%), Deer Park - Derrimut (53.0%) and Delahey (52.6%).

Map 12: Female labour force participation, by PHA in Brimbank, 2011



The lowest female labour force participation rates were recorded in St Albans - South/ Sunshine North (40.1%), St Albans - North/ Kings Park (41.5%) and Ardeer - Albion/ Sunshine/ Sunshine West (44.2%).

Table 26: Female labour force participation, by PHA in Brimbank, 2011

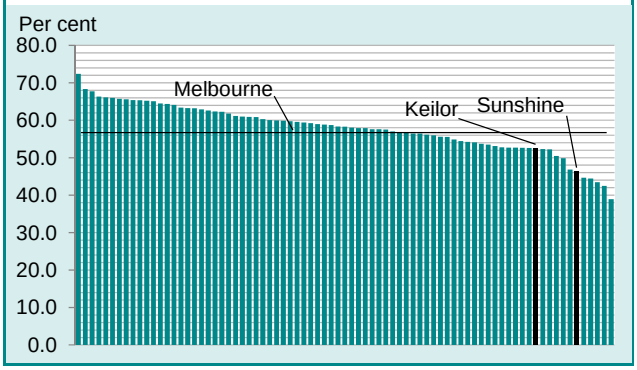
PHA	No.	%	RR#
Keilor	1,982	55.7	1.13
Ardeer - Albion/ Sunshine/ Sunshine West	5917	44.2	0.90
Cairnlea	1,949	58.1	1.18
Deer Park - Derrimut	4,572	53.0	1.08
Delahey	1,798	52.6	1.07
Keilor Downs	3,104	54.1	1.10
St Albans - North/ Kings Park	5,495	41.5	0.84
St Albans - South/ Sunshine North	4,513	40.1	0.82
Sydenham	2,665	59.0	1.20
Taylors Lakes	4,604	63.3	1.29
Brimbank City	**36,599**	**49.2**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

In 2011, both of the Brimbank City SLAs had a female labour force participation rate well below the Melbourne average, with a very low rate, of 46.3%, in Sunshine, and a rate of 52.4% in Keilor (Figure 17).

Figure 17: Female labour force participation, by SLA in Melbourne, 2011



Correlations

There are very strong inverse correlations at the SLA level across Melbourne between this indicator and low income households under financial stress from rent or mortgage payments (indicating that there are few of these households in areas of high female labour force participation), and of people aged 15 years and over living with disability.

A strong correlation was found between female labour force participation and children assessed as being developmentally on track in the language and cognitive skills domain of the AEDC; conversely, there were relatively fewer children who were assessed as being developmentally vulnerable on one or more domains (a strong inverse correlation).

With respect to health and wellbeing, there were strong inverse correlations between female labour force participation and self-assessed fair or poor health, high or very high psychological distress among females, and the estimated prevalence of diabetes mellitus.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Labour Force, Australia, detailed. (ABS Cat. no. 6291.0.55.001). Electronic Delivery, January 2014.
2. Department of Treasury and Finance, Victorian Government (DTF). Addressing impacts of population ageing on labour force participation. Melbourne: DTF, 2005.

People working as managers or professionals

Occupation remains an important determinant of wealth, social standing and wellbeing for most people in Australian society. The occupations described here include, among others, chief executives, and hospitality, retail, service and farm managers (including farmers); and professionals, including in the arts, education, health, welfare, engineering, business and legal occupations.[1] Their prevalence in a community, therefore, forms a useful general indicator of high socioeconomic status.

Indicator definition: Comprises people whose reported occupation in the 2011 Census of Population and Housing was classified as being a Manager or a Professional under the ABS Standard Classification of Occupations, expressed as a proportion of employed persons aged 15 years and over.[1]

Key points

- Relatively few people in Brimbank (when compared with Australia) have the occupations of managers or professionals.
- None of the PHAs had a proportion above the national figure, and some were at half that level.

Geographic variation

Just over one fifth of employed people in Brimbank were classified as managers or as professionals, at the 2011 Census (Table 27). This was less than two thirds of the level across Australia or Melbourne, and was also below the level in Melbourne - West.

The proportion in these occupations was slightly higher in Keilor (22.6%) than in Sunshine (20.4%).

Table 27: People working as managers or professionals, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**8,747**	**22.6**	**0.66**
Brimbank - Sunshine	**7,694**	**20.4**	**0.60**
Brimbank City	**16,441**	**21.5**	**0.63**
Melbourne - West	*78,095*	*27.7*	*0.81*
Melbourne	*705,411*	*36.6*	*1.07*
Country Victoria	*191,540*	*27.8*	*0.81*
Victoria	*897,711*	*35.5*	*1.04*
Australia	**3,439,412**	**34.2**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Within Brimbank, the highest proportion of the workforce employed as a manager, or as a professional was in Keilor (33.6%); this was still below the average proportion for Australia (Map 13 and Table 28). The next highest proportions were in Taylors Lakes (27.6%) and Cairnlea (25.8%). Very few people in St Albans - North/ Kings Park and Delahey had these occupations (15.0% and 15.7%, respectively).

Map 13: People working as managers or professionals, by PHA in Brimbank, 2011

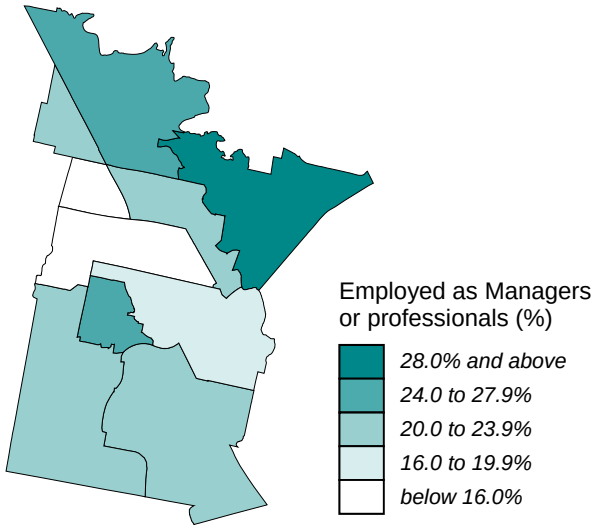


Table 28: People working as managers or professionals, by PHA in Brimbank, 2011

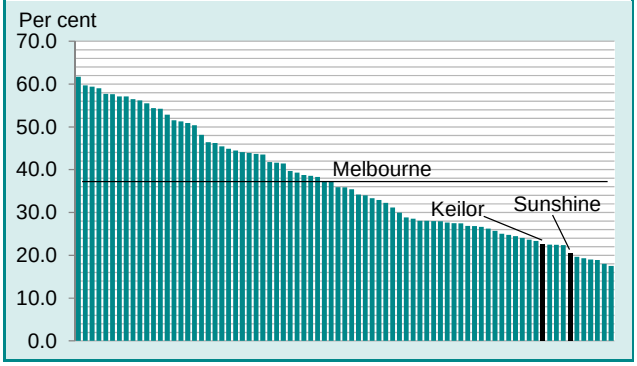
PHA	No.	%	RR#
Keilor	1,375	33.6	1.56
Ardeer - Albion/ Sunshine/ Sunshine West	2,596	20.4	0.95
Cairnlea	1,036	25.8	1.20
Deer Park - Derrimut	2,088	21.8	1.01
Delahey	574	15.7	0.73
Keilor Downs	1,469	23.1	1.07
St Albans - North/ Kings Park	1,726	15.0	0.69
St Albans - South/ Sunshine North	1,648	17.7	0.82
Sydenham	1,294	23.2	1.08
Taylors Lakes	2,626	27.6	1.28
Brimbank City	**16,432**	**21.5**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

Relatively few people in Brimbank City were employed as managers or as professionals at the 2011 Census, when compared with other SLAs in Melbourne. In both Sunshine (where 20.4% of employed people were managers or professionals) and Keilor (22.6%), proportions were below the Melbourne average (of 36.6%) (Figure 18).

Figure 18: People working as managers or professionals, by SLA in Melbourne, 2011



Correlations

There was a very strong correlation between people working as managers or professionals and elevated proportions of the population having a level of education of a Bachelor Degree, or higher. Strong correlations were also found with the indicators of education and child development describing higher levels of participation in preschool and a greater proportion of children assessed as being developmentally on track in the physical health and wellbeing domain of the AEDC.

As would be expected for areas with more people who have the resources that come with positions of socioeconomic advantage, there were fewer children assessed as being developmentally vulnerable on one or more domains of the AEDC. There were also fewer people with their highest level of education as an Advanced Diploma, Diploma or Certificate.

There was a very strong inverse correlation with early school leavers at the SLA level across Melbourne, and strong inverse correlations with the indicators for children in families where the mother has low educational attainment, people working as labourers, and children living with disability.

There were also very strong inverse correlations with many of the health and wellbeing indicators, with fewer women smoking in pregnancy, fewer adult smokers, fewer adults who are obese and relatively fewer people (aged 15 years and over) were hospitalised with ambulatory care-sensitive conditions; and a lower level of self-reported high or very high psychological distress (more so for females than males). This also demonstrates the likely health benefits of higher education levels, and the ability to access more resources to support health promoting behaviours and attend primary health care services.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). ANZSCO - Australian and New Zealand Standard Classification of Occupations, Version 1.2. (ABS Cat. no. 1220.0). Canberra: ABS, 2013.

People working as labourers

Occupation remains an important determinant of wealth, social standing and wellbeing for most people in Australian society. The occupations described here as labourers encompass lower paid and less skilled work, and include, among others, cleaners, factory process workers, kitchen hands and garden workers.[1] Their prevalence in a community therefore forms a useful general indicator of lower socioeconomic status.

Indicator definition: Comprises people whose reported occupation in the 2011 Census of Population and Housing was classified as being a Labourer under the ABS Standard Classification of Occupations, expressed as a proportion of employed persons aged 15 years and over.[1]

Key points

- Of people who reported in the 2011 Census that they were working, 14.0% gave their occupation as being a labourer: this was almost 50% above the level across Australia, and was 75% above the level in Melbourne.
- People living in Brimbank who work as labourers were located across much of the City, with only two PHAs having proportions in this occupation which were below the national average.

Geographic variation

The proportion of the workforce in Brimbank classified as labourers (14.0%) is almost 50% above the level across Australia (and is 75% above the level in Melbourne) (Table 29).

Within Brimbank, more people living in the SLA of Sunshine were employed as labourers (16.0%), than were people from Keilor (12.1%).

Table 29: People working as labourers, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**4,677**	**12.1**	**1.28**
Brimbank - Sunshine	**6,033**	**16.0**	**1.70**
Brimbank City	**10,710**	**14.0**	**1.49**
Melbourne - West	*30,085*	*10.7*	*1.13*
Melbourne	*153,299*	*8.0*	*0.84*
Country Victoria	*73,551*	*12.3*	*1.30*
Victoria	*227,181*	*9.0*	*0.95*
Australia	**947,608**	**9.4**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Labourers comprised the highest proportions of the workforce in St Albans - South/ Sunshine North (18.9%), St Albans - North/ Kings Park (18.8%), Ardeer - Albion/ Sunshine/ Sunshine West (16.6%) and Delahey (16.1%) (Map 14 and Table 30).

Relatively few people in Keilor (6.2%) and Taylors Lakes (7.9%) were working as labourers.

Map 14: People working as labourers, by PHA in Brimbank, 2011

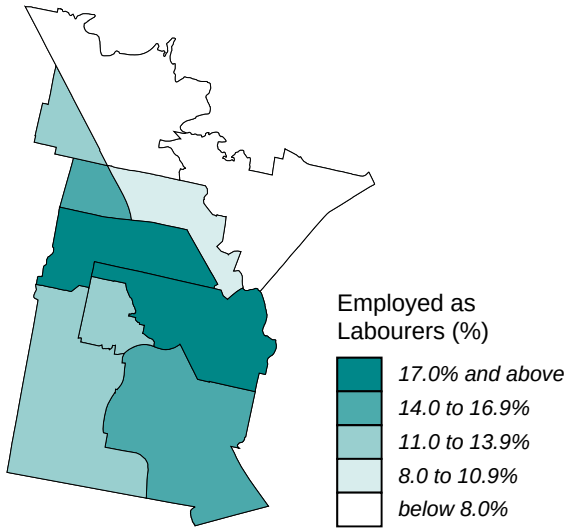


Table 30: People working as labourers, by PHA in Brimbank, 2011

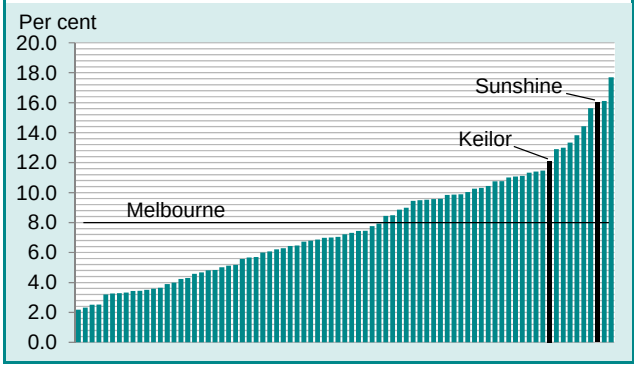
PHA	No.	%	RR#
Keilor	254	6.2	0.44
Ardeer - Albion/ Sunshine/ Sunshine West	2,104	16.6	1.18
Cairnlea	540	13.4	0.96
Deer Park - Derrimut	1,245	13.0	0.93
Delahey	587	16.1	1.15
Keilor Downs	663	10.4	0.74
St Albans - North/ Kings Park	2,172	18.8	1.34
St Albans - South/ Sunshine North	1,760	18.9	1.35
Sydenham	632	11.3	0.81
Taylors Lakes	752	7.9	0.56
Brimbank City	**10,709**	**14.0**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

Of all the SLAs in Melbourne, the Brimbank City SLAs had among the highest proportions of their workforce employed as labourers (Figure 19). The proportion in Sunshine, of 16.1%, was twice that in Melbourne (8.0%); in Keilor, it was 50% above the Melbourne figure, or 12.1% of the workforce.

Figure 19: People working as labourers, by SLA in Melbourne, 2011



Correlations

At the SLA level across Melbourne, the indicators for children in families where the mother has low educational achievement, low income households under financial stress from rent or mortgage payments and homes without Internet access, were all strongly correlated with high proportions of labourers. Not surprisingly, there was a very strong inverse correlation with people working as managers or professionals.

Very strong correlations were also found with the indicators of education and child development, with relatively more children assessed as being developmentally vulnerable on one or more domains of the AEDC; and more people having left school early (i.e., completed Year 10 or below, or did not go to school). However, very strong inverse correlations indicated that relatively fewer children were on track in the language and cognitive skills domain of the AEDC; and fewer people had a highest level of education of a Bachelor Degree or higher.

Very strong correlations with the indicator of people working as labourers were also apparent for a number of the health and wellbeing indicators, with relatively more women smoking during pregnancy, and greater numbers of people reporting their health as fair or poor, male smokers, and adults who were obese. Strong correlations were found with low birthweight babies, hospitalisations of children and adults for ambulatory care-sensitive conditions, the prevalence of diabetes mellitus and circulatory system diseases, and of female smokers.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). ANZSCO - Australian and New Zealand Standard Classification of Occupations, Version 1.2. (ABS Cat. no. 1220.0). Canberra: ABS, 2013.

Social housing

The availability of affordable, sustainable and appropriate housing underpins good health and the social, educational and economic participation of individuals.[1] Social housing provides secure and affordable housing not available in the private market through a range of organisations, and its distribution remains an indicator of socioeconomic disadvantage as tenants are increasingly welfare-dependent. Victoria trails the rest of Australia in the provision of social housing; and in December 2013, there were 33,916 Victorians waiting for public housing, with many more in need.[2]

Indicator definition: Comprises occupied private dwellings rented from government housing authorities, housing cooperatives and community or church groups, expressed as a proportion of all occupied private dwellings.

Key points

- Melbourne has a relatively small stock of social housing, with even lower levels within Brimbank: this is surprising, given the relatively disadvantaged nature of the City.
- None of the PHAs have proportions above the national average.

Geographic variation

Social housing comprises a relatively small proportion of the housing stock in Melbourne (3.0%) when compared with the level across Australia (4.7%) (Table 31). The level in Brimbank is lower again, at 2.4% of the housing stock, with 2.3% in Keilor and 2.6% in Sunshine.

Table 31: Social housing, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	630	2.3	0.48
Brimbank - Sunshine	794	2.6	0.54
Brimbank City	1,424	2.4	0.51
Melbourne - West	5,692	2.7	0.57
Melbourne	42,475	3.0	0.63
Country Victoria	21,114	4.1	0.87
Victoria	63,589	3.3	0.69
Australia	**365,899**	**4.7**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

However, there is wide variation in the availability of social housing at the PHA level within Brimbank, and an unusual distribution in comparison to that seen for other social indicators mapped in this atlas. For example, the highest proportion of this housing is in Keilor Downs (4.4%). St Albans - North/ Kings Park (4.1%, and the largest number of these dwellings) and Delahey (3.3%), also in Keilor SLA, have the next highest proportions. The lowest proportions are in Sydenham (0.3%), Keilor (0.9%) and Taylors Lakes (1.1%).

In Sunshine, the highest proportions were in St Albans - South/ Sunshine North (2.8%, with the second largest number of these dwellings) and Deer Park - Derrimut (2.6%); the lowest was in Ardeer - Albion/ Sunshine/ Sunshine West (1.1%) (Map 15 and Table 32).

Map 15: Social housing, by PHA in Brimbank, 2011

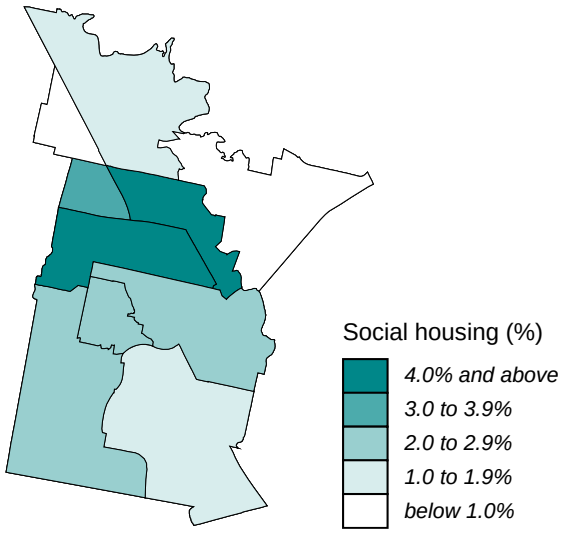


Table 32: Social housing, by PHA in Brimbank, 2011

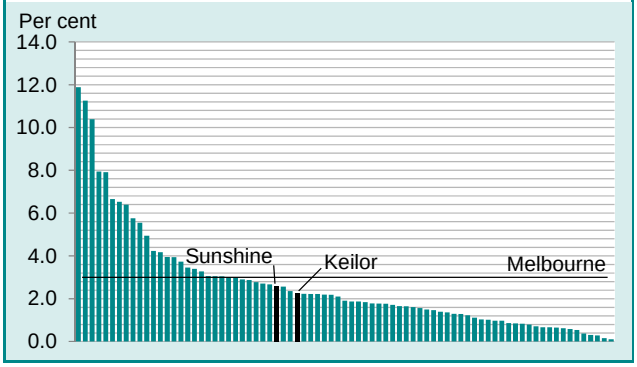
PHA	No.	%	RR#
Keilor	78	0.9	0.35
Ardeer - Albion/ Sunshine/ Sunshine West	99	1.1	0.41
Cairnlea	148	2.1	0.81
Deer Park - Derrimut	67	2.6	1.02
Delahey	144	3.3	1.29
Keilor Downs	188	4.4	1.72
St Albans - North/ Kings Park	469	4.1	1.58
St Albans - South/ Sunshine North	234	2.8	1.08
Sydenham	17	0.3	0.12
Taylors Lakes	55	1.1	0.44
Brimbank City	**1,499**	**2.6**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

Given the relatively high level of socioeconomic disadvantage in Brimbank, there was little social housing available in 2011, when compared with other SLAs in Melbourne (Figure 20).

Figure 20: Social housing, by SLA in Melbourne, 2011



Correlations

Social housing was strongly correlated with households without a motor vehicle at the SLA level across Melbourne. However, there were no other strong correlations between social housing and indicators of socioeconomic disadvantage, health and wellbeing or education and child development. This lack of correlation with the indicators of socioeconomic disadvantage is likely to reflect the relatively low rate of provision of this type of housing across Melbourne.

Data sources, references and notes

1. Australian Institute of Health and Welfare (AIHW). Australia's welfare, 2011. (AIHW Cat. no. AUS 142). Canberra: AIHW, 2011.
2. Community Housing Federation of Victoria et al. Making social housing work: better homes for low-income Victorians. Melbourne, Victoria: Victorian Council of Social Services, 2014.

Low income households under financial stress from rent or mortgage

A family or individual is considered to be in housing stress if they are in a low-income bracket and pay more than 30% of their income on rent or mortgage repayments. Acute housing stress occurs when 50% of income is spent on housing. High numbers of families experience housing stress, and are at increasing risk of homelessness.[1] In 2012, it was estimated that only two per cent of Melbourne rental homes were affordable for working single-parent families, while none were affordable for a single person on the minimum wage or income support.[2]

Housing stress is rising due to low investment in public housing, demographic shifts and increases in the number of households, including through family breakdown; and a tendency for affluent people to want to live in the inner-city, which increases rents and forces low-income earners out of even relatively low-standard, un-renovated housing.[3]

Indicator definition: Comprises households in the bottom 40% of the income distribution (those with less than 80% of median income), spending more than 30% of their income on rent, or on mortgage repayments, as a proportion of all private dwellings.

Key points

- Relatively more low income households in Brimbank were under financial stress from their rental or mortgage commitments at the 2011 Census.
- Over one quarter of households in some PHAs were estimated to be under such financial stress.

Geographic variation

Despite the low level of provision of social housing in Melbourne relative to the national level, the proportion of low income households under financial stress from their rental or mortgage commitments in Melbourne is consistent with the national figure (Table 33).

However, the same cannot be said of Brimbank, where the level of housing stress among these families is one third above the national figure. At the SLA level, almost one quarter of families in Sunshine (24.7%) and over one fifth in Keilor (21.0%) were considered to be under financial stress from their rental or mortgage commitments under this measure.

Table 33: Housing stress, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**3,313**	**21.0**	**1.21**
Brimbank - Sunshine	**4,693**	**24.7**	**1.43**
Brimbank City	**8,006**	**23.0**	**1.33**
Melbourne - West	*26,523*	*18.7*	*1.08*
Melbourne	*163,453*	*17.2*	*0.99*
Country Victoria	*48,723*	*17.8*	*1.02*
Victoria	*212177*	*17.3*	*1.00*
Australia	**879,377**	**17.3**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

This financial pressure is most evident, at the PHA level, in St Albans - South/ Sunshine North (28.9% of households) and St Albans - North/ Kings Park (28.4%) (Map 16 and Table 34). It is least evident in Keilor (13.2% of households) and Taylors Lakes (13.5%).

Map 16: Housing stress, by PHA in Brimbank, 2011

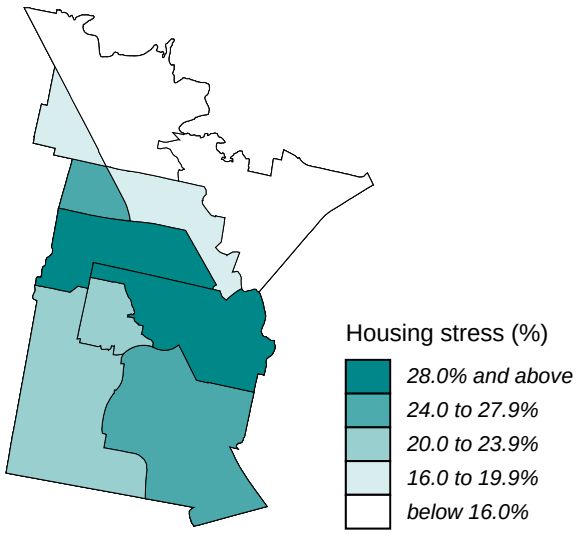


Table 34: Housing stress, by PHA in Brimbank, 2011

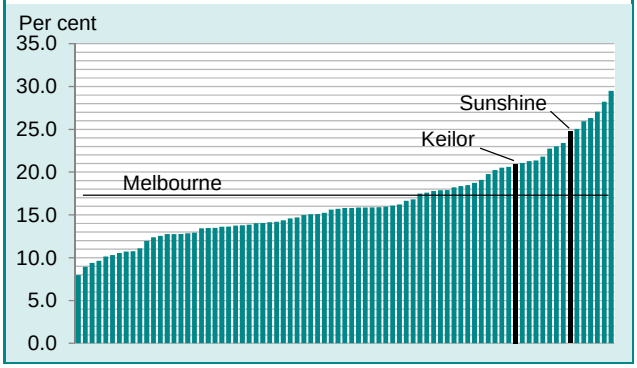
PHA	No.	%	RR#
Keilor	176	13.2	0.57
Ardeer - Albion/ Sunshine/ Sunshine West	1,606	24.8	1.08
Cairnlea	401	21.7	0.94
Deer Park - Derrimut	1,068	21.0	0.91
Delahey	431	25.2	1.09
Keilor Downs	409	18.0	0.78
St Albans - North/ Kings Park	1,696	28.4	1.24
St Albans - South/ Sunshine North	1,342	28.9	1.26
Sydenham	491	18.8	0.82
Taylors Lakes	382	13.5	0.59
Brimbank City	**8,002**	**23.0**	**1.00**

#RR is the ratio of the percentage in the PHA to the percentage for Brimbank City

Regional comparisons

Sunshine is ranked seventh of all SLAs in Melbourne under this indicator of low income households under financial stress from their rental or mortgage commitments; Keilor is ranked fifteenth (Figure 21).

Figure 21: Housing stress, by SLA in Melbourne, 2011



Correlations

There is a very strong correlation at the SLA level across Melbourne between this indicator and many indicators of socioeconomic disadvantage: correlations with the individual indicators of socioeconomic disadvantage were most evident with children living in jobless families and unemployment (both at all ages and for young people).

Correlations with the indicators of health and wellbeing are very strong for self-assessed fair or poor health, high or very high psychological distress and male smokers. Strong correlations were evident for hospitalisations from ambulatory care-sensitive conditions, both for children aged 0 to 14 years and for people aged 15 years and over, indicating relatively poorer access to timely and effective primary health care.

A very strong correlation was found between this indicator and the education and child development indicator of children assessed as being developmentally vulnerable on one or more domains under the AEDC. However, there were relatively low levels of children participating in preschool (very strong inverse correlation) and young people participating in full-time secondary education, and relatively few children developmentally on track in the physical health and wellbeing, and the language and cognitive skills domains of the AEDC in these households (all with strong inverse correlations).

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Yates J, Gabriel M. Housing affordability in Australia. Sydney: Australian Housing and Urban Research Institute (AHURI), 2006.
2. Department of Human Services, Victoria. Rental report, March 2012. Melbourne: Victorian Government, 2012.
3. St Vincent de Paul Society (SVdPS). Don't dream, it's over: housing stress in Australia's private rental market. Canberra: SVdPS, 2007.

No motor vehicle

Ready access to transport provides a link with educational, social and work-related activities. In the 2011 Census, 164,030 householders reported having no motor vehicle at the dwelling (8.4% of dwellings in Victoria).[1] While some of the households in these dwellings may represent more affluent inner city residents, the majority are more likely to be disadvantaged households. While public transport can adequately provide this link for some households, for most, this access is achieved through owning a car. People living in households without a car face many disadvantages in gaining access to jobs, services and recreation, especially if they are in low-density outer suburbia, or in rural or remote areas. The ability to afford to run and maintain a vehicle in reliable condition to meet their transport needs, and the costs of registering and insuring a vehicle are other important factors.

Indicator definition: Comprises people with no motor vehicle garaged or parked at their dwelling on Census night: the data have been age-standardised to remove expected differences between areas in the level of vehicle ownership related to the age of the population.

Key points

- Although the proportion of Brimbank's population without direct access to a motor vehicle on Census night was consistent with that in Melbourne overall, such access was more limited in Sunshine than in Keilor.
- Despite adjusting these data to allow for lower vehicle ownership by older residents, the lack of access at the PHA level to a motor vehicle varied between 1% and 8% of the population.

Geographic variation

The majority of the population in Australia reported having a motor vehicle garaged or parked at their dwelling on Census night, with only 5.4% not having such access (Table 35).

After adjusting for differences in the age of the population in Sunshine and Keilor from the Australian profile, more people in Sunshine had no immediate access to a motor vehicle (6.4% of the population, or 20% more than nationally) compared with fewer people in Keilor (4.0%, 26% fewer).

The rate in Melbourne West was slightly lower, and across Melbourne, it was slightly higher than in Brimbank City.

Table 35: No motor vehicle, Brimbank and comparators, 2011

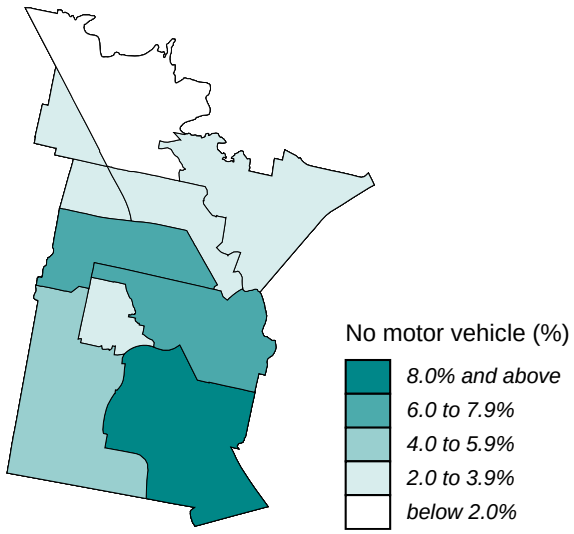
Region	No.	Rate*	RR#
Brimbank - Keilor	**3,292**	**4.0**	**0.74**
Brimbank - Sunshine	**6,163**	**6.4**	**1.20**
Brimbank City	**9,455**	**5.3**	**0.99**
Melbourne - West	*29,567*	*5.0*	*0.93*
Melbourne	*223,371*	*5.5*	*1.03*
Country Victoria	*52,480*	*3.9*	*0.72*
Victoria	*275,851*	*5.1*	*0.95*
Australia	**1,169,321**	**5.4**	**1.00**

*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the rate in the area to the rate for Australia

There is substantial variation in access to a vehicle across Brimbank (Map 17 and Table 36). In Taylors Lakes, only 1.4% of the population did not have access to a motor vehicle garaged or parked at their dwelling on Census night, with similarly low rates in Cairnlea (2.2%) and Keilor Downs (2.5%).

Map 17: No motor vehicle, by PHA in Brimbank, 2011



However, rates were substantially above the Brimbank average in Ardeer - Albion/ Sunshine/ Sunshine West (8.2%, and 55% above the Brimbank rate), St Albans - South/ Sunshine North (7.2%, and 36% above) and St Albans - North/ Kings Park (7.0%, and 32% above).

In Taylors Lakes, only 1.4% of the population did not have access to a motor vehicle garaged or parked at their dwelling on Census night, with similarly low rates in Cairnlea (2.2%) and Keilor Downs (2.5%).

Table 36: No motor vehicle, by PHA in Brimbank, 2011

PHA	No.	Rate*	RR#
Keilor	185	2.2	0.42
Ardeer - Albion/ Sunshine/ Sunshine West	2,805	8.2	1.55
Cairnlea	172	2.2	0.41
Deer Park - Derrimut	924	4.4	0.83
Delahey	263	3.4	0.65
Keilor Downs	315	2.5	0.46
St Albans - North/ Kings Park	2,224	7.0	1.32
St Albans - South/ Sunshine North	2,013	7.2	1.36
Sydenham	322	3.0	0.56
Taylors Lakes	228	1.4	0.27
Brimbank City	**9,455**	**5.3**	**1.00**

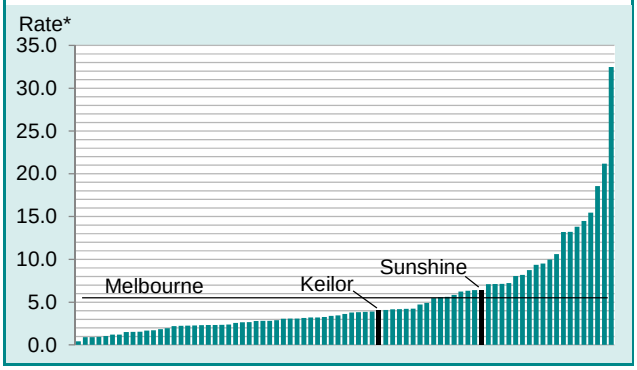
*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

In 2011, the Brimbank City SLAs had proportions around the Melbourne average, above the average in Sunshine (6.4%) and below it in Keilor (4.0%) (Figure 22).

