

*Cohuna, Gannawarra shire*



# Gannawarra Community Profile

## 2025

This document has been prepared to provide a data profile on the health and wellbeing of the local government areas of Loddon Mallee. It contains publicly available data that has been collated and summarised to inform local government, health services, advocacy and community groups.

All effort has been made to report data accurately and represent data available at time of publishing. These estimates may differ from those seen elsewhere due to differences in calculation methodologies and/or source data used.







We acknowledge the First Peoples of Australia who are the Traditional Custodians of the land and water where we live, work and play. We celebrate that this is the oldest living and continuous culture in the world. We are proud to be sharing the land that we work on and recognise that sovereignty was never ceded.



We welcome all cultures, nationalities and religions. Being inclusive and providing equitable healthcare is our commitment.



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Produced by Bendigo Health, Loddon Mallee Public Health Unit.  
November 2025

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# Data snapshot

The Gannawarra local government area (LGA) is home to 10,683 residents, with a median age of 51 years, spread across 3,732 square kilometres. Located in northern Victoria on the New South Wales border, the region sits approximately 250 kilometres north-west of Melbourne.

Gannawarra has a proportionally older population than Victoria overall and an Indigenous population of 2.5%, higher than Victoria (1%). Only 5.5% of residents were born overseas, significantly lower than the 12.4% recorded across regional Victoria, and the region reports lower tolerance of diversity than the state proportion.

Median individual, family and household incomes is below state proportions, however Gannawarra has a very low rate of homelessness and rental/mortgage affordability is better than Victoria.

Unemployment rates are low and the major employment industries in the region are dairy cattle farming (7.8%), followed by local government administration (5.1%) and hospitals (5%).

Gannawarra has a high proportion of obesity (33.4% compared to 26.9% for Victoria) with high levels of daily sugar sweetened beverages intake. Residents are also at increased risk of alcohol-related harm (22.4% versus 12.9% of Victorians). Skin damage from sun exposure is high but it is encouraging that there are high rates of skin checks by a doctor in the region.

The Gannawarra area is 98.7% prone to bushfires and subject to flooding from the Murray, Loddon and Avoca River systems.

This snapshot highlights the indicators where the Gannawarra LGA is statistically different to expected levels\* or in the absence of statistical analysis, ranks in the top ten of Victoria's 79 LGAs.

- Areas of strength compared to Australian or Victorian measures
- Areas of concern compared to Australian or Victorian measures

| Social determinants of health        |  |
|--------------------------------------|--|
| Homelessness                         |  |
| Rental and mortgage stress           |  |
| Low income households                |  |
| Health risk factors                  |  |
| Tolerance of diversity               |  |
| Alcohol and other drugs              |  |
| Obesity                              |  |
| Sugar sweetened beverage             |  |
| Sunburn                              |  |
| Health screening                     |  |
| Breast screening                     |  |
| Health conditions                    |  |
| Premature mortality                  |  |
| Multiple long-term health conditions |  |
| Arthritis                            |  |
| Asthma                               |  |
| Mental health                        |  |
| Avoidable deaths: external causes    |  |

\*Comparison may be with Victorian or Australian data based on primary data source

# Local government area summary:

## Gannawarra

The local government area of Gannawarra is bordered by the Murray River to the north and shares boundaries with the Swan Hill Shire to the west, Campaspe Shire to the east, and Loddon Shire to the south. The key towns in Gannawarra include Kerang, Cohuna, and Leitchville. Gannawarra is home to 10,683 (2021) people, with Kerang, the largest town, having approximately 3,696 residents. The rest of the population is spread across smaller rural communities, making the shire sparsely populated. <sup>[1]</sup>

The largest industries of employment in Gannawarra are dairy cattle farming (7.8%), followed by local government administration (5.1%) and hospitals (5%). <sup>[1]</sup>

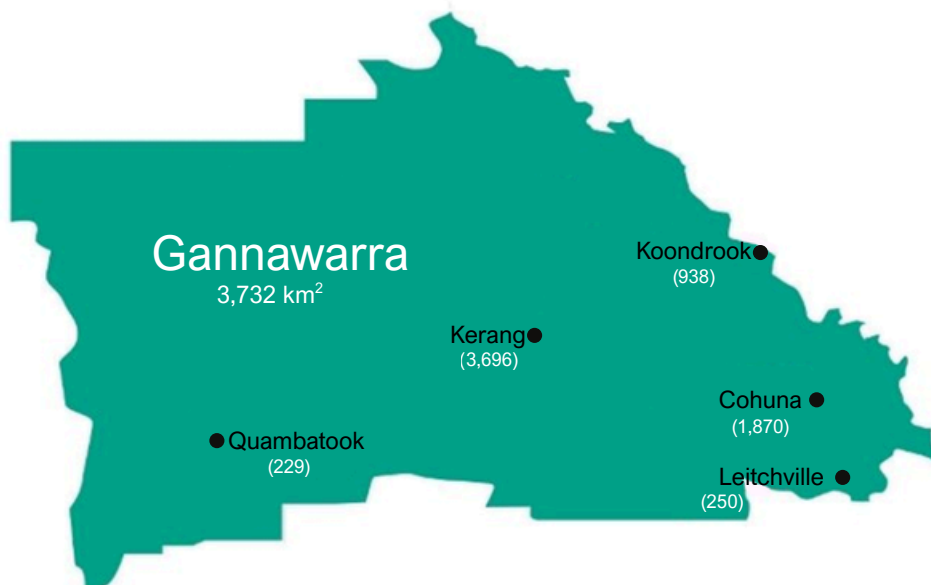
Agriculture is the dominant economic driver in Gannawarra Shire, with a focus on dryland and irrigated farming. Key agricultural activities include grain and cereal production, dairy

farming, and livestock grazing (cattle and sheep). The region also produces hay and horticultural products such as vegetables and fruit, supported by irrigation from the Murray River <sup>[2]</sup>.

In recent years, Gannawarra Shire has also seen growth in renewable energy projects, particularly solar farms, contributing to the local economy and diversifying the traditional agricultural base.

Under the Modified Monash Model, Gannawarra is classified as Modified Monash category 5 which reflects small rural towns. This classification reflects the challenges the region faces in accessing services and other essential infrastructure, given its distance from larger urban centres. <sup>[3]</sup>

The Traditional Owners of the Gannawarra area are the Barapa Barapa, Wamba Wamba and Yorta Yorta people.



[1] Australian Bureau of Statistics, 2021

[2] Department of Agriculture, Fisheries and Forestry, Land use and management, 2023

[3] Modified Monash Model | Australian Government Department of Health and Aged Care

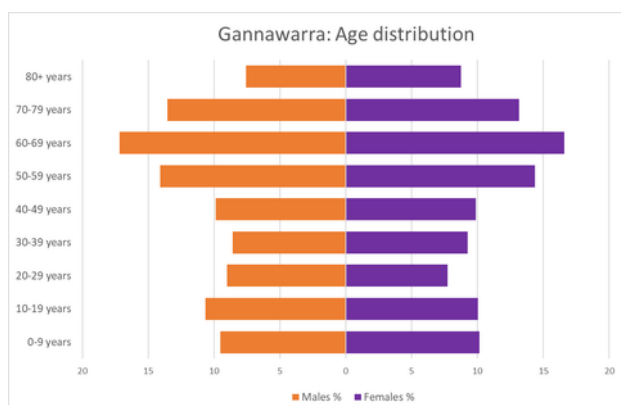
# 1. Population

Gannawarra's population profile, based on ABS data obtained from the 2021 census reveals an older demographic. The median age of 51 years is considerably higher than the state median of 38 years. The percentage of people aged 70 years and above is also higher in Gannawarra (21%) compared to the state proportion (11.9%). The male-female ratio is slightly skewed towards females.

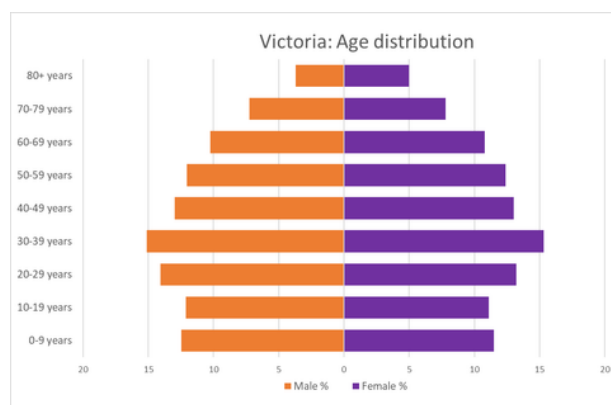


10,683 people reside in Gannawarra, in 2021

51yrs is the median age in Gannawarra (Victoria 38yrs), in 2021



Source: [Australian Bureau of Statistics, 2021](#)



Source: [Australian Bureau of Statistics, 2021](#)

| Age groups  | Gannawarra (n) |        | Gannawarra (%) |        | Victoria (%) |        |
|-------------|----------------|--------|----------------|--------|--------------|--------|
|             | Male           | Female | Male           | Female | Male         | Female |
| 0-9 years   | 508            | 545    | 9.5            | 10.2   | 12.5         | 11.5   |
| 10-19 years | 567            | 539    | 10.6           | 10.0   | 12.1         | 11.1   |
| 20-29 years | 480            | 416    | 9.0            | 7.7    | 14.1         | 13.2   |
| 30-39 years | 458            | 498    | 8.6            | 9.3    | 15.1         | 15.3   |
| 40-49 years | 525            | 530    | 9.9            | 9.9    | 13.0         | 13.0   |
| 50-59 years | 750            | 772    | 14.1           | 14.4   | 12.0         | 12.4   |
| 60-69 years | 915            | 892    | 17.2           | 16.6   | 10.2         | 10.8   |
| 70-79 years | 721            | 707    | 13.5           | 13.2   | 7.2          | 7.8    |
| 80+ years   | 403            | 470    | 7.6            | 8.8    | 3.7          | 5.0    |
| Total       | 5,314          | 5,368  | 100            | 100    | 100          | 100    |

Source: [Australian Bureau of Statistics, 2021](#)

## 2. Priority groups

### 2.1 Indigenous status

Gannawarra has a significant Indigenous population which makes up 2.5% of the total demographic. This is higher than the state proportion of 1%.

The median age of Gannawarra's Indigenous population is slightly older at 25 years, compared to the state median of 24 years. However, the Indigenous median age is also significantly younger than the median age of the total Gannawarra population (51 years).

| Indigenous status                           | Gannawarra (n) | Gannawarra (%) | Victoria (n) | Victoria (%) |
|---|----------------|----------------|--------------|--------------|
| Aboriginal and/or Torres Strait Islander    | 268            | 2.5            | 65,646       | 1.0          |
| Non-Indigenous                              | 9,638          | 90.2           | 6,148,188    | 94.5         |
| Indigenous status not stated                | 782            | 7.3            | 289,665      | 4.5          |
| Median age of Indigenous Population (years) | 25             |                | 24           |              |

Murray Primary Health Network's First Nations Health and Healing report provides an overview of the current state of First Nations health drawing on data and consultation with First Nations Peoples.



Source: [Australian Bureau of Statistics, 2021](#)

### 2.2 Multicultural communities

The majority of Gannawarra's residents, accounting for 90.1% of the total population, are Australian citizens with 85.7% being born in Australia. Language use patterns reveal the vast majority (89.6%) of Gannawarra's residents speak English only. However, a small percentage (0.3%) speak other languages and do not speak English well or at all.