Figure 22: No motor vehicle, by SLA in Melbourne, 2011



*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

Correlations

There was a very strong correlation at the SLA level across Melbourne between this indicator and recent arrivals from NES countries. Strong correlations were also found with unemployed youth, social housing and people working as managers or professionals.

Of the health and wellbeing indicators, there were strong inverse correlations between this indicator and children living with disability, and adult obesity.

There was a very strong inverse correlation between this indicator and people with their highest level of education as an Advanced Diploma, Diploma or Certificate; and a strong inverse correlation with early school leavers.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). 2011 Census QuickStats. Online at http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/0#vehicles (accessed 17 April 2014).

No Internet access at home

A household can be considered to be disadvantaged if it lacks the resources to participate fully in society.[1] Access to the outside world, through a telephone or the Internet, provides a means of communicating with friends and family, as well as services, employers and schools, thereby increasing educational, employment and other opportunities, including social interaction.[2]

Socioeconomic characteristics of households continue to influence the rate of computer and Internet connectivity across Australia. Households which do not have children aged less than 15 years and those that are located in non-metropolitan or regional areas of Australia and/or have lower household incomes are less likely to have a computer and/or access to the Internet.[2] These socioeconomic factors also influence the take-up rate of broadband access (as opposed to dial-up access), in addition to the technical issues regarding service availability in certain locations.

Indicator definition: Comprises people living in dwellings where there is no Internet connection: the data have been age-standardised to remove expected differences between areas in the level of Internet connection related to the age of the population.

Key points

- Almost 40% of the population of Brimbank in 2011 were living in dwellings where there was no Internet connection.
- More than half of the PHAs had a greater proportion of people without an Internet connection at home than was the case for Australia as a whole.

Geographic variation

Almost one in five people (19.5%) in Sunshine reported in the 2011 Census that they did not have an Internet connection in their dwelling; this was 52% above the Australian level (Table 37). The proportion in Keilor was lower (16.0%), but was still markedly higher than the national figure.

The overall level in Brimbank, comprising some 30,480 people, or 17.9% of the population, was higher than in Melbourne West (15.0%), and substantially higher than the Melbourne average (11.4%).

Table 37: No Internet access at home, Brimbank and comparators, 2011

Region	No.	Rate*	RR#
Brimbank - Keilor	**12,797**	**16.0**	**1.25**
Brimbank - Sunshine	**17,683**	**19.5**	**1.52**
Brimbank City	**30,480**	**17.9**	**1.39**
Melbourne - West	*81,203*	*15.0*	*1.17*
Melbourne	*443,275*	*11.4*	*0.89*
Country Victoria	*227,380*	*15.7*	*1.23*
Victoria	*670,655*	*12.6*	*0.98*
Australia	**2,789,109**	**12.9**	**1.00**

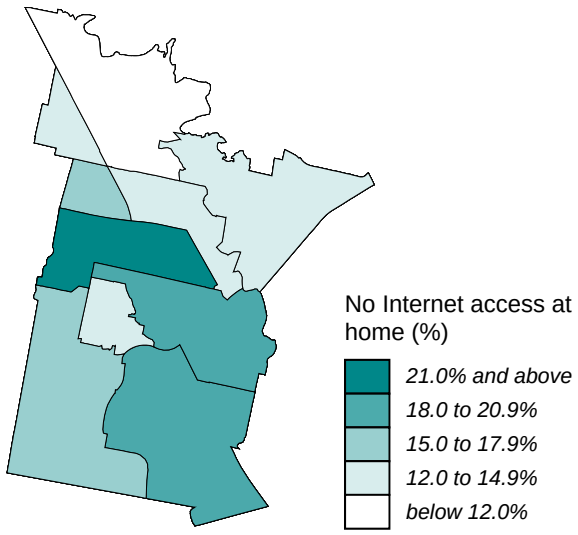
*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the rate in the area to the rate for Australia

Two thirds of dwellings in Brimbank with an Internet connection had a Broadband connection, just (5.3%) below the national average; however, in Melbourne, three quarters of dwellings had a Broadband connection.

Only St Albans - North/ Kings Park and Ardeer - Albion/ Sunshine/ Sunshine West had relatively more people with no Internet connection, when compared with the Brimbank figure, with rates higher by 17% and five per cent, respectively (Map 18 and Table 38).

Map 18: No Internet access at home, by PHA in Brimbank, 2011



However, in six of the ten PHAs in Brimbank, more people were without an Internet connection at home than for Australia overall.

The highest rates were in St Albans - North/ Kings Park (22.9%, or 78% above the Australian rate), St Albans - South/ Sunshine North (20.8%, and 62% above), Ardeer - Albion/ Sunshine/ Sunshine West (20.5%, and 60% above), Deer Park - Derrimut (17.7%, and 38% above), Delahey (16.4%, and 28% above) and Keilor Downs (13.7%, and 7% above).

People in Taylors Lakes (10.4%), Keilor (11.9%), Sydenham (12.3%) and Cairnlea (12.4%) were the most likely to have access to the Internet at home.

Table 38: No Internet access at home, by PHA in Brimbank, 2011

PHA	No.	Rate*	RR#
Keilor	1,085	11.9	0.61
Ardeer - Albion/ Sunshine/ Sunshine West	6,839	20.5	1.05
Cairnlea	809	12.4	0.64
Deer Park - Derrimut	3,222	17.7	0.91
Delahey	1,132	16.4	0.84
Keilor Downs	1,738	13.7	0.70
St Albans - North/ Kings Park	7,162	22.9	1.17
St Albans - South/ Sunshine North	5,776	20.8	1.07
Sydenham	1,134	12.3	0.63
Taylors Lakes	1,586	10.4	0.53
Brimbank City	**30,480**	**17.9**	**1.00**

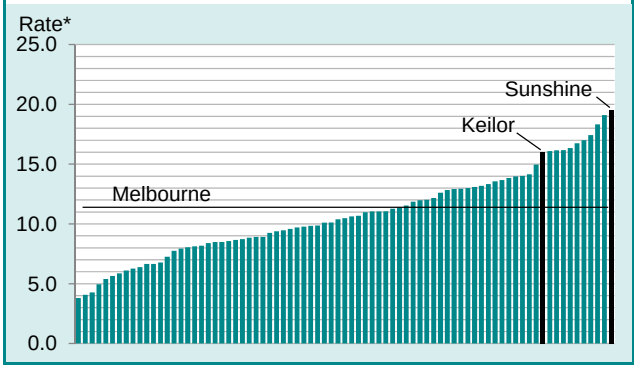
*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the rate in the area to the rate for Australia

Regional comparisons

Almost one in five people in Sunshine lived in dwellings with no Internet connection (19.5%); this was the highest proportion of any SLA in Melbourne (Figure 23).

Figure 23: No Internet access at home, by SLA in Melbourne, 2011



*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

Although Keilor had a lower proportion, with 16% of its population without this access, it was still ranked eleventh among Melbourne's SLAs.

Correlations

This indicator was very strongly correlated at the SLA level across Melbourne with a number of other indicators of socioeconomic disadvantage: children living in jobless families, children in families where the mother has low educational attainment, people working as labourers and people aged 15 years and over living with disability. There was also a very strong inverse correlation between this indicator and young people learning or earning.

Strong correlations were found with the education and child development indicators of children assessed as developmentally vulnerable on one or more domains of the AEDC and more people having left school early (i.e., completed Year 10 or below, or did not go to school). There were relatively lower levels of preschool participation, relatively fewer people with their highest level of education being a Bachelor Degree or higher, and fewer children assessed as developmentally on track in the physical health and wellbeing, and the language and cognitive skills domains of the AEDC.

There was a very strong correlation between this indicator and estimates for people reporting fair or poor health, females with high or very high psychological distress, the prevalence of diabetes mellitus, and male smokers. A strong correlation was also evident for low birthweight babies, women smoking during pregnancy, males with high or very high psychological distress and for people (aged 15 years and over) hospitalised with ambulatory care-sensitive conditions, indicating relatively poorer access to effective primary health care.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Townsend P. Deprivation. Journal of Social Policy 1987; 16: 125-146.
2. Australian Bureau of Statistics (ABS). Household use of information technology, Australia, 2010-11. (ABS Cat. no. 8146.0). Canberra: ABS, 2011.

Voluntary work

Volunteering can improve the health and wellbeing of volunteers by enhancing their support networks, self-esteem and individual quality of life. It is estimated that volunteering (both arranged through an organisation or group, and informal unpaid help and care that occurs within personal networks) directly contributed $16.4 billion in 2006 to the Victorian economy, and also has substantial social benefits.[1]

Almost one fifth (17.8%) of the population reported undertaking voluntary work through an organisation or a group in the year prior to the 2011 Census.[2] These data are useful in the planning of local facilities and services, and in understanding the way individuals and families balance paid work and other important aspects of their lives with such community commitments.

Indicator definition: Comprises people aged 15 years and over who participated in voluntary work for an organisation or group in the twelve months before the 2011 Census, expressed as a proportion of the population aged 15 years and over.

Key points

- Only half of the number of people in Brimbank aged 15 years and over reported that they participated in voluntary work when compared with the Australian average.
- None of the PHAs had a participation rate above the Melbourne average.

Geographic variation

Only half of the number of people in Brimbank reported that they participated in voluntary work (9.0% of the population aged 15 years and over) when compared with the Australian average (17.8%) (Table 39). This rate is also lower than in Melbourne - West (11.5%).

It is of note that the rate of participation in Melbourne is also below the Australian and 'all capital cities' average (of 17.8% and 16.3%, respectively).

At the SLA level, a higher proportion of the population of Keilor reported being involved in voluntary work for an organisation or group in the twelve months before the 2011 Census, at 9.7%, compared with 8.4% of the population aged 15 years and over in Sunshine.

Table 39: Voluntary work, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**6,836**	**9.7**	**0.54**
Brimbank - Sunshine	**6,489**	**8.4**	**0.47**
Brimbank City	**13,325**	**9.0**	**0.51**
Melbourne - West	*55,867*	*11.5*	*0.64*
Melbourne	*516,533*	*15.8*	*0.89*
Country Victoria	*254,915*	*23.4*	*1.32*
Victoria	*772,443*	*17.7*	*1.00*
Australia	**3,090,875**	**17.8**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

None of the rates of participation in voluntary work at the PHA level in Brimbank were above the Melbourne average, with only Keilor (14.1%), Taylors Lakes (11.1%) and Sydenham (11.0%) having more than one in ten people in their populations engaged in this way (Map 19 and Table 40). Participation in the remaining areas varied from 7.4% to 9.8%.

Map 19: Voluntary work, by PHA in Brimbank, 2011

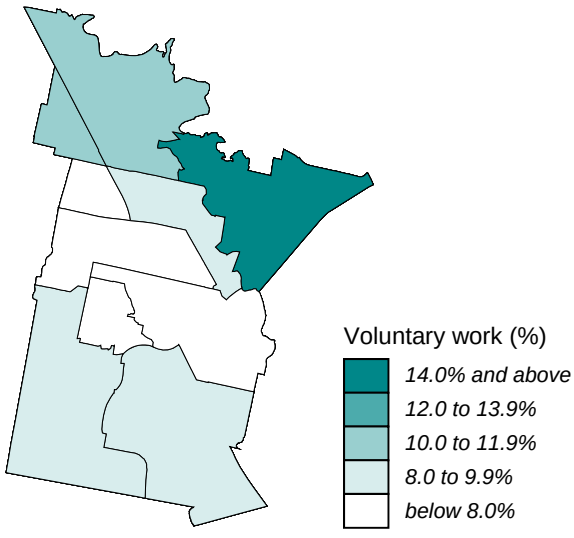


Table 40: Voluntary work, by PHA in Brimbank, 2011

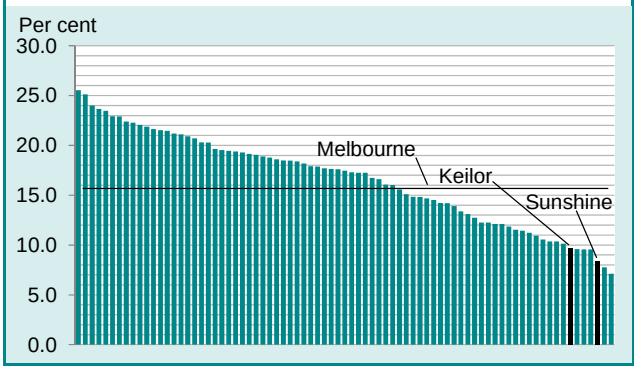
PHA	No.	%	RR#
Keilor	978	14.1	1.56
Ardeer - Albion/ Sunshine/ Sunshine West	2,583	9.5	1.05
Cairnlea	528	7.9	0.88
Deer Park - Derrimut	1,378	8.0	0.88
Delahey	508	7.7	0.85
Keilor Downs	1,107	9.8	1.09
St Albans - North/ Kings Park	1,959	7.4	0.82
St Albans - South/ Sunshine North	1,690	7.7	0.85
Sydenham	986	11.0	1.22
Taylors Lakes	1,608	11.1	1.23
Brimbank City	**13,325**	**9.0**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

As noted above, the populations of both of the Brimbank City SLAs reported relatively low rates of participation in voluntary work, with the rate in Sunshine (8.4%) being the third lowest recorded in Melbourne (Figure 24). The rate in Keilor was only slightly higher (9.7%).

Figure 24: Voluntary work, by SLA in Melbourne, 2011



Correlations

There was a very strong inverse correlation at the SLA level across Melbourne between this indicator and many indicators of socioeconomic disadvantage.

Very strong or strong correlations were found with most of the indicators of education and child development, in particular demonstrating relatively higher levels of preschool attendance, relatively more young people participating in full-time secondary education, more people with their highest level of education being a Bachelor Degree or higher, and relatively more children being developmentally on track in the physical health and wellbeing, and the language and cognitive skills domains of the AEDC.

As expected, given the results described above, relatively fewer children were assessed as being developmentally vulnerable on one or more domains of the AEDC, and there were fewer early school leavers in these areas.

For the health and wellbeing indicators, there were very strong inverse correlations between this indicator and people reporting fair or poor health, and diabetes mellitus. There was a strong inverse correlation with the estimated prevalence of high or very high psychological distress for both males and females.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Ironmonger D. The economic value of volunteering in Victoria. Melbourne: Department of Planning and Community Development, Government of Victoria, 2012.
2. Australian Bureau of Statistics (ABS). 2011 Census QuickStats. Online at http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/0#vehicles (accessed 17 April 2014).

People living with disability

The likelihood of living with disability increases with age. The disability rate among 15 to 24 year olds was 6.6%, and the rate was higher for successively older age groups, with 18% of 45 to 54 year olds, and 31% of 55 to 64 year olds living with disability in 2009.[1] In Victoria in 2006, there were nearly 5,000 parents aged 65 years and older who were living with a son or daughter with a more severe disability.[2]

Personal networks for people with profound or severe disability are particularly important in supporting their integration into the wider community, thereby enhancing their wellbeing and the social fabric of the community. In 2009, in terms of disability group, people with intellectual disability who had profound or severe disability, were less likely to have participated in social clubs and organisations in the previous 12 months than their counterparts who reported other disability types.[3] However, all people with disability were less likely to have participated in social and support groups than people without disability.[3]

Indicator definition: Comprises people living in the community who reported in the 2011 Census a need for assistance which resulted in them being designated as having a profound or severe disability. These 'living in the community' data exclude people living in long-term residential accommodation in nursing homes, in accommodation for the retired or aged (not self-contained), in hostels for the disabled, or in psychiatric hospitals.

Key points

- Almost 730 children aged 0 to 14 years were living with disability in Brimbank.
- Brimbank has a substantially higher rate of people aged 15 years and over living with a disability than the Australian average.

Geographic variation

0 to 14 years of age

Children aged 0 to 14 years and living with disability comprised 2.1% of all children aged 0 to 14 years in Brimbank at the 2011 Census (Table 41). This proportion is consistent with the Melbourne and Australian averages (1.9% and 2.0% respectively).

Of the SLAs, Sunshine had a higher proportion than Keilor, at 2.2% and 2.0% respectively.

As a result, almost 730 children in Brimbank aged 0 to 14 years were estimated to be living with disability at the 2011 Census.

Table 41: Children aged 0 to 14 years living with disability, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**328**	**2.0**	**1.00**
Brimbank - Sunshine	**400**	**2.2**	**1.08**
Brimbank City	**728**	**2.1**	**1.05**
Melbourne - West	2,702	2.1	1.05
Melbourne	14,146	1.9	0.96
Country Victoria	6,431	2.5	1.24
Victoria	20,577	2.1	1.03
Australia	**83,154**	**2.0**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Higher proportions of children living with disability were recorded in the PHAs of St Albans - North/ Kings Park and Sydenham (2.4%), followed by Deer Park - Derrimut (2.3%). In contrast, lower proportions were recorded in Keilor, St Albans - South/ Sunshine North and Taylors Lakes (1.8%) (Map 20 and Table 42).

Map 20: Children aged 0 to 14 years living with disability, by PHA in Brimbank, 2011

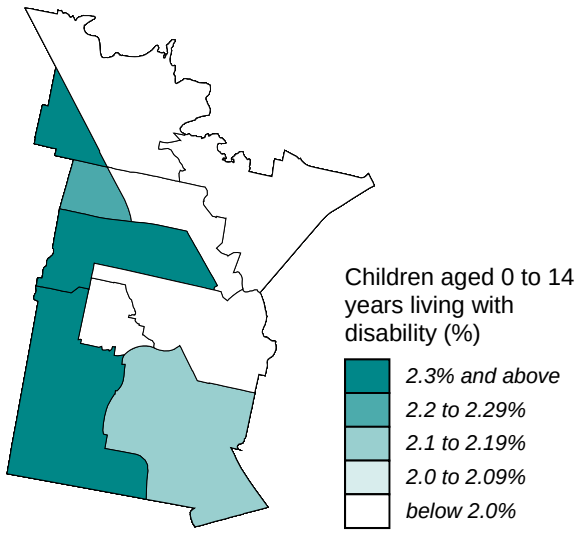


Table 42: Children aged 0 to 14 years living with disability, by PHA in Brimbank, 2011

PHA	No.	%	RR#
Keilor	24	1.8	0.84
Ardeer - Albion/ Sunshine/ Sunshine West	116	2.1	1.00
Cairnlea	42	1.9	0.92
Deer Park - Derrimut	113	2.3	1.10
Delahey	39	2.2	1.03
Keilor Downs	43	1.9	0.92
St Albans - North/ Kings Park	143	2.4	1.13
St Albans - South/ Sunshine North	88	1.8	0.86
Sydenham	62	2.4	1.16
Taylors Lakes	61	1.8	0.85
Brimbank City	**731**	**2.1**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

15 years of age and over

People aged 15 years and over living with disability comprised 6.1% of the Brimbank population (aged 15 years and over) at the 2011 Census (Table 43). This is substantially higher than the Australian average as shown by the rate ratio of 1.40; it is also substantially higher than the Melbourne average.

Of the SLAs, the proportion in Sunshine was higher than in Keilor, with 6.4% and 5.7% respectively.

As a result, almost 9,000 people aged 15 years and over were estimated to be living with disability in Brimbank at the 2011 Census.

Table 43: People aged 15 years and over living with disability, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**4,011**	**5.7**	**1.32**
Brimbank - Sunshine	**4,933**	**6.4**	**1.47**
Brimbank City	**8,944**	**6.1**	**1.40**
Melbourne - West	22,891	4.7	1.08
Melbourne	135,711	4.2	0.97
Country Victoria	55,080	4.8	1.10
Victoria	190,789	4.4	1.01
Australia	**755,054**	**4.4**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Within Brimbank, higher proportions of people aged 15 years and over living with disability were recorded in the PHAs of St Albans - North/ Kings Park (7.9%), St Albans - South/ Sunshine North (7.8%) and Cairnlea (7.3%).

In contrast, markedly lower proportions were recorded in Sydenham (3.4%), Taylors Lake (4.0%), Deer Park - Derrimut (4.2%) and Delahey (4.5%) (Map 21 and Table 44).

Map 21: People aged 15 years and over living with disability, by PHA in Brimbank, 2011

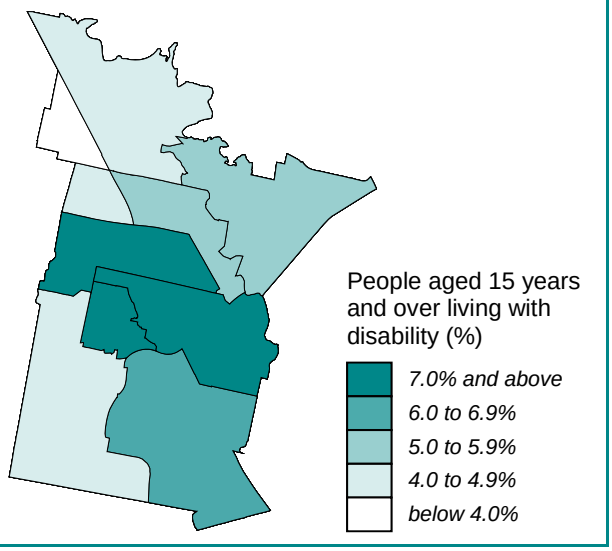


Table 44: People aged 15 years and over living with disability, by PHA in Brimbank, 2011

PHA	No.	%	RR#
Keilor	360	5.1	0.84
Ardeer - Albion/ Sunshine/ Sunshine West	1,780	6.3	1.04
Cairnlea	361	7.3	1.20
Deer Park - Derrimut	164	4.2	0.69
Delahey	920	4.5	0.75
Keilor Downs	666	5.9	0.98
St Albans - North/ Kings Park	2,092	7.9	1.31
St Albans - South/ Sunshine North	1,715	7.8	1.29
Sydenham	309	3.4	0.57
Taylors Lakes	575	4.0	0.65
Brimbank City	**8,942**	**6.0**	**1.00**

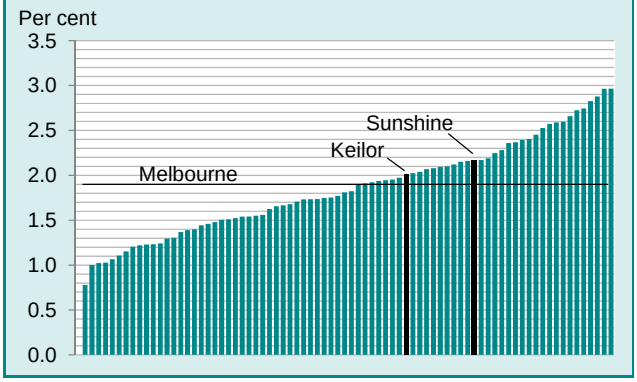
#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

0 to 14 years of age

Both Keilor and Sunshine had proportions (2.0% and 2.2%, respectively) above the Melbourne average (of 1.9%); however, both of these SLAs were ranked just outside of the twenty SLAs with the highest proportions among the 79 Melbourne SLAs (Figure 25).

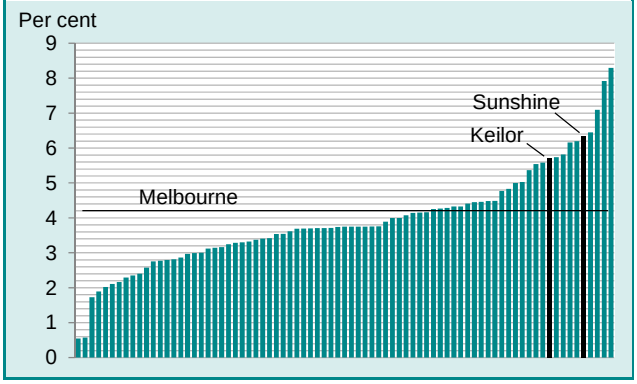
Figure 25: Children aged 0 to 14 years living with disability, by SLA in Melbourne, 2011



15 years of age and over

Across the 79 SLAs in Melbourne, Sunshine ranked fifth highest (6.4%) and Keilor, tenth highest (5.7%), showing that these SLAs are amongst those with the highest proportions across Melbourne (Figure 26). As mentioned earlier, Keilor and Sunshine have proportions well above the Melbourne average of 4.2%.

Figure 26: People aged 15 years and over living with disability, by SLA in Melbourne, 2011



Correlations

0 to 14 years of age

There are strong correlations at the SLA level across Melbourne between children living with disability and children in families where the mother has low educational achievement, and people working as labourers. There was a very strong inverse correlation with high proportions of people working as managers or professionals.

For the health and wellbeing indicators, there were very strong correlations with this indicator and women smoking during pregnancy, female smokers, and obese adults. Male smoking was strongly correlated.

There were also very strong correlations between this indicator and the education indicators for early school leavers (i.e., people had completed Year 10 or below, or did not go to school) and for people with a highest level of education of an Advanced Diploma, Diploma or Certificate; however, relatively fewer people had a Bachelor Degree or higher.

Proportions for these indicators in the Brimbank SLAs are similarly elevated.

15 years of age and over

There was a very strong correlation at the SLA level across Melbourne between this indicator and many indicators of socioeconomic disadvantage; there was a similarly strong correlation with households without Internet access at home.

In the area of health and wellbeing, there were very strong correlations with this indicator and self-assessed fair or poor health, and the estimated prevalence of diabetes mellitus. Strong correlations were also present for hospitalisations for ambulatory care-sensitive conditions, the prevalence of circulatory system diseases, high or very high psychological distress, male smoking, and adult obesity.

Strong correlations were found between this indicator and the education and child development indicators for children assessed as developmentally vulnerable on one or more domains of the AEDC, and people having left school early (i.e., completed Year 10 or below, or did not go to school). In keeping with this finding of the AEDC, relatively fewer children in these areas were assessed as being developmentally on track in the language and cognitive skills domain of the AEDC.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Australian social trends, March quarter 2012. (ABS Cat. no. 4102.0). Canberra: ABS, 2012.
2. Qu L, Edwards B, Gray M. Ageing parent carers of people with a disability. (Report for Carers Victoria). Melbourne: Australian Institute of Family Studies, 2012.
3. Australian Bureau of Statistics (ABS). Social participation of people with a disability, 2011. (ABS Cat. no. 4439.0). Canberra: ABS, 2011.

Health and wellbeing, and education and child development indicators at the Population Health Area level

Low birthweight babies

The weight of a baby at delivery (birthweight) is widely accepted as a key indicator of infant health and can be affected by a number of factors, including the age, size, health and nutritional status of the mother, pre-term birth, and tobacco smoking during pregnancy.[1] A baby is defined as having a low birthweight if born weighing less than 2,500 grams. Low birthweight is generally associated with poorer health outcomes, including increased risk of illness and death, longer periods of hospitalisation after birth, and increased risk of developing significant disabilities.[2] The country of birth of the mother may also be an important risk factor for outcomes such as low birthweight and perinatal mortality.[3]

Indicator definition: Comprises babies (both live born and still-born) weighing less than 2500 grams at birth, expressed as a proportion of all births.

Key points

- There were 667 low birthweight babies born in Brimbank City over the period 2010-12.
- The proportion of low birthweight babies born in Brimbank was 14% higher than that for Australia overall, particularly in Keilor, where it was 23% above the national rate and ranked fourth highest among Melbourne's SLAs.

Geographic variation

For the period 2010-12, the proportion of low birthweight babies born in Brimbank was 14% above the Australian rate, and slightly higher than the rate in Melbourne, which was consistent with the national average (Table 45).

In Keilor, the proportion of low birthweight babies was markedly higher than the Australian rate, being 23% above it; however, the rate in Sunshine was just slightly higher (8%) than the national figure.

Table 45: Low birthweight babies, Brimbank and comparators, 2010-12

Region	No.	%	RR#
Brimbank - Keilor	**289**	**8.1**	**1.23**
Brimbank - Sunshine	**378**	**7.1**	**1.08**
Brimbank City	**667**	**7.5**	**1.14**
Melbourne - West	..	..	..
Melbourne	11,699	6.8	1.03
Country Victoria	3,558	7.1	1.08
Victoria	15,257	6.9	1.05
Australia	**58,788**	**6.6**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Victoria

At the PHA level, Keilor Downs had 35% more low birthweight babies than in Brimbank overall, with 17% more in St Albans - North/ Kings Park (Map 22 and Table 46). The lowest proportions were in Deer Park - Derrimut (22% below the Brimbank figure) and Keilor (19% below).

Map 22: Low birthweight babies, by PHA in Brimbank, 2010-12

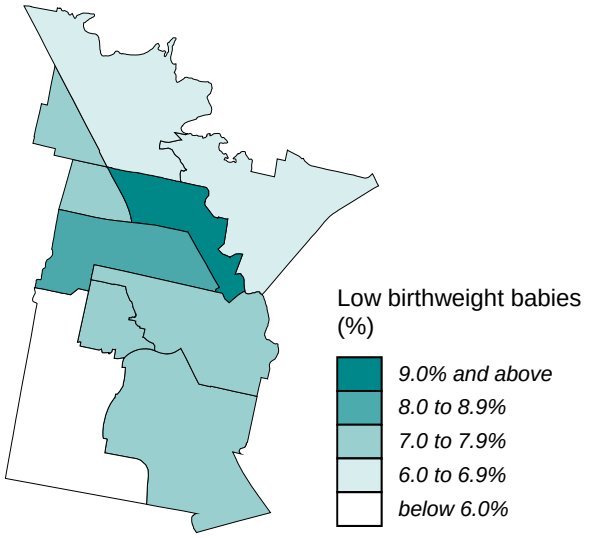


Table 46: Low birthweight babies, by PHA in Brimbank, 2010-12

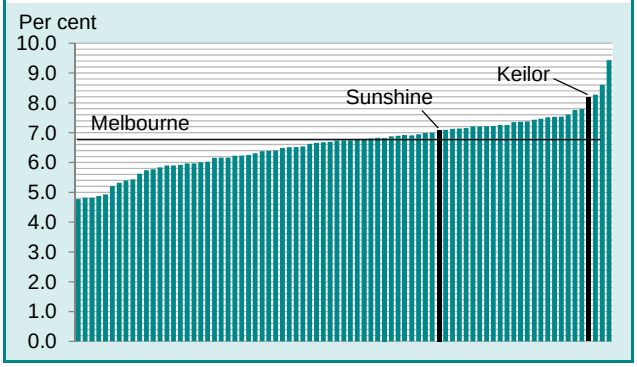
PHA	No.	%	RR#
Keilor	16	6.1	0.81
Ardeer - Albion/ Sunshine/ Sunshine West	131	7.6	1.01
Cairnlea	36	7.5	1.00
Deer Park - Derrimut	92	5.9	0.78
Delahey	24	7.1	0.95
Keilor Downs	48	10.1	1.35
St Albans - North/ Kings Park	126	8.8	1.17
St Albans - South/ Sunshine North	99	7.4	0.99
Sydenham	50	7.9	1.06
Taylors Lakes	28	6.7	0.90
Brimbank City	**650**	**7.5**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Keilor had the fourth highest rate of low birthweight babies born in 2010-12, compared to Melbourne's SLAs (Figure 27). The rate in Sunshine was lower, and just above the Melbourne average.

Figure 27: Low birthweight babies, by SLA in Melbourne, 2010-12



Correlations

There was a strong correlation at the SLA level across Melbourne between this indicator and many indicators of socioeconomic disadvantage: with children living in families where the mother has low educational attainment, people working as labourers, and no access to the Internet at home.

Strong correlations were found with some of the indicators of education and child development, in particular demonstrating relatively higher levels of early school leavers. Strong inverse correlations were apparent for people with their highest level of education being a Bachelor Degree or higher, and people working as managers or professionals.

In the area of health and wellbeing, there were strong correlations between this indicator and people reporting fair or poor health, male smokers and obese females.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Laws PJ, Grayson N, Sullivan EA. Australia's mothers and babies, 2004. (AIHW Cat. no. PER 34). Sydney: Australian Institute of Health and Welfare (AIHW), 2006.
2. Australian Institute of Health and Welfare (AIHW). A picture of Australia's children, 2012. Canberra: AIHW, 2012.
3. Li Z, McNally L, Hilder L, Sullivan EA. Australia's mothers and babies 2009. (Perinatal statistics series no. 25, AIHW Cat. no. PER 52). Sydney: Australian Institute of Health and Welfare (AIHW), 2011.

Women smoking during pregnancy

Maternal smoking during pregnancy is a major risk factor that can adversely affect infant health, increasing the likelihood of low birth weight, pre-term birth, fetal and neonatal death, and SIDS.[1] In 2009 in Australia, one in seven women (14%) smoked during pregnancy, with rates between three and four times as high among Aboriginal and Torres Strait Islander women, and those living in remote or socioeconomically disadvantaged areas.[2]

Indicator definition: Comprises women who reported that they smoked at any time during the first 20 weeks of pregnancy, expressed as a proportion of the number of pregnant women.

Key points

- The proportion of women who smoked during pregnancy in Brimbank City was 34% lower when compared to the national rate; however, the proportion was only slightly lower than that for the Melbourne SLAs.
- None of the PHAs had a rate of women smoking during pregnancy which was at, or above, the Australian average.

Geographic variation

The proportion of women living in Brimbank who reported that they smoked during pregnancy over the period 2010-12 was 34% below the Australian rate, and just lower than the rate for Melbourne (Table 47).

In both Sunshine and Keilor, the proportion of women smoking in pregnancy was markedly lower than the Australian average, being 34% and 33% respectively, below the national rate.

The rate of women smoking in pregnancy in Melbourne was 31% lower than the figure for Australia overall.

Table 47: Women smoking during pregnancy, Brimbank and comparators, 2010-12

Region	No.	%	RR#
Brimbank - Keilor	**315**	**9.2**	**0.67**
Brimbank - Sunshine	**465**	**9.0**	**0.66**
Brimbank City	**780**	**9.0**	**0.66**
Melbourne - West	..	..	..
Melbourne	15,679	9.4	0.69
Country Victoria	8,552	17.5	1.28
Victoria	24,231	11.2	0.82
Australia	**119,868**	**13.7**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Victoria

Consistent with the low overall proportion of women smoking during pregnancy, the highest proportion, of 12.1% in Keilor Downs, was still below the national figure of 13.7%. However, the rate in Keilor Downs was 38% above the Brimbank average (Map 23 and Table 48). The lowest proportions were in Sydenham (35% below the Brimbank rate) and in Taylors Lakes (34% below).

Map 23: Women smoking during pregnancy, by PHA in Brimbank, 2010-12

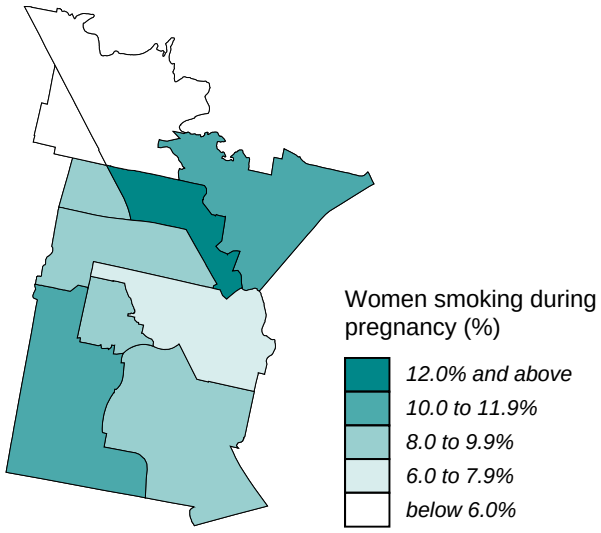


Table 48: Women smoking during pregnancy, by PHA in Brimbank, 2010-12

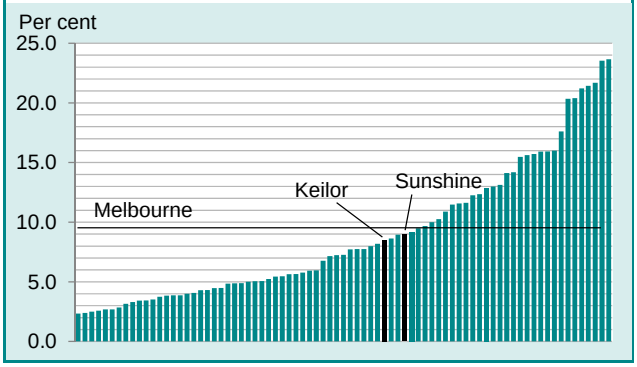
PHA	No.	%	RR#
Keilor	27	10.5	1.19
Ardeer - Albion/ Sunshine/ Sunshine West	147	8.8	0.99
Cairnlea	39	8.4	0.96
Deer Park - Derrimut	168	11.0	1.25
Delahey	31	9.6	1.09
Keilor Downs	55	12.1	1.38
St Albans - North/ Kings Park	123	8.8	1.00
St Albans - South/ Sunshine North	91	7.1	0.80
Sydenham	35	5.7	0.65
Taylors Lakes	23	5.8	0.66
Brimbank City	**739**	**8.8**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Rates for women living in Sunshine and Keilor, who reported smoked during pregnancy, were just below the average rate for Melbourne's 79 SLAs (Figure 28).

Figure 28: Women smoking during pregnancy, by SLA in Melbourne, 2010-12



Correlations

There was a very strong correlation at the SLA level across Melbourne between this indicator and many indicators of socioeconomic disadvantage: with children living in families where the mother has low educational attainment, people working as labourers, and children aged 0 to 14 years living with disability.

Strong correlations were found with some of the indicators of education and child development, in particular demonstrating relatively higher levels of early school leavers; lower rates of earning or learning; and fewer children participating in preschool or developmentally on track in the physical health and wellbeing and language and cognitive skills under the AEDC. Very strong inverse correlations were apparent for people with their highest level of education being a Bachelor Degree or higher, and people working as managers or professionals.

In the area of health and wellbeing, there were very strong correlations between this indicator and male and female smokers, and obese females. Strong correlations were apparent for rates of hospitalisations for ambulatory care-sensitive conditions for children aged 0 to 14 years and people aged 15 years and over, indicating relatively poorer access to adequate and timely primary health care, and for high or very high psychological distress for females.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Laws PJ, Grayson N, Sullivan EA. Smoking and pregnancy. (AIHW Cat. no. PER 33). Sydney: Australian Institute of Health and Welfare (AIHW), 2006.
2. Australian Institute of Health and Welfare (AIHW). A picture of Australia's children, 2012. Canberra: AIHW, 2012.

Ambulatory care-sensitive conditions

Ambulatory care-sensitive conditions (ACSCs) are those conditions for which hospitalisation should be able to be avoided because the disease or condition was prevented from occurring, or because individuals have had access to timely and effective primary care.[1] Variations in hospitalisations from these conditions can be used as an indicator to assess the adequacy, efficiency and quality of primary health care within the broader health system, as preventive care and early disease management is usually delivered in a primary care setting (for example by a general medical practitioner, or at a community health centre). High rates of hospital admissions for ACSCs may provide indirect evidence of problems with patient access to primary health care, inadequate health-related resources, poor health literacy or disconnection with specialist services.[1]

Indicator definition: Hospital admissions resulting from ambulatory care-sensitive conditions per 1,000 population (see Appendix A for details of conditions covered).

Note: As these data were not available for Australia in the age groups shown here, the comparisons made are between Brimbank, and Victoria or Melbourne.

Key points

- Hospitalisations for ACSCs of children aged from 0 to 14 years living in Brimbank are relatively high, and surprisingly so in Brimbank - Keilor, with the second highest rate of all SLAs in Melbourne. At the PHA level, high rates are found in areas of both high and low socioeconomic status.
- Among the population aged 15 years and over, the gap in hospitalisations for these conditions is even greater than for children, with the rate in Keilor being over one and a half times the rate in Sunshine. Rates in two PHAs were over 50% above the average rate for the City.

Geographic variation

0 to 14 years of age

The rate of hospitalisations of children aged 0 to 14 years for ACSCs in Brimbank, of 24.1 admissions per 1,000 population, is 19% above the Victorian rate, and even more elevated when compared with the rate in Melbourne (Table 49). Children in Sunshine had a rate consistent with the Victorian rate; however, the rate in Keilor was markedly higher, being 40% above the Victorian rate.

Rates for these admissions in Melbourne - West and in Melbourne were both 8% below the Victorian rate.

Table 49: ACSCs for people aged 0 to 14 years, Brimbank and comparators, 2011/12

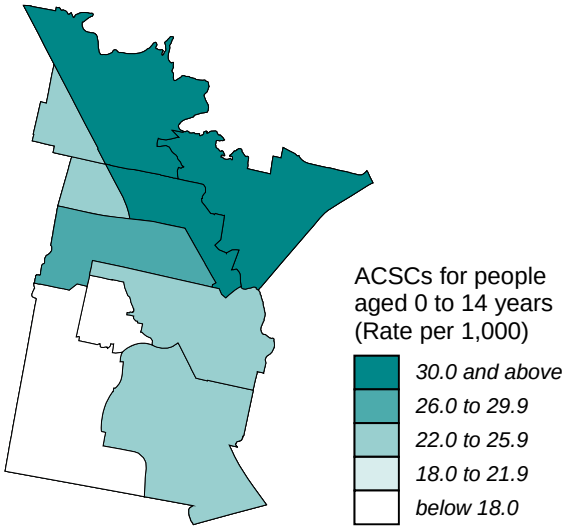
Region	No.	Rate*	RR#
Brimbank - Keilor	**459**	**28.4**	**1.40**
Brimbank - Sunshine	**398**	**20.6**	**1.01**
Brimbank City	**857**	**24.1**	**1.19**
Melbourne - West	*2,807*	*18.6*	*0.92*
Melbourne	*14,103*	*18.6*	*0.92*
Country Victoria	*6,475*	*25.4*	*1.25*
Victoria	*20,578*	*20.3*	*1.00*
Australia	**..**	**..**	**..**

*Indirectly age-standardised rate per 1,000 population

#RR is the ratio of the rate in the area to the rate for Victoria

Rates of hospitalisation for these conditions vary widely across Brimbank (Map 24 and Table 50). Keilor (33.1 admissions per 1,000 population) and Keilor Downs (32.5) had rates of over one third above the City rate, with a high rate also in Taylors Lakes (30.8). Other data provided for this atlas show that children in these PHAs had very high hospitalisation rates for ACSCs for both asthma and dental conditions.

Map 24: ACSCs for people aged 0 to 14 years, by PHA in Brimbank, 2011/12



Cairnlea (16.5) and Deer Park - Derrimut (16.9) had the lowest rates of hospitalisation of children for these ACSCs.

There is no clear association at the PHA level between socioeconomic disadvantage and hospitalisations for ACSCs of children; for example, PHAs with high hospitalisation rates include some with high and some with low IRSD scores, or proportions of social housing or of children in jobless families.

Table 50: ACSCs for people aged 0 to 14 years, by PHA in Brimbank, 2011/12

PHA	No.	Rate*	RR#
Keilor	44	33.1	1.37
Ardeer - Albion/ Sunshine/ Sunshine West	137	23.7	0.98
Cairnlea	37	16.5	0.69
Deer Park - Derrimut	92	16.9	0.70
Delahey	45	25.9	1.07
Keilor Downs	71	32.5	1.35
St Albans - North/ Kings Park	166	26.7	1.11
St Albans - South/ Sunshine North	111	22.5	0.93
Sydenham	61	23.3	0.96
Taylors Lakes	95	30.8	1.28
Brimbank City	**857**	**24.1**	**1.00**

*Indirectly age-standardised rate per 1,000 population

#RR is the ratio of the rate in the area to the rate for Brimbank City

15 years of age and over

Hospitalisation rates for ACSCs of people aged 15 years and over were higher than those for the 0 to 14 year age group, and are markedly different at the SLA level (Table 51). For example, although the rate in Brimbank was just 8% above the Victorian rate, the rate in Keilor was 36% above that rate, and in Sunshine, it was 17% below it. The Keilor rate is, therefore, over one and a half times the rate in Sunshine.

Table 51: ACSCs for people aged 15 years and over, Brimbank and comparators, 2011/12

Region	No.	Rate*	RR#
Brimbank - Keilor	**3,003**	**38.2**	**1.36**
Brimbank - Sunshine	**2,083**	**23.4**	**0.83**
Brimbank City	**5,086**	**30.3**	**1.08**
Melbourne - West	*15,348*	*30.0*	*1.07*
Melbourne	*111,327*	*27.8*	*0.99*
Country Victoria	*44,501*	*28.9*	*1.03*
Victoria	*155,829*	*28.1*	*1.00*
Australia	**..**	**..**	**..**

*Indirectly age-standardised rate per 1,000 population

#RR is the ratio of the rate in the area to the rate for Victoria

The distribution at the PHA level is also markedly different from that seen for children, with the highest rates in Sydenham (47.1 admissions per 1,000 population, and 55% above the Brimbank rate), Delahey (45.9, 51% above) and Taylors Lakes (42.2, 39% above) (Map 25 and Table 52). In Keilor Downs, the rate was 21% above the City rate. Ardeer - Albion/ Sunshine/ Sunshine West and St Albans - South/ Sunshine North both had rates that were one third below the Brimbank rate.

The drivers of these high rates of hospitalisation in Brimbank are also the chronic conditions that are the most prevalent across Australia, namely diabetes, chronic obstructive pulmonary disease and angina.

Map 25: ACSCs for people aged 15 years and over, by PHA in Brimbank, 2011/12

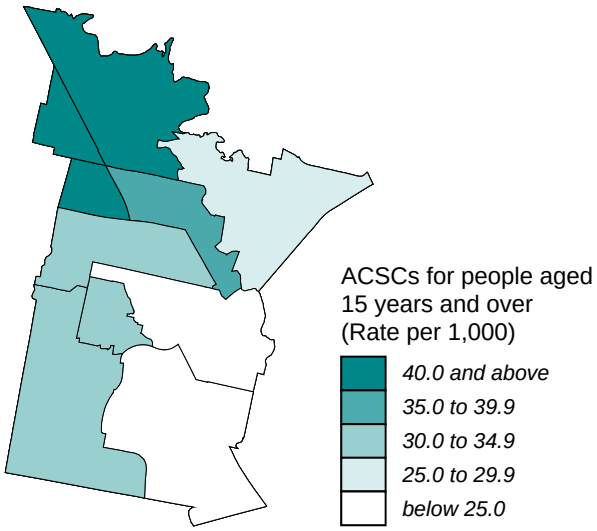


Table 52: ACSCs for people aged 15 years and over, by PHA in Brimbank, 2011/12

PHA	No.	Rate*	RR#
Keilor	287	29.1	0.96
Ardeer - Albion/ Sunshine/ Sunshine West	712	20.4	0.68
Cairnlea	192	34.8	1.15
Deer Park - Derrimut	482	30.3	1.00
Delahey	292	45.9	1.51
Keilor Downs	466	36.7	1.21
St Albans - North/ Kings Park	1,054	33.8	1.12
St Albans - South/ Sunshine North	583	20.5	0.68
Sydenham	398	47.1	1.55
Taylors Lakes	620	42.2	1.39
Brimbank City	**5,086**	**30.3**	**1.00**

*Indirectly age-standardised rate per 1,000 population

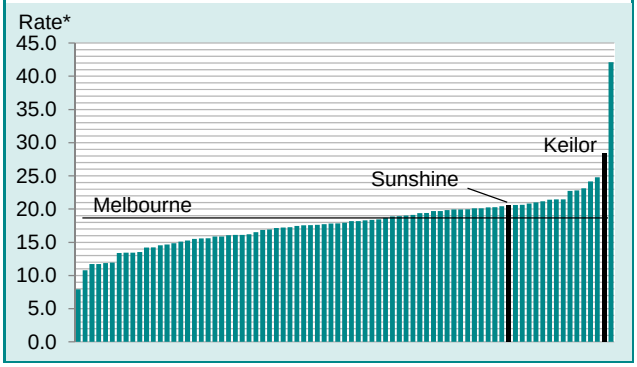
#RR is the ratio of the rate in the area to the rate for Brimbank City

Regional comparisons

0 to 14 years of age

Keilor had the second highest admission rate for children 0 to 14 years hospitalised for ACSCs in 2011/12, after Melbourne - Inner (Figure 29). The rate in Sunshine was much lower, although it was still above the Melbourne average.

Figure 29: ACSCs for people aged 0 to 14 years, by SLA in Melbourne, 2011/12

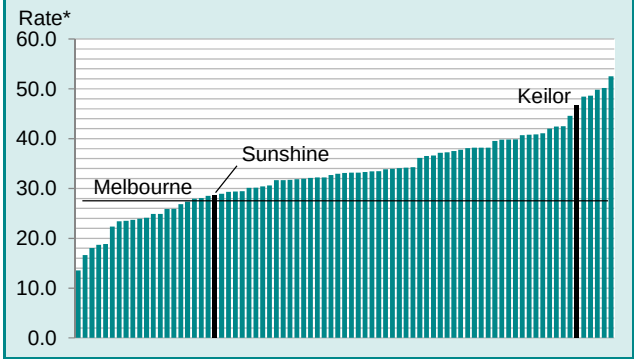


*Indirectly age-standardised rate per 1,000 population

15 years of age and over

Keilor also had a hospitalisation rate for the 15 years and over age group that was well above average, and was ranked sixth among Melbourne's SLAs (Figure 30). The rate in Sunshine was much lower, and close to the Melbourne average.

Figure 30: ACSCs for people aged 15 years and over, by SLA in Melbourne, 2011/12



*Indirectly age-standardised rate per 1,000 population

Correlations

0 to 14 years of age

There are strong correlations at the SLA level across Melbourne between this indicator and relatively high levels of unemployment (at all ages and for young people) and low income households under financial stress from rent or mortgage payments.

15 years of age and over

There was a strong correlation at the SLA level across Melbourne between this indicator and other indicators of socioeconomic disadvantage. These were most evident for homes without Internet access, children living in jobless families and those where the mother had low educational attainment, and low income households under financial stress from rent or mortgage payments. Strong inverse correlations were also found between this indicator and young adults learning or earning, people working as managers or professionals and people who had participated in voluntary work.

Strong correlations were also found with the education and child development indicator for children being developmentally vulnerable on one or more domains of the AEDC. In line with this finding, relatively few children were on track in the language and cognitive skills domain of the AEDC.

In the area of health and wellbeing, there were strong correlations between this indicator and women smoking during pregnancy; self-assessed fair or poor health; high or very high psychological distress; estimated prevalence of diabetes mellitus, and circulatory system diseases; male smokers; and obese females. A strong correlation was also found between this indicator and high rates of hospitalisation of children for ACSCs.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Victorian Department of Health (VDH). Victorian Ambulatory Care Sensitive Conditions study. [Website]. At http://www.health.vic.gov.au/healthstatus/admin/acsc/ (accessed 17 April 2014).

Modelled estimates

The following pages show the estimated prevalence of a number of important indicators of the population's health at the PHA level in Brimbank. These estimates, produced from the Australian Health Survey 2011-13, are for self-assessed health status (reported as 'fair' or 'poor'), psychological distress (reported as 'high' or 'very high'), diabetes, circulatory system diseases, and the health risk factors of smoking and obesity.

These data are not available at the PHA or other small area level from any administrative data source. In order to provide people working at the local and community level with credible estimates of the likely level of a condition or risk factor in their area, PHIDU contracted the Australian Bureau of Statistics to produce the estimates. Further details of the estimates, their production, their limitations and the additional work undertaken by PHIDU to publish them in the form below, are contained in Appendix C.

Although the data were modelled at the PHA (and not at the SLA) level, the PHA data have been allocated to SLAs to produce weighted estimates for all SLAs in Melbourne; these data are shown in the bar chart. This involved splitting data, for some PHAs, between SLAs. However, this was of little significance in Brimbank, as the boundaries of the PHAs in Brimbank very closely approximate the Keilor and Sunshine boundaries.

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

Self-assessed health status reported as 'fair', or 'poor'

Self-assessed health status is commonly used as a proxy measure of actual health status; and how people rate their health is strongly related to their experience of illness and disability.[1,2] This measure is therefore an important indicator of key aspects of quality of life.[3]

Australians generally consider themselves to be healthy. In 2011-12, over half (55%) of Australians aged 15 years and over rated their health as 'very good' or 'excellent', while only 4% rated it as 'poor'.[1] Older Australians generally rated themselves as having poorer health than younger people, with persons aged 75-84 years and 85 years and over recording the highest proportions of fair or poor health, at 31.4% and 37.5% respectively.[1] Men and women showed no differences in the way they assessed their overall health.[1]

Indicator definition: Estimated number of people aged 15 years and over who reported their health as 'fair' or as 'poor' (rather than as 'good', 'very good', or 'excellent'); expressed as an indirectly age-standardised rate per 100 population (aged 15 years and over). These data are modelled estimates – for more information, see Appendix C.

Key points

- Rates for people aged 15 years and over living in Brimbank City who report fair or poor health, are relatively high, with Brimbank - Sunshine and - Keilor, having the third and fifth highest estimated rates respectively, of all SLAs in Melbourne.
- Three of the PHAs had estimated rates of people reporting fair or poor health, which were above the City's average.

Geographic variation

An estimated one in five people in Brimbank, assessed their health as being fair, or poor, 38% above the Australian rate, and even more elevated when compared with the rate in Melbourne (Table 53).

People aged 15 years and over in Sunshine and Keilor had rates of reporting fair or poor health, which were markedly higher than that for Australia overall, being 47% and 29% respectively, above the national rate.

The rate in Melbourne was 5% below the national rate.

Table 53: Self-assessed health status reported as 'fair', or 'poor', Brimbank and comparators, 2011–12

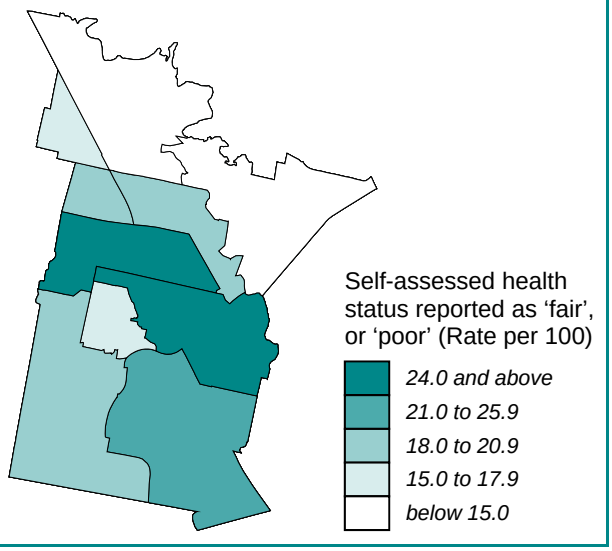
Region	No.	Rate*	RR#
Brimbank - Keilor	**13,706**	**18.9**	**1.29**
Brimbank - Sunshine	**16,821**	**21.6**	**1.47**
Brimbank City	**30,526**	**20.3**	**1.38**
Melbourne - West	*..*	*..*	*..*
Melbourne	*462,660*	*13.9*	*0.95*
Country Victoria	*175,662*	*14.8*	*1.01*
Victoria	*638,323*	*14.1*	*0.96*
Australia	**2,620,662**	**14.6**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

The population reporting their health as fair or poor is highly concentrated, with rates in St Albans - North/ Kings Park (25.5 people per 100 population) and St Albans - South/ Sunshine North (24.0 people per 100 population) elevated by 26% and 18%, respectively above the Brimbank rate (Map 26 and Table 54). That these figures are even more highly elevated when compared with the national rate (14.6%) suggests this is an area of concern.

Map 26: Self-assessed health status reported as 'fair', or 'poor', by PHA in Brimbank, 2011–12



The populations of both Keilor (13.2 people per 100 population) and Taylors Lakes (14.0 people per 100 population) have rates of over 30% below the Brimbank average.

Table 54: Self-assessed health status reported as 'fair', or 'poor', by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	1,054	13.2	0.65
Ardeer - Albion/ Sunshine/ Sunshine West	5,984	21.3	1.05
Cairnlea	1,074	17.4	0.86
Deer Park – Derrimut	3,057	19.1	0.94
Delahey	1,205	18.9	0.93
Keilor Downs	2,133	18.0	0.89
St Albans - North/ Kings Park	7,061	25.5	1.26
St Albans - South/ Sunshine North	5,568	24.0	1.18
Sydenham	1,295	15.8	0.78
Taylors Lakes	2,096	14.0	0.69
Brimbank City	**30,526**	**20.3**	**1.00**

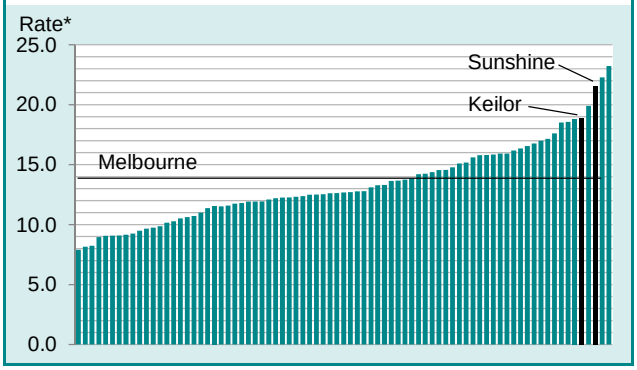
*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Brimbank City

Regional comparisons

Residents of Sunshine and Keilor aged 15 years and over reported estimated rates of fair or poor health, which were well above the average for Melbourne, and ranked third and fifth respectively, among Melbourne's SLAs (Figure 31).

Figure 31: Self-assessed health status reported as 'fair', or 'poor', by SLA in Melbourne, 2011–12



Correlations

There was a very strong correlation at the SLA level across Melbourne between this indicator and many indicators of socioeconomic disadvantage: for children living in jobless families, and in families where the mother has low educational attainment, people working as labourers, adult unemployment, people aged 15 years and over living with disability, no Internet access at home, and low income households under financial stress from rent or mortgage commitments. A very strong inverse correlation was evident for voluntary work.

Very strong correlations were also found with a number of the indicators of education and child development, in particular demonstrating relatively fewer children participating in preschool (a strong inverse correlation), or developmentally on track in the language and cognitive skills under the AEDC. A very strong correlation was therefore apparent for children developmentally vulnerable in one or more domains of the AEDC. A very strong inverse correlation was evident for young people earning or learning.

For the health and wellbeing indicators, there were very strong correlations between this indicator and high or very high psychological distress, male smokers, and the estimated prevalence of diabetes mellitus. Strong correlations were apparent for rates of hospitalisations for ambulatory care-sensitive conditions for people aged 15 years and over, indicating relatively poorer access to adequate and timely primary health care.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Profiles of health, Australia, 2011-13. (ABS Cat. no. 4338.0). Canberra: ABS, 2013.
2. Doiron D, Fiebig DG, Johar M, Suziedelyte A. Does self-assessed health measure health? Sydney, NSW: UTS, 2014.
3. McCallum J, Shadbolt B, Wang D. Self-rated health and survival: a seven-year follow-up study of Australian elderly. American Journal of Public Health 1994; 84(7): 1100-1105.

Prevalence of diabetes mellitus

Diabetes mellitus is a chronic disease characterised by high blood glucose levels resulting from defective insulin production, insulin action or both.[1] There are a number of different forms of diabetes, which may have serious complications, such as cardiovascular, eye and renal diseases.

Aboriginal and Torres Strait Islander peoples and others who are socioeconomically disadvantaged are at higher risk of developing diabetes mellitus, and have much greater hospitalisation and death rates from diabetes than other Australians.[2]

Indicator definition: The prevalence of diabetes mellitus was measured by a glycated haemoglobin test (commonly referred to as HbA1c), derived from tests on blood and samples from volunteering participants aged 18 years and over selected in the AHS: people with an HbA1c level of greater than or equal to 6.5% were recorded as having diabetes mellitus (6.5% is the WHO recommended cut-off point for diabetes). These data, expressed as an indirectly age-standardised rate per 100 population aged 18 years and over, are modelled estimates – see Appendix C.

Key points

- Rates for people aged 18 years and over with diabetes mellitus living in Brimbank are relatively elevated, with Brimbank - Sunshine and - Keilor having the second and fifth highest rates respectively, of all SLAs in Melbourne.
- There were two PHAs in Brimbank, which were at least 25% higher than the City's average for this indicator.

Geographic variation

The estimated prevalence of diabetes mellitus among the population of Brimbank was substantially higher than in Australia overall, with the rate of 8.8 per 100 people being 63% above the national rate (Table 55). When compared with Melbourne, with a rate 6% below the national rate, the gap is even larger.

For people aged 18 years and over, the estimated prevalence of diabetes mellitus in Sunshine was substantially higher than that for Australia overall, being 79% above the national rate.

In Keilor, the prevalence of diabetes mellitus was markedly (47%) higher than the national rate.

Table 55: Prevalence of diabetes mellitus, Brimbank and comparators, 2011–12

Region	No.	Rate*	RR#
Brimbank - Keilor	**5,338**	**7.9**	**1.47**
Brimbank - Sunshine	**6,771**	**9.6**	**1.79**
Brimbank City	**12,109**	**8.8**	**1.63**
Melbourne - West	..	..	..
Melbourne	*154,865*	*5.0*	*0.94*
Country Victoria	*47,331*	*3.9*	*0.73*
Victoria	*202,196*	*4.7*	*0.88*
Australia	**917,838**	**5.4**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

St Albans - North/ Kings Park and St Albans - South/ Sunshine North (both with 11.2 people per 100 population with diabetes mellitus) have the most highly elevated rates when compared with the rate in Brimbank overall. These rates are over twice the national rate (Map 27 and Table 56). Ardeer - Albion/ Sunshine West (9.3 people per 100 population) is the only other PHA with a rate estimated to be above the Brimbank rate.

Keilor (5.8 people per 100 population with diabetes mellitus) and Sydenham (6.0) have rates of around two thirds of the Brimbank average.

Map 27: Prevalence of diabetes mellitus, by PHA in Brimbank, 2011–12

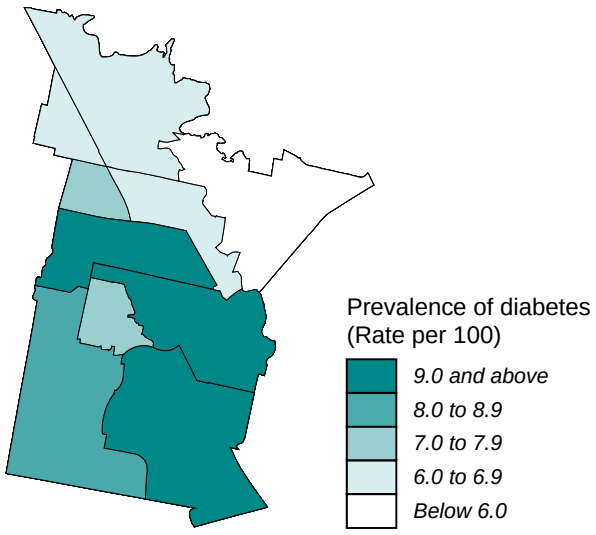


Table 56: Prevalence of diabetes mellitus, by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	485	5.8	0.66
Ardeer - Albion/ Sunshine/ Sunshine West	2,432	9.3	1.06
Cairnlea	357	7.3	0.83
Deer Park – Derrimut	1,064	8.0	0.91
Delahey	396	7.2	0.82
Keilor Downs	750	6.7	0.76
St Albans - North/ Kings Park	2,952	11.2	1.27
St Albans - South/ Sunshine North	2,442	11.2	1.27
Sydenham	392	6.0	0.68
Taylors Lakes	839	6.3	0.71
Brimbank City	**12,109**	**8.8**	**1.00**

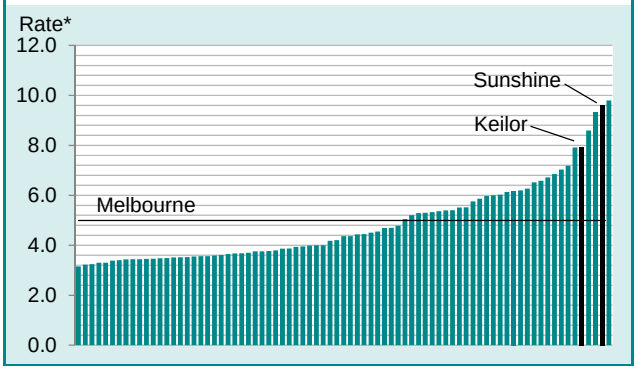
*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Brimbank City

Regional comparisons

The estimated rates of diabetes mellitus for residents aged 18 years and over in Sunshine and Keilor are considerably higher than the average for Melbourne, with Sunshine and Keilor ranked second and fifth respectively, among Melbourne's SLAs (Figure 32).

Figure 32: Prevalence of diabetes mellitus, by SLA in Melbourne, 2011–12



Correlations

There are very strong correlations at the SLA level across Melbourne between this indicator and many other indicators of socioeconomic disadvantage. These were most evident with high proportions of children living in jobless families, people born overseas reporting poor proficiency in English, longer term residents born in NES countries, adult unemployment, no Internet access at home, and people aged 15 years and over living with disability. Strong correlations were found for children in families with mothers with low educational attainment, unemployed youth, people working as labourers, and low income households under financial stress from rent or mortgage payments. Strong inverse correlations were also found with high proportions of the population involved in learning or earning, and female labour force participation.