Filipino is the top non-English language spoken at home in Gannawarra

| Country of birth, top responses | Gannawarra (n) | Gannawarra (%) | Victoria (%) |
|---------------------------------|----------------|----------------|--------------|
| Australia                       | 9,157          | 85.7           | 65.0         |
| England                         | 158            | 1.5            | 2.7          |
| Philippines                     | 71             | 0.7            | 1.1          |
| New Zealand                     | 55             | 0.5            | 1.5          |
| India                           | 41             | 0.4            | 4.0          |
| South Africa                    | 39             | 0.4            | 0.5          |



Source: [Australian Bureau of Statistics, 2021](#)

| Language used at home other than English, top responses     | Gannawarra (n) | Gannawarra (%) | Victoria (%) |
|---|----------------|----------------|--------------|
| Filipino  | 33             | 0.3            | 0.4          |
| Punjabi   | 22             | 0.2            | 1.6          |
| Tagalog   | 21             | 0.2            | 0.4          |
| Mandarin  | 15             | 0.1            | 3.4          |
| Greek   | 13             | 0.1            | 1.6          |
| English only used at home                                   | 9,574          | 86.6           | 67.2         |
| Households where a non-English language is used             | 145            | 3.3            | 30.2         |
| Uses other languages and speaks English not well/not at all | 32             | 0.3            | 4.4          |

Source: [Australian Bureau of Statistics, 2021](#)

## 2.3 LGBTIQA+ population

Unfortunately, there is a lack of local data on LGBTIQA+ (lesbian, gay, bisexual, transgender, intersex, queer, asexual and other sexually or gender diverse people) population including population size and health and wellbeing data. There is data at a state and national level that can be used as an indicator. The Victorian Population Health Survey 2017 estimates 5.7% of Victorian adults identify as LGBTIQA+, however some rural areas have attracted significantly higher proportion of LGBTIQA+ people to their communities.

State and national data indicate poorer mental and physical health for LGBTIQA+ community members. There is also significantly higher rates of drug use, alcohol, smoking, chronic disease, homelessness, and disability along with higher rates of anxiety and depression, psychological stress and low satisfaction with life.

Sources and for more information: [Pride in our future: Victoria's LGBTIQA+ strategy 2022-32 | vic.gov.au \(www.vic.gov.au\)](#)  
[The health and wellbeing of the lesbian, gay, bisexual, transgender, intersex and queer population in Victoria - Findings from the Victorian Population Health Survey 2017 | Victorian Agency for Health Information \(vahi.vic.gov.au\)](#)

## 2.4 People with disabilities

Data on disability show that 7.9% of people in Gannawarra have a profound or severe disability, higher than the Victorian proportion of 6.1%. Gannawarra is ranked in the top ten of LGAs with the highest rate of people aged 0-64 years with moderate or mild disability, who are living in households.

In Gannawarra (2023), there were 232 people participating in the National Disability Insurance Scheme (2.4 ASR/100 population), comparable with the Victorian rate (2.2 ASR/100 population).

| Disability indicators  | Gannawarra (n) | Gannawarra           | Victoria             |
|--|----------------|----------------------|----------------------|
| People with a profound or severe disability, includes people in long-term accommodation (all ages), 2021                             | 786            | 7.6%                 | 6.1%                 |
| People with a profound or severe disability and living in households (all ages), 2021  | 671            | 6.8%                 | 5.4%                 |
| People with a profound or severe disability, includes people in long-term accommodation (0 to 64 years), 2021                        | 307            | 4.4%                 | 3.3%                 |
| People with a profound or severe disability and living in households (0 to 64 years), 2021   | 307            | 4.4%                 | 3.2%                 |
| Estimated number of total persons, living in households, with moderate or mild core activity limitation (modelled estimates, 2018) ● | 1,605          | 11 ASR <sup>^</sup>  | na                   |
| National Disability Insurance Scheme participants, 2023  | 232            | 2.4 ASR <sup>^</sup> | 2.5 ASR <sup>^</sup> |

Source: [Social Health Atlas](#)

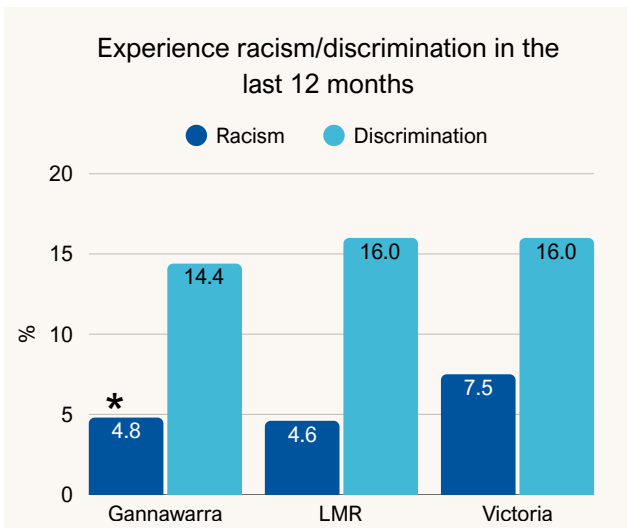
<sup>^</sup>Average annual ASR per 100. Age Standardise Rate (ASR) is used to remove the effect of the differing age distributions that we can make conclusions about the relative decreases or increases in mortality over time.

● Ranked in the ten highest LGAs in Victoria

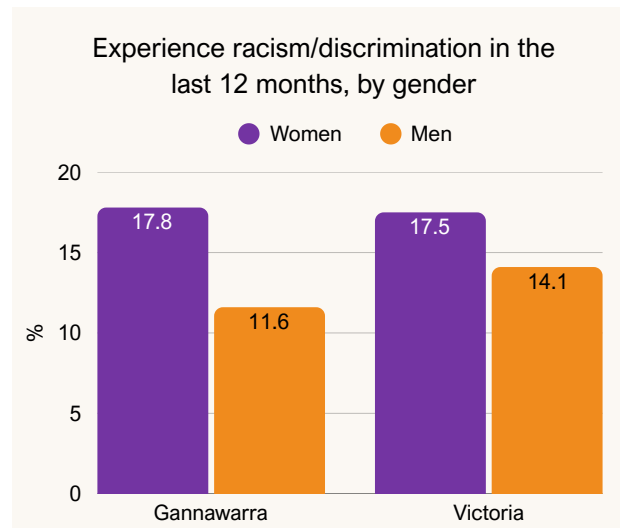
## 2.5 Racism and discrimination

On an individual level, racism refers to the beliefs and attitudes members of certain groups have of their superiority in relation to other groups who are regarded as inferior based on race, ethnicity or cultural background (Sanson et al, 1998).

Racism was defined as experiences of discrimination due to First People’s status, skin colour, nationality, race, ethnic group or language spoken at home. Discrimination was defined as experiences of discrimination due to gender identity, sexual orientation or intersex status.



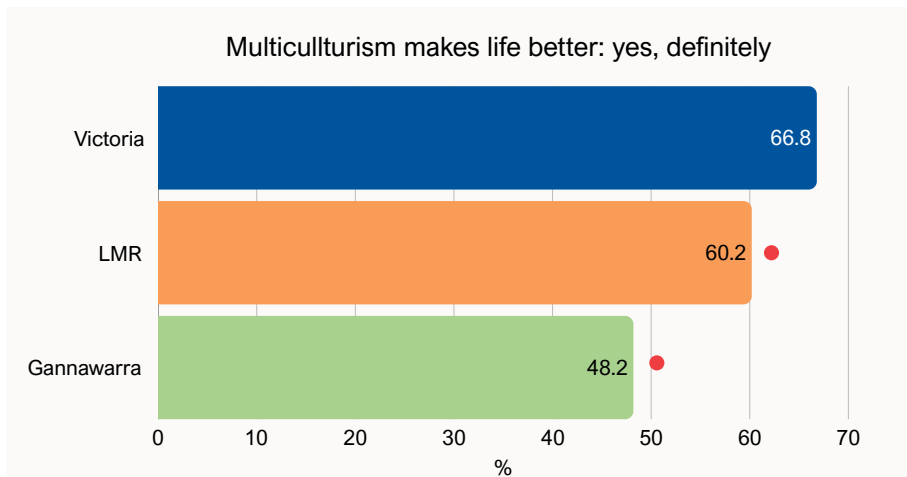
Source: [Victorian Population Health Survey 2023](#), age adjusted.  
\*high relative standard error so interpret with caution



Source: [Victorian Population Health Survey 2023](#), age adjusted.

Gannawarra has lower proportion of racism and discrimination experienced in the last 12 months, compared with Victoria. A higher proportion of women (17.8%) have experienced discrimination in the last 12 months compared to men (11.6%) in Gannawarra.

To measure tolerance of diversity, adults were asked if multiculturalism makes life better. In Gannawarra, there was statistically significantly fewer people who felt that multiculturalism makes life better, compared with Victoria.



Source: [Victorian Population Health Survey 2023](#), age adjusted.

● Statistically significantly lower than Victorian proportion

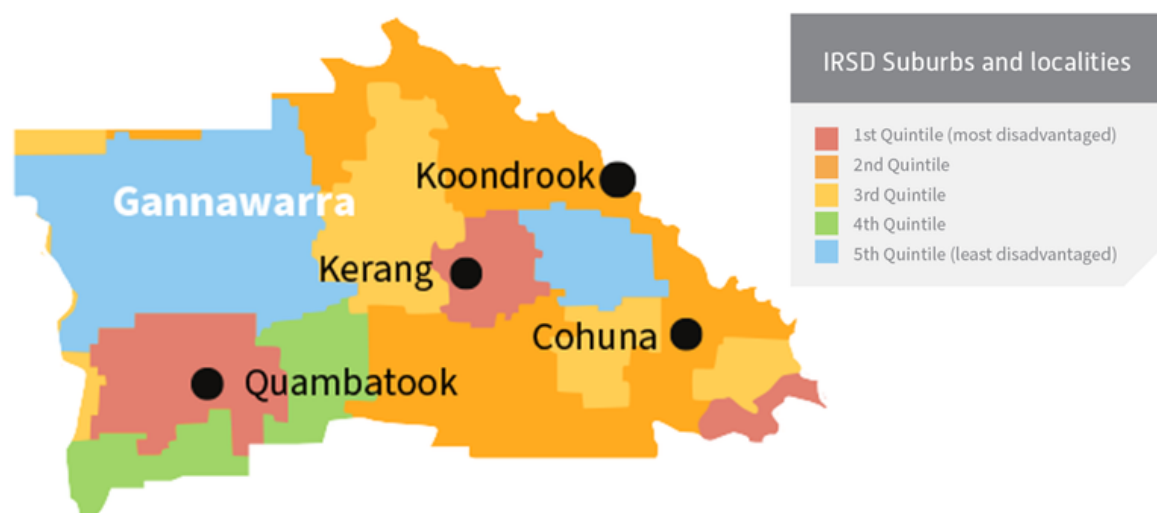
## 3. Determinants of health

### 3.1 Areas of disadvantage

The Index of Relative Socio-economic Disadvantage (IRSD) is a general socio-economic index that summarises a range of information about the economic and social conditions of people and households within an area.

A low score indicates relatively greater disadvantage. For example, an area could have a low score if there are: many households with low income, or many people without qualifications, and many people in low skilled occupations. A high score indicates a relative lack of disadvantage. For example, an area may have a high score if there are: few households with low incomes, few people without qualifications, few people in low skilled occupations.