Strong inverse correlations were also found, with children in these families having relatively lower levels of preschool participation, and fewer children who were developmentally on track in the physical health and wellbeing, and in the language and cognitive skills domains of the AEDC. Not surprisingly, given these findings, relatively more children were developmentally vulnerable on one or more domains of the AEDC.

With respect to health and wellbeing indicators, there was a very strong correlation with self-assessed fair or poor health. Strong correlations were found for estimates of high or very high psychological distress; male smokers; and hospitalisations for ambulatory care-sensitive conditions for people aged 15 years and over, indicating relatively poorer access to adequate and timely primary health care.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. World Health Organization (WHO). Definition, diagnosis and classification of diabetes mellitus and its complications. Part 1: Diagnosis and classification of diabetes mellitus. Geneva: Department of Noncommunicable Disease Surveillance, WHO; 1999.
2. Australian Bureau of Statistics (ABS). Profiles of health, Australia, 2011-13. (ABS Cat. no. 4338.0). Canberra: ABS, 2013.

Prevalence of circulatory system diseases

The heart, blood and blood vessels make up the circulatory system. The leading conditions contributing to circulatory system disease burden and mortality are hypertension (high blood pressure), stroke, and ischaemic heart disease (coronary heart disease). These diseases are mainly caused by a damaged blood supply to the heart, brain and/or limbs, and share a number of risk factors. Behavioural risk factors, such as poor diet and tobacco smoking, contribute significantly to the likelihood of developing a circulatory system disease.[1] Circulatory system diseases are also largely age-related.

In 2011–12, 16.9% of Australians (or around 3.7 million people) reported having a disease of the circulatory system.[2] Indigenous Australians, people of lower socioeconomic status, males over the age of 45 years, and males living in rural and remote areas are at increased risk for developing and dying from circulatory system diseases.[3]

Indicator definition: Estimated number of people aged two years and over who reported that they had heart or circulatory conditions, and who confirmed that a doctor, nurse or other health practitioner had told them they had the condition; expressed as an indirectly age-standardised rate per 100 population aged two years and over. These data are modelled estimates – see Appendix C.

Key points

- For people aged two years and over living in Brimbank City, the prevalence of circulatory system diseases was estimated at slightly below the Australian rate; and consistent with that for Melbourne.
- There is little variation in the prevalence of circulatory system diseases at the PHA level across the City.

Geographic variation

The estimated prevalence of circulatory system diseases for people aged two years and over living in Brimbank, a rate of 16.6 per 100 population, is slightly below the national rate, and consistent with the rate in Melbourne (Table 57).

For Sunshine and Keilor, the estimated prevalence of circulatory system diseases is similar, and slightly lower than that for Australia overall.

Table 57: Prevalence of circulatory system diseases, Brimbank and comparators, 2011–12

Region	No.	Rate*	RR#
Brimbank - Keilor	**13,953**	**16.6**	**0.96**
Brimbank - Sunshine	**14,906**	**16.7**	**0.96**
Brimbank City	**28,858**	**16.6**	**0.96**
Melbourne - West	*..*	*..*	*..*
Melbourne	*642,168*	*16.4*	*0.95*
Country Victoria	*258,228*	*17.1*	*0.99*
Victoria	*900,395*	*16.6*	*0.96*
Australia	**3,721,333**	**17.3**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

There is little variation in the prevalence of circulatory system diseases at the PHA level, with rates estimated to range from five per cent above the Brimbank average in St Albans - North/ Kings Park and Keilor, to nine per cent below in Sydenham (Map 28 and Table 58).

Map 28: Prevalence of circulatory system diseases, by PHA in Brimbank, 2011–12

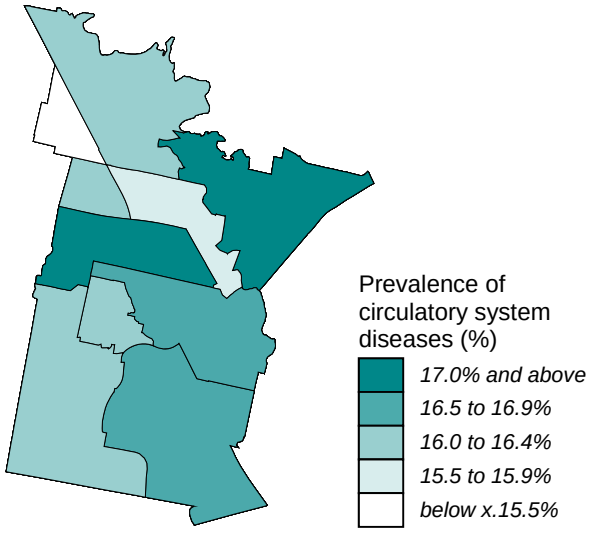


Table 58: Prevalence of circulatory system diseases, by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	1,795	17.4	1.05
Ardeer - Albion/ Sunshine/ Sunshine West	5,533	16.6	1.00
Cairnlea	1,010	16.2	0.98
Deer Park - Derrimut	2,737	16.2	0.97
Delahey	1,111	16.0	0.97
Keilor Downs	2,220	15.8	0.95
St Albans - North/ Kings Park	5,787	17.5	1.05
St Albans - South/ Sunshine North	4,694	16.9	1.02
Sydenham	1,284	15.2	0.91
Taylors Lakes	2,687	16.1	0.97
Brimbank City	**28,858**	**16.6**	**1.00**

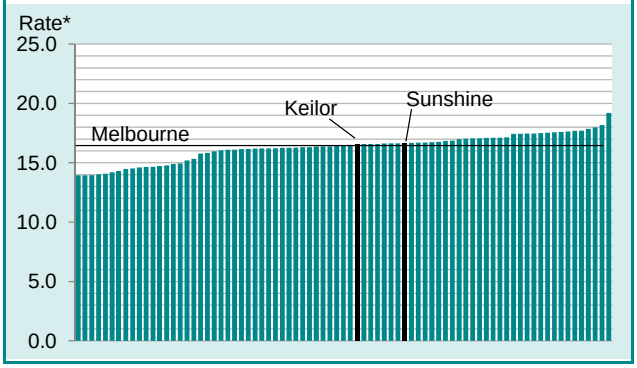
*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Brimbank City

Regional comparisons

For people aged two years and over, the estimated rates of circulatory system diseases in Sunshine and Keilor are both just above the average for Melbourne's SLAs (Figure 33).

Figure 33: Prevalence of circulatory system diseases, by SLA in Melbourne, 2011–12



Correlations

There are strong correlations at the SLA level across Melbourne between this indicator and other indicators of socioeconomic disadvantage.

These were most evident with the indicators for proportions of children living in families with mothers with low educational attainment, people working as labourers, no Internet access at home, and people aged 15 years and over living with disability. Strong inverse correlations were present for young people learning or earning, and voluntary work.

With respect to indicators of education and child development, there were strong correlations for early school leavers, and children developmentally vulnerable on one or more domains of the AEDC. Conversely, strong inverse correlations were found for preschool participation, and the highest level of education being a Bachelor Degree or higher.

With respect to health and wellbeing indicators, there was a strong correlation with those for women smoking in pregnancy, self-assessed fair or poor health, male and female smokers, and obese females. A strong correlation with hospitalisations for ambulatory care-sensitive conditions for people aged 15 years and over is likely to indicate relatively poorer access to adequate and timely primary health care.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Institute of Health and Welfare (AIHW). Australia's health 2010. (AIHW Cat. no. AUS 122). Canberra: AIHW, 2010.
2. Australian Bureau of Statistics (ABS). Australian Health Survey: Health service usage and health related actions, 2011-12. (ABS Cat. no. 4364.0.55.002). Canberra: ABS, 2013.
3. Australian Institute of Health and Welfare (AIHW). Socioeconomic inequalities in cardiovascular disease in Australia: current picture and trends since 1992. (AIHW Cat. no. AUS 74.) Canberra: AIHW, 2006.

population), Taylors Lakes (9.3 males per 100 population) and Keilor (9.6 males per 100 population) all have rates markedly below the Brimbank average.

Table 60: High or very high psychological distress (males), by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	327	9.6	0.80
Ardeer - Albion/ Sunshine/ Sunshine West	1,940	14.0	1.17
Cairnlea	356	10.2	0.85
Deer Park – Derrimut	1,072	12.0	1.00
Delahey	364	11.2	0.93
Keilor Downs	487	8.5	0.71
St Albans - North/ Kings Park	1,760	13.1	1.09
St Albans - South/ Sunshine North	1,546	14.0	1.17
Sydenham	465	10.3	0.86
Taylors Lakes	717	9.3	0.78
Brimbank City	**9,036**	**12.0**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Brimbank City

Females

The estimated rate of high or very high psychological distress among females in Brimbank, a rate of 14.7 females per 100 population, was 16% above the Australian rate. The Brimbank rate was notably elevated when compared with the rate in Melbourne overall (Table 61).

Table 61: High or very high psychological distress (females), Brimbank and comparators, 2011–12

Region	No.	Rate*	RR#
Brimbank - Keilor	**4,851**	**13.3**	**1.05**
Brimbank - Sunshine	**6,308**	**16.0**	**1.26**
Brimbank City	**11,159**	**14.7**	**1.16**
Melbourne - West	**..**	**..**	**..**
Melbourne	*205,471*	*12.3*	*0.97*
Country Victoria	*69,486*	*13.3*	*1.04*
Victoria	*274,957*	*12.5*	*0.99*
Australia	**1,097,824**	**12.7**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

Of note is the rate for females aged 18 years and over in Sunshine, where 16.0 females per 100 population were estimated to have high or very high psychological distress, markedly above the national rate.

Seven of the ten PHAs in Brimbank have rates of high or very high psychological distress for females aged 18 years and over which are above the national rate (Map 30 and Table 62). As such, only three PHAs have rates notably above the Brimbank rate; they are the PHAs of St Albans - South/ Sunshine North (17.2 females per 100 population), Ardeer - Albion/ Sunshine/ Sunshine West (16.6) and St Albans - North/ Kings Park (16.1).

Map 30: High or very high psychological distress (females), by PHA in Brimbank, 2011–12

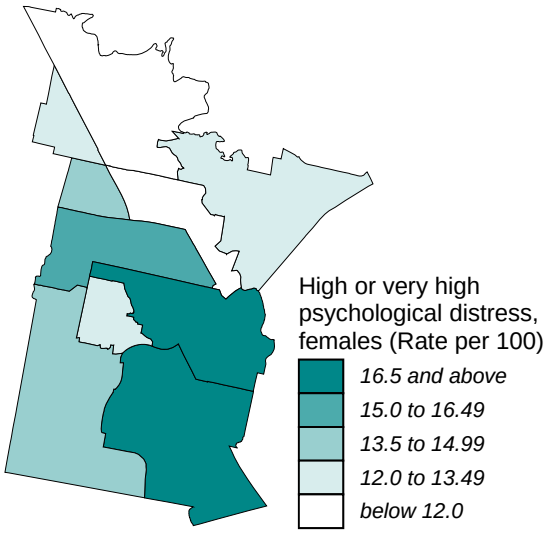


Table 62: High or very high psychological distress (females), by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	429	12.0	0.82
Ardeer - Albion/ Sunshine/ Sunshine West	2,240	16.6	1.13
Cairnlea	449	12.7	0.86
Deer Park – Derrimut	1,333	14.8	1.01
Delahey	497	14.5	0.99
Keilor Downs	643	10.9	0.74
St Albans - North/ Kings Park	2,190	16.1	1.09
St Albans - South/ Sunshine North	1,932	17.2	1.17
Sydenham	579	12.7	0.86
Taylors Lakes	865	11.4	0.78
Brimbank City	**11,159**	**14.7**	**1.00**

*Indirectly age-standardised rate per 100 population

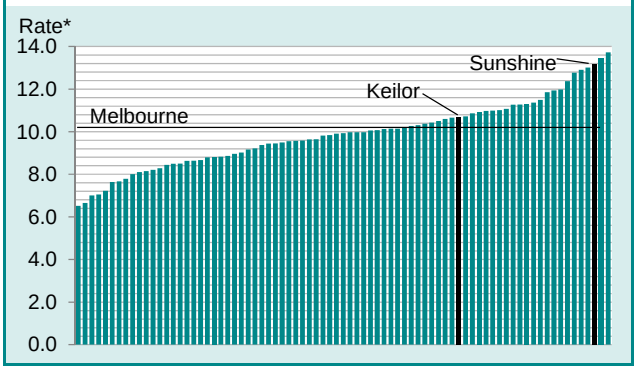
#RR is the ratio of the rate in the area to the rate for Brimbank City

Regional comparisons

Males

The level of high or very high psychological distress among males aged 18 years and over living in Sunshine was above the average for Melbourne, with Sunshine ranked third among Melbourne's SLAs; the rate in Keilor was slightly above the average (Figure 34).

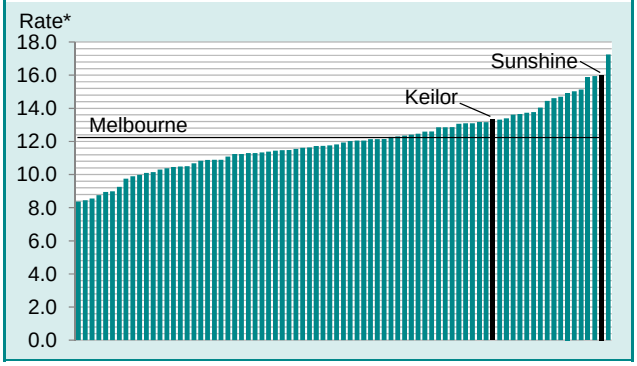
Figure 34: High or very high psychological distress (males), by SLA in Melbourne, 2011–12



Females

For females aged 18 years and over, the estimated rate of psychological distress in Sunshine was well above the average for Melbourne, being ranked second among Melbourne's SLAs; the rate in Keilor was slightly above the average (Figure 35).

Figure 35: High or very high psychological distress (females), by SLA in Melbourne, 2011–12



Correlations

There are strong correlations at the SLA level across Melbourne between this indicator and other indicators of socioeconomic disadvantage.

Correlations with the estimated prevalence of high or very high psychological distress were very strong with the rates of children living in jobless families, unemployment and low income households under financial stress from rent or mortgage payments. Very strong correlations for females and strong correlations for males were evident with the proportions of children in families with mothers with low educational attainment, people working as labourers, and no Internet access at home. There was a very strong inverse correlation (for both males and females with high or very high psychological distress) with young people learning or earning, and strong inverse correlations with people working as managers or professionals (for females), and with people undertaking voluntary work (for both males and females).

For females, strong correlations were also found with a number of the indicators of education and child development, in particular demonstrating relatively higher participation in vocational education and training, and high rates of early school leavers. There were strong or very strong correlations for both males and females with high or very high psychological distress with poor outcomes under the AEDC, indicating that relatively fewer children were on track in the health and wellbeing, or language and cognitive skills domains; and relatively more were vulnerable on one or more domains.

For the health and wellbeing indicators, there were very strong correlations between this indicator and fair or poor self-assessed health. Strong correlations were apparent for women smoking during pregnancy (with females with high or very high psychological distress); for the estimated prevalence of diabetes mellitus or circulatory system diseases (for both males and females); and for rates of hospitalisations for ambulatory care-sensitive conditions for people aged 15 years and over (males and females) and 0 to 14 years (males), indicating relatively poorer access to adequate and timely primary health care.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Coombs T. Australian Mental Health Outcomes and Classification Network: Kessler-10 Training Manual. Sydney: NSW Institute of Psychiatry, 2005.
2. Australian Bureau of Statistics (ABS). National Health Survey: users' guide - electronic publication, 2007-08. (ABS Cat. no. 4364.0). Canberra: ABS, 2009.
3. Australian Bureau of Statistics (ABS). Profiles of health, Australia, 2011-13. (ABS Cat. no. 4338.0). Canberra: ABS, 2013.

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Smoking

Tobacco smoking is recognised as the largest single preventable cause of death and disease in Australia.[1] It is associated with an increased risk of heart disease, stroke, cancer, emphysema, bronchitis, asthma, renal disease and eye disease.[2] In 2011-12, the Australian Health Survey estimated that approximately eight million Australian adults aged 18 years and over had smoked at some time in their lives; and 3.1 million were current smokers, with the vast majority (90%) of these people smoking daily.[1] The negative effects of passive smoking indicate that the risks to health of smoking affect more than just the smoker. Passive smoking increases the risk of heart disease, asthma, and some cancers. It may also increase the risk of Sudden Infant Death Syndrome (SIDS), and may predispose children to allergic sensitisation.[3] Rates of smoking differ between males and females and across age groups; and between 2001 and 2011-12, overall rates of smoking decreased for both males and females. In 2011-12, 20.4% of males and 16.3% of females aged 18 years and over were current smokers.[4]

Indicator definition: Estimated number of people aged 18 years and over who reported being a current smoker; expressed as an indirectly age-standardised rate per 100 population aged 18 years and over (see Appendix A). These data are modelled estimates – see Appendix C.

Key points

- One in four adult males and about one in seven females in Brimbank City are estimated to be current smokers, representing rates which are 26% higher and 8% lower, respectively than the national rate.
- There is some variation at the PHA level for male smokers, but little for female smokers.

Geographic variation

Males

One quarter of the male population in Brimbank aged 18 years and over was estimated to smoke cigarettes, a rate that is 26% above the national average, and higher than the level in Melbourne (Table 63).

For adult males living in Sunshine and Keilor, the estimated prevalence of smoking is markedly higher than that for Australia overall, being 34% and 17% higher respectively, than the national rate.

Table 63: Male smokers, Brimbank and comparators, 2011–12

Region	No.	Rate*	RR#
Brimbank - Keilor	**8,629**	**23.7**	**1.17**
Brimbank - Sunshine	**11,094**	**27.1**	**1.34**
Brimbank City	**19,723**	**25.5**	**1.26**
Melbourne - West	*..*	*..*	*..*
Melbourne	*324,160*	*19.8*	*0.98*
Country Victoria	*123,591*	*25.2*	*1.24*
Victoria	*447,751*	*21.0*	*1.04*
Australia	**1,702,898**	**20.3**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

St Albans - South/ Sunshine North (with 28.8 male smokers per 100 population), St Albans - North/ Kings Park (28.4), Ardeer - Albion/ Sunshine West (27.8) and Deer Park - Derrimut (25.9) had male smoking rates above the Brimbank average (Map 31 and Table 64). As noted, the Brimbank City rate is already substantially above the Australian and Melbourne averages; this indicates the high levels of smoking among males in these areas.

Keilor and Taylors Lakes had the lowest rates, with 19.6 and 19.5 male smokers per 100 population, respectively.

Map 31: Male smokers, by PHA in Brimbank, 2011–12

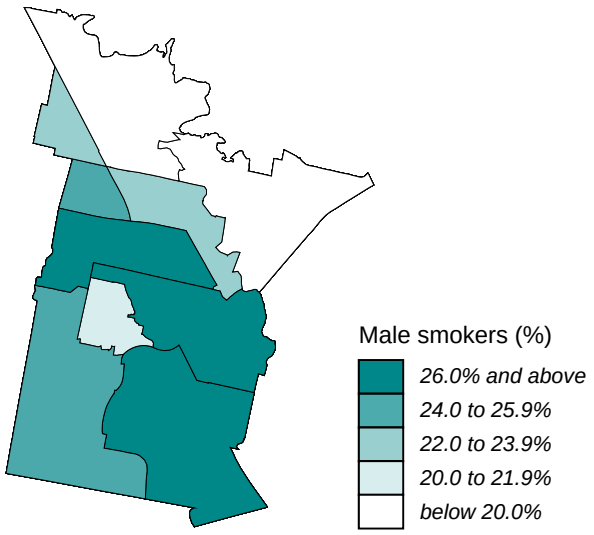


Table 64: Male smokers, by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	627	19.5	0.77
Ardeer - Albion/ Sunshine/ Sunshine West	3,969	27.8	1.09
Cairnlea	790	21.2	0.83
Deer Park – Derrimut	2,500	25.9	1.02
Delahey	852	25.3	0.99
Keilor Downs	1,283	22.6	0.89
St Albans - North/ Kings Park	3,901	28.4	1.11
St Albans - South/ Sunshine North	3,206	28.8	1.13
Sydenham	1,076	22.3	0.87
Taylors Lakes	1,519	19.6	0.77
Brimbank City	**19,723**	**25.5**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Brimbank City

Females

The female smoking rate is much lower than the male rate, with 14.5 females aged 18 years and over per 100 population in Brimbank estimated to smoke cigarettes (Table 65). This rate is consistent with that in Melbourne.

For adult females living in Keilor and Sunshine, the estimated rates of smoking are slightly lower than that for Australia overall, being 9% and 7% lower respectively, than the national rate.

Table 65: Female smokers, Brimbank and comparators, 2011–12

Region	No.	Rate*	RR#
Brimbank - Keilor	**5,345**	**14.3**	**0.91**
Brimbank - Sunshine	**5,878**	**14.6**	**0.93**
Brimbank City	**11,222**	**14.5**	**0.92**
Melbourne - West	*..*	*..*	*..*
Melbourne	*242,028*	*14.3*	*0.91*
Country Victoria	*101,708*	*20.2*	*1.28*
Victoria	*343,735*	*15.7*	*1.00*
Australia	**1,356,339**	**15.7**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

None of the PHAs had highly elevated female smoking rates, with the highest in Ardeer - Albion/ Sunshine West (15.6 female smokers per 100 population), Deer Park - Derrimut (15.3), and Delahey and St Albans - North/ Kings Park (both 15.2) (Map 32 and Table 66).

Taylors Lakes had the lowest rate, with 12.9 female smokers per 100 population.

Map 32: Female smokers, by PHA in Brimbank, 2011–12

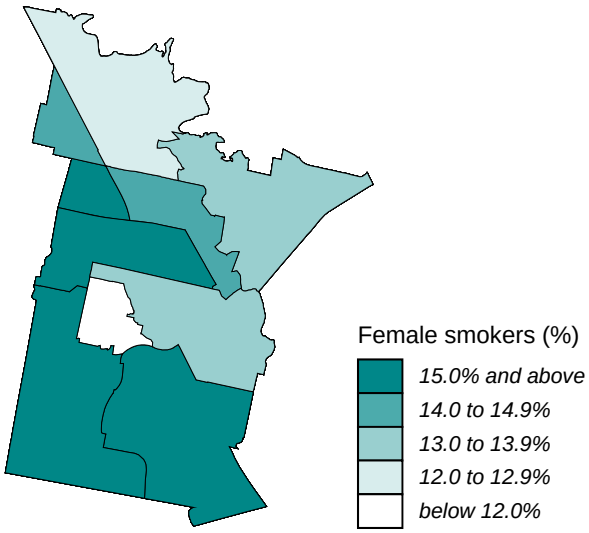


Table 66: Female smokers, by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	473	13.9	0.96
Ardeer - Albion/ Sunshine/ Sunshine West	2,090	15.6	1.08
Cairnlea	435	11.3	0.78
Deer Park - Derrimut	1,479	15.3	1.06
Delahey	545	15.2	1.05
Keilor Downs	882	14.7	1.02
St Albans - North/ Kings Park	2,082	15.2	1.05
St Albans - South/ Sunshine North	1,538	13.8	0.96
Sydenham	686	14.1	0.97
Taylors Lakes	1,012	12.9	0.89
Brimbank City	**11,222**	**14.5**	**1.00**

*Indirectly age-standardised rate per 100 population

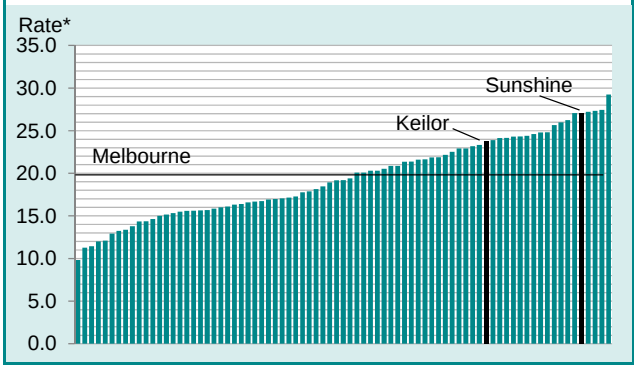
#RR is the ratio of the rate in the area to the rate for Brimbank City

Regional comparisons

Males

For males aged 18 years and over, the estimated rates of smoking in Sunshine and Keilor are both above the average for Melbourne, with Sunshine ranked fifth among Melbourne's SLAs (Figure 36, overleaf).

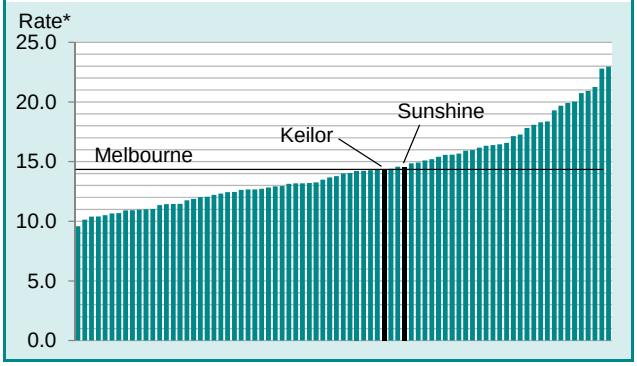
Figure 36: Male smokers, by SLA in Melbourne, 2011–12



Females

For females aged 18 years and over, the estimated rates of smoking in Sunshine and Keilor are both close to the average for Melbourne's SLAs (Figure 37).

Figure 37: Female smokers, by SLA in Melbourne, 2011–12



Correlations

There are different strength correlations for males and females at the SLA level across Melbourne between this indicator and other indicators of socioeconomic disadvantage.

For male smokers, there were very strong correlations with children living in jobless families and those with mothers with low educational attainment, people working as labourers, early school leavers, and no Internet access at home. Strong correlations were recorded with Aboriginal and Torres Strait Islander peoples, low income households under financial stress from rent or mortgage payments, and people living with disability.

Strong or very strong correlations were also found with the indicators for women smoking in pregnancy, hospitalisations for ambulatory care-sensitive conditions, self-assessed fair or poor health, estimated prevalence of diabetes mellitus and circulatory system disease, female smokers, and obesity.

For female smokers, correlations were very strong with the rates of children in families with mothers with low educational attainment, Aboriginal and Torres Strait Islander peoples, early school leavers, and children living with disability. Very strong inverse correlations were found for people working as managers or professionals.

There were also very strong correlations with the health indicators for women smoking in pregnancy, male smokers, and female obesity; and strong correlations with the estimated prevalence of diabetes mellitus and of circulatory system diseases, and obese males.

In the education and child development indicators, very strong inverse correlations were present for male smokers and young people learning or earning, young people participating in full-time secondary education, preschool participation, highest level of education being a Bachelor Degree or higher, and children developmentally on track in one or more domains of the AEDC. For female smokers, a very strong inverse correlation was present for the highest level of education being a Bachelor Degree or higher; and strong inverse correlations for children developmentally on track in language and cognitive skills under the AEDC.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Australian Health Survey: Health service usage and health related actions, 2011-12. (ABS Cat. no. 4364.0.55.002). Canberra: ABS, 2013.
2. Australian Medical Association (AMA). Tobacco smoking - position statement, November 2005. [Online resource]. At https://ama.com.au/position-statement/tobacco-smoking-2005 (accessed 29 July 2014).
3. National Public Health Partnership (NPHP). National response to passive smoking in enclosed places and workplaces: a background paper. Canberra: NPHP, 2000.
4. Australian Bureau of Statistics (ABS). Gender indicators, Australia. (ABS Cat. no. 4125.0). Canberra: ABS, 2013.

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Obesity

Being obese has significant health, social and economic impacts, and is closely related to lack of exercise and to diet.[1] Obesity increases the risk of developing a range of health conditions, including coronary heart disease, type 2 diabetes, some cancers, knee and hip problems, and sleep apnoea.[1] In 2011–12, more than one in four adult Australians were obese.[2] Rates of obesity were the same for men and women (both 27.5%). The proportion of people who are obese has increased across all age groups over time, from 18.7% in 1995 to 27.5% in 2011-12.[2]

Indicator definition: Estimated number of people aged 18 years and over who were assessed as being obese, based on their measured height and weight; expressed as an indirectly age-standardised rate per 100 population aged 18 years and over. These data are modelled estimates – see Appendix C.

Note: Obesity is classified as having a Body Mass Index (BMI) of 30 and greater: the BMI was calculated from measured height and weight information and grouped to allow reporting against both the World Health Organization and the National Health and Medical Research Council guidelines.

Key points

- One in four adult males and almost one in three adult females are estimated to be obese in Brimbank City. These reflect rates which are 6% below and 18% above respectively, the national rate.
- At the PHA level, there is little variation in the extent of male obesity; but considerable variation in female obesity, with the highest rate estimated in St Albans - North/ Kings Park (28% above the Brimbank City rate).

Geographic variation

Males

One quarter of the male population in Brimbank aged 18 years and over was estimated to be obese, a rate that is 6% below the national average, but higher than the rate in Melbourne (Table 67).

For adult males living in Sunshine and Keilor, the estimated prevalence of obesity is slightly lower than that for Australia overall, being 7% and 6% lower respectively, than the national rate.

Table 67: Obese males, Brimbank and comparators, 2011–12

Region	No.	Rate*	RR#
Brimbank - Keilor	**7,537**	**25.9**	**0.94**
Brimbank - Sunshine	**8,127**	**25.7**	**0.93**
Brimbank City	**15,664**	**25.8**	**0.94**
Melbourne - West	*..*	*..*	*..*
Melbourne	*308,260*	*23.7*	*0.86*
Country Victoria	*116,737*	*26.7*	*0.97*
Victoria	*424,996*	*24.5*	*0.89*
Australia	**2,007,156**	**27.5**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

There is little variation in the extent of obesity among males aged 18 years and over at the PHA level in Brimbank, with rates varying by no more than 4% from the average for the City (Map 33 and Table 68).

Map 33: Obese males, by PHA in Brimbank, 2011–12

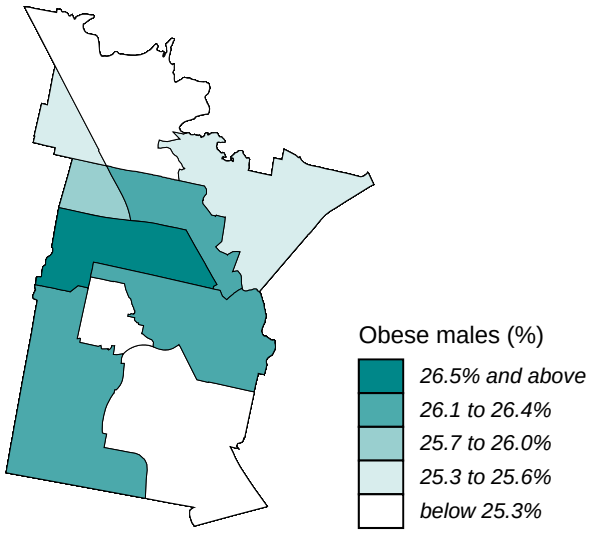


Table 68: Obese males, by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	736	25.4	0.98
Ardeer - Albion/ Sunshine/ Sunshine West	2,799	25.1	0.97
Cairnlea	689	25.1	0.97
Deer Park – Derrimut	1,831	26.1	1.01
Delahey	667	25.9	1.00
Keilor Downs	1,223	26.2	1.02
St Albans - North/ Kings Park	2,954	26.7	1.04
St Albans - South/ Sunshine North	2,333	26.1	1.01
Sydenham	886	25.4	0.98
Taylors Lakes	1,546	25.1	0.97
Brimbank City	**15,664**	**25.8**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Brimbank City

Females

Almost one third (32.6%) of the female population in Brimbank aged 18 years and over were estimated to be obese (Table 69). This was 18% above Australian rate (27.5%), and markedly above the Melbourne rate, of 25.3%.

The rates in Keilor and Sunshine were consistent with the level for the City overall, at 32.0% and 33.2%, respectively.

Table 69: Obese females, Brimbank and comparators, 2011–12

Region	No.	Rate*	RR#
Brimbank - Keilor	**9,005**	**32.0**	**1.16**
Brimbank - Sunshine	**9,859**	**33.2**	**1.21**
Brimbank City	**18,864**	**32.6**	**1.18**
Melbourne - West	..	..	..
Melbourne	*324,053*	*25.3*	*0.92*
Country Victoria	*139,939*	*32.9*	*1.19*
Victoria	*463,992*	*27.2*	*0.99*
Australia	**1,940,380**	**27.5**	**1.00**

*Indirectly age-standardised rate per 100 population

#RR is the ratio of the rate in the area to the rate for Australia

In contrast to the situation for males, obesity among adult females in Brimbank varied markedly between the PHAs (Map 34 and Table 70).