Within the Gannawarra LGA there are five Australian quintile areas of disadvantage (see map below). The areas of the most disadvantage cluster around Quambatook and Kerang. The average IRSD score for Gannawarra is 952 (2021), which ranks Gannawarra 14<sup>th</sup> in Victoria of most disadvantage.



Source: [Socio-Economic Index for Areas, ABS, 2021](#)

| LGA, 2021         | IRSD Score | Victorian LGA ranking <sup>^</sup> |
|-------------------|------------|------------------------------------|
| Mildura           | 940        | 5                                  |
| Swan Hill         | 941        | 7                                  |
| Loddon            | 948        | 11                                 |
| <b>Gannawarra</b> | <b>952</b> | <b>14</b>                          |
| Campaspe          | 965        | 19                                 |
| Buloke            | 972        | 24                                 |
| Greater Bendigo   | 985        | 27                                 |
| Mount Alexander   | 1007       | 47                                 |
| Macedon Ranges    | 1063       | 73                                 |

Source: [Socio-Economic Index for Areas, ABS, 2021](#)

<sup>^</sup> rank 1 =most disadvantage; rank 79 = least disadvantage

## 3.2 Educational attainment

### Level of highest education attainment

Gannawarra has a comparable percentage of the population attending early and secondary education to the state average. However, Gannawarra has a significantly lower percentage of people attending university or other higher education compared to the statewide percentage, with Gannawarra at 9.4% and Victoria at 24.5%. This could potentially reflect accessibility to higher education institutions compared to metropolitan areas.



In Gannawarra, 9.1% completed bachelor degree and above (Vic. 29.2%)

| People attending an educational institution                                    | Gannawarra (n) | Gannawarra (%) | Victoria (%) |
|--|----------------|----------------|--------------|
| Preschool total  | 158            | 6.0            | 7.1          |
| Primary total  | 741            | 28.1           | 26.5         |
| Secondary total  | 556            | 21.1           | 21           |
| Tertiary: Vocational education (including TAFE and private training providers) | 146            | 5.5            | 7.9          |
| Tertiary - University or other higher education                                | 109            | 4.1            | 16.6         |
| Tertiary total   | 284            | 9.4            | 24.5         |

Source: [Australian Bureau of Statistics](#), 2021

### Level of highest education attainment

The data on the highest educational attainment in Gannawarra for people aged 15 years and over reveals a diverse educational landscape. Gannawarra shows lower percentages of individuals with higher education qualifications (bachelor's degree and above) and advanced diplomas/diplomas, while having higher percentages in certificate III qualifications and Year 11 and below, indicating a diverse educational profile. This could potentially reflect accessibility to different forms of higher education compared to metropolitan areas. The percentage of individuals in Gannawarra with a bachelor's degree or higher is notably lower than the statewide percentage, accounting for 9.1% in Gannawarra compared to 29.2% in Victoria. Meanwhile, Gannawarra has 16.7% of individuals with certificate III qualifications compared to the 10.9% statewide proportion. The combined percentage of individuals with Year 11 or below education in Gannawarra and Victoria is 40.1% and 21% respectively.

| Level of highest educational attainment | Gannawarra (n) | Gannawarra (%) | Victoria (%) |
|---|----------------|----------------|--------------|
| Bachelor degree level and above         | 821            | 9.1            | 29.2         |
| Advanced diploma and diploma level      | 608            | 6.8            | 9.8          |
| Certificate level IV                    | 317            | 3.5            | 3.4          |
| Certificate level III                   | 1,504          | 16.7           | 10.9         |
| Year 12                                 | 883            | 9.8            | 14.9         |
| Year 11                                 | 837            | 9.3            | 5.7          |
| Year 10                                 | 1,311          | 14.6           | 7.3          |
| Certificate level 11                    | 8              | 0.1            | 0.1          |
| Certificate level 1                     | 0              | 0              | 0            |
| Year 9 or below                         | 1,453          | 16.1           | 7.9          |
| Inadequately described                  | 131            | 1.5            | 2.1          |
| No educational attainment               | 26             | 0.3            | 1.1          |
| Not stated                              | 1,113          | 12.4           | 7.6          |

Source: [Australian Bureau of Statistics](#), 2021, People aged 15yrs and over

### 3.3 Household income

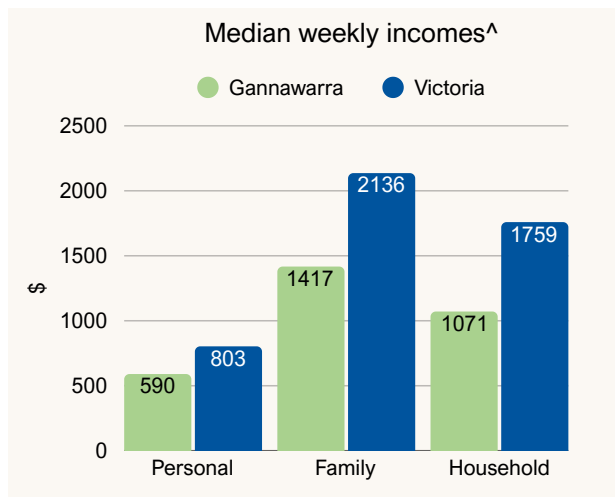
Data on household income for the Gannawarra region, compared to the state of Victoria, gives insights into the income distribution within the community. The median weekly incomes for people aged over 15 years, families and households are all below the state medians. The percentage of occupied private dwellings in Gannawarra with a weekly income of less than \$650 is 26.8% and above \$3,000 is 8.7% compared with a state proportion of 16.4% and 24.2% respectively. This indicates that Gannawarra has a greater number of households with low income when compared with Victoria.

From 2006 to 2021, the median weekly household income for Gannawarra is continuously lower than the Victorian median and the pay gap appears to be widening.

Gannawarra is ranked **3rd highest** in the state (Gannawarra: 59.1%; Victoria: 39.5%) for proportion of households with low income (households in bottom 40% of income distribution).<sup>[1]</sup>

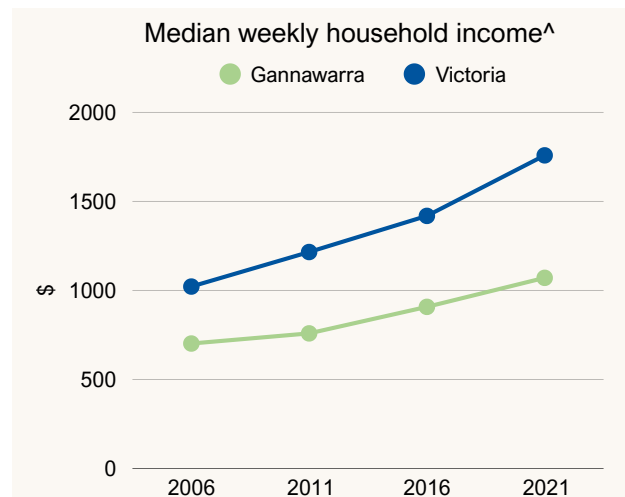
| Occupied private dwellings (excl. visitor only and other non-classified households) | Gannawarra (%) | Victoria (%) |
|---|----------------|--------------|
| Less than \$650 total household weekly income                                       | 26.8           | 16.4         |
| More than \$3,000 total household weekly income                                     | 8.7            | 24.2         |

Source: [Australian Bureau of Statistics](#), 2021, Percentages exclude dwellings with 'Partial income stated' and 'All incomes not stated.'



Source: [Australian Bureau of Statistics](#), 2021

^ Incomes are collected in ranges and exclude people, families and households where at least one member aged 15 years and over did not state their income.



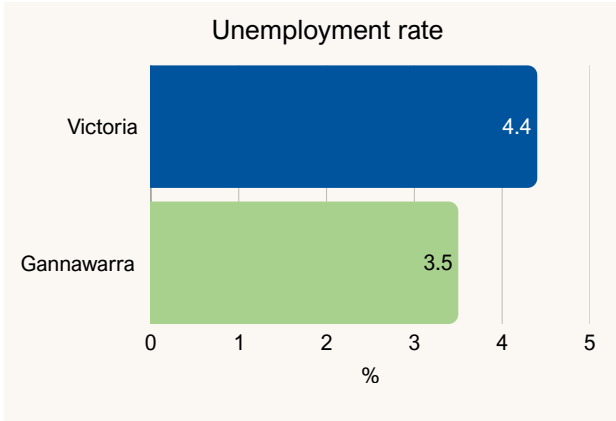
Source: [Australian Bureau of Statistics](#), 2021

^ Incomes are collected in ranges and exclude people, families and households where at least one member aged 15 years and over did not state their income.

[1] Source: [Social Health Atlas](#), 2021

### 3.4 Unemployment

The psychosocial stress caused by unemployment has a strong impact on physical and mental health and wellbeing. Once employed, participating in quality work helps to protect health, instilling self-esteem and a positive sense of identity, while providing the opportunity for social interaction and personal development.



The data represent people aged 18 years and over who are seeking employment and yet to find it.

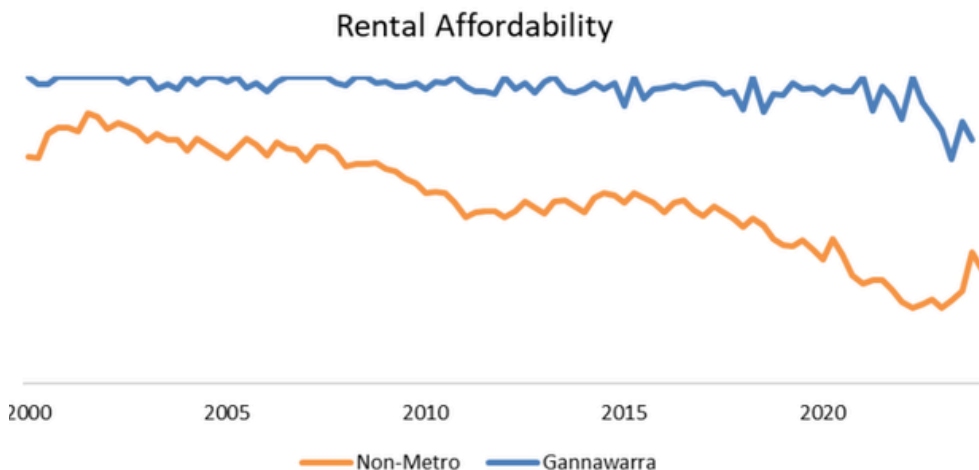
Gannawarra’s unemployment rate is 3.5%, which is lower than Victoria (4.4%).

Source: [Social Health Atlas of Australia](#), June 2025

### 3.5 Rental affordability

Median rental prices are continuing to increase and becoming less affordable. The graph below represents affordability of rental homes for lower income households. Gannawarra has experienced consistent rental affordability, with affordability only dropping from 100% to 73.1% from 2022 to 2023. Rental affordability is consistently higher than the Victorian non-metro figures.