The highest rate of obesity was estimated for females in St Albans - North/ Kings Park (28% above the Brimbank City rate), and the lowest rates were estimated for Keilor (31% below the City rate), and Cairnlea (21% below).

Map 34: Obese females, by PHA in Brimbank, 2011–12

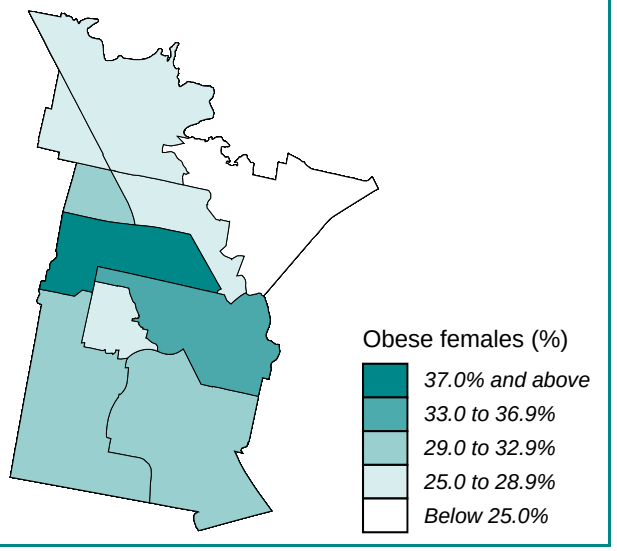


Table 70: Obese females, by PHA in Brimbank, 2011–12

PHA	No.	Rate*	RR#
Keilor	662	22.4	0.69
Ardeer - Albion/ Sunshine/ Sunshine West	3,369	32.7	1.00
Cairnlea	663	25.8	0.79
Deer Park – Derrimut	2,071	31.8	0.98
Delahey	828	32.0	0.98
Keilor Downs	1,228	26.7	0.82
St Albans - North/ Kings Park	4,401	41.6	1.28
St Albans - South/ Sunshine North	3,048	35.3	1.08
Sydenham	918	27.7	0.85
Taylors Lakes	1,676	28.8	0.88
Brimbank City	**18,864**	**32.6**	**1.00**

*Indirectly age-standardised rate per 100 population

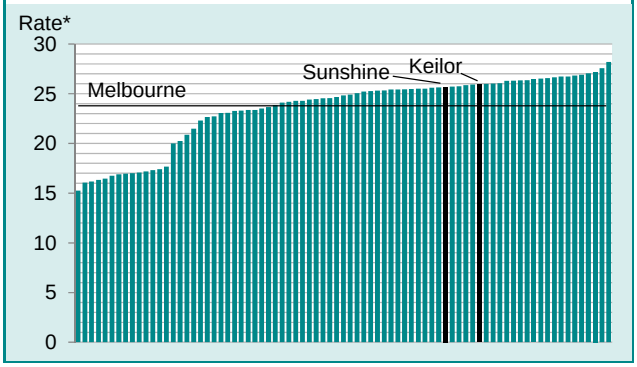
#RR is the ratio of the rate in the area to the rate for Brimbank City

Regional comparisons

Males

For males aged 18 years and over, the estimated rates of obesity in Sunshine and Keilor are both just higher than the average for Melbourne's SLAs (Figure 38).

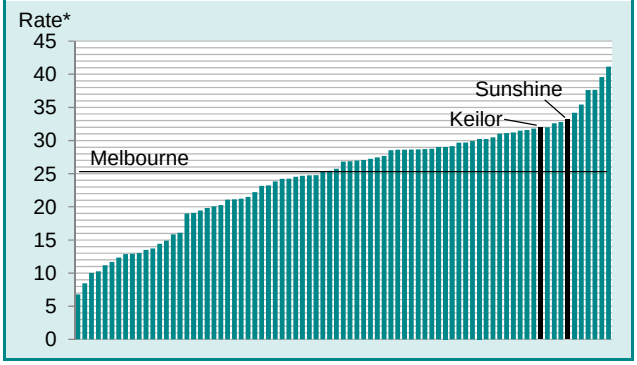
Figure 38: Obese males, by SLA in Melbourne, 2011–12



Females

In Sunshine and Keilor, the estimated rates of obesity for adult females are both markedly higher than the average for Melbourne's SLAs, with Sunshine ranked seventh highest (Figure 39).

Figure 39: Obese females, by SLA in Melbourne, 2011–12



Correlations

There are different strength correlations for males and females at the SLA level across Melbourne between this indicator and other indicators of socioeconomic disadvantage.

For obese males, there were very strong correlations with children living in families with mothers with low educational attainment, people working as labourers, early school leavers, and children living with disability. Strong correlations were recorded with Aboriginal and Torres Strait Islander peoples, no Internet access at home, and people aged 15 years and over living with disability.

Strong correlations were also found with the indicators for self-assessed fair or poor health, adult smokers, and obese females.

For obese females, correlations were very strong with the indicators for children in families with mothers with low educational attainment, people working as labourers, early school leavers, and children living with disability. Strong correlations were present for Aboriginal and Torres Strait Islander peoples, no Internet access at home, and adults living with disability. Very strong inverse correlations were found for people working as managers or professionals.

There were very strong correlations with the health indicators for women smoking in pregnancy, adult smokers, and male obesity; and strong correlations with low birthweight babies, self-assessed fair or poor health, females with high or very high psychological distress, and estimated prevalence of circulatory system diseases. Strong correlations were also found with hospitalisations for ambulatory care-sensitive conditions, indicating relatively poorer access to adequate and timely primary health care.

In the education and child development indicators, very strong correlations were evident for obese males and highest level of education being an Advanced Diploma, Diploma or Certificate. For obese females, a very strong inverse correlation was present for the highest level of education being a Bachelor Degree or higher; and strong inverse correlations for preschool participation, children developmentally on track in physical health and wellbeing and language and cognitive skills under the AEDC. Conversely, there was a strong correlation with children developmentally vulnerable on one or more domains of the AEDC.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Australian Bureau of Statistics (ABS). Measures of Australia's progress, 2010. (ABS Cat. no. 1370.0). Canberra: ABS, 2010.
2. Australian Bureau of Statistics (ABS). Profiles of health, Australia. (ABS Cat. no. 4338.0). Canberra: ABS, 2013.

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Participation in preschool

The Victorian Government funds kindergarten, pre-school and child care services to provide an early childhood program to children in the year before they go to school, which aims to enhance children's social, emotional, physical and intellectual development.[1] Preschool services are also provided by private or community-run child care services and by Catholic and Independent schools.

Kindergarten participation rates have been historically high in Victoria, with data suggesting 96.8% attendance compared with the national average of 87.2%.[1] However, Aboriginal children are less likely to participate in preschool than their non-Indigenous peers. Recent data indicate that the Victorian participation rate of Aboriginal children in kindergarten in 2006 was 52.6%, slightly higher than the national participation rate of 50.8%.[2]

Indicator definition: Children recorded at the 2011 Census as attending a preschool, as a proportion of the number of children aged from three to four years.

Key points

- The participation in preschool of young children living in Brimbank is low, and is particularly low in Sunshine.
- The 2011 Census data show that, in a number of PHAs, only one third of eligible children are attending preschool.

Geographic variation

The participation in preschool of young children living in Brimbank (36.0%) is relatively low, being 16% below the level across Australia (Table 71).

There is also a notable difference between the SLAs, with a participation rate of 39.9% in Keilor compared with 34.6% in Sunshine, the latter being 21% below the Australian rate. However, both SLAs have participation rates below the national figure of 43.9%. It is of note that participation in Melbourne is 47.5%, or 8% above the national rate.

Table 71: Participation in preschool, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**853**	**39.9**	0.91
Brimbank - Sunshine	**922**	**34.6**	0.79
Brimbank City	**1775**	**36.9**	0.84
Melbourne - West	*7631*	*39.9*	0.91
Melbourne	*49,435*	*47.5*	1.08
Country Victoria	*14,928*	*42.5*	0.97
Victoria	*64,423*	*46.3*	1.05
Australia	**252,692**	**43.9**	1.00

#RR is the ratio of the percentage in the area to the percentage for Australia

The variation in participation at the PHA level is substantial, from 58% above the Brimbank City rate in Keilor, to 15% below in Ardeer - Albion/ Sunshine/ Sunshine West and 14% below in St Albans - North/ Kings Park (Map 35 and Table 72).

Both Taylors Lakes and Sydenham also had relatively high rates of participation in preschool (at 30% and 15% above, respectively); and in St Albans - South/ Sunshine North and Delahey, about one third of children were recorded in the 2011 Census as attending preschool, which was below the rate for Brimbank City.

Map 35: Participation in preschool, by PHA in Brimbank, 2011

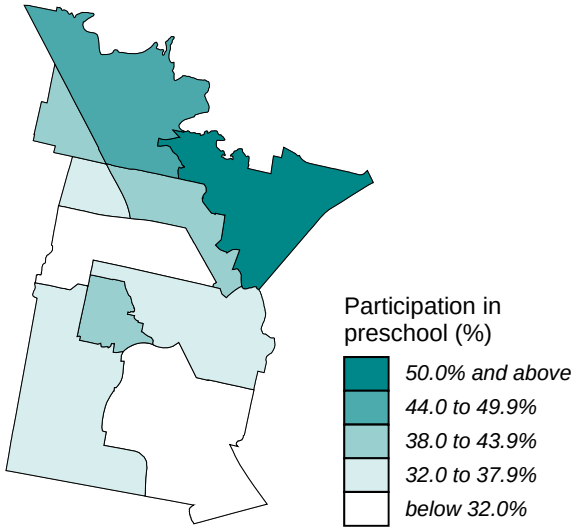


Table 72: Participation in preschool, by PHA in Brimbank, 2011

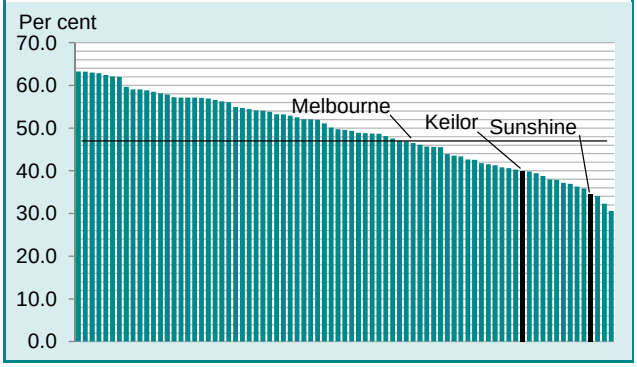
PHA	No.	%	RR#
Keilor	102	58.3	1.58
Ardeer - Albion/ Sunshine/ Sunshine West	241	31.4	0.85
Cairnlea	121	39.2	1.06
Deer Park - Derrimut	296	36.6	0.99
Delahey	79	33.8	0.92
Keilor Downs	118	40.0	1.08
St Albans - North/ Kings Park	265	31.6	0.86
St Albans - South/ Sunshine North	212	33.2	0.90
Sydenham	151	42.8	1.16
Taylors Lakes	193	47.9	1.30
Brimbank City	**1,778**	**36.9**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Just over one third of young children in Sunshine were estimated to be attending preschool at the 2011 Census; this figure, of 34.6%, was the fourth lowest at the SLA level in Melbourne (Figure 40). The proportion of 39.9% in Keilor was also well below that in Melbourne overall (47.5%), and in the majority of SLAs.

Figure 40: Participation in preschool, by SLA in Melbourne, 2011



Correlations

This indicator was very strongly correlated at the SLA level across Melbourne with socioeconomic advantage, as measured by the IRSD, and with the individual indicators of higher socioeconomic status for populations learning or earning, and undertaking voluntary work. There are very strong inverse correlations with children living in jobless families, children in families where the mother has low educational attainment, and unemployment.

In the health and wellbeing indicators, there were very strong inverse correlations with self-assessed fair or poor health, high or very high psychological distress for females, and male smoking. Strong inverse correlations were apparent for hospitalisations of girls aged 0 to 14 years and of people aged 15 years and over for ambulatory care-sensitive conditions, indicating relatively poor access to timely and effective primary health care. Strong inverse correlations were also found with the indicators for the estimated prevalence of diabetes mellitus, high or very high psychological distress for males, circulatory system diseases and obesity in females.

Very strong correlations were also found with education and child development indicators, indicating that there were relatively more children developmentally on track in the physical health and wellbeing, and the language and cognitive skills domains of the AEDC; and relatively more young people participating in full-time secondary education. Conversely, relatively fewer children in areas characterised by high rates of participation in preschool were developmentally vulnerable on one or more domains of the AEDC.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Harrington M. Preschool education in Australia. Canberra, ACT: Parliamentary Library Parliament of Australia, 2008.
2. Kronemann M. Universal preschool education for Aboriginal and Torres Strait Islander children. (Briefing paper). Southbank, Victoria: Australian Education Union (AEU), 2007.

Young people aged 16 years participating in full-time secondary school education

The indicator for young people aged 16 years participating in full-time secondary education is not intended as an indicator of educational participation; it is included because young people completing Year 12 (and who would be still at school at age 16) are more likely to make a successful initial transition to further education, training and work than are early school leavers.[1]

Indicator definition: 16 year old young people recorded at the 2011 Census as attending full-time secondary education, expressed as a proportion of all young people of that age.

Key points

- Young people aged 16 years living in Brimbank were participating in full-time secondary education in 2011 at the same rate as other young Australians of this age.
- However, there was some variation within the City, with less than three quarters of 16 year olds in some PHAs in full-time secondary education.

Geographic variation

In Brimbank, four fifths (80.3%) of young people 16 years of age were attending full-time secondary education in 2011; this was just above the figure for Australia, of 79.1%. Although Brimbank also had a better outcome on this measure than the western region overall (with 79.0%), participation was a little below the level in Melbourne, where 82.9% of young people at this age were attending full-time secondary education (Table 73).

Table 73: Young people participating in full-time secondary education, Brimbank and comparators, 2011

Region	No.	%	RR#
Brimbank - Keilor	**1,125**	**81.5**	**1.03**
Brimbank - Sunshine	**910**	**79.0**	**1.00**
Brimbank City	**2,035**	**80.3**	**1.02**
Melbourne - West	*6,204*	*79.0*	*1.00*
Melbourne	*41,166*	*82.9*	*1.05*
Country Victoria	*15,306*	*79.1*	*1.00*
Victoria	*56,496*	*81.8*	*1.03*
Australia	**225,240**	**79.1**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

Fewer than three quarters of 16 year olds in Deer Park - Derrimut (72.5%) and Keilor Downs (73.8%) were participating in full-time secondary education, with proportions below the Brimbank average also in St Albans - North/ Kings Park (78.0%) (Map 36 and Table 74). The highest proportions were in Taylors Lakes (86.2%) and Delahey (83.5%): all other PHAs had proportions of 80% or higher.

Map 36: Young people participating in full-time secondary education, by PHA in Brimbank, 2011

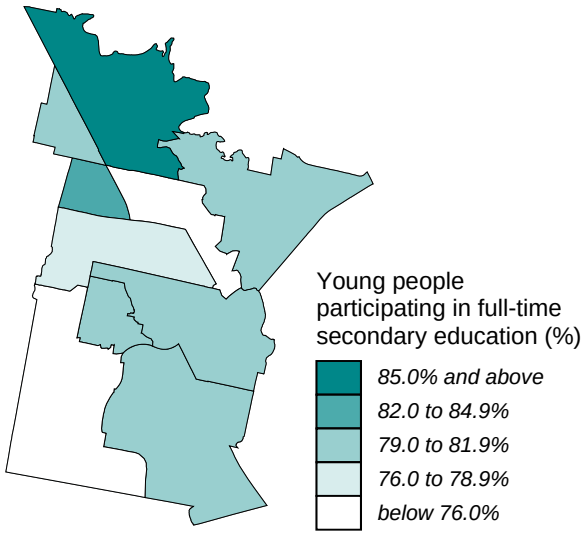


Table 74: Young people participating in full-time secondary education, by PHA in Brimbank, 2011

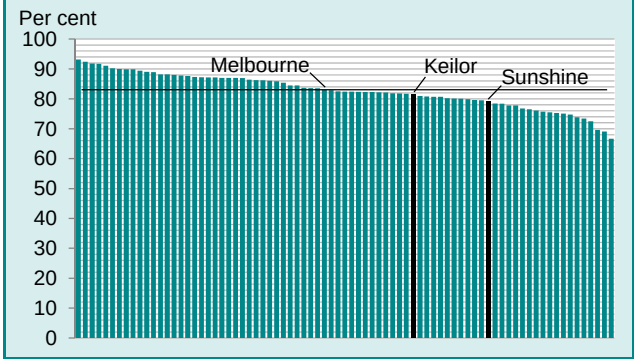
PHA	No.	%	RR#
Keilor	106	80.9	1.01
Ardeer - Albion/ Sunshine/ Sunshine West	310	80.3	1.01
Cairnlea	91	80.5	1.01
Deer Park - Derrimut	182	72.5	0.91
Delahey	137	83.5	1.05
Keilor Downs	163	73.8	0.92
St Albans - North/ Kings Park	327	78.0	0.98
St Albans - South/ Sunshine North	279	81.8	1.03
Sydenham	149	80.1	1.00
Taylors Lakes	282	86.2	1.08
Brimbank City	**2,026**	**79.8**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Both Keilor and Sunshine had slightly fewer young people 16 years of age participating in full-time secondary education in 2011 than in Melbourne overall (Figure 41).

Figure 41: Young people participating in full-time secondary education, by SLA in Melbourne, 2011



Correlations

There was a very strong correlation at the SLA level across Melbourne between this indicator and young people aged 15 to 24 years who were learning or earning. Strong inverse correlations were found with the indicators of socioeconomic disadvantage for children living in jobless families, children in families where the mother has low educational attainment, and low income households under financial stress from rent or mortgage payments.

In the health and wellbeing indicators, there was a very strong inverse correlation between this indicator and male smokers. Strong inverse correlations were also evident for women smoking during pregnancy, self-assessed fair or poor health, and female smoking.

There are strong correlations with the following indicators of education and child development: participation in preschool, children developmentally on track in the physical health and wellbeing, and the language and cognitive skills domains of the AEDC, and fewer children developmentally vulnerable on one or more domains of the AEDC.

These correlations reinforce the differences in health and wellbeing between communities with high levels of educational participation and those with lower levels. Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Foundation for Young Australians (FYA). How young people are faring, 2009. Melbourne: Foundation for Young Australians, 2009.

Early school leavers

Education increases opportunities for choice of occupation and for income and job security, and also equips people with the skills and ability to control many aspects of their lives – key factors that influence wellbeing throughout the life course.[1]

People who leave school early and do not undertake further training or education may be at risk of social exclusion, poorer life chances and socioeconomic disadvantage in the longer term.[1] Research has shown that a model of community-centred education that offers a networked, integrated and contextual approach to learning, which is broader than the concept of 'schooling', is more likely to be successful in re-engaging those young people at risk of becoming disengaged with education.[2]

Indicator definition: Comprises people of all ages who completed Year 10 or below, or did not go to school, expressed as a proportion of the population aged 15 years and over: the data have been age-standardised to remove expected differences between areas in the level of school attendance related to the age of the population (see box for details).

Key points

- Looking across the population as whole, the number of people who completed Year 10 or below, or did not go to school, was consistent with the national figure.
- However, early school leavers comprised over one third of the population in over half of the PHAs.

Geographic variation

There were slightly fewer early school leavers in Brimbank (33.5%) than in Australia (34.3%), although the rate in Sunshine (34.9%) was slightly higher, and that in Keilor, a little lower (32.0%), than the national figure (Table 75). However, both Melbourne - West and Melbourne had lower rates, of below one third of the population aged 15 years and over in Melbourne - West (32.3%) and just over one quarter in Melbourne (27.0%).

Table 75: Early school leavers, Brimbank and comparators, 2011

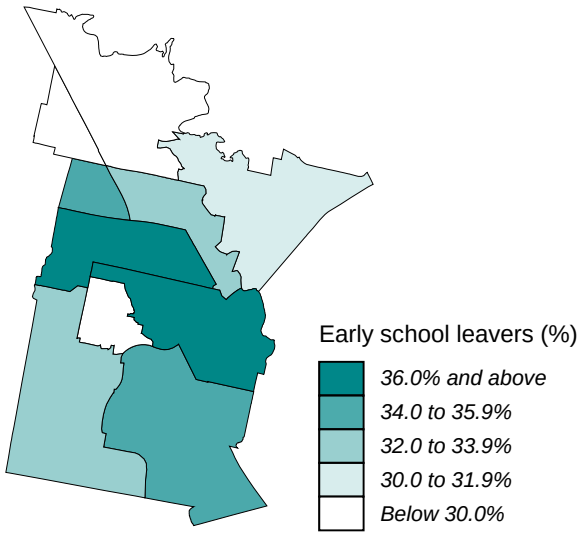
Region	No.	Rate*	RR#
Brimbank - Keilor	**22,035**	**32.0**	**0.93**
Brimbank - Sunshine	**25,420**	**34.9**	**1.02**
Brimbank City	**47,455**	**33.5**	**0.98**
Melbourne - West	*143,359*	*32.3*	*0.94*
Melbourne	*847,493*	*27.0*	*0.79*
Country Victoria	*423,658*	*36.6*	*1.07*
Victoria	*1,273,107*	*29.4*	*0.86*
Australia	**5,952,566**	**34.3**	**1.00**

*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the percentage in the area to the percentage for Australia

There is, however, marked variation in rates at the PHA level in Brimbank, from just over one quarter of the population aged 15 years and over in Taylors Lakes (27.9%), Cairnlea (28.3%) and Sydenham (28.6%), to over one third in St Albans - South/ Sunshine North (37.3%), St Albans - North/ Kings Park (36.0%) and Ardeer - Albion/ Sunshine/ Sunshine West (35.5%) (Map 37 and Table 76).

Map 37: Early school leavers, by PHA in Brimbank, 2011



Age-standardised data

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

Table 76: Early school leavers, by PHA in Brimbank, 2011

PHA	No.	Rate*	RR#
Keilor	2,206	30.1	0.89
Ardeer - Albion/ Sunshine/ Sunshine West	9,211	35.5	1.05
Cairnlea	1,632	28.3	0.84
Deer Park - Derrimut	5,061	33.8	1.00
Delahey	2,086	34.0	1.00
Keilor Downs	3,601	32.7	0.97
St Albans - North/ Kings Park	9,497	37.3	1.10
St Albans - South/ Sunshine North	8,000	36.9	1.09
Sydenham	2,239	28.6	0.85
Taylors Lakes	3,922	27.9	0.83
Brimbank City	**47,455**	**33.8**	**1.00**

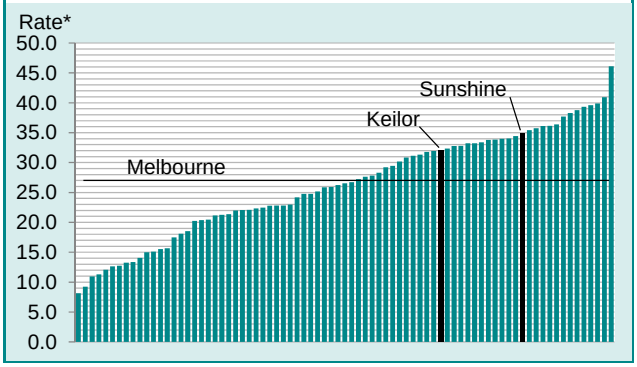
*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Although the Brimbank City SLAs have rates of early school leavers above the Melbourne average, they are not among the areas with the poorest outcome on this measure (Figure 42).

Figure 42: Early school leavers, by SLA in Melbourne, 2011



*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

Correlations

There are very strong correlations at the SLA level across Melbourne between this indicator and children in families where the mother has low educational attainment, children living with disability, and people working as labourers; and a very strong inverse correlation between this indicator and people working as managers or professionals.

A very strong inverse correlation was evident with people having a Bachelor Degree or higher; and there were strong inverse correlations with children developmentally on track on the physical health and wellbeing, and the language and cognitive skills domains of the AEDC. This indicator was also strongly correlated with children assessed as being developmentally vulnerable on one or more domains of the AEDC.

In the health and wellbeing indicators, there is a very strong correlation for women smoking during pregnancy, adult smokers, adult obesity, and high or very high levels of psychological distress for females. Strong correlations are evident with low birthweight infants, hospitalisations of people aged 15 years and over for ambulatory care-sensitive conditions, self-assessed fair or poor health, and the estimated prevalence of circulatory system diseases.

These correlations stand in contrast to those for the previous indicator (young people 16 years of age attending full-time secondary education). Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Pech J, McNevin A, Nelms L. Young people with poor labour force attachment: a survey of concepts, data and previous research. Canberra: Australian Fair Pay Commission, 2009.
2. Stehlik T. Schooling vs. education: (Re)engaging early school leavers in meaningful learning through whole-of-community approaches to learning as part of social inclusion initiatives in South Australia. Refereed paper presented to the New Zealand Association for Research in Education National Conference, December 2006.

Highest level of education

Tertiary education entry and attainment levels in Australia are well above the OECD average: in 2010, 38% of 25-64 year olds had attained this level of education.[1] Among younger adults, this figure was even higher, with 44% of 25-34 year olds attaining tertiary education, placing the country 9th among OECD member and partner countries in 2010.[1]

Upward mobility is a significant feature of Australia's education system, with 41% of 25-34 year olds having attained tertiary education, despite being from socioeconomically disadvantaged backgrounds and having parents with low levels of education.[1] This is the highest proportion among OECD countries.[1] Educational attainment also adds an earnings premium, though less so than across many OECD countries. In 2009, a tertiary-educated worker in Australia could expect to earn 35% more than a worker with an upper secondary education.[1]

A Bachelor degree (or higher) is the standard university qualification and is recognised worldwide. Most courses take three to four years to complete and are almost exclusively delivered by universities.[2] Courses at Diploma, Advanced Diploma and Associate degree level take between two to three years to complete, and are generally considered to be equivalent to one to two years of study at degree level. These courses are usually delivered by universities, TAFE colleges, community education centres and private RTO's (Registered Training Organisations).[2]

Indicator definition: Comprises people who have a qualification at Bachelor Degree, Graduate Diploma and Graduate Certificate, or Postgraduate Degree Level. Advanced Diploma, Diploma or Certificate comprises people who have a qualification at any of these three levels.

Key points

- One in eight people in Brimbank had a Bachelor Degree or higher in 2011, with relatively fewer people with these qualifications across all areas of Brimbank than Australia overall.
- Just over one in five people had the level of education of an Advanced Diploma, Diploma or Certificate, again below the Australian average overall (and in almost all areas within the City).

Geographic variation

Bachelor Degree or higher

After adjusting for differences in the age of the population of Brimbank compared to the Australian population, the rate of people who had a Bachelor Degree or higher qualification, as reported at the 2011 Census, is markedly below the Australian rate and, in particular, the Melbourne rate (Table 77).

Table 77: Bachelor Degree or higher, Brimbank and comparators, 2011

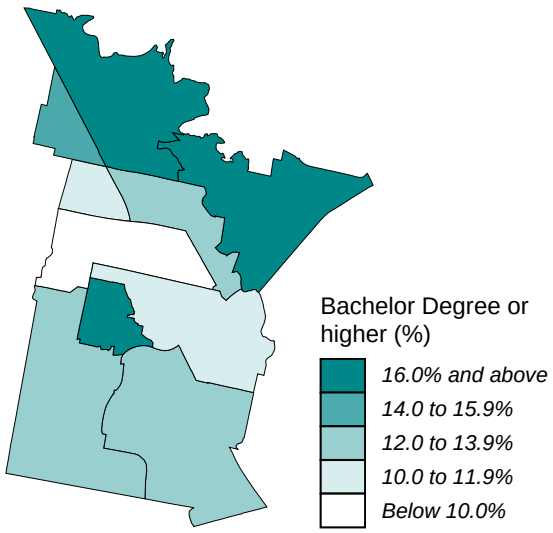
Region	No.	Rate*	RR#
Brimbank - Keilor	**9,076**	**12.8**	**0.68**
Brimbank - Sunshine	**10,400**	**12.8**	**0.68**
Brimbank City	**19,476**	**12.8**	**0.68**
Melbourne - West	85,151	16.3	0.87
Melbourne	769,673	23.0	1.22
Country Victoria	135,992	13.3	0.71
Victoria	906,952	20.8	1.10
Australia	**3,268,910**	**18.8**	**1.00**

*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the percentage in the area to the percentage for Australia

Of the SLAs, Keilor and Sunshine (both with 12.8 people with these qualifications per 100 population) had lower rates than in Melbourne - West (16.3), and a markedly lower rate than in Melbourne (23.0).

Map 38: Bachelor Degree or higher, by PHA in Brimbank, 2011



Within Brimbank, none of the PHAs had rates above the Australian rate (18.8 people with these qualifications per 100 population) (Map

38 and Table 86). The lowest rates were in the PHAs of St Albans - North/ Kings Park (8.9), Delahey (10.6) and St Albans - South/ Sunshine North (10.9). In contrast, the highest rates were evident for people living in Keilor (17.1), Cairnlea (16.9), and Taylors Lakes (16.3).

Table 78: Bachelor Degree or higher, by PHA in Brimbank, 2011

PHA	No.	Rate*	RR#
Keilor	1,101	17.1	1.33
Ardeer - Albion/ Sunshine/ Sunshine West	3,642	13.1	1.02
Cairnlea	1,251	16.9	1.32
Deer Park - Derrimut	2,720	13.9	1.09
Delahey	723	10.6	0.83
Keilor Downs	1,417	12.8	1.00
St Albans - North/ Kings Park	2,402	8.9	0.70
St Albans - South/ Sunshine North	2,421	10.9	0.85
Sydenham	1,510	15.5	1.21
Taylors Lakes	2,290	16.3	1.27
Brimbank City	**19,477**	**12.8**	**1.00**

*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Advanced Diploma, Diploma or Certificate

More than one in five people living in Brimbank had an Advanced Diploma, Diploma or Certificate level of education at the 2011 Census (Table 79). After adjusting for differences in the age of the population for Brimbank compared to the Australian population, this rate (20.7 people with these qualifications per 100 population) is lower than the rates in Melbourne (23.5) and Australia (26.1).

Table 79: Advanced Diploma, Diploma or Certificate, Brimbank and comparators, 2011

Region	No.	Rate*	RR#
Brimbank - Keilor	**15,845**	**22.4**	**0.86**
Brimbank - Sunshine	**15,037**	**19.1**	**0.73**
Brimbank City	**30,888**	**20.7**	**0.79**
Melbourne - West	114,664	23.0	0.88
Melbourne	773,603	23.5	0.90
Country Victoria	303,804	28.6	1.10
Victoria	1,078,949	24.8	0.95
Australia	**4,527,962**	**26.1**	**1.00**

*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

#RR is the ratio of the percentage in the area to the percentage for Australia

Of the SLAs, Keilor (22.4 people with these qualifications per 100 population) had a similar rate to Melbourne -West (23.0) whereas the rate in the SLA of Sunshine (19.1) was lower.

The rate of people with an Advanced Diploma, Diploma or Certificate was lowest in the PHAs of St Albans - South/ Sunshine North (16.8 people with these qualifications per 100 population), followed by Cairnlea and St Albans - North/ Kings Park (18.7). In contrast, the highest rates for the level of education of an Advanced Diploma or lower were calculated for people living in Keilor (26.6), Sydenham (25.3) and Taylors Lakes (24.1) (Map 39 and Table 80).

Map 39: Advanced Diploma, Diploma or Certificate, by PHA in Brimbank, 2011

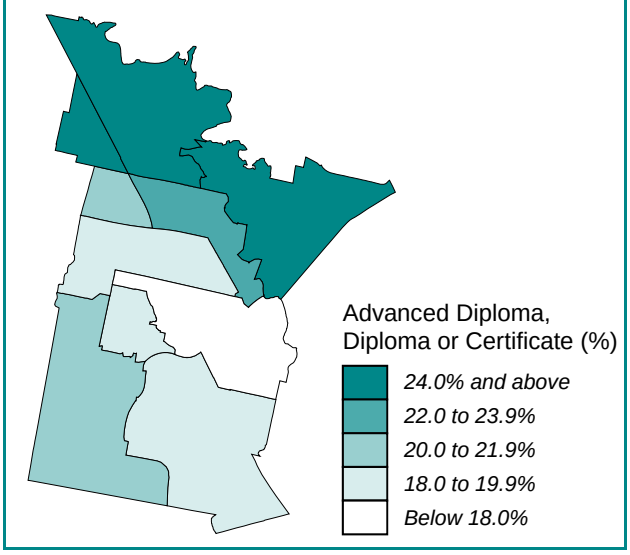


Table 80: Advanced Diploma, Diploma or Certificate, by PHA in Brimbank, 2011

PHA	No.	Rate*	RR#
Keilor	1,810	26.6	1.29
Ardeer - Albion/ Sunshine/ Sunshine West	5,293	19.4	0.94
Cairnlea	1,301	18.7	0.91
Deer Park - Derrimut	3,931	21.8	1.05
Delahey	1,372	20.5	0.99
Keilor Downs	2,671	23.7	1.15
St Albans - North/ Kings Park	4,967	18.7	0.90
St Albans - South/ Sunshine North	3,696	16.8	0.81
Sydenham	2,330	25.3	1.22
Taylors Lakes	3,512	24.1	1.17
Brimbank City	**30,883**	**20.7**	**1.00**

*Indirectly age-standardised rate per 100 population, also referred to as a percentage (age-standardised)

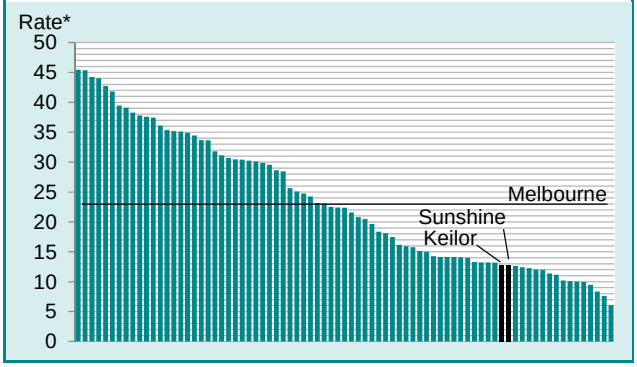
#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Bachelor Degree or higher

Across the SLAs in Melbourne, Keilor and Sunshine had relatively low numbers of people with a Bachelor Degree or higher, ranking in the twenty SLAs with the lowest rates among the 79 Melbourne SLAs (Figure 43).

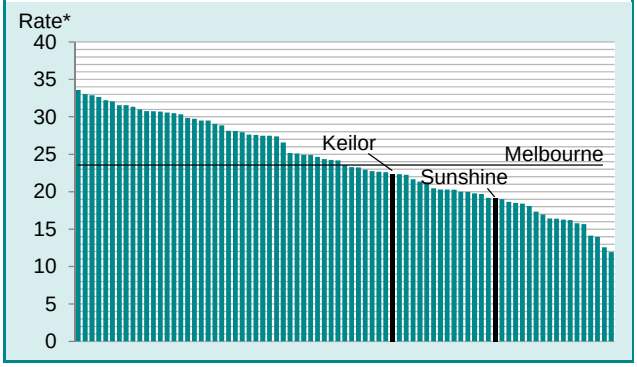
Figure 43: Bachelor Degree or higher, by SLA in Melbourne, 2011



Advanced Diploma, Diploma or Certificate

The SLAs of Keilor and Sunshine had a wider variation in the rate of people with a qualification of an Advanced Diploma, Diploma or Certificate when ranked against all 79 Melbourne SLAs, with Keilor around the Melbourne rate, but Sunshine ranking in the twenty SLAs with the lowest rates amongst the Melbourne SLAs (Figure 44).

Figure 44: Advanced Diploma, Diploma or Certificate, by SLA in Melbourne, 2011



Correlations

Bachelor Degree or higher

There is a very strong correlation at the SLA level across Melbourne between this indicator and people working as managers or professionals; and there are very strong inverse correlations with children in families where the mother has low educational attainment, people working as labourers, and children living with disability.

There are very strong inverse correlations between areas with high proportions of the population having a Bachelor Degree or higher qualification, and women smoking during pregnancy, adult smokers, obese adults, early school leavers, and the highest level of education being an Advanced Diploma, Diploma and Certificate. Strong inverse correlations were evident for hospitalisations for ambulatory care-sensitive conditions, and self-assessed fair or poor health, among others.

Strong correlations with other education and child development indicators were also found, in particular indicating a relatively higher level of preschool participation, more young people participating in full-time secondary education and more children being developmentally on track in the physical health and wellbeing, and the language and cognitive skills domains of the AEDC. Conversely, there were relatively fewer children assessed as being developmentally vulnerable on one or more domains of the AEDC. Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Advanced Diploma, Diploma or Certificate

There was a very strong correlation at the SLA level across Melbourne between this indicator and children living with disability, and obese males; and a very strong inverse correlation with people without access to a motor vehicle.

A strong correlation was recorded with early school leavers, women smoking during pregnancy, female smokers and obese females. A very strong inverse correlation was apparent with the highest level of education being a Bachelor Degree or higher.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Organisation for Economic Co-operation and Development (OECD). Education at a glance, 2012: OECD Indicators - Australia. Paris: OECD, 2012.
2. Australian Qualifications Framework Council (AQFC). Australian Qualifications Framework (2nd edn.). Adelaide: AQFC, 2013.

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Australian Early Development Census: children developmentally on track

In 2009, the Australian Early Development Index (AEDI), which provides information on early childhood development outcomes, was undertaken nationwide.[1] Information was collected on children in their first year of full-time formal school (average age of five years and seven months), using a teacher-completed checklist. The AEDI data collection was repeated in 2012; and in 2014, it was renamed the Australian Early Development Census (AEDC).

AEDC data help communities to assess how well they support young children and their families.[2] The results from the AEDC provide information about how local children have developed by the time they start school, measured across five areas (domains) of early child development: physical health and wellbeing, social competence, emotional maturity, language and cognitive skills (school-based), and communication skills and general knowledge.[2]

Indicator definition: Children who were assessed as being developmentally 'on track' (i.e., children in the top 75% of the national AEDC population) in the *physical health and wellbeing* and the *language and cognitive skills (school-based)* developmental domains, expressed as a proportion of all children for whom a checklist was completed.

Key points

- Over three quarters of Brimbank City's children in their first year of school were assessed as being developmentally on track in the physical health and wellbeing, and the language and cognitive skills (school-based) developmental domains. The proportion of children assessed as being developmentally on track in the language and cognitive skills domain was somewhat lower in Brimbank City, than in Australia or in Melbourne.
- There was little variation across the City for the domain of physical health and wellbeing; however, for the language and cognitive skills (school-based) domain, there was a slightly lower proportion in Sunshine.

Geographic variation

Physical health and wellbeing domain

The majority of children in Brimbank City were assessed as being developmentally on track in the physical health and wellbeing domain (Table 81). The proportion of 79.1% was slightly below that in Australia (81.2%) and Melbourne (81.7%), but consistent with that in Melbourne - West.

There was little variation across the SLAs, although Brimbank - Sunshine had a slightly higher proportion.

Table 81: Children developmentally on track under the physical health and wellbeing domain, Brimbank and comparators, 2012

Region	No.	%	RR#
Brimbank - Keilor	**738**	**78.0**	**0.96**
Brimbank - Sunshine	**977**	**80.0**	**0.98**
Brimbank City	**1,715**	**79.1**	**0.97**
Melbourne - West	*6,121*	*79.7*	*0.98*
Melbourne	*35,061*	*81.7*	*1.01*
Country Victoria	*14,458*	*68.3*	*0.84*
Victoria	*49,519*	*77.3*	*0.95*
Australia	**222,425**	**81.2**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

In the majority of PHAs, the proportion of children assessed as being developmentally on track in this domain were within 11% of the Brimbank City average (Map 40 and Table 82). The major variations were the higher proportion in Taylors Lakes (13% above the City's average), and the lower proportion in Delahey (15% below).

Map 40: Children developmentally on track under the physical health and wellbeing domain by PHA in Brimbank, 2012

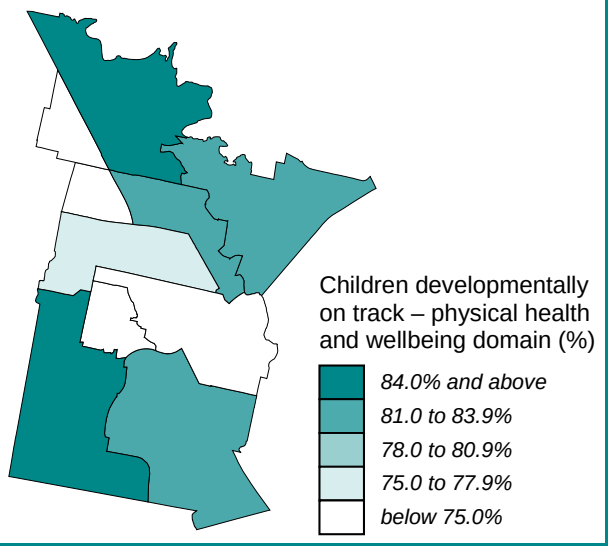


Table 82: Children developmentally on track under the physical health and wellbeing domain by PHA in Brimbank, 2012

PHA	No.	%	RR#
Keilor	71	83.6	1.06
Ardeer - Albion/ Sunshine/ Sunshine West	273	82.7	1.05
Cairnlea	101	73.7	0.93
Deer Park – Derrimut	340	86.0	1.09
Delahey	72	67.6	0.85
Keilor Downs	110	82.5	1.04
St Albans - North/ Kings Park	293	75.6	0.96
St Albans - South/ Sunshine North	211	70.8	0.89
Sydenham	73	70.2	0.89
Taylors Lakes	172	89.5	1.13
Brimbank City	**1,715**	**79.1**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Language and cognitive skills (school-based) domain

The proportion of children assessed as being developmentally on track in the language and cognitive skills domain was somewhat lower in Brimbank City (77.4%) than in Australia (82.6%) or in Melbourne (84.5%) (Table 83).

Unlike the physical health and wellbeing domain, in this instance, a slightly lower proportion was recorded for children in Brimbank - Sunshine.

Table 83: Children developmentally on track under the language and cognitive skills domain, Brimbank and comparators, 2012

Region	No.	%	RR#
Brimbank - Keilor	**738**	**78.2**	**0.95**
Brimbank - Sunshine	**940**	**76.7**	**0.93**
Brimbank City	**1,678**	**77.4**	**0.94**
Melbourne – West	*6,236*	*81.1*	*0.98*
Melbourne	*36,329*	*84.5*	*1.02*
Country Victoria	*17,595*	*82.9*	*1.00*
Victoria	*53,924*	*84.0*	*1.02*
Australia	**226,238**	**82.6**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

The variation at the PHA level was generally small, ranging from 10% above the Brimbank City average in Keilor, to 10% below in Delahey, with almost half of the areas with proportions within 5% of the City's average (Map 41 and Table 84).

Map 41: Children developmentally on track under the language and cognitive skills domain, by PHA in Brimbank, 2012

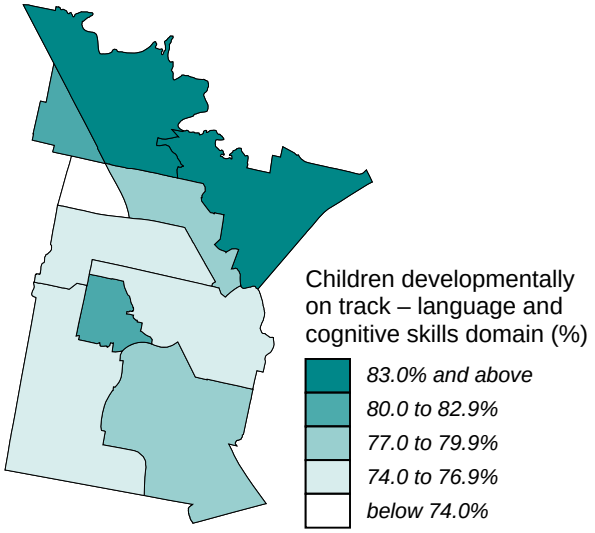


Table 84: Children developmentally on track under the language and cognitive skills domain, by PHA in Brimbank, 2012

PHA	No.	%	RR#
Keilor	72	84.9	1.10
Ardeer - Albion/ Sunshine/ Sunshine West	257	77.9	1.01
Cairnlea	110	80.3	1.04
Deer Park - Derrimut	298	75.0	0.97
Delahey	74	69.4	0.90
Keilor Downs	106	79.5	1.03
St Albans - North/ Kings Park	287	74.1	0.96
St Albans - South/ Sunshine North	230	76.8	0.99
Sydenham	86	82.7	1.07
Taylors Lakes	159	83.6	1.08
Brimbank City	**1,678**	**77.4**	**1.00**

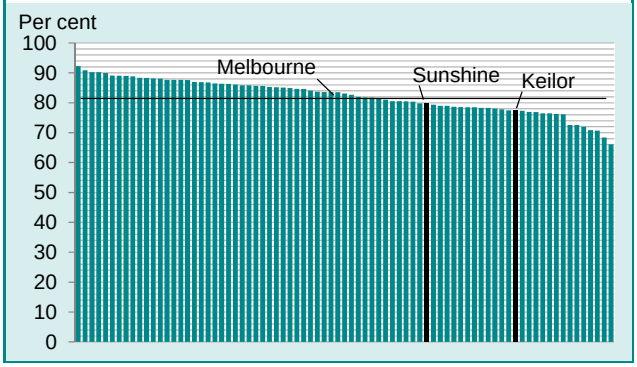
#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Physical health and wellbeing domain

Although both the SLAs of Sunshine and Keilor had proportions below the Melbourne average, they were not among the lowest SLAs (Figure 45, overleaf).

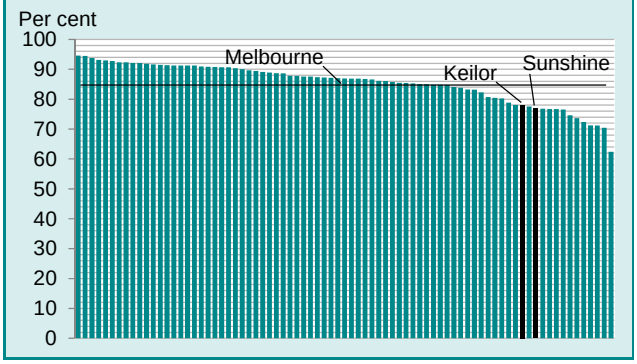
Figure 45: Children developmentally on track under the physical health and wellbeing domain, by SLA in Melbourne, 2012



Language and cognitive skills (school-based) domain

Compared with children in other SLAs in Melbourne, fewer children in both Sunshine and Keilor were assessed as being on track under this domain than under the physical health and wellbeing domain (Figure 46).

Figure 46: Children developmentally on track under the language and cognitive skills domain, by SLA in Melbourne, 2012



Correlations

Physical health and wellbeing domain

There is a very strong correlation at the SLA level across Melbourne between this indicator and socioeconomic advantage, as measured by the IRSD; conversely, there are strong or very strong inverse correlations with the individual indicators of socioeconomic disadvantage, of children living in jobless families and children in families where the mother has low educational attainment.

There were strong inverse correlations with the health and wellbeing indicators for women smoking during pregnancy, self-assessed fair or poor health, high or very high psychological distress, estimated prevalence of diabetes mellitus, male smokers, and obese females.

Very strong correlations were also found with the following indicators of education and child development: preschool participation and children developmentally on track in the language and cognitive skills domain of the AEDC. Conversely, there is a very strong inverse correlation with children developmentally assessed as vulnerable on one or more domains of the AEDC.

Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Language and cognitive skills (school-based) domain

There is a very strong correlation between this indicator and socioeconomic advantage, as measured by the IRSD; therefore, there are very strong inverse correlations with the individual indicators of socioeconomic disadvantage, of children living in jobless families, children in families where the mother has low educational attainment and people working as labourers. There was also a very strong correlation between this indicator and young people learning or earning.

Very strong correlations were also found with the following indicators of education and child development: preschool participation and children assessed as being developmentally on track in the physical health and wellbeing domain of the AEDC. In line with this finding, relatively fewer children were assessed as being developmentally vulnerable on one or more domains of the AEDC. Very strong inverse correlations were present for self-assessed fair or poor health, females with high or very high psychological distress, and male smokers. Similar outcomes were also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Centre for Community Child Health (CCCH), Telethon Institute for Child Health Research (TICHR). A snapshot of early childhood development in Australia: Australian Early Development Index (AEDI) National Report 2009. Canberra, ACT: Australian Government, 2009.
2. The Royal Children's Hospital (RCH), Melbourne. Uses for the AEDI. [Website - updated 19 March 2013]. At http://www.rch.org.au/aedi/resources/Uses_for_the_AEDI/ (accessed 17 April 2014).

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Australian Early Development Census: children developmentally vulnerable

In 2009, the Australian Early Development Index (AEDI), which provides information on early childhood development outcomes, was undertaken nationwide.[1] Information was collected on children in their first year of full-time formal school (average age of five years and seven months), using a teacher-completed checklist. The AEDI data collection was repeated in 2012; and in 2014, it was renamed the Australian Early Development Census (AEDC).

AEDC data help communities to assess how well they support young children and their families.[2] The results from the AEDC provide information about how local children have developed by the time they start school, measured across five areas (domains) of early child development: physical health and wellbeing, social competence, emotional maturity, language and cognitive skills (school-based), and communication skills and general knowledge.[2]

Indicator definition: Children who were assessed as being developmentally vulnerable on one or more domains, expressed as a proportion of all children for whom a checklist was completed.

Key points

- Over one quarter of children in Brimbank were assessed as being developmentally vulnerable on one or more of the AEDC developmental domains; this was markedly above the proportion in Melbourne overall.
- Both Sunshine and Keilor had relatively high proportions of children in their first year of school assessed as developmentally vulnerable on one or more domains, when compared with all SLAs in Melbourne.

Geographic variation

Despite the relatively high proportions of children assessed as being on track in the domains discussed above, over one quarter of children in Brimbank were assessed as being developmentally vulnerable on one or more of the domains of the AEDC (Table 85). This figure, of 27.7% of children in their first year of school who were assessed, was higher than in Australia overall (22.0%), and markedly higher than in Melbourne (19.3%).

The proportion in Brimbank - Sunshine (28.5%) was slightly higher than that in - Keilor (26.6%).

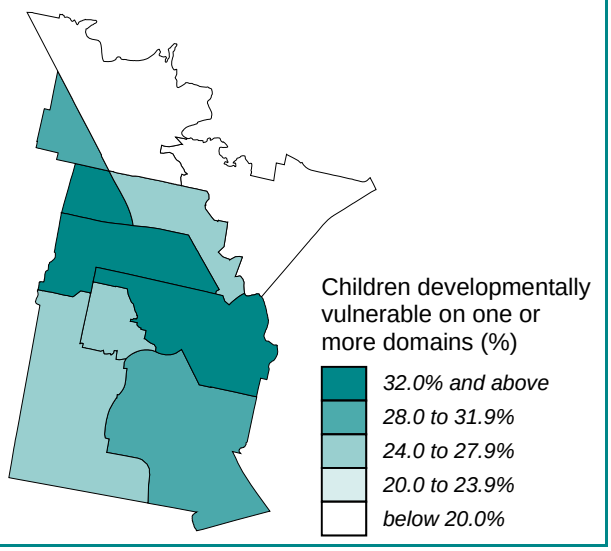
Table 85: Children developmentally vulnerable on one or more domains, Brimbank and comparators, 2012

Region	No.	%	RR#
Brimbank - Keilor	**249**	**26.6**	**1.21**
Brimbank - Sunshine	**345**	**28.5**	**1.29**
Brimbank City	**594**	**27.7**	**1.26**
Melbourne - West	*1,843*	*23.9*	*1.09*
Melbourne	*8,234*	*19.3*	*0.88*
Country Victoria	*4,165*	*19.8*	*0.90*
Victoria	*12,399*	*19.5*	*0.89*
Australia	**59,902**	**22.0**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Australia

At the PHA level, there was a wide range in the proportions of young children assessed as being developmentally vulnerable on one or more AEDC domains (Map 42 and Table 86).

Map 42: Children developmentally vulnerable on one or more domains, by PHA in Brimbank, 2012



Proportions ranged from just over half the City's average in Taylors Lakes (a rate ratio of 0.54) and Keilor (0.56), to one quarter above the average in Delahey (a rate ratio of 1.25). St Albans - South/ Sunshine North (with a rate ratio of 1.20, or 20% more of these children

Table 86: Children developmentally vulnerable on one or more domains, by PHA in Brimbank, 2012

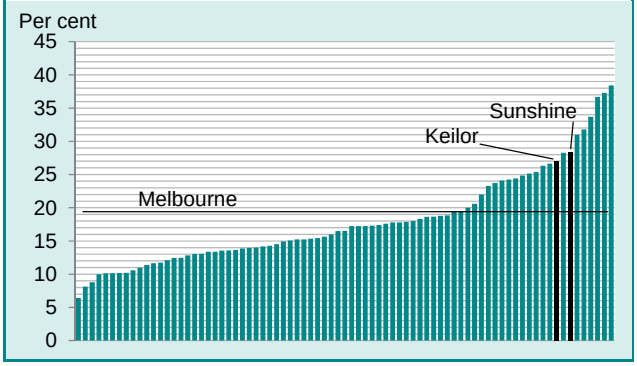
PHA	No.	%	RR#
Keilor	13	15.4	0.56
Ardeer - Albion/ Sunshine/ Sunshine West	96	29.3	1.06
Cairnlea	36	26.7	0.96
Deer Park - Derrimut	97	24.8	0.90
Delahey	37	34.6	1.25
Keilor Downs	34	26.2	0.95
St Albans - North/ Kings Park	125	32.4	1.17
St Albans - South/ Sunshine North	98	33.1	1.20
Sydenham	30	28.8	1.04
Taylors Lakes	28	15.1	0.54
Brimbank City	**594**	**27.7**	**1.00**

#RR is the ratio of the percentage in the area to the percentage for Brimbank City

Regional comparisons

Both Sunshine and Keilor have relatively high proportions of children assessed as developmentally vulnerable on one or more domains under the AEDC in their first year of school, being ranked seventh and ninth, respectively when compared with all SLAs in Melbourne (Figure 47).

Figure 47: Children developmentally vulnerable on one or more domains, by SLA in Melbourne, 2012



Correlations

There are very strong correlations at the SLA level across Melbourne between high proportions of children being developmentally vulnerable on one or more domains and socioeconomic disadvantage, as measured by the IRSD: correlations with the individual indicators of socioeconomic disadvantage were most evident with children living in jobless families, children in families where the mother has low educational attainment, low income households under financial stress from rent or mortgage payments, unemployment and people working as labourers.

Very strong inverse correlations were found between this indicator and participation in preschool, and children assessed as being developmentally on track in the physical health and wellbeing domain and the language and cognitive skills domains of the AEDC.

For the health and wellbeing indicators, there are very strong correlations with the indicators for self-assessed fair or poor health, and females with high or very high psychological distress. Strong correlations are evident for the estimated prevalence of diabetes mellitus, males with high or very high psychological distress, male smokers and obese females; and also for hospitalisations of people aged 15 years and over for ambulatory care-sensitive conditions, indicating relatively poorer access to adequate and timely primary health care.

Relatively poor outcomes are also evident for many of these indicators in Brimbank and its component areas.

Data sources, references and notes

1. Centre for Community Child Health (CCCH), Telethon Institute for Child Health Research (TICHR). A snapshot of early childhood development in Australia: Australian Early Development Index (AEDI) National Report 2009. Canberra, ACT: Australian Government, 2009.
2. The Royal Children's Hospital (RCH), Melbourne. Uses for the AEDI. [Website - updated 19 March 2013]. At http://www.rch.org.au/aedi/resources/Uses_for_the_AEDI/ (accessed 17 April 2014).

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Summary

Populations identified in the atlas as potentially vulnerable

There is a great deal of information in the text, tables, maps and graphs describing the indicators that Brimbank Council and its community may wish to respond to, or use to expand supportive initiatives already in place. Having worked with these data for some time, we suggest focusing on the following groups across the Brimbank population, where there are certain clustering of indicators:

- infants and children (including mothers who smoke during pregnancy, infant mortality and low birthweight; children living with disability; hospitalisations for ACSCs; children who live in jobless families or have mothers with low educational attainment; and low preschool participation, AEDC vulnerability, and low NAPLAN scores);

- young people (including early school leavers, those who are unemployed; with no Internet access at home; those not participating in secondary school or VET programs; and those not learning or earning);

- women (where there is low female workforce participation, poor English proficiency, low educational attainment, and no access to Internet; and high prevalence of self-assessed health as fair or poor, or high or very high psychological distress, smoking in pregnancy, obesity and diabetes mellitus);

- men (with high levels of unemployment and poor English proficiency, no access to the Internet and working as a labourer; and high prevalence of self-assessed health as fair or poor, obesity, smoking, and diabetes mellitus);

- disadvantaged households (under financial stress from rent or mortgage payments; welfare dependent; experience delays in accessing services or in purchasing prescribed medication because of cost; high levels of disability, and no Internet access in nearly one in five households).

Opportunities/strengths

Childhood immunisation rates are consistent with the rate across Melbourne, although these could be improved to cover the ten per cent of children who have not been fully immunised.

Rates of smoking in pregnancy are generally low when compared with the average rate for Melbourne, but in some parts of Brimbank, they are markedly higher.

Participation rates of young people in VET programs are higher in Sunshine compared to the average rate for Melbourne, but are lower than this in Keilor, and may be able to be improved for more young people living there. Participation rates for young people in full-time secondary school education are generally consistent with the average for Melbourne, with the exception of Sunshine, which is slightly lower. Rates for school leavers admitted to university are also consistent or higher than this average. However, rates of youth unemployment, which are higher than the average for Melbourne, need further attention.

The higher proportions of people from non-English speaking countries who live in Brimbank contribute to a vibrant, multicultural community, which enhances the City as a cultural precinct. While the rate of undertaking voluntary work through an organisation is lower, the rates of providing support to relatives and others outside the household are consistent with the average for the Melbourne SLAs.

Challenges/ further efforts

Proportions of young children who are developmentally vulnerable on one or more domains of the AEDC are significantly higher than the average for Melbourne, and rates of preschool participation are much lower than this average. There are also higher proportions of children living in families where the mother has low educational attainment and/or are in jobless families. Opportunities to improve developmental outcomes for young children, especially through targeted, subsidised preschool programs should be considered, and are likely to improve their readiness to learn at school entry and beyond. Similarly, proportions of students in Years 3 and 9 with NAPLAN scores in reading and numeracy outcomes below the national minimum standard are generally higher than the average for Melbourne, and need improving.

Women with low educational attainment, poor proficiency in English and no Internet access at home, face substantial barriers to finding employment, which is likely reflected in the

low female workforce participation rate for Brimbank, compared to the Melbourne average. Higher rates of high or very high levels of psychological distress and obesity, and average rates of premature mortality also contribute to their poorer health and wellbeing, the likelihood of living in low income, welfare-dependent and jobless households, and financial stress from rent or mortgage payments. Interventions to increase women's proficiency in English and their educational outcomes should improve their chances to participate in the workforce. Better health literacy will also provide greater understanding of their health and that of their children, as will timely access to culturally responsive primary health care.

Men who are unemployed and unskilled, and have poor proficiency in English and no access to the Internet at home also face additional challenges in finding employment. Rates of poorer health and wellbeing are reflected in higher than the Melbourne average rates of smoking and obesity, which contribute to the estimated prevalence of diabetes mellitus and rates of premature mortality for men seen in Brimbank, which are also considerably higher. Generally higher than average rates of hospitalisations for ambulatory care-sensitive conditions also indicate relatively poorer access to timely, effective primary health care.

There are higher proportions of households in Brimbank which are significantly disadvantaged because of low incomes, lack of employment, welfare dependency, financial stress from rent or mortgage payments, and high levels of disability than for Melbourne's SLAs. Such households also more likely to experience difficulty in accessing services, and delay attending medical consultations or purchasing prescribed medications because of the costs, compared to the Melbourne average.

Inequalities in outcomes span populations, so it is important to consider the differences across all population subgroups. Examining patterns in disaggregated data, such as those represented by the indicators in this atlas, helps to identify the most appropriate approaches to tackling avoidable inequalities. Interventions, particularly those that focus on the determinants of health, learning, development and wellbeing, and which address the lack of opportunities that many other households in Melbourne already enjoy, are needed across the life course, to ensure that all residents can lead flourishing, productive and fulfilled lives, and contribute to a sustainable and prosperous future for Brimbank City.

Appendices

In this section …

- Appendix A: Notes on the indicators and data sources
- Appendix B: Correlation analysis
- Appendix C: Details of modelled estimates
- Appendix D: Key maps

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Appendix A: Notes on the indicators and data sources

Background details

Data differences

In some instances, the totals for the Brimbank LGA for an indicator may differ between tables. For example, the Aboriginal and Torres Strait Islander population is shown as 696 in Table 18 and as 712 in Table 19. The difference is the result of the ABS method of confidentialisation, whereby some numbers are randomly altered to avoid revealing details of individuals.

Data not mapped

In the maps, some areas are shown as data 'not mapped'. Data have not been mapped where there were only a small number of cases for the particular indicator: in general, this was fewer than five cases, although in the case of the AEDC, it was where there were at least 15 children with valid AEDC data living in the 'Community' (in Brimbank City, a suburb or group of suburbs).

Glossary

DoE – Australian Government Department of Education

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

URP, the Usual Resident Population, is the ABS count of people in Australia on Census night.

.. not applicable

Maps

The maps show data for the usual resident address of the person to whom the statistic refers (e.g., of women smoking during pregnancy, or of children living in jobless families).

Measures used

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

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

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

Notes and data sources

The following notes and data sources are provided where it was thought necessary to provide additional information to that included on the indicator pages in Section 3.

Socioeconomic status

Index of Relative Socio-economic Disadvantage, 2011

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

It is derived, using principal component analysis, from attributes such as low income, low educational attainment, high unemployment, jobs in relatively unskilled occupations and variables that reflect disadvantage, rather than measure specific aspects of disadvantage (e.g., Indigenous status and separated/divorced). Full details of the composition and construction of this and the other three

indexes are available from the Technical Paper, *Socio-Economic Indexes for Areas (SEIFA), 2011* (ABS Cat. no. 2033.0.55.001).

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

Community strengths: modelled estimates from the 2010 General Social Survey

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

Provides support to relatives living outside the household (modelled estimates)

Feels very safe/safe walking alone in local area after dark (modelled estimates)

Personal and financial stressors: modelled estimates from the 2010 General Social Survey

Government support as main source of income in last 2 years (modelled estimates)

Access to services: financial and transport barriers: modelled estimates from the 2010 General Social Survey

Delayed medical consultation because could not afford it (modelled estimates)

Delayed purchasing prescribed medication due to cost (modelled estimates)

Have difficulty accessing services (modelled estimates)

Respondents aged 18 years and over were asked if they could, for example, "get support in times of crisis from outside of the household", or had "delayed medical consultation because could not afford it".

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

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

People living with disability, who are living in the community

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

The ABS figures include people of all ages, including those living in long-term residential accommodation in nursing homes, accommodation for the retired or aged (not self-contained), hostels for those with a disability, and psychiatric hospitals. The data in this atlas exclude people living in these accommodation types, to provide estimates of the number 'living in the community'.

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

Health and wellbeing

Mothers and babies

Low birthweight babies and smoking during pregnancy

The data presented are of

- babies (live born) weighing less than 2500 grams at birth, as a proportion of all live births; and
- women who reported that they had smoked at any time during the first 20 weeks of pregnancy, as a proportion of all women who were pregnant in each year.

Source: Compiled by PHIDU using data supplied by State and territory health departments.

Childhood immunisations

The data presented are children fully immunised at five years, (those who have received their fourth or fifth vaccination dependent on the type of vaccine used for diphtheria, tetanus and whooping cough, their fourth vaccination for polio and their second vaccination for measles mumps and rubella, all prior to the age of 5 years), as a proportion of children registered at five years of age on the Australian Childhood Immunisation Register.

Compiled by PHIDU based on data from the Australian Childhood Immunisation Register, Medicare Australia

Hospitalisations for ambulatory care-sensitive conditions

Ambulatory care-sensitive conditions (ACSCs) are those conditions for which hospitalisation should be able to be avoided because the disease or condition has been prevented from occurring, or because individuals have had timely access to effective primary care. Further details are at http://www.health.vic.gov.au/healthstatus/admin/acsc/index.htm

Source: Compiled by PHIDU using data supplied by the Victorian Department of Health.