In Gannawarra (2021), the proportion of low income households under financial stress from mortgage or rent is low (10.6%), compared with Victoria (27.8%).<sup>[1]</sup>



Source: [Rental Report - Quarterly: Affordable Lettings by LGA - Dataset - Victorian Government Data Directory](#)

The affordability benchmark used is that no more than 30% of gross income is spent on rent. Lower income households are defined as those receiving Centrelink incomes

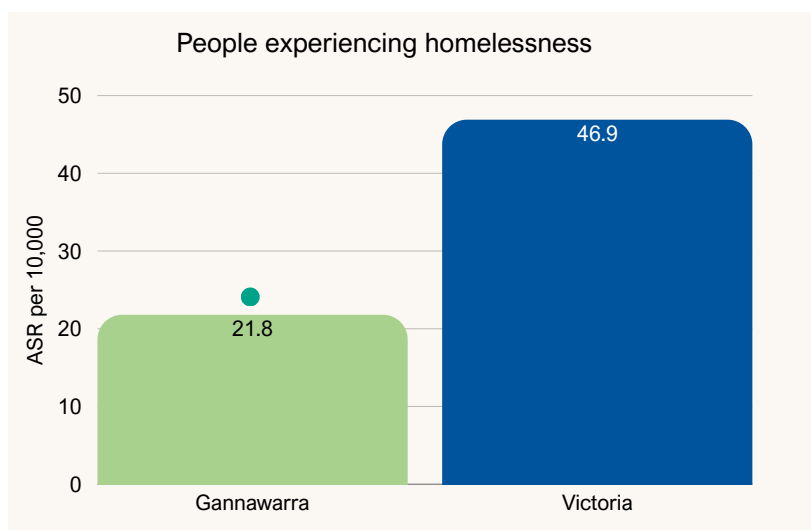
[1] Source: [Social Health Atlas of Australia](#), 2021

### 3.6 Homelessness

Access to safe, adequate housing is central to the health and wellbeing of individuals and families. Secure and affordable housing is the basis for social connectedness and a contributor to the social determinants of health and wellbeing. These data include:

- Living in improvised dwellings, tents or sleeping out
- Living in supported accommodation for the homeless
- Staying temporarily with other households
- Living in boarding houses
- Living in 'severely' crowded dwellings.

The rate of homelessness in Gannawarra is 21.8/10,000 people while the rate in Victoria is 46.9/10,000 people. This indicates the estimated rate of homelessness standardised to the age distribution of the population is considerably lower in Gannawarra compared to the broader state of Victoria. While the overall rate is different between Gannawarra and Victoria, the specific challenges and characteristics of homelessness may vary between regions.



Source: [Social Health Atlas](#), 2021

● Statistically significantly lower, compared to Australia and lower than Victoria

### 3.7 Family composition

Couple families without children constitute the largest proportion in Gannawarra, accounting for 52% of all families, which is considerably higher than the state proportion of 37.6%. Couple families with children make up 33.3% of all families in Gannawarra, which is lower than the state proportion of 45.5%.

One-parent families represent 13.3% of all families in Gannawarra, which is lower than Victoria (15.2%). Other families, which may include non-traditional family structures, account for a small percentage (1.5%) in Gannawarra, similar to the state proportion of 1.7%.

| All families                   | Gannawarra (n) | Gannawarra (%) | Victoria (%) |
|--------------------------------|----------------|----------------|--------------|
| Couple family without children | 1,477          | 52             | 37.6         |
| Couple family with children    | 947            | 33.3           | 45.5         |
| One parent family              | 377            | 13.3           | 15.2         |
| Other family                   | 42             | 1.5            | 1.7          |

Source: [Australian Bureau of Statistics](#), 2021

#### Single (or lone parents)

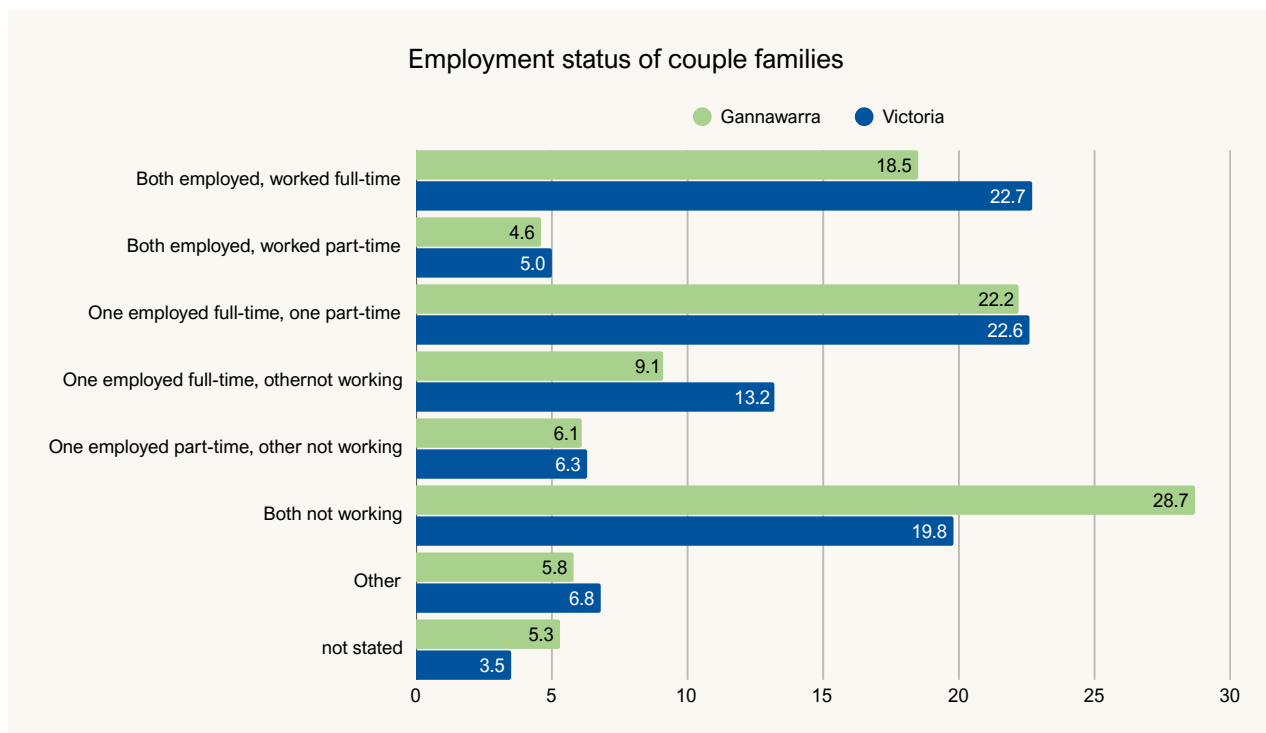
The data indicate the majority of single (or lone) parents in Gannawarra are female, constituting a substantial 78.8% of the total single parent population. This percentage is slightly lower than the female proportion in Victoria, which is 80.9%.

| Proportion of the total single (or lone) parents | Gannawarra (%) | Victoria (%) |
|--|----------------|--------------|
| Male   | 22.5           | 19.1         |
| Female   | 78.8           | 80.9         |

Source: [Australian Bureau of Statistics](#), 2021

## Employment status of couple families

In Gannawarra, the most common employment statuses for couple families are both not working (28.7%) and one employed full-time, one part-time (22.2%). The proportion of both adults not working is higher in Gannawarra than Victoria (19.8%). This could indicate an older population, lack of employment opportunities but may also be due to caregiving responsibilities, study or other reasons.



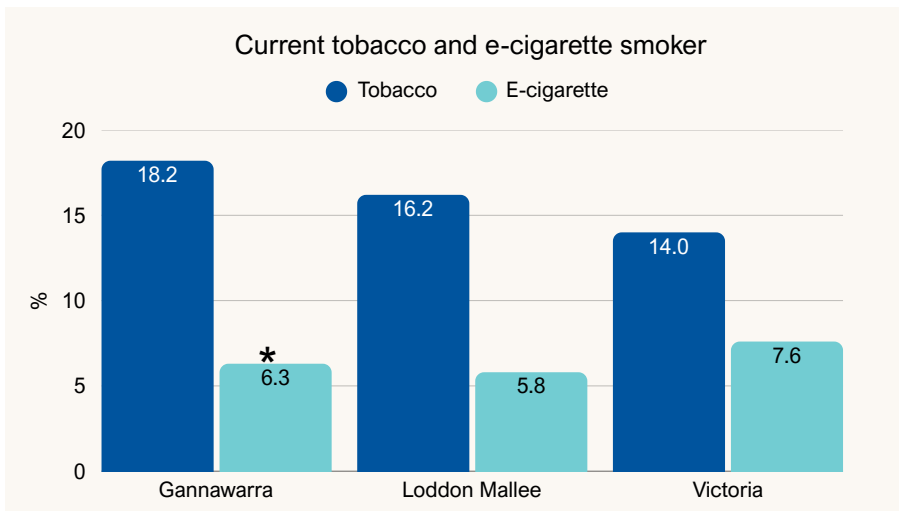
Source: [Australian Bureau of Statistics](#), 2021

# 4. Health risk factors

## 4.1 Smoking and vaping

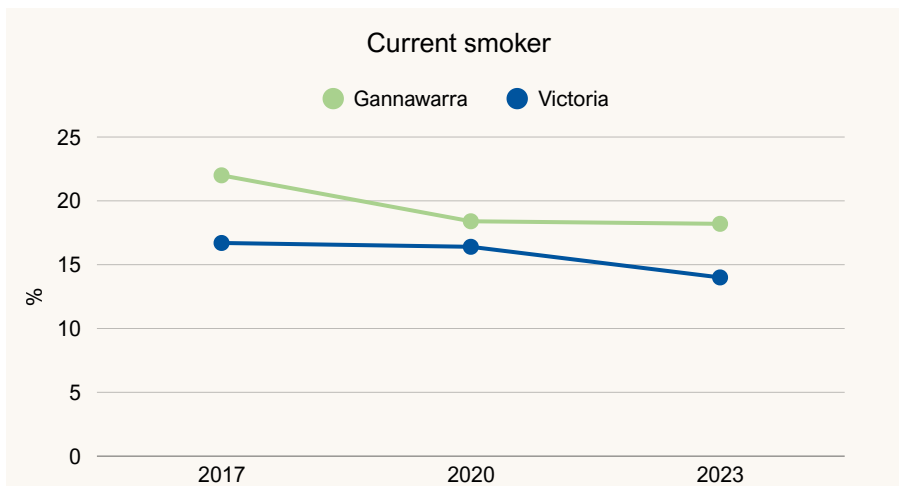
Smoking increases the risk of chronic diseases such as heart disease, diabetes, kidney disease, eye disease, stroke, dementia, certain cancers (for example, oral cancer), gum disease and respiratory diseases such as asthma, emphysema and bronchitis. Vapes are relatively new compared to cigarettes, so we are yet to see all the long-term effects they may have on the body. What we know now is vaping can damage many parts of the body, including the cardiovascular system, lungs and airways, and the brain and nervous system. <sup>[1]</sup>

The proportion of adults who smoke tobacco in Gannawarra are higher, with 18.2% of adults currently smoking compared with 14% across Victoria. While the percentage of people who are smoking are trending down in Victoria, Gannawarra’s percentages remains relatively static from 2020 to 2023.



Source: [Victorian Population Health Survey 2023](#), age adjusted.

\* Interpret with caution



Source: [Victorian Population Health Survey, 2023](#), age adjusted.