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

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

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

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

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

For full details, refer to the *Australian Health Survey: Users' Guide, 2011-13* (ABS Cat. no. 4363.0.55.001) at http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/74D87E30B3539C53CA257BBB0014BB36?opendocument.

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

Self-assessed health status reported as 'fair' or 'poor'

With respect to self-assessed health, respondents aged 15 years and over were asked to assess their health on a scale from 'poor' to 'excellent' (the scale was 'poor', 'fair', 'good', 'very good', or 'excellent'), as part of the 2011–13 Australian Health Survey (AHS). The data reported are the sum of responses categorised as 'poor' or 'fair'.

Prevalence of diabetes mellitus

The prevalence of diabetes mellitus was measured by a glycated haemoglobin test (commonly referred to as HbA1c), derived from tests on blood samples from volunteering participants selected as part of the NHMS: people with an HbA1c level of greater than or equal to 6.5% were recorded as

having diabetes mellitus (6.5% is the World Health Organization's recommended diagnostic cut-off point for diabetes).

Prevalence of circulatory system diseases

Respondents aged two years and over were asked if they "had ever been told by a doctor or nurse that they had a heart or circulatory system condition", as part of the AHS.

Source: Compiled by PHIDU using data estimated from the 2011–13 Australian Health Survey, ABS (unpublished); and ABS Estimated Resident Population, average of 30 June 2011 and 2012.

Prevalence of high or very high psychological distress: males

Prevalence of high or very high psychological distress: females

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

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

K10 results are commonly grouped for output. Results from the 2011-13 AHS are grouped into the following four levels of psychological distress: 'low' (scores of 10-15, indicating little or no psychological distress); 'moderate' (scores of 16-21); 'high' (scores of 22-29); and 'very high' (scores of 30-50). Based on research from other population studies, a 'very high' level of psychological distress shown by the K10 may indicate a need for professional help. For the indicator in this atlas, data are for respondents aged 18 years and over who scored in the 'high' or 'very high' levels of psychological distress.

Smoking: males

Smoking: females

With regard to smoking, this refers to tobacco smoking, and includes manufactured (packet) cigarettes, roll-your-own cigarettes, cigars, and pipes. It excludes chewing tobacco and smoking of non-tobacco products. As part of the AHS, respondents aged 15 years and over were asked to describe their smoking status at the time of interview:

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

For the indicator in this atlas, data are for respondents aged 18 years and over who responded that they were "a current, daily or at least once weekly smoker".

Obesity: males

Obesity: females

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

Source: Compiled by PHIDU using data estimated from the 2011–13 Australian Health Survey, ABS (unpublished); and ABS Estimated Resident Population, average of 30 June 2011 and 2012.

Health status: Deaths

Infant mortality – Deaths before the age of 12 months, 2006-2010

The data presented are the number of deaths that occurred before 12 months of age, expressed as an age-standardised rate per 100,000 population.

Source: Compiled by PHIDU using data from 2006 to 2010 supplied by ABS as a consultancy; and Births, 30 June 2006 to 2010.

Child mortality – Deaths at ages 1 to 4 years, 2006-2010

The data presented are the number of deaths at ages 1 to 4 years, expressed as an age-standardised rate per 100,000 population.

Source: Compiled by PHIDU using data from 2006 to 2010 supplied by ABS as a consultancy; and ABS Estimated Resident Population, 30 June 2006 to 2010.

Premature mortality – Deaths at ages 0 to 74 years by sex (from all causes), and from accidents, poisonings and violence (or external causes), 2006-2010

The data presented are the number of deaths at ages 0 to 74 years, expressed as an age-standardised rate per 100,000 population.

Source: Compiled by PHIDU using data supplied by ABS on behalf of State and Territory Registrars of Deaths, 2006 to 2010; and ABS Estimated Resident Population, 30 June 2006 to 2010.

Education and child development

Participation in preschool and secondary school

Data by geographic location of student residential address are not available from current education/ schools collections. However, estimates can be made from ABS Census data for

- preschool participation, where the data are the number of children attending preschool/ kindergartens/ child parent centres/ children's services centres, as a proportion of the population 3 and 4 years of age.
- secondary school participation, where the data are the number of children attending secondary school, as a proportion of the population 12 to 17 years of age in NSW, Victoria, Tasmania, NT and ACT; and 13 to 17 years of age in Queensland, SA and WA.

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

Participation in vocational education and training

Data refer to the number of students participating in vocational education and training, expressed as a proportion of the population.

Source: Compiled by PHIDU based on data from the National Centre for Vocational Education Research Ltd, 2010; and ABS Estimated Resident Population, 2010.

NAPLAN (the National Assessment Program - Literacy and Numeracy)

Reading outcomes in Year 3 and Year 9

Numeracy outcomes in Year 3 and Year 9

The NAPLAN results are presented as the number of children in Year 3 or Year 9 who have scores below the national minimum standard for reading or numeracy.

Source: Compiled by PHIDU using data supplied by the Victorian Curriculum and Assessment Authority.

School leavers admitted to university

The data are presented as the number of people who are school leavers (i.e., students who attained a Year 12 qualification in 2012 in any State/ Territory through the completion of one or more Year 12 courses) and who are identified as enrolled at an Australian university, as at 31 March 2013.

Source: Compiled by PHIDU using data supplied by State and Territory tertiary admissions bodies and ABS Estimated Resident Population, 30 June 2012.

AEDC (the Australian Early Development Census)

Children 'on track' in the Physical health and wellbeing domain, or in the Language and cognitive skills (school-based) domain

Children developmentally vulnerable in one or more domains of the AEDC

The AEDC results are presented as the number of children who are considered to be 'on track' in the physical health and wellbeing domain, or in the language and cognitive skills (school-based) domain, as a proportion of all children assessed using the AEDC (children who score above the 25th percentile (in the top 75 per cent) of the AEDC population are classified as 'on track'). Data are also provided for children who are considered to be 'developmentally vulnerable' (children who score in the lowest ten per cent) on one or more of the five domains (or areas of early child development, which are: physical health and wellbeing; social competence; emotional maturity; language and cognitive skills (school-based); and communication skills and general knowledge), as a proportion of all children assessed using the AEDC.

Although the data published for Melbourne and Melbourne - West closely approximate the ABS GCCSA of Melbourne and the ABS SA4 of Melbourne - West, they are not exact figures, having been compiled from data coded to suburbs and groups of suburbs, whose boundaries do not match these ABS geographic areas.

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

Appendix B: Correlation analysis

A correlation analysis has been undertaken to illustrate the extent of association at the Statistical Local Area (SLA) level between the indicators in this atlas for which data were available for the 80 SLAs in Melbourne.

As a general rule, correlation coefficients of plus or minus 0.71 or above are of substantial statistical significance, because this higher value represents at least fifty per cent shared variation (r^2 greater than or equal to 0.5): these are referred to in this atlas as being 'very strong' correlations, while those of 0.50 to 0.70 are of meaningful statistical significance, and are referred to as being 'strong' correlations. Readers should note that correlations between the IRSD and poor health outcomes (e.g., high rates of premature death) appear in the tables as negative numbers. This occurs because low 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.

The results of the correlation analysis are discussed under each indicator in Section 3, where you can find full definitions and links to data sources. In discussing the correlations across Melbourne's SLAs, attention is drawn to the existence of similar associations at the PHA level within Brimbank.

Data for indicators included in Tables 1 and 2 which were available at the SLA level, but not by PHA, have been included in the correlation analysis (and have been underlined). They are indicators of community strengths (people can get support in times of crisis from outside of household, provide support to relatives living outside the household, feeling very safe/safe walking alone in local area after dark); of financial and transport barriers to accessing services (people delayed medical consultation because could not afford it, delayed purchasing prescribed medication due to cost, have difficulty accessing services); of health and wellbeing (childhood immunisation at five years of age, infant death rate, child mortality rate and premature mortality for males, females and from external causes); and of education and child development (participation in vocational education and training, and school leavers admitted to university).

The full matrix is available overleaf (Table 87).

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Table 87: Correlations matrix of the indicator data at the Statistical Local Area level in Greater Melbourne

	Socioeconomic status				Birthplace			Indigenous status	Labour force					Housing and transport			Internet	Community strength				Access to services		
Indicators	IRSD	Children living in jobless families	Children in families where mother has low educational attainment	Learning or earning at ages 15 to 24 yrs	Recent arrivals of people born in NES countries	Longer term residents born in NES countries	People born overseas reporting poor proficiency in English	Aboriginal and Torres Strait Islander peoples	Unemploy-ment	Unemployed youth	Female labour force participation	People working as managers or professionals	People working as labourers	Social housing	Low income households under financial stress from rent or mortgage	No motor vehicle	No Internet access at home	Voluntary work through an organisation	Support in times of crisis	Support to other relatives living outside the household	Feeling very safe/safe walking alone in local area after dark	Delayed medical consultation because could not afford it	Delayed purchasing prescribed medication because could not afford it	Difficulty accessing services
Index of Relative Socio-economic Disadvantage (IRSD)	1.00	-0.94**	-0.82**	0.80**	-0.24*	-0.49**	-0.67**	-0.45**	-0.77**	-0.54**	0.70**	0.67**	-0.82**	-0.30**	-0.86**	-0.13	-0.89**	0.73**	0.81**	0.73**	0.68**	-0.73**	-0.84**	-0.06
Children living in jobless families	-0.94**	1.00	0.76**	-0.80**	0.30**	0.48**	0.64**	0.40**	0.81**	0.59**	-0.63**	-0.53**	0.68**	0.40**	0.81**	0.26*	0.76**	-0.69**	-0.79**	-0.62**	-0.60**	0.62**	0.78**	0.01
Children in families where mother has low educational attainment	-0.82**	0.76**	1.00	-0.74**	-0.14	0.15	0.26*	0.55**	0.44**	0.19	-0.45**	-0.87**	0.92**	0.06	0.64**	-0.25*	0.75**	-0.61**	-0.55**	-0.73**	-0.47**	0.67**	0.78**	0.17
Learning or earning at ages 15 to 24 yrs	0.80**	-0.80**	-0.74**	1.00	-0.06	-0.15	-0.29**	-0.63**	-0.53**	-0.32**	0.37**	0.61**	-0.66**	-0.21	-0.62**	-0.15	-0.77**	0.68**	0.61**	0.83**	0.45**	-0.73**	-0.82**	-0.13
Recent arrivals of people born in NES countries	-0.24*	0.30**	-0.14	-0.06	1.00	0.54**	0.55**	-0.24*	0.72**	0.84**	-0.25*	0.22	-0.06	0.18	0.51**	0.76**	-0.03	-0.30**	-0.60**	0.12	-0.22*	0.00	0.03	-0.13
Longer term residents born in NES countries	-0.49**	0.48**	0.15	-0.15	0.54**	1.00	0.90**	-0.23*	0.68**	0.60**	-0.52**	-0.15	0.30**	0.13	0.51**	0.20	0.40**	-0.64**	-0.72**	0.06	-0.65**	0.09	0.18	-0.37**
People born overseas reporting poor proficiency in English	-0.67**	0.64**	0.26*	-0.29**	0.55**	0.90**	1.00	-0.12	0.77**	0.64**	-0.58**	-0.16	0.39**	0.32**	0.60**	0.32**	0.57**	-0.61**	-0.80**	-0.15	-0.68**	0.26*	0.35**	-0.27*
Aboriginal and Torres Strait Islander peoples	-0.45**	0.40**	0.55**	-0.63**	-0.24*	-0.23*	-0.12	1.00	0.12	0.00	-0.16	-0.54**	0.51**	0.07	0.33**	-0.15	0.48**	-0.26*	-0.17	-0.65**	-0.04	0.61**	0.56**	0.42**
Unemployment	-0.77**	0.81**	0.44**	-0.53**	0.72**	0.68**	0.77**	0.12	1.00	0.91**	-0.62**	-0.31**	0.48**	0.29*	0.86**	0.47**	0.52**	-0.66**	-0.87**	-0.31**	-0.64**	0.42**	0.55**	-0.17
Unemployed youth	-0.54**	0.59**	0.19	-0.32**	0.84**	0.60**	0.64**	0.00	0.91**	1.00	-0.45**	-0.09	0.23*	0.25*	0.74**	0.57**	0.28*	-0.52**	-0.75**	-0.14	-0.47**	0.27*	0.34**	-0.15
Female labour force participation	0.70**	-0.63**	-0.45**	0.37**	-0.25*	-0.52**	-0.58**	-0.16	-0.62**	-0.45**	1.00	0.43**	-0.56**	-0.04	-0.74**	0.05	-0.56**	0.45**	0.46**	0.27*	0.60**	-0.27*	-0.41**	0.13
People working as managers or professionals	0.67**	-0.53**	-0.87**	0.61**	0.22	-0.15	-0.16	-0.54**	-0.31**	-0.09	0.43**	1.00	-0.92**	0.29**	-0.56**	0.50**	-0.65**	0.64**	0.44**	0.66**	0.54**	-0.60**	-0.66**	-0.05
People working as labourers	-0.82**	0.68**	0.92**	-0.66**	-0.06	0.30**	0.39**	0.51**	0.48**	0.23*	-0.56**	-0.92**	1.00	-0.13	0.70**	-0.33**	0.77**	-0.64**	-0.61**	-0.67**	-0.54**	0.62**	0.73**	0.16
Social housing	-0.30**	0.40**	0.06	-0.21	0.18	0.13	0.32**	0.07	0.29*	0.25*	-0.04	0.29**	-0.13	1.00	0.13	0.54**	0.26*	-0.01	-0.24*	-0.21	-0.10	0.33**	0.28*	0.00
Low income households under financial stress from rent or mortgage	-0.86**	0.81**	0.64**	-0.62**	0.51**	0.51**	0.60**	0.33**	0.86**	0.74**	-0.74**	-0.56**	0.70**	0.13	1.00	0.25*	0.64**	-0.64**	-0.78**	-0.51**	-0.60**	0.55**	0.66**	0.05
No motor vehicle	-0.13	0.26*	-0.25*	-0.15	0.76**	0.20	0.32**	-0.15	0.47**	0.57**	0.05	0.50**	-0.33**	0.54**	0.25*	1.00	-0.05	-0.06	-0.40**	-0.02	0.03	0.09	0.08	0.03
No Internet access at home	-0.89**	0.76**	0.75**	-0.77**	-0.03	0.40**	0.57**	0.48**	0.52**	0.28*	-0.56**	-0.65**	0.77**	0.26*	0.64**	-0.05	1.00	-0.69**	-0.63**	-0.76**	-0.61**	0.74**	0.80**	0.09
Voluntary work through an organisation	0.73**	-0.69**	-0.61**	0.68**	-0.30**	-0.64**	-0.61**	-0.26*	-0.66**	-0.52**	0.45**	0.64**	-0.64**	-0.01	-0.64**	-0.06	-0.69**	1.00	0.78**	0.49**	0.74**	-0.55**	-0.61**	0.24*
Support in times of crisis	0.81**	-0.79**	-0.55**	0.61**	-0.60**	-0.72**	-0.80**	-0.17	-0.87**	-0.75**	0.46**	0.44**	-0.61**	-0.24*	-0.78**	-0.40**	-0.63**	0.78**	1.00	0.46**	0.61**	-0.51**	-0.61**	0.03
Support to other relatives living outside the household	0.73**	-0.62**	-0.73**	0.83**	0.12	0.06	-0.15	-0.65**	-0.31**	-0.14	0.27*	0.66**	-0.67**	-0.21	-0.51**	-0.02	-0.76**	0.49**	0.46**	1.00	0.39**	-0.86**	-0.84**	-0.27*
Feeling very safe/safe walking alone in local area after dark	0.68**	-0.60**	-0.47**	0.45**	-0.22*	-0.65**	-0.68**	-0.04	-0.64**	-0.47**	0.60**	0.54**	-0.54**	-0.10	-0.60**	0.03	-0.61**	0.74**	0.61**	0.39**	1.00	-0.49**	-0.56**	0.64**
Delayed medical consultation because could not afford it	-0.73**	0.62**	0.67**	-0.73**	0.00	0.09	0.26*	0.61**	0.42**	0.27*	-0.27*	-0.60**	0.62**	0.33**	0.55**	0.09	0.74**	-0.55**	-0.51**	-0.86**	-0.49**	1.00	0.90**	0.13
Delayed purchasing prescribed medication because could not afford it	-0.84**	0.78**	0.78**	-0.82**	0.03	0.18	0.35**	0.56**	0.55**	0.34**	-0.41**	-0.66**	0.73**	0.28*	0.66**	0.08	0.80**	-0.61**	-0.61**	-0.84**	-0.56**	0.90**	1.00	0.09
Difficulty accessing services	-0.06	0.01	0.17	-0.13	-0.13	-0.37**	-0.27*	0.42**	-0.17	-0.15	0.13	-0.05	0.16	0.00	0.05	0.03	0.09	0.24*	0.03	-0.27*	0.64**	0.13	0.09	1.00
Children living with disability aged 0 to 14 yrs	-0.34**	0.27*	0.69**	-0.40**	-0.51**	-0.26*	-0.23*	0.52**	-0.04	-0.19	-0.14	-0.76**	0.61**	-0.22*	0.21	-0.58**	0.40**	-0.21	0.01	-0.54**	-0.21	0.49**	0.49**	0.12
People living with disability aged 15 yrs and over	-0.79**	0.66**	0.57**	-0.56**	-0.10	0.47**	0.60**	0.34**	0.46**	0.21	-0.76**	-0.55**	0.65**	0.22	0.58**	-0.18	0.86**	-0.56**	-0.46**	-0.58**	-0.69**	0.58**	0.64**	-0.09
Low birthweight babies	-0.54**	0.46**	0.58**	-0.43**	-0.03	0.30**	0.30**	0.29*	0.27*	0.14	-0.31**	-0.55**	0.61**	0.05	0.42**	-0.16	0.59**	-0.51**	-0.46**	-0.45**	-0.27*	0.39**	0.46**	0.20
Women smoking during pregnancy	-0.52**	0.46**	0.81**	-0.68**	-0.33**	-0.26*	-0.20	0.64**	0.13	-0.07	-0.27*	-0.76**	0.71**	-0.14	0.43**	-0.31**	0.51**	-0.36**	-0.19	-0.71**	-0.18	0.58**	0.64**	0.30**
Children fully immunised at 5 years of age	0.04	-0.16	0.05	0.15	-0.32**	-0.02	-0.06	0.00	-0.16	-0.18	0.03	-0.15	0.05	-0.02	-0.07	-0.36**	0.13	-0.08	0.19	0.06	-0.17	0.10	-0.03	-0.13
Hospitalisations for ACSCs: children aged 0 to 14 yrs	-0.43**	0.44**	0.23*	-0.39**	0.49**	0.21	0.27*	0.08	0.58**	0.56**	-0.30**	-0.21	0.23*	0.10	0.54**	0.41**	0.22*	-0.40**	-0.47**	-0.26*	-0.41**	0.32**	0.37**	-0.15
Hospitalisations for ACSCs: people aged 15 yrs and over	-0.66**	0.58**	0.59**	-0.65**	0.10	0.23*	0.29**	0.40**	0.46**	0.31**	-0.39**	-0.57**	0.59**	0.12	0.60**	0.05	0.62**	-0.62**	-0.50**	-0.61**	-0.56**	0.66**	0.67**	-0.04
Hospitalisations for ACSCs: Total	-0.67**	0.59**	0.58**	-0.65**	0.13	0.24*	0.31**	0.39**	0.49**	0.34**	-0.41**	-0.55**	0.58**	0.13	0.61**	0.09	0.61**	-0.62**	-0.51**	-0.60**	-0.57**	0.65**	0.67**	-0.06
Self assesed health status reported as 'fair' or 'poor'#	-0.95**	0.86**	0.75**	-0.77**	0.26*	0.55**	0.68**	0.43**	0.76**	0.55**	-0.66**	-0.70**	0.80**	0.16	0.84**	0.09	0.88**	-0.81**	-0.82**	-0.72**	-0.74**	0.74**	0.81**	-0.01
Prevalence of diabetes mellitus#	-0.81**	0.79**	0.51**	-0.57**	0.36**	0.76**	0.87**	0.14	0.76**	0.59**	-0.53**	-0.40**	0.57**	0.31**	0.66**	0.22	0.78**	-0.77**	-0.84**	-0.41**	-0.67**	0.48**	0.58**	-0.13
Prevalence of circulatory system diseases#	-0.61**	0.49**	0.57**	-0.62**	-0.06	0.17	0.26*	0.40**	0.29**	0.17	-0.26*	-0.48**	0.51**	0.29*	0.43**	0.03	0.69**	-0.55**	-0.42**	-0.70**	-0.45**	0.70**	0.63**	0.05
Infant deaths	-0.10	0.25	0.02	-0.19	0.44**	0.35**	0.23	-0.06	0.33**	0.29*	-0.10	0.07	0.01	0.02	0.15	0.38**	-0.07	-0.25*	-0.38**	0.11	-0.08	-0.12	0.05	-0.17
Child mortality	-0.38*	0.36*	0.34	-0.34*	-0.02	0.41*	0.34*	0.07	0.24	0.15	-0.26	-0.44**	0.40*	0.06	0.30	-0.15	0.40*	-0.59**	-0.36*	-0.23	-0.53**	0.32	0.30	-0.27
Premature mortality - males	-0.76**	0.69**	0.65**	-0.80**	-0.02	0.12	0.31**	0.60**	0.46**	0.26*	-0.35**	-0.49**	0.58**	0.45**	0.54**	0.13	0.79**	-0.48**	-0.50**	-0.81**	-0.41**	0.78**	0.80**	0.19
Premature mortality - females	-0.63**	0.56**	0.69**	-0.68**	-0.25*	-0.04	0.12	0.62**	0.27*	0.06	-0.29**	-0.59**	0.62**	0.23*	0.41**	-0.17	0.72**	-0.37**	-0.29**	-0.73**	-0.32**	0.69**	0.70**	0.19
Premature mortality - external causes	-0.35**	0.31**	0.41**	-0.42**	-0.17	-0.27*	-0.10	0.49**	0.07	-0.07	-0.12	-0.29**	0.38**	0.14	0.26*	-0.01	0.34**	0.04	-0.12	-0.53**	0.18	0.34**	0.39**	0.57**
High or very high psychological distress - males#	-0.82**	0.80**	0.52**	-0.71**	0.47**	0.42**	0.60**	0.35**	0.76**	0.61**	-0.56**	-0.34**	0.51**	0.42**	0.78**	0.49**	0.66**	-0.58**	-0.76**	-0.64**	-0.56**	0.63**	0.70**	0.02
High or very high psychological distress - females#	-0.90**	0.85**	0.73**	-0.77**	0.28*	0.38**	0.53**	0.46**	0.73**	0.52**	-0.67**	-0.60**	0.72**	0.28*	0.82**	0.21	0.74**	-0.67**	-0.72**	-0.70**	-0.64**	0.68**	0.77**	0.01
Male smokers#	-0.83**	0.74**	0.91**	-0.84**	-0.06	0.11	0.23*	0.65**	0.46**	0.24*	-0.49**	-0.88**	0.90**	-0.03	0.70**	-0.15	0.78**	-0.66**	-0.58**	-0.86**	-0.48**	0.76**	0.84**	0.22*
Females smokers#	-0.49**	0.42**	0.77**	-0.70**	-0.41**	-0.39**	-0.28*	0.72**	0.02	-0.17	-0.18	-0.71**	0.65**	-0.09	0.33**	-0.29*	0.51**	-0.29**	-0.10	-0.77**	-0.10	0.61**	0.66**	0.37**
Obese males#	-0.49**	0.30**	0.71**	-0.45**	-0.38**	0.00	0.02	0.51**	0.09	-0.08	-0.32**	-0.91**	0.78**	-0.32**	0.36**	-0.62**	0.56**	-0.46**	-0.23*	-0.64**	-0.45**	0.56**	0.54**	0.07
Obese females#	-0.64**	0.49**	0.83**	-0.61**	-0.39**	0.03	0.09	0.54**	0.18	-0.04	-0.39**	-0.93**	0.85**	-0.19	0.43**	-0.54**	0.69**	-0.55**	-0.31**	-0.72**	-0.50**	0.62**	0.67**	0.06
Participation in preschool	0.78**	-0.81**	-0.75**	0.76**	-0.33**	-0.44**	-0.48**	-0.41**	-0.72**	-0.56**	0.38**	0.64**	-0.68**	-0.17	-0.70**	-0.19	-0.63**	0.82**	0.80**	0.60**	0.57**	-0.65**	-0.71**	0.01
Young people participating in full-time secondary education	0.65**	-0.70**	-0.64**	0.78**	-0.33**	-0.07	-0.18	-0.55**	-0.56**	-0.48**	0.31**	0.48**	-0.52**	-0.15	-0.65**	-0.35**	-0.46**	0.55**	0.61**	0.64**	0.24*	-0.59**	-0.65**	-0.25*
Participation in vocational education and training	-0.68**	0.61**	0.90**	-0.70**	-0.24*	0.12	0.16	0.58**	0.32**	0.09	-0.35**	-0.91**	0.87**	-0.10	0.53**	-0.42**	0.66**	-0.63**	-0.45**	-0.68**	-0.48**	0.63**	0.69**	0.07
Early school leavers	-0.64**	0.49**	0.89**	-0.61**	-0.38**	0.00	0.07	0.60**	0.16	-0.05	-0.36**	-0.95**	0.89**	-0.21	0.45**	-0.53**	0.70**	-0.54**	-0.32**	-0.73**	-0.41**	0.65**	0.67**	0.19
School leavers enrolled in higher education	0.44**	-0.39**	-0.74**	0.64**	0.31**	0.27*	0.20	-0.60**	-0.07	0.05	0.06	0.72**	-0.65**	0.09	-0.32**	0.30**	-0.47**	0.36**	0.22	0.73**	0.17	-0.58**	-0.61**	-0.23*
Highest level of education - Bachelor Degree or higher	0.63**	-0.50**	-0.88**	0.65**	0.29**	0.00	-0.04	-0.59**	-0.20	0.00	0.31**	0.97**	-0.88**	0.24*	-0.47**	0.45**	-0.63**	0.60**	0.39**	0.74**	0.43**	-0.63**	-0.67**	-0.14
Highest level of education - Advanced Diploma, Diploma or Certificate	0.02	-0.15	0.44**	-0.13	-0.65**	-0.52**	-0.55**	0.41**	-0.41**	-0.50**	0.09	-0.66**	0.44**	-0.49**	-0.09	-0.74**	0.05	0.03	0.29**	-0.37**	0.04	0.21	0.17	0.17
AEDC: Children developmentally on track - physical health and wellbeing	0.73**	-0.76**	-0.72**	0.66**	-0.07	-0.27*	-0.36**	-0.44**	-0.50**	-0.28*	0.41**	0.53**	-0.61**	-0.38**	-0.57**	-0.08	-0.61**	0.55**	0.56**	0.57**	0.42**	-0.59**	-0.68**	-0.04
AEDC: Children developmentally on track - language and cognitive skills	0.82**	-0.84**	-0.84**	0.71**	-0.05	-0.34**	-0.45**	-0.43**	-0.58**	-0.35**	0.53**	0.69**	-0.78**	-0.18	-0.68**	0.05	-0.70**	0.63**	0.63**	0.59**	0.54**	-0.56**	-0.71**	0.01
AEDC: Children developmentally vulnerable on one or more domains	-0.84**	0.87**	0.78**	-0.66**	0.25*	0.49**	0.58**	0.35**	0.73**	0.52**	-0.58**	-0.62**	0.72**	0.29*	0.74**	0.08	0.67**	-0.70**	-0.73**	-0.50**	-0.62**	0.56**	0.69**	-0.11

Notes:

Data based on modelled estimates: see Appendix C for details.

* Correlation is statistically significant, at the 95% confidence level

**Correlation is statistically significant, at the 99% confidence level

Weak or no correlation:	< ± 0.30
Moderate correlation:	± 0.30 to ± 0.49
Strong correlation:	± 0.50 to ± 0.70
Very strong correlation:	> ± 0.70
Not applicable:	1.00

Table 87: Correlations matrix of the indicator data at the Statistical Local Area level in Greater Melbourne …*continued*