[Victorian Population Health Survey, 2020](#), age adjusted

[Victorian Population Health Survey, 2017](#), age adjusted

[1] [Quit, effects of vaping on the body](#)

## 4.2 Alcohol and other drugs

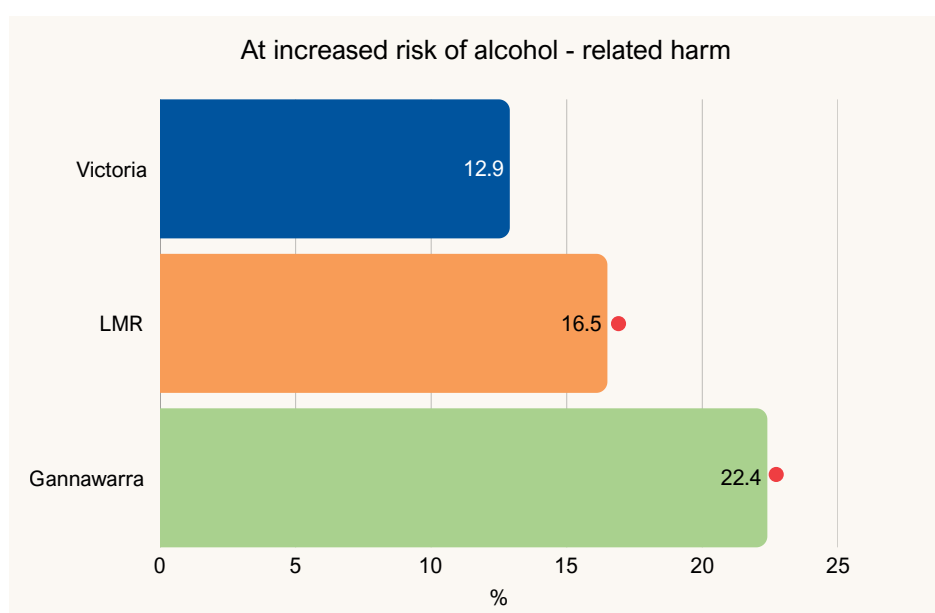
While the impacts of drug use on health and wellbeing can vary, related harms can impact physical health through increased risk of chronic disease, exposure to infectious diseases, and mental health and wellbeing impacts. Increased risk of alcohol-related harm is defined as greater than 10 standard drinks a week and more than four standard drinks in one day.

Adults in the Loddon Mallee region drink alcohol at higher rates than the Victorian average, with 16.5% drinking at levels that increase their risk of alcohol-related harm. In Gannawarra, this is even higher at 22.4%, and is statistically significantly higher compared to Victorian (12.9%).

The death rate for alcohol-related events (2021) in Gannawarra (273.2/100,000 population) was nearly double the Victorian rate (141.9/100,000 population).

| Indicators per 100,000 population  | Gannawarra | Victoria |
|--|------------|----------|
| Deaths for alcohol-related events, 2021  | 273.2      | 141.9    |
| Deaths for illicit drug (any)-related events in, 2021                          | na         | 0.6      |
| Ambulance attendances for Alcohol Intoxication (w/wo Other Substance), 2022/23 | 341.9      | 393.5    |
| Ambulance attendances for Alcohol Only (Intoxication), 2022/23                 | 284.9      | 319.7    |
| Ambulance attendances for Illicit Drugs (Any), FY-2022/23                      | 123.5      | 204.6    |
| Hospital admissions for Alcohol, 2021/22                                       | 499.4      | 570      |
| Hospital admissions for Illicit Drugs (Any), 2021/22                           | 207.3      | 241.3    |

Source: [Alcohol and other drug statistics in Victoria - AODstats](#)

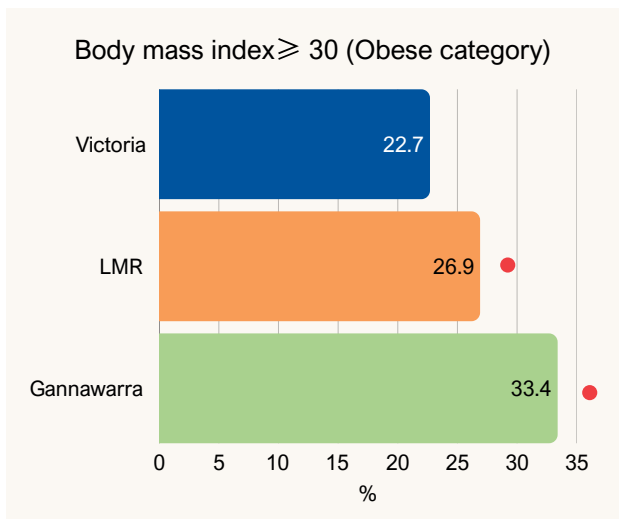


Source: [Victorian Population Health Survey 2023](#), age adjusted.

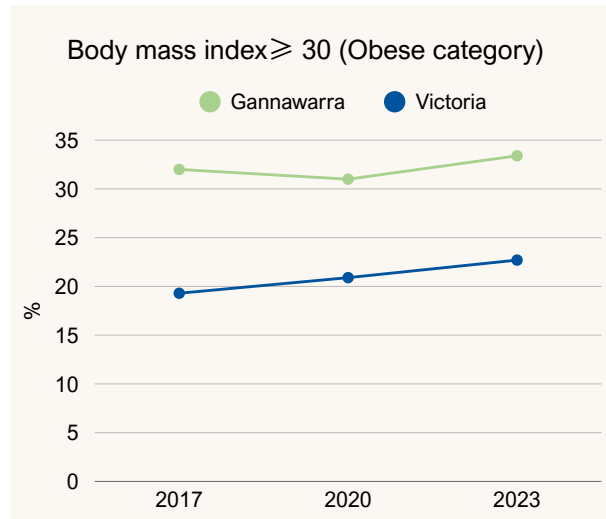
● Statistically significantly higher compared to Victoria

### 4.3 Obesity

Obesity contributes to cardiovascular disease, type 2 diabetes, musculoskeletal disorders and some cancers. Recent evidence shows the prevalence of obesity is rising in Gannawarra. In Gannawarra, 33.4% of adults have a BMI  $\geq 30$ , statistically significantly higher than Victoria (22.7%).



Source: Victorian Population Health Survey, 2023, age adjusted  
 ● Statistically significantly higher than Victoria



Source: Victorian Population Health Survey, 2023, age adjusted  
 Victorian Population Health Survey, 2020, age adjusted  
 Victorian Population Health Survey, 2017, age adjusted

### 4.4 Healthy eating and active living

Poor diet and lack of exercise contribute to being overweight and obese, which are leading contributors to chronic disease and premature death in Victoria [1]. Gannawarra (4.2%) is lower for compliance with vegetable consumption guidelines compared with Victoria (5.5%). Gannawarra also has a statistically significantly higher proportion of people consuming sugar-sweetened beverages daily (25.9%) compared with the Victorian percentage (19.3%). Gannawarra has a lower proportion of people engaging in moderate to vigorous exercise (29.4% compared with Victoria (34.9%).



Recommended daily intake of fruit 2 serves: a serve is one medium piece or two small pieces of fruit or one cup of diced fruit.



Recommended daily intake of vegetables is 5-6 serves for adults: a serve is half a cup of cooked vegetables or one cup of salad leaves.

| LGA        | Compliance with fruit consumption guidelines (%) | Compliance with vegetable consumption guidelines (%) | Daily consumption of sugar sweetened beverage (%) | Moderate to vigorous physical exercise greater than 150mins/day (%) |
|------------|--|--|---|---|
| Victoria   | 34.9   | 5.5  | 19.3  | 34.9  |
| LMR        | 31.3   | 5.3  | 24.6  | 34.2  |
| Gannawarra | 34.3   | 4.2*   | 25.9 ●  | 29.4  |

Source: Victorian Population Health Survey, 2023, age adjusted  
 \*high relative standard error so interpret with caution

● Statistically significantly higher compared with Victoria

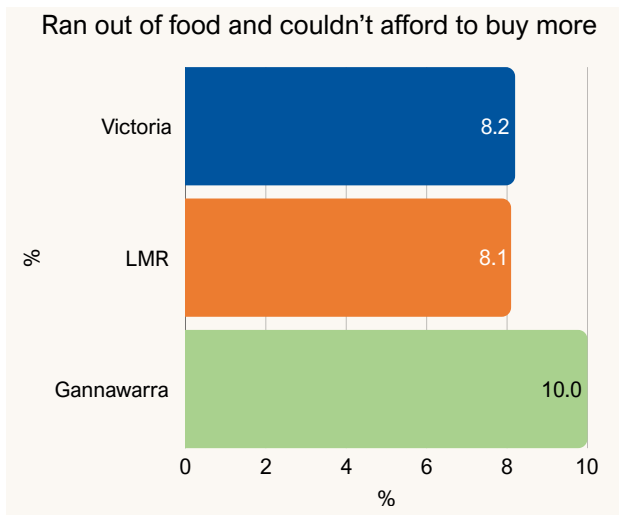
[1] Victorian Population Health and Wellbeing Plan 2023-27

## 4.5 Food insecurity

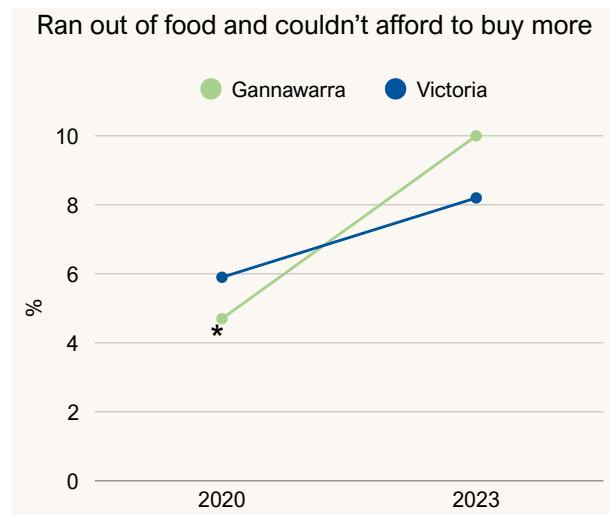
Food security is defined as access by all people at all times for enough food for an active, healthy life and includes at a minimum:

- the ready availability of nutritionally adequate and safe foods
- the assured ability to acquire food in socially acceptable ways. <sup>[1]</sup>

The proportion of people, who ran out of food and couldn't afford to buy more is higher in Gannawarra (10%), compared with Victoria (8.3%).



Source: Victorian Population Health Survey, 2023, age adjusted

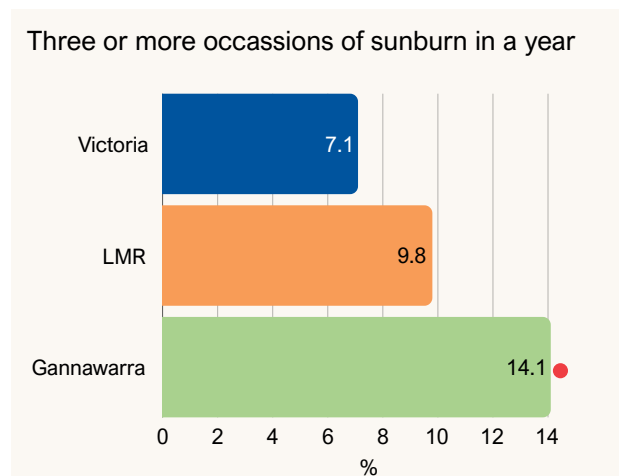


Source: Victorian Population Health Survey, 2023, age adjusted  
Victorian Population Health Survey, 2020, age adjusted  
 \*Interpret with caution

## 4.6 Sun exposure

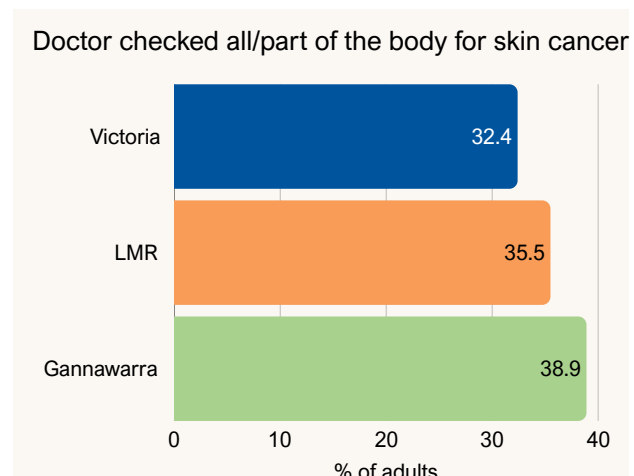
Australia has one of the highest rates of skin cancer in the world. Skin cancer occurs when skin cells are damaged, for example by overexposure to ultraviolet radiation from the sun. <sup>[2]</sup>

Gannawarra has a statistically significantly higher proportion with 14.1% of people reporting three or more occasions of sunburn in a year, compared with Victoria 7.1%. Therefore, it is important that people in Gannawarra are seeking skin checks by a doctor for skin cancer.