Indicators	Disability					Health and wellbeing								Premature mortality							
						Hospitalisations for ACSCs															
	Children living with disability aged 0 to 14 yrs	People living with disability aged 15 yrs and over	Low birthweight babies	Women smoking during pregnancy	Children fully immunised at 5 years of age	Children aged 0 to 14 yrs	People aged 15 yrs and over	Total	Self assesed health status reported as 'fair' or 'poor'#	Prevalence of diabetes mellitus#	Prevalence of circulatory system diseases#	Infant deaths	Child mortality	Males, 0 to 74 years	Females, 0 to 74 years	External causes, 0 to 74 years	High or very high psychological distress - males#	High or very high psychological distress - females#	Male smokers#	Females smokers#	Obese males#	Obese females#
Index of Relative Socio-economic Disadvantage (IRSD)	-0.34**	-0.79**	-0.54**	-0.52**	0.04	-0.43**	-0.66**	-0.67**	-0.95**	-0.81**	-0.61**	-0.10	-0.38*	-0.76**	-0.63**	-0.35**	-0.82**	-0.90**	-0.83**	-0.49**	-0.49**	-0.64**
Children living in jobless families	0.27*	0.66**	0.46**	0.46**	-0.16	0.44**	0.58**	0.59**	0.86**	0.79**	0.49**	0.25	0.36*	0.69**	0.56**	0.31**	0.80**	0.85**	0.74**	0.42**	0.30**	0.49**
Children in families where mother has low educational attainment	0.69**	0.57**	0.58**	0.81**	0.05	0.23*	0.59**	0.58**	0.75**	0.51**	0.57**	0.02	0.34	0.65**	0.69**	0.41**	0.52**	0.73**	0.91**	0.77**	0.71**	0.83**
Learning or earning at ages 15 to 24 yrs	-0.40**	-0.56**	-0.43**	-0.68**	0.15	-0.39**	-0.65**	-0.65**	-0.77**	-0.57**	-0.62**	-0.19	-0.34*	-0.80**	-0.68**	-0.42**	-0.71**	-0.77**	-0.84**	-0.70**	-0.45**	-0.61**
Recent arrivals of people born in NES countries	-0.51**	-0.10	-0.03	-0.33**	-0.32**	0.49**	0.10	0.13	0.26*	0.36**	-0.06	0.44**	-0.02	-0.02	-0.25*	-0.17	0.47**	0.28*	-0.06	-0.41**	-0.38**	-0.39**
Longer term residents born in NES countries	-0.26*	0.47**	0.30**	-0.26*	-0.02	0.21	0.23*	0.24*	0.55**	0.76**	0.17	0.35**	0.41*	0.12	-0.04	-0.27*	0.42**	0.38**	0.11	-0.39**	0.00	0.03
People born overseas reporting poor proficiency in English	-0.23*	0.60**	0.30**	-0.20	-0.06	0.27*	0.29**	0.31**	0.68**	0.87**	0.26*	0.23	0.34*	0.31**	0.12	-0.10	0.60**	0.53**	0.23*	-0.28*	0.02	0.09
Aboriginal and Torres Strait Islander peoples	0.52**	0.34**	0.29*	0.64**	0.00	0.08	0.40**	0.39**	0.43**	0.14	0.40**	-0.06	0.07	0.60**	0.62**	0.49**	0.35**	0.46**	0.65**	0.72**	0.51**	0.54**
Unemployment	-0.04	0.46**	0.27*	0.13	-0.16	0.58**	0.46**	0.49**	0.76**	0.76**	0.29**	0.33**	0.24	0.46**	0.27*	0.07	0.76**	0.73**	0.46**	0.02	0.09	0.18
Unemployed youth	-0.19	0.21	0.14	-0.07	-0.18	0.56**	0.31**	0.34**	0.55**	0.59**	0.17	0.29*	0.15	0.26*	0.06	-0.07	0.61**	0.52**	0.24*	-0.17	-0.08	-0.04
Female labour force participation	-0.14	-0.76**	-0.31**	-0.27*	0.03	-0.30**	-0.39**	-0.41**	-0.66**	-0.53**	-0.26*	-0.10	-0.26	-0.35**	-0.29**	-0.12	-0.56**	-0.67**	-0.49**	-0.18	-0.32**	-0.39**
People working as managers or professionals	-0.76**	-0.55**	-0.55**	-0.76**	-0.15	-0.21	-0.57**	-0.55**	-0.70**	-0.40**	-0.48**	0.07	-0.44**	-0.49**	-0.59**	-0.29**	-0.34**	-0.60**	-0.88**	-0.71**	-0.91**	-0.93**
People working as labourers	0.61**	0.65**	0.61**	0.71**	0.05	0.23*	0.59**	0.58**	0.80**	0.57**	0.51**	0.01	0.40*	0.58**	0.62**	0.38**	0.51**	0.72**	0.90**	0.65**	0.78**	0.85**
Social housing	-0.22*	0.22	0.05	-0.14	-0.02	0.10	0.12	0.13	0.16	0.31**	0.29*	0.02	0.06	0.45**	0.23*	0.14	0.42**	0.28*	-0.03	-0.09	-0.32**	-0.19
Low income households under financial stress from rent or mortgage	0.21	0.58**	0.42**	0.43**	-0.07	0.54**	0.60**	0.61**	0.84**	0.66**	0.43**	0.15	0.30	0.54**	0.41**	0.26*	0.78**	0.82**	0.70**	0.33**	0.36**	0.43**
No motor vehicle	-0.58**	-0.18	-0.16	-0.31**	-0.36**	0.41**	0.05	0.09	0.09	0.22	0.03	0.38**	-0.15	0.13	-0.17	-0.01	0.49**	0.21	-0.15	-0.29*	-0.62**	-0.54**
No Internet access at home	0.40**	0.86**	0.59**	0.51**	0.13	0.22*	0.62**	0.61**	0.88**	0.78**	0.69**	-0.07	0.40*	0.79**	0.72**	0.34**	0.66**	0.74**	0.78**	0.51**	0.56**	0.69**
Voluntary work through an organisation	-0.21	-0.56**	-0.51**	-0.36**	-0.08	-0.40**	-0.62**	-0.62**	-0.81**	-0.77**	-0.55**	-0.25*	-0.59**	-0.48**	-0.37**	0.04	-0.58**	-0.67**	-0.66**	-0.29**	-0.46**	-0.55**
Support in times of crisis	0.01	-0.46**	-0.46**	-0.19	0.19	-0.47**	-0.50**	-0.51**	-0.82**	-0.84**	-0.42**	-0.38**	-0.36*	-0.50**	-0.29**	-0.12	-0.76**	-0.72**	-0.58**	-0.10	-0.23*	-0.31**
Support to other relatives living outside the household	-0.54**	-0.58**	-0.45**	-0.71**	0.06	-0.26*	-0.61**	-0.60**	-0.72**	-0.41**	-0.70**	0.11	-0.23	-0.81**	-0.73**	-0.53**	-0.64**	-0.70**	-0.86**	-0.77**	-0.64**	-0.72**
Feeling very safe/safe walking alone in local area after dark	-0.21	-0.69**	-0.27*	-0.18	-0.17	-0.41**	-0.56**	-0.57**	-0.74**	-0.67**	-0.45**	-0.08	-0.53**	-0.41**	-0.32**	0.18	-0.56**	-0.64**	-0.48**	-0.10	-0.45**	-0.50**
Delayed medical consultation because could not afford it	0.49**	0.58**	0.39**	0.58**	0.10	0.32**	0.66**	0.65**	0.74**	0.48**	0.70**	-0.12	0.32	0.78**	0.69**	0.34**	0.63**	0.68**	0.76**	0.61**	0.56**	0.62**
Delayed purchasing prescribed medication because could not afford it	0.49**	0.64**	0.46**	0.64**	-0.03	0.37**	0.67**	0.67**	0.81**	0.58**	0.63**	0.05	0.30	0.80**	0.70**	0.39**	0.70**	0.77**	0.84**	0.66**	0.54**	0.67**
Difficulty accessing services	0.12	-0.09	0.20	0.30**	-0.13	-0.15	-0.04	-0.06	-0.01	-0.13	0.05	-0.17	-0.27	0.19	0.19	0.57**	0.02	0.01	0.22*	0.37**	0.07	0.06
Children living with disability aged 0 to 14 yrs	1.00	0.32**	0.38**	0.73**	0.17	-0.03	0.29**	0.27*	0.34**	0.00	0.36**	-0.21	0.19	0.36**	0.57**	0.34**	0.04	0.29*	0.65**	0.75**	0.77**	0.78**
People living with disability aged 15 yrs and over	0.32**	1.00	0.46**	0.35**	0.18	0.16	0.54**	0.54**	0.81**	0.72**	0.55**	-0.07	0.38*	0.63**	0.57**	0.20	0.58**	0.67**	0.60**	0.33**	0.52**	0.64**
Low birthweight babies	0.38**	0.46**	1.00	0.38**	0.04	0.12	0.38**	0.37**	0.54**	0.48**	0.43**	0.18	0.41*	0.38**	0.37**	0.24*	0.34**	0.43**	0.57**	0.37**	0.49**	0.56**
Women smoking during pregnancy	0.73**	0.35**	0.38**	1.00	0.04	0.16	0.52**	0.50**	0.47**	0.10	0.53**	-0.02	0.15	0.54**	0.61**	0.46**	0.33**	0.55**	0.82**	0.94**	0.67**	0.75**
Children fully immunised at 5 years of age	0.17	0.18	0.04	0.04	1.00	-0.08	0.20	0.18	0.01	0.02	0.21	-0.64**	0.20	0.05	0.07	-0.21	-0.20	-0.08	-0.03	0.03	0.21	0.19
Hospitalisations for ACSCs: children aged 0 to 14 yrs	-0.03	0.16	0.12	0.16	-0.08	1.00	0.62**	0.68**	0.45**	0.34**	0.14	0.05	0.09	0.27*	0.11	0.02	0.50**	0.48**	0.34**	0.14	0.08	0.14
Hospitalisations for ACSCs: people aged 15 yrs and over	0.29**	0.54**	0.38**	0.52**	0.20	0.62**	1.00	1.00**	0.70**	0.52**	0.55**	-0.11	0.44**	0.60**	0.48**	0.19	0.57**	0.66**	0.66**	0.48**	0.45**	0.54**
Hospitalisations for ACSCs: Total	0.27*	0.54**	0.37**	0.50**	0.18	0.68**	1.00**	1.00	0.70**	0.52**	0.52**	-0.11	0.40*	0.59**	0.47**	0.18	0.59**	0.67**	0.65**	0.46**	0.43**	0.53**
Self assesed health status reported as 'fair' or 'poor'#	0.34**	0.81**	0.54**	0.47**	0.01	0.45**	0.70**	0.70**	1.00	0.85**	0.61**	0.11	0.40*	0.70**	0.57**	0.23*	0.78**	0.85**	0.82**	0.43**	0.56**	0.67**
Prevalence of diabetes mellitus#	0.00	0.72**	0.48**	0.10	0.02	0.34**	0.52**	0.52**	0.85**	1.00	0.42**	0.18	0.47**	0.51**	0.34**	0.05	0.64**	0.64**	0.50**	0.04	0.23*	0.38**
Prevalence of circulatory system diseases#	0.36**	0.55**	0.43**	0.53**	0.21	0.14	0.55**	0.52**	0.61**	0.42**	1.00	0.01	0.24	0.67**	0.55**	0.19	0.52**	0.57**	0.60**	0.52**	0.48**	0.51**
Infant deaths	-0.21	-0.07	0.18	-0.02	-0.64**	0.05	-0.11	-0.11	0.11	0.18	0.01	1.00	0.25	-0.10	-0.14	-0.15	0.27*	0.18	0.01	-0.11	-0.26*	-0.16
Child mortality	0.19	0.38*	0.41*	0.15	0.20	0.09	0.44**	0.40*	0.40*	0.47**	0.24	0.25	1.00	0.28	0.19	-0.12	0.17	0.28	0.29	0.10	0.33	0.40*
Premature mortality - males	0.36**	0.63**	0.38**	0.54**	0.05	0.27*	0.60**	0.59**	0.70**	0.51**	0.67**	-0.10	0.28	1.00	0.83**	0.58**	0.68**	0.71**	0.71**	0.58**	0.39**	0.53**
Premature mortality - females	0.57**	0.57**	0.37**	0.61**	0.07	0.11	0.48**	0.47**	0.57**	0.34**	0.55**	-0.14	0.19	0.83**	1.00	0.62**	0.46**	0.58**	0.68**	0.65**	0.51**	0.64**
Premature mortality - external causes	0.34**	0.20	0.24*	0.46**	-0.21	0.02	0.19	0.18	0.23*	0.05	0.19	-0.15	-0.12	0.58**	0.62**	1.00	0.27*	0.31**	0.47**	0.50**	0.24*	0.32**
High or very high psychological distress - males#	0.04	0.58**	0.34**	0.33**	-0.20	0.50**	0.57**	0.59**	0.78**	0.64**	0.52**	0.27*	0.17	0.68**	0.46**	0.27*	1.00	0.93**	0.62**	0.32**	0.18	0.31**
High or very high psychological distress - females#	0.29*	0.67**	0.43**	0.55**	-0.08	0.48**	0.66**	0.67**	0.85**	0.64**	0.57**	0.18	0.28	0.71**	0.58**	0.31**	0.93**	1.00	0.79**	0.51**	0.42**	0.55**
Male smokers#	0.65**	0.60**	0.57**	0.82**	-0.03	0.34**	0.66**	0.65**	0.82**	0.50**	0.60**	0.01	0.29	0.71**	0.68**	0.47**	0.62**	0.79**	1.00	0.82**	0.76**	0.85**
Females smokers#	0.75**	0.33**	0.37**	0.94**	0.03	0.14	0.48**	0.46**	0.43**	0.04	0.52**	-0.11	0.10	0.58**	0.65**	0.50**	0.32**	0.51**	0.82**	1.00	0.66**	0.74**
Obese males#	0.77**	0.52**	0.49**	0.67**	0.21	0.08	0.45**	0.43**	0.56**	0.23*	0.48**	-0.26*	0.33	0.39**	0.51**	0.24*	0.18	0.42**	0.76**	0.66**	1.00	0.92**
Obese females#	0.78**	0.64**	0.56**	0.75**	0.19	0.14	0.54**	0.53**	0.67**	0.38**	0.51**	-0.16	0.40*	0.53**	0.64**	0.32**	0.31**	0.55**	0.85**	0.74**	0.92**	1.00
Participation in preschool	-0.32**	-0.43**	-0.47**	-0.51**	0.13	-0.48**	-0.60**	-0.60**	-0.79**	-0.68**	-0.51**	-0.37**	-0.48**	-0.58**	-0.44**	-0.13	-0.66**	-0.74**	-0.74**	-0.44**	-0.45**	-0.53**
Young people participating in full-time secondary education	-0.29*	-0.24*	-0.38**	-0.61**	0.34**	-0.46**	-0.48**	-0.49**	-0.60**	-0.39**	-0.46**	-0.44**	-0.20	-0.54**	-0.44**	-0.40**	-0.63**	-0.67**	-0.73**	-0.61**	-0.30**	-0.40**
Participation in vocational education and training	0.72**	0.52**	0.49**	0.76**	0.12	0.16	0.55**	0.53**	0.67**	0.42**	0.48**	-0.02	0.46**	0.58**	0.65**	0.36**	0.35**	0.59**	0.86**	0.71**	0.81**	0.87**
Early school leavers	0.81**	0.58**	0.58**	0.81**	0.18	0.08	0.54**	0.52**	0.66**	0.35**	0.56**	-0.16	0.32	0.53**	0.65**	0.37**	0.29**	0.54**	0.88**	0.80**	0.91**	0.95**
School leavers enrolled in higher education	-0.72**	-0.25*	-0.43**	-0.82**	0.05	-0.02	-0.41**	-0.38**	-0.41**	-0.10	-0.51**	-0.06	-0.25	-0.49**	-0.62**	-0.39**	-0.27*	-0.44**	-0.76**	-0.82**	-0.66**	-0.74**
Highest level of education - Bachelor Degree or higher	-0.76**	-0.48**	-0.56**	-0.82**	-0.10	-0.18	-0.57**	-0.55**	-0.65**	-0.33**	-0.53**	0.07	-0.39*	-0.51**	-0.60**	-0.36**	-0.34**	-0.58**	-0.91**	-0.81**	-0.91**	-0.94**
Highest level of education - Advanced Diploma, Diploma or Certificate	0.74**	0.00	0.15	0.64**	0.14	-0.14	0.13	0.10	-0.01	-0.37**	0.13	-0.30*	0.12	0.07	0.32**	0.29**	-0.24*	0.02	0.46**	0.66**	0.76**	0.67**
AEDC: Children developmentally on track - physical health and wellbeing	-0.34**	-0.49**	-0.41**	-0.50**	0.11	-0.24*	-0.47**	-0.46**	-0.63**	-0.52**	-0.38**	-0.17	-0.47**	-0.61**	-0.47**	-0.27*	-0.57**	-0.66**	-0.66**	-0.48**	-0.36**	-0.51**
AEDC: Children developmentally on track - language and cognitive skills	-0.45**	-0.60**	-0.47**	-0.58**	0.06	-0.27*	-0.53**	-0.53**	-0.74**	-0.65**	-0.40**	-0.09	-0.43*	-0.56**	-0.58**	-0.40**	-0.57**	-0.72**	-0.76**	-0.51**	-0.49**	-0.65**
AEDC: Children developmentally vulnerable on one or more domains	0.36**	0.57**	0.48**	0.46**	-0.04	0.38**	0.53**	0.54**	0.76**	0.69**	0.40**	0.16	0.49**	0.57**	0.50**	0.24*	0.64**	0.76**	0.69**	0.38**	0.41**	0.54**

Notes:

Data based on modelled estimates: see Appendix C for details.

* Correlation is statistically significant, at the 95% confidence level

**Correlation is statistically significant, at the 99% confidence level

Weak or no correlation:	< ± 0.30
Moderate correlation:	± 0.30 to ± 0.49
Strong correlation:	± 0.50 to ± 0.70
Very strong correlation:	> ± 0.70
Not applicable:	1.00

Table 87: Correlations matrix of the indicator data at the Statistical Local Area level in Greater Melbourne …*continued*

Indicators	Education and child development									
						Highest level of education		AEDC: Children developmentally		
	Participation in preschool	Young people participating in full-time secondary education	Participation in vocational education and training	Early school leavers	School leavers enrolled in higher education	Bachelor Degree or higher	Advanced Diploma, Diploma or Certificate	on track: physical health and wellbeing	on track: language and cognitive skills	vulnerable: on one or more domains
Index of Relative Socio-economic Disadvantage (IRSD)	0.78**	0.65**	-0.68**	-0.64**	0.44**	0.63**	0.02	0.73**	0.82**	-0.84**
Children living in jobless families	-0.81**	-0.70**	0.61**	0.49**	-0.39**	-0.50**	-0.15	-0.76**	-0.84**	0.87**
Children in families where mother has low educational attainment	-0.75**	-0.64**	0.90**	0.89**	-0.74**	-0.88**	0.44**	-0.72**	-0.84**	0.78**
Learning or earning at ages 15 to 24 yrs	0.76**	0.78**	-0.70**	-0.61**	0.64**	0.65**	-0.13	0.66**	0.71**	-0.66**
Recent arrivals of people born in NES countries	-0.33**	-0.33**	-0.24*	-0.38**	0.31**	0.29**	-0.65**	-0.07	-0.05	0.25*
Longer term residents born in NES countries	-0.44**	-0.07	0.12	0.00	0.27*	0.00	-0.52**	-0.27*	-0.34**	0.49**
People born overseas reporting poor proficiency in English	-0.48**	-0.18	0.16	0.07	0.20	-0.04	-0.55**	-0.36**	-0.45**	0.58**
Aboriginal and Torres Strait Islander peoples	-0.41**	-0.55**	0.58**	0.60**	-0.60**	-0.59**	0.41**	-0.44**	-0.43**	0.35**
Unemployment	-0.72**	-0.56**	0.32**	0.16	-0.07	-0.20	-0.41**	-0.50**	-0.58**	0.73**
Unemployed youth	-0.56**	-0.48**	0.09	-0.05	0.05	0.00	-0.50**	-0.28*	-0.35**	0.52**
Female labour force participation	0.38**	0.31**	-0.35**	-0.36**	0.06	0.31**	0.09	0.41**	0.53**	-0.58**
People working as managers or professionals	0.64**	0.48**	-0.91**	-0.95**	0.72**	0.97**	-0.66**	0.53**	0.69**	-0.62**
People working as labourers	-0.68**	-0.52**	0.87**	0.89**	-0.65**	-0.88**	0.44**	-0.61**	-0.78**	0.72**
Social housing	-0.17	-0.15	-0.10	-0.21	0.09	0.24*	-0.49**	-0.38**	-0.18	0.29*
Low income households under financial stress from rent or mortgage	-0.70**	-0.65**	0.53**	0.45**	-0.32**	-0.47**	-0.09	-0.57**	-0.68**	0.74**
No motor vehicle	-0.19	-0.35**	-0.42**	-0.53**	0.30**	0.45**	-0.74**	-0.08	0.05	0.08
No Internet access at home	-0.63**	-0.46**	0.66**	0.70**	-0.47**	-0.63**	0.05	-0.61**	-0.70**	0.67**
Voluntary work through an organisation	0.82**	0.55**	-0.63**	-0.54**	0.36**	0.60**	0.03	0.55**	0.63**	-0.70**
Support in times of crisis	0.80**	0.61**	-0.45**	-0.32**	0.22	0.39**	0.29**	0.56**	0.63**	-0.73**
Support to other relatives living outside the household	0.60**	0.64**	-0.68**	-0.73**	0.73**	0.74**	-0.37**	0.57**	0.59**	-0.50**
Feeling very safe/safe walking alone in local area after dark	0.57**	0.24*	-0.48**	-0.41**	0.17	0.43**	0.04	0.42**	0.54**	-0.62**
Delayed medical consultation because could not afford it	-0.65**	-0.59**	0.63**	0.65**	-0.58**	-0.63**	0.21	-0.59**	-0.56**	0.56**
Delayed purchasing prescribed medication because could not afford it	-0.71**	-0.65**	0.69**	0.67**	-0.61**	-0.67**	0.17	-0.68**	-0.71**	0.69**
Difficulty accessing services	0.01	-0.25*	0.07	0.19	-0.23*	-0.14	0.17	-0.04	0.01	-0.11
Children living with disability aged 0 to 14 yrs	-0.32**	-0.29*	0.72**	0.81**	-0.72**	-0.76**	0.74**	-0.34**	-0.45**	0.36**
People living with disability aged 15 yrs and over	-0.43**	-0.24*	0.52**	0.58**	-0.25*	-0.48**	0.00	-0.49**	-0.60**	0.57**
Low birthweight babies	-0.47**	-0.38**	0.49**	0.58**	-0.43**	-0.56**	0.15	-0.41**	-0.47**	0.48**
Women smoking during pregnancy	-0.51**	-0.61**	0.76**	0.81**	-0.82**	-0.82**	0.64**	-0.50**	-0.58**	0.46**
Children fully immunised at 5 years of age	0.13	0.34**	0.12	0.18	0.05	-0.10	0.14	0.11	0.06	-0.04
Hospitalisations for ACSCs: children aged 0 to 14 yrs	-0.48**	-0.46**	0.16	0.08	-0.02	-0.18	-0.14	-0.24*	-0.27*	0.38**
Hospitalisations for ACSCs: people aged 15 yrs and over	-0.60**	-0.48**	0.55**	0.54**	-0.41**	-0.57**	0.13	-0.47**	-0.53**	0.53**
Hospitalisations for ACSCs: Total	-0.60**	-0.49**	0.53**	0.52**	-0.38**	-0.55**	0.10	-0.46**	-0.53**	0.54**
Self assesed health status reported as 'fair' or 'poor'#	-0.79**	-0.60**	0.67**	0.66**	-0.41**	-0.65**	-0.01	-0.63**	-0.74**	0.76**
Prevalence of diabetes mellitus#	-0.68**	-0.39**	0.42**	0.35**	-0.10	-0.33**	-0.37**	-0.52**	-0.65**	0.69**
Prevalence of circulatory system diseases#	-0.51**	-0.46**	0.48**	0.56**	-0.51**	-0.53**	0.13	-0.38**	-0.40**	0.40**
Infant deaths	-0.37**	-0.44**	-0.02	-0.16	-0.06	0.07	-0.30*	-0.17	-0.09	0.16
Child mortality	-0.48**	-0.20	0.46**	0.32	-0.25	-0.39*	0.12	-0.47**	-0.43*	0.49**
Premature mortality - males	-0.58**	-0.54**	0.58**	0.53**	-0.49**	-0.51**	0.07	-0.61**	-0.56**	0.57**
Premature mortality - females	-0.44**	-0.44**	0.65**	0.65**	-0.62**	-0.60**	0.32**	-0.47**	-0.58**	0.50**
Premature mortality - external causes	-0.13	-0.40**	0.36**	0.37**	-0.39**	-0.36**	0.29**	-0.27*	-0.40**	0.24*
High or very high psychological distress - males#	-0.66**	-0.63**	0.35**	0.29**	-0.27*	-0.34**	-0.24*	-0.57**	-0.57**	0.64**
High or very high psychological distress - females#	-0.74**	-0.67**	0.59**	0.54**	-0.44**	-0.58**	0.02	-0.66**	-0.72**	0.76**
Male smokers#	-0.74**	-0.73**	0.86**	0.88**	-0.76**	-0.91**	0.46**	-0.66**	-0.76**	0.69**
Females smokers#	-0.44**	-0.61**	0.71**	0.80**	-0.82**	-0.81**	0.66**	-0.48**	-0.51**	0.38**
Obese males#	-0.45**	-0.30**	0.81**	0.91**	-0.66**	-0.91**	0.76**	-0.36**	-0.49**	0.41**
Obese females#	-0.53**	-0.40**	0.87**	0.95**	-0.74**	-0.94**	0.67**	-0.51**	-0.65**	0.54**
Participation in preschool	1.00	0.76**	-0.70**	-0.56**	0.51**	0.63**	-0.03	0.72**	0.71**	-0.80**
Young people participating in full-time secondary education	0.76**	1.00	-0.54**	-0.45**	0.59**	0.54**	-0.08	0.59**	0.61**	-0.60**
Participation in vocational education and training	-0.70**	-0.54**	1.00	0.89**	-0.74**	-0.91**	0.57**	-0.63**	-0.75**	0.68**
Early school leavers	-0.56**	-0.45**	0.89**	1.00	-0.77**	-0.96**	0.68**	-0.50**	-0.66**	0.54**
School leavers enrolled in higher education	0.51**	0.59**	-0.74**	-0.77**	1.00	0.81**	-0.64**	0.50**	0.55**	-0.42**
Highest level of education - Bachelor Degree or higher	0.63**	0.54**	-0.91**	-0.96**	0.81**	1.00	-0.71**	0.54**	0.66**	-0.56**
Highest level of education - Advanced Diploma, Diploma or Certificate	-0.03	-0.08	0.57**	0.68**	-0.64**	-0.71**	1.00	-0.07	-0.16	0.01
AEDC: Children developmentally on track - physical health and wellbeing	0.72**	0.59**	-0.63**	-0.50**	0.50**	0.54**	-0.07	1.00	0.75**	-0.83**
AEDC: Children developmentally on track - language and cognitive skills	0.71**	0.61**	-0.75**	-0.66**	0.55**	0.66**	-0.16	0.75**	1.00	-0.91**
AEDC: Children developmentally vulnerable on one or more domains	-0.80**	-0.60**	0.68**	0.54**	-0.42**	-0.56**	0.01	-0.83**	-0.91**	1.00

Notes:

Data based on modelled estimates: see Appendix C for details.

* Correlation is statistically significant, at the 95% confidence level

**Correlation is statistically significant, at the 99% confidence level

Weak or no correlation:	< ± 0.30
Moderate correlation:	± 0.30 to ± 0.49
Strong correlation:	± 0.50 to ± 0.70
Very strong correlation:	> ± 0.70
Not applicable:	1.00

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Appendix C: Details of modelled estimates

Modelled estimates

The modelled estimates in this atlas were produced at the Population Health Area (PHA) level by the Australian Bureau of Statistics (ABS) from the 2010 General Social Survey (GSS) and the 2011–13 Australian Health Survey (AHS), and from known characteristics of the area. The estimates provide data at the PHA level for the prevalence of self-assessed health status (reported as 'fair' or 'poor'), high or very high psychological distress, diabetes, circulatory system diseases, and the health risk factors of high or very high levels of psychological distress, smoking and obesity.

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

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

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

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

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

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

Although the data were modelled at the PHA (and not at the SLA) level, the PHA data have been allocated to SLAs to produce weighted estimates for all SLAs in Melbourne; these data are shown in the bar chart. This involved splitting data, for some PHAs, between SLAs. However, this was of little significance in Brimbank, as the boundaries of the PHAs in Brimbank very closely approximate the Keilor and Sunshine boundaries.

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Appendix D: Key maps

The key maps on the following A3 sheets show the suburbs in Brimbank City, and the Population Health Areas (PHAs) in each Statistical Local Area in Brimbank City. These sheets can be folded out and used as a reference when viewing the maps and tables of PHAs.

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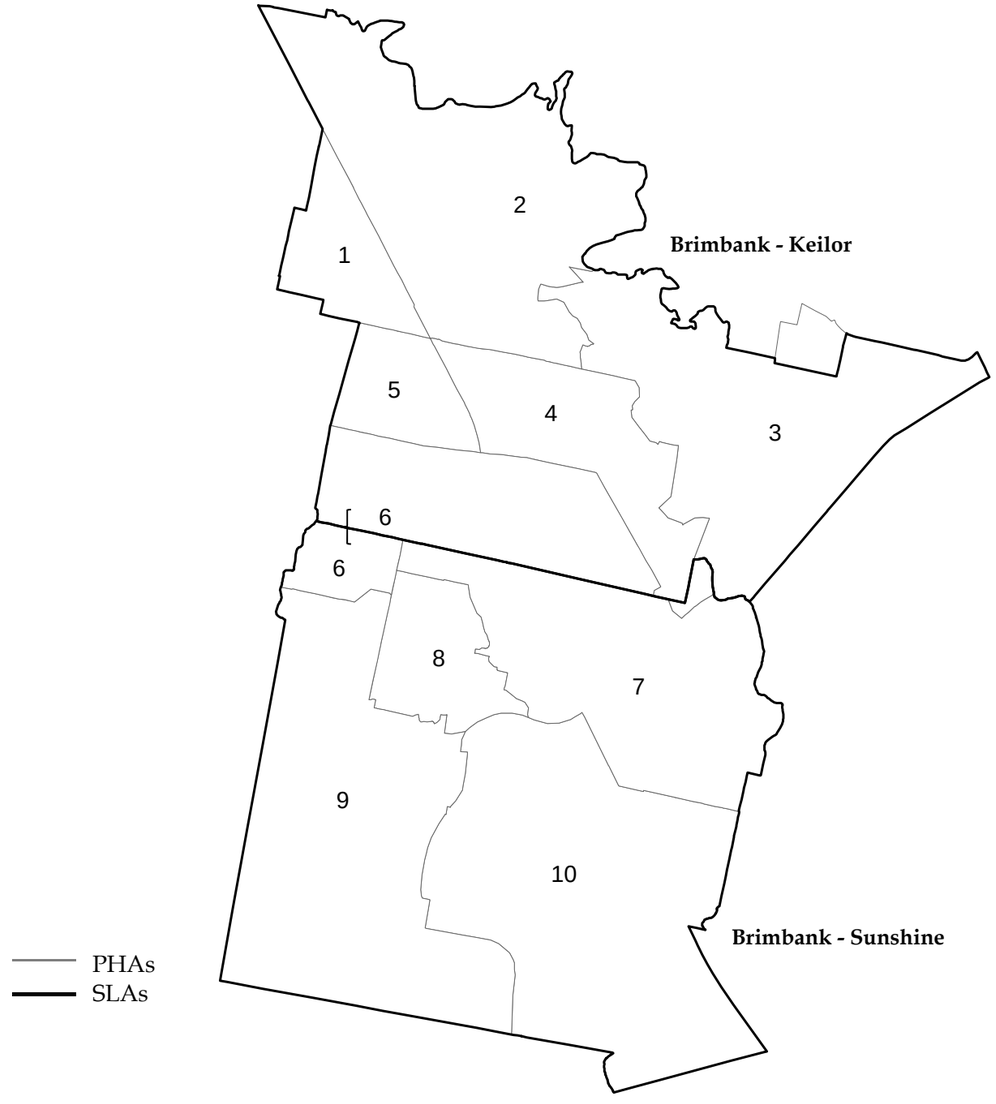
Statistical Local Areas and Population Health Areas, Brimbank City, 2011



Alphabetical key to Population Health Areas in the Brimbank City SLAs of Keilor and Sunshine

Ardeer - Albion/ Sunshine/ Sunshine West	10	Keilor Downs	4
Cairnlea	8	St Albans-North/ Kings Park	6
Deer Park - Derrimut	9	St Albans-South/ Sunshine North	7
Delahey	5	Sydenham	1
Keilor	3	Taylors Lakes	2

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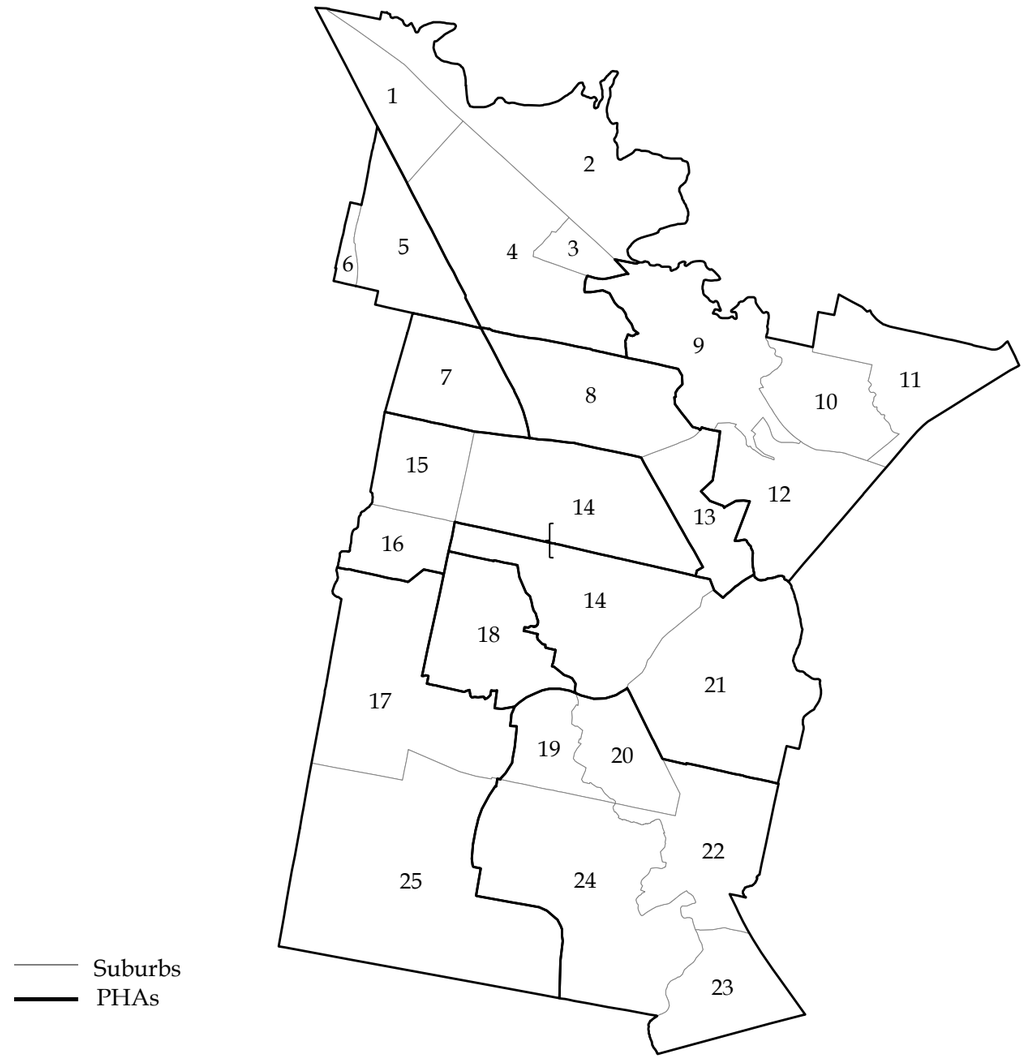
Population Health Areas and suburbs, Brimbank City, 2011



Alphabetical key to suburbs in Brimbank City

Albanvale	16	Hillside	6	St Albans	14
Albion	20	Kealba	13	Sunshine	22
Ardeer	19	Keilor	9	Sunshine North	21
Brooklyn	23	Keilor Downs	8	Sunshine West	24
Cairnlea	18	Keilor East	12	Sydenham	5
Calder Park	1	Keilor Lodge	3	Taylors Lakes	4
Deer Park	17	Keilor North	2	Tullamarine	11
Delahey	7	Keilor Park	10		
Derrimut	25	Kings Park	15		