Source: Victorian Population Health Survey, 2023, age adjusted

● Statistically significantly higher compared with Victoria



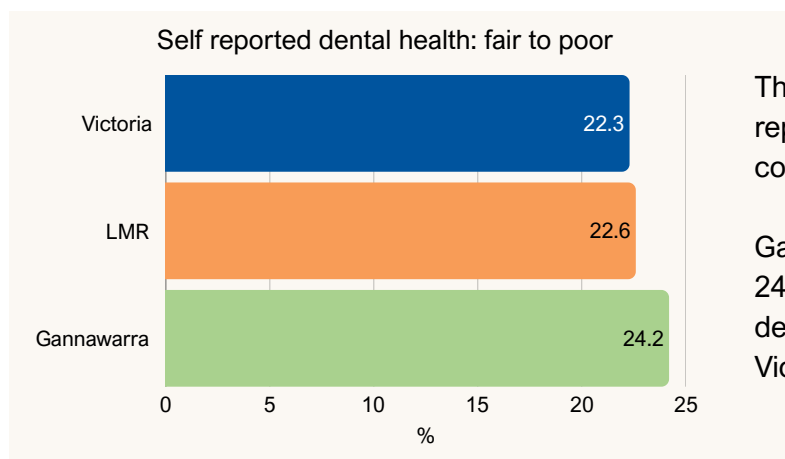
Source: Victorian Population Health Survey, 2023, age adjusted

[1] Australian Institute of Health and Welfare

[2] Cancer Council

## 4.7 Dental health

Oral disease can destroy the tissues in the mouth, leading to lasting physical and psychological disability. Tooth loss can make chewing and swallowing more challenging, which can then compromise nutrition. Poor oral health is also associated with a number of chronic diseases including stroke and cardiovascular disease. Dental disease can also impair a person's appearance and speech, impacting their self-esteem, which can lead to restricted participation at school, the workplace and other social settings.



The Loddon Mallee proportion of adults reporting fair to poor dental health is comparable with the whole of Victoria.

Gannawarra is only slightly higher with 24.2% of people reporting fair to poor dental health compared with the Victorian proportion of 22.3%.

Source: [Victorian Population Health Survey](#), 2023, age adjusted

## 4.8 Childhood development

The Australian Early Development Census (AEDC) is a nationwide census of early child development that shows how young children have developed as they start their first year of full-time schooling. Overall, 24% of children in Gannawarra are vulnerable on one or more domains, compared with 22.3% across Victoria.

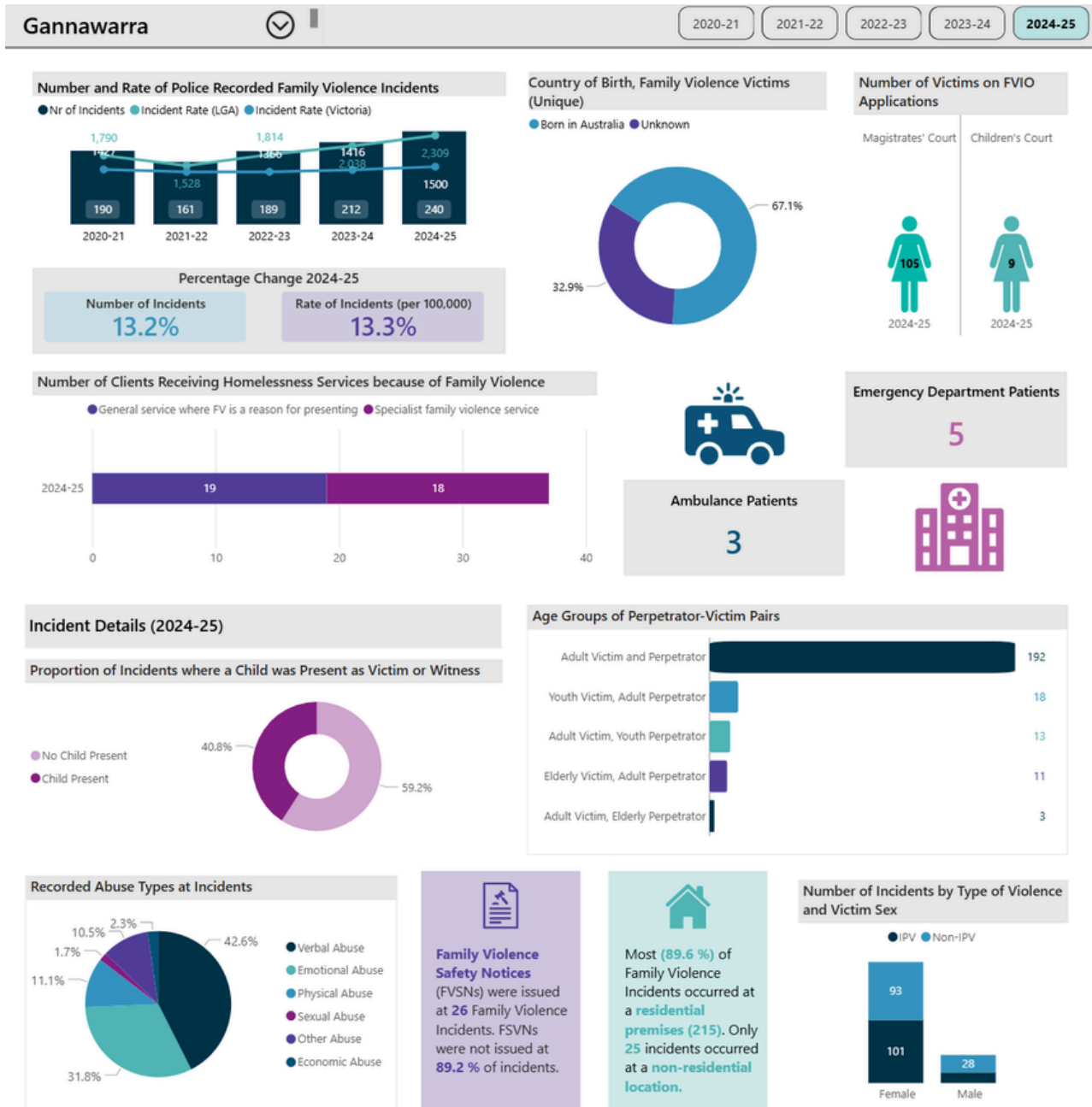
| Indicator       | Indicator description   | Vulnerable (52 children assessed) |                |              |
|-----------------|---|-----------------------------------|----------------|--------------|
|                 |   | Gannawarra (n)                    | Gannawarra (%) | Victoria (%) |
| Physical        | Child is healthy; independent; excellent gross and fine motor skills          | 10                                | 9.6            | 8.5          |
| Social          | Gets along with others; shares; self-confident                                | 8                                 | 7.7            | 10.6         |
| Emotional       | Able to concentrate; help others; patient, not angry or aggressive            | 12                                | 11.5           | 9.9          |
| Language        | Interested in reading or writing; can count; recognises numbers and shapes    | 13                                | 12.5           | 7.3          |
| Communication   | Can tell a story; communicate with adults and children; articulate themselves | 6                                 | 5.8            | 8.2          |
| Vulnerability 1 | Developmentally vulnerable in one or more domains                             | 25                                | 24             | 22.3         |
| Vulnerability 2 | Developmentally vulnerable in two or more domains                             | 13                                | 12.5           | 11.8         |

Source: [Australian Early Development Census](#), 2024

## 4.9 Family violence

A family violence incident is an incident attended by Victoria Police and a police report has been completed. Gannawarra reported family violence incidents are consistently higher than the state rate with 2,309/100,000 compared with the Victorian rate 1,500/100,000 in 2024-25.

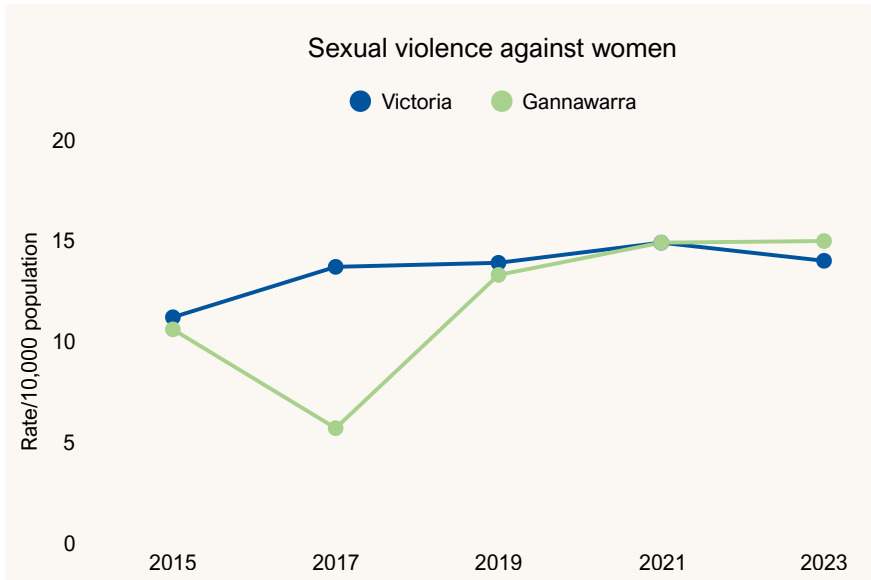
An 'affected family member' is the individual who is deemed to be affected by events occurring during a family violence incident. The majority of the affected family are women. In 2024-25, 40.8% of incidents had a child present as a victim or witness. Most of the family violence incidents occurred at a residential premises (89.6%).



Source: [Latest crime data by area](#) | Crime Statistics Agency Victoria, 2024-25

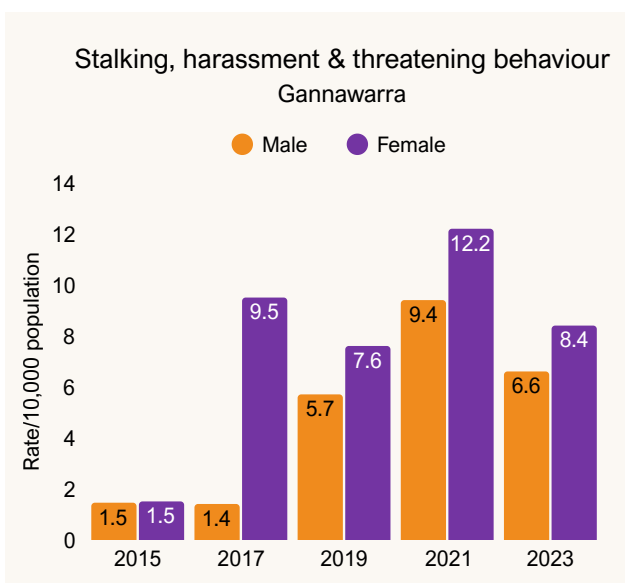
## 4.10. Sexual assault

According to Victoria Police, sexual offences occur when someone does not or cannot consent to a sexual behaviour, act or acts. These sexual behaviours can include: rape, sexual or inappropriate touching, sexual assault, child sexual abuse, elder sexual abuse, sexual exposure of genitalia, image-based sexual offending, stealthing (non-consensual condom removal), stalking and grooming. Gannawarra's rates have been slightly increasing from 2019 (13.3/10,000 population) to 2023 (15/10,000 population).



Source: [Womens Health Atlas](#), victim reports received where the woman is the victim

The Victorian Crime Statistics Agency reports on stalking, harassment, and threatening behaviours as a group. This category includes repeated acts of unreasonable conduct intended to: cause physical or mental harm; arouse apprehension or fear; threaten or invade privacy; create nuisance or offend someone based on personal characteristics. In Gannawarra, from 2017 the rate of female victim reports of stalking, harassment and threatening behaviour are higher compared to males. In Victoria, female victim reports of stalking, harassment and threatening behaviour outnumber male victim reports by a ratio of almost 2 to 1.



Source: [Womens Health Atlas](#), victim reports received by police

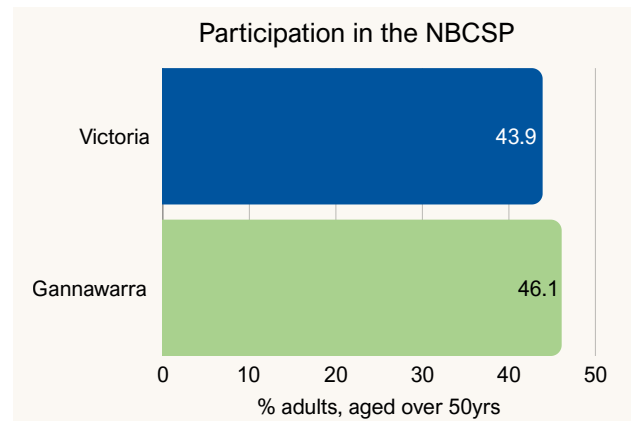


Source: [Womens Health Atlas](#), victim reports received by police

# 5. Health screening

## 5.1 Bowel screening

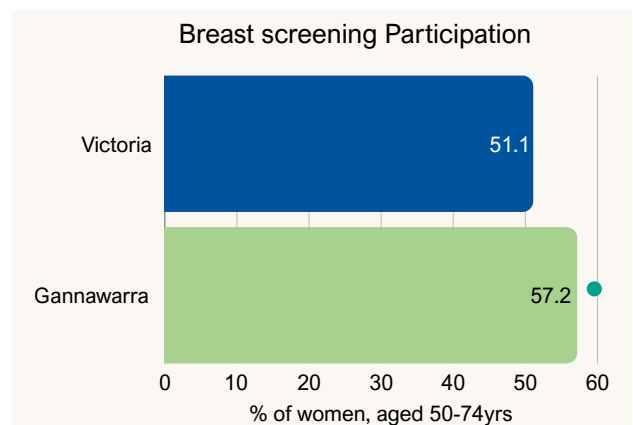
Bowel cancer, is the third most common type of newly diagnosed cancer in Australia. The National Bowel Cancer Screening Program (NBCSP) aims to reduce deaths from bowel cancer by detecting early signs of the disease. If found early, more than 90% of cases can be successfully treated. The percentage of people participating in NBCSP in Gannawarra (46.1%) is higher than Victoria (43.9%).



Source: [Social Health Atlas](#), 2020-21

## 5.2 Breast screening

Research has shown that screening mammography is currently the most effective tool for the early detection of breast cancer in asymptomatic women in the target age group of women aged 50 to 74 years; and, that having a screening mammogram every two years, reduces the chance of dying from breast cancer by up to 40%.

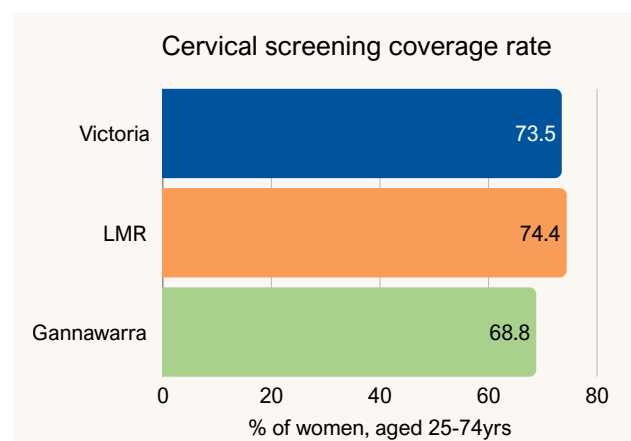


Source: [Social Health Atlas](#), 2021-22

● Ranked fifth highest LGA in Victoria

## 5.3 Cervical screening

The National Cervical Screening Program reduces illness and death from cervical cancer. Women and people with a cervix aged 25 to 74 years are invited to have a cervical screening test every 5 years through their healthcare provider. Gannawarra has a lower coverage of cervical screening (68.8%) compared to LMR (74.4%) and Victoria (73.5%).



Source: [National Cervical Screening Program](#), 2020 -2024

## 6. Health conditions

### 6.1 Life expectancy

The median age at death for males decreased but remained stable for females in Gannawarra. Examining premature mortality (deaths occurring before the age of 75 years), Gannawarra demonstrated a decrease for males but an increase for females. Premature mortality of Females increased from 214.9 ASR/100,000 population (2016-2020) to 232.7 ASR/100,000 population (2018-2022).

Avoidable mortality (deaths that could have been prevented) also showed improvement in Gannawarra for males (-33.1%). However, for females, the average annual ASR/100,000 population increased from 91.3 to 101.5, indicating a percentage increase of 11.1%.

|   | 2018 - 2022 |            |          |       | 2016-2020  |       |          |       | % Difference between reports |      |          |     |
|---|-------------|------------|----------|-------|------------|-------|----------|-------|------------------------------|------|----------|-----|
|   | Gannawarra  |            | Victoria |       | Gannawarra |       | Victoria |       | Gannawarra                   |      | Victoria |     |
|   | M           | F          | M        | F     | M          | F     | M        | F     | M                            | F    | M        | F   |
| Median age at death (yrs)                           | 79          | 84         | 79       | 85    | 80         | 84    | 79       | 85    | -1                           | 0    | 0        | 0   |
| Premature mortality, 0-74yrs of age <sup>^</sup>    | 398.3<br>●  | 232.7<br>● | 281.8    | 176.8 | 443.7      | 214.9 | 269.5    | 171.2 | -10.2                        | 8.3  | 4.6      | 3.3 |
| Avoidable mortality, 0 to 74yrs of age <sup>^</sup> | 189.3       | 101.5      | 142.1    | 80.8  | 283.2      | 91.3  | 138.3    | 80.5  | -33.1                        | 11.1 | 3.0      | 0.4 |

Source: [Social Health Atlas of Australia: Victoria](#).

<sup>^</sup>Average annual ASR per 100,000. Age Standardise Rate (ASR) is used to remove the effect of the differing age distributions that we can make conclusions about the relative decreases or increases in mortality over time.

● Statistically significantly higher than expected (based on Australian data)

## 6.2 Avoidable deaths

Avoidable deaths are deaths from conditions that are potentially preventable through individualised care and/or treatable through existing primary or hospital care. The highest rate of avoidable deaths (0-74 years) in Gannawarra is for circulatory system disease 38.2/100,000 population and cancer 31.5/100,000 population, both with considerably higher rates compared with Victoria at a rate of 33.3/100,000 population and 21/100,000 population respectively.

In Gannawarra, all the avoidable death conditions measured rose from 2017-2021 to 2018-2023 with the exception of colorectal cancer which rate was unchanged.

| Avoidable deaths by cause  | 2018-2022  |          | 2017-2021  |          | %Difference between the reports |          |
|--|------------|----------|------------|----------|---------------------------------|----------|
|  | Gannawarra | Victoria | Gannawarra | Victoria | Gannawarra                      | Victoria |
| Circulatory system   | 38.2       | 33.3     | 31.1       | 32.7     | 22.8                            | 1.8      |
| Ischaemic heart disease  | 24.1       | 21       | 21.3       | 20.6     | 13.1                            | 1.9      |
| Cancer   | 31.5       | 27.5     | 30.1       | 27.8     | 4.6                             | -1.8     |
| Transport accidents  | na         | 4.1      | na         | 4        | na                              | 2.5      |
| Respiratory system disease   | 15.9       | 9.1      | 12         | 9        | 32.5                            | 1.1      |
| Obstructive pulmonary disease  | 13.1       | 8.5      | 10.5       | 8.3      | 24.7                            | 2.4      |
| Cerebrovascular disease  | 8.4        | 7.7      | na         | 7.6      | na                              | 1.3      |
| Breast cancer  | na         | 15.2     | na         | 15.6     | na                              | -2.5     |
| Diabetes   | 12.6       | 5.5      | 9.8        | 5.2      | 28.5                            | 5.8      |
| Colorectal Cancer  | 12.9       | 10.7     | 12.9       | 10.1     | 0                               | 5.9      |
| External causes (falls, burns, suicide, self-inflicted injuries etc) | 26.4 ●     | 14       | 22.4       | 13.5     | 17.8                            | 3.7      |
| Suicide and self-inflicted injuries                                  | 15.5       | 10.9     | 13.2       | 10.6     | 17.4                            | 2.8      |

Source: [Social Health Atlas](#), 0-74 years, ASR/100,000 population

● Statistically significantly higher than expected (based on Australian data)

### 6.3 Physical health conditions

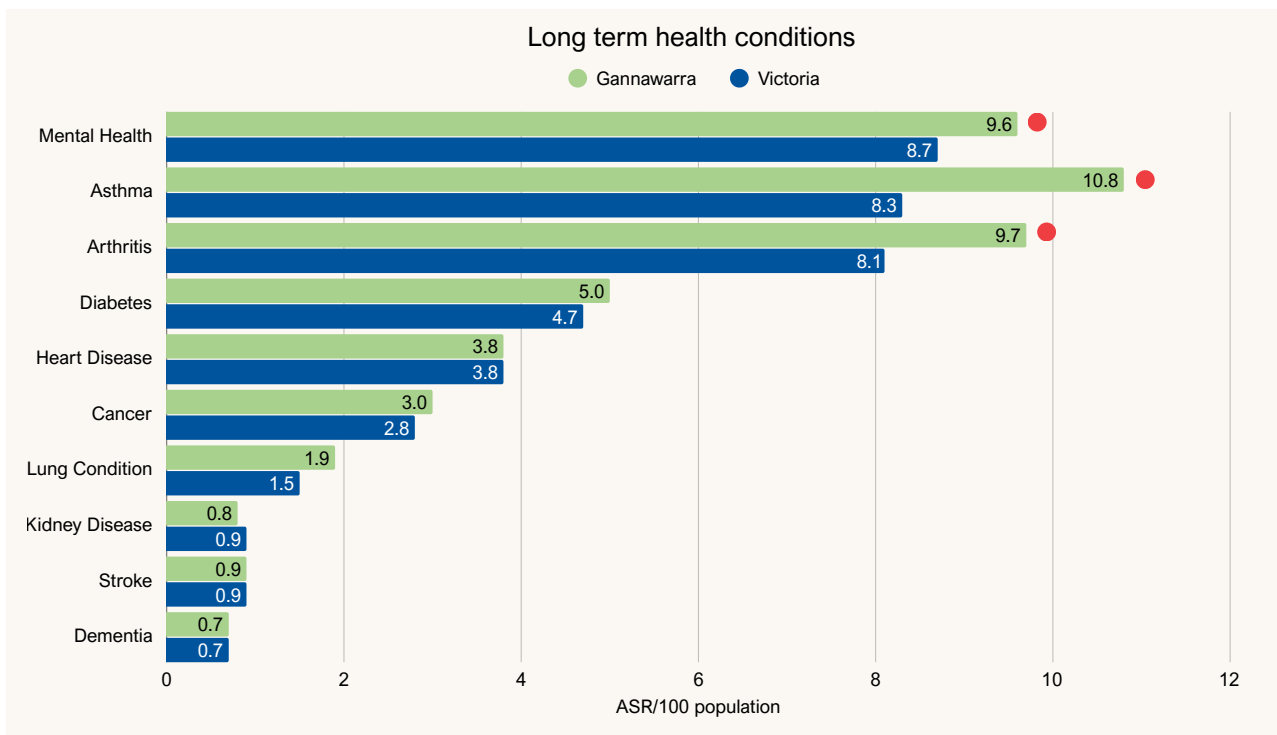
In the census, people were asked to indicate long-term conditions (six months or more) diagnosed by a doctor or nurse. Selected long-term health conditions include arthritis, asthma, cancer (including remission), dementia (including Alzheimer's), diabetes (excluding gestational diabetes), heart disease (including heart attack or angina), kidney disease, lung condition (including COPD or emphysema), mental health condition (including depression or anxiety) and stroke. Other long-term health conditions are not included in this count.

In Gannawarra, 5.6% of people reported having three or more long-term conditions, compared with 2.9% across Victoria. High levels of multiple long-term health conditions place significant strain on individuals, communities and health systems, reducing quality of life, increasing service demand and widening health inequities.

| Long-term health conditions               | Gannawarra (n) | Gannawarra (%) | Victoria (%) |
|---|----------------|----------------|--------------|
| None of the selected long term conditions | 5,669          | 53.1           | 65           |
| One condition                             | 2,367          | 22.2           | 18.8         |
| Two conditions                            | 930            | 8.7            | 5.7          |
| Three or more conditions                  | 602            | 5.6            | 2.9          |

Source: Australian Bureau of Statistics, 2021, all people

In Gannawarra, self-reported asthma (110.8/100 population), arthritis (9.7/100 population) and mental health (9.6/100/population) are all statistically significantly higher than expected (based on Australian data) and notably higher than the Victorian rate.



Source: Social Health Atlas, 2021, all people

● Statistically significantly higher than expected (based on Australian data)

More recent data, using a different collection methodology and smaller cohort show the proportion of adults in Gannawarra reporting the long-term chronic health conditions in the table below, remain higher than Victoria, with the exception of heart disease.

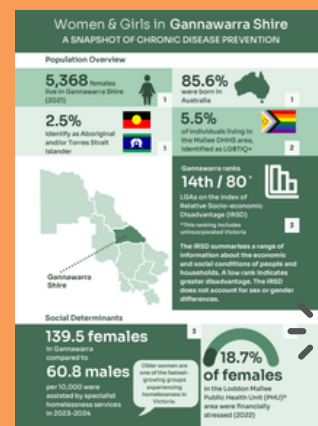
| LGA            | COPD* | Asthma | Osteoarthritis | Diabetes (type 2) | Heart disease | Cancer |
|----------------|-------|--------|----------------|-------------------|---------------|--------|
| Victoria (%)   | 3.6   | 20.1   | 13.8           | 6.2               | 8.3           | 8.3    |
| LMR (%)        | 4.6   | 23.5   | 15.5           | 6.2               | 8.6           | 11.3   |
| Gannawarra (%) | 5.6   | 23.1   | 15             | 6.6               | 6.9           | 9.0    |

Source: [Victorian Population Health Survey, 2023](#), age adjusted

\*COPD: Chronic Obstructive Pulmonary Disease

Women’s Health Loddon Mallee has developed a series of chronic disease infographic data snapshots for each LGA in the Loddon Mallee region using local sex-disaggregated data, where available.

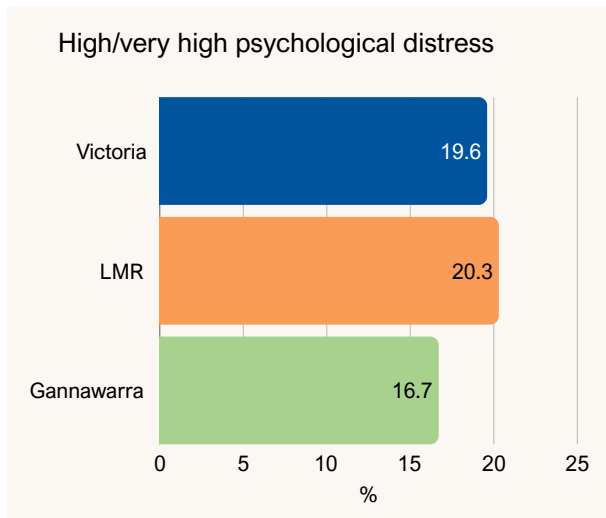
These infographics highlight conditions more common among women and girls in the Loddon Mallee, such as osteoporosis and dementia, and snapshots of the individual, economic, social and structural factors which interact to influence the development and management of chronic conditions.



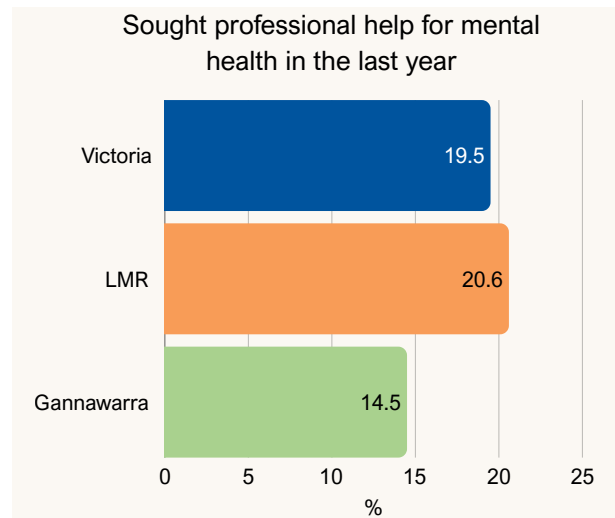
Source: [Women’s Health Loddon Mallee](#), 2025

## 6.4 Mental wellbeing

By prioritising good mental health and wellbeing, we reduce stigma, increase social connection, improve physical health, promote productivity and create safer environments. Our mental health and our physical health are linked. In Gannawarra, 16.7% reported experiencing high/very high psychological distress compared with Victoria (19.6%). A smaller proportion of people in Gannawarra (14.5%) sought professional help for mental health in the last year, compared with Victoria (19.5%).



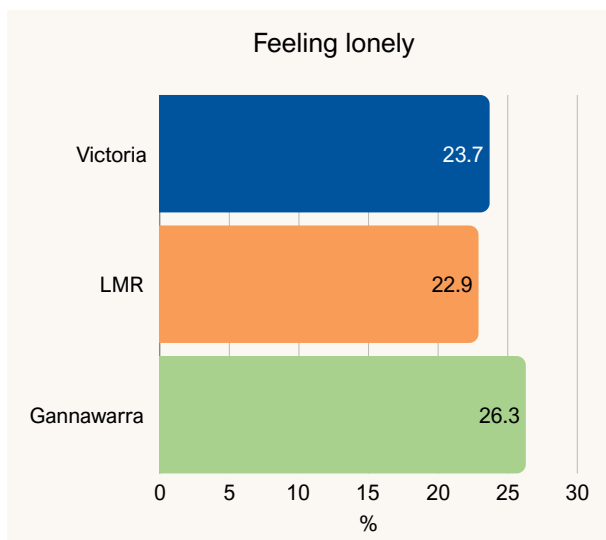
Source: [Victorian Population Health Survey, 2023, age adjusted](#)



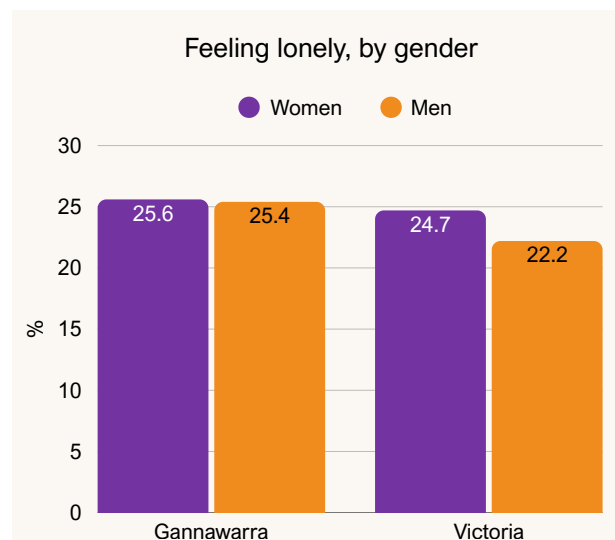
Source: [Victorian Population Health Survey, 2023, age adjusted](#)

Social connection is essential for our health and wellbeing. Loneliness is a subjective measure of low social connection and is defined as an ‘unpleasant or distressing feeling of a lack of connection to other people, along with a desire for more, or satisfying, social relationships’ (Badcock et al, 2022). Loneliness was measured in the Victorian Population Health Survey using the 3-item UCLA Loneliness Scale.

There is a higher proportion of people in Gannawarra feeling lonely (26.3%) compared with Victoria (23.7%). There is little difference in the proportion of women (25.6%) and men (25.4%) who are feeling lonely.



Source: [Victorian Population Health Survey, 2023, age adjusted](#)

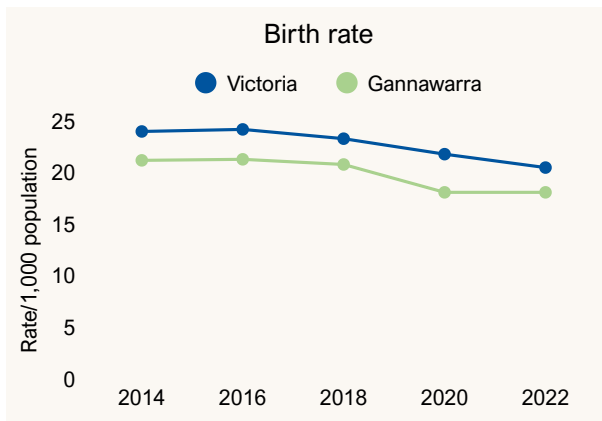


Source: [Victorian Population Health Survey, 2023, age adjusted](#)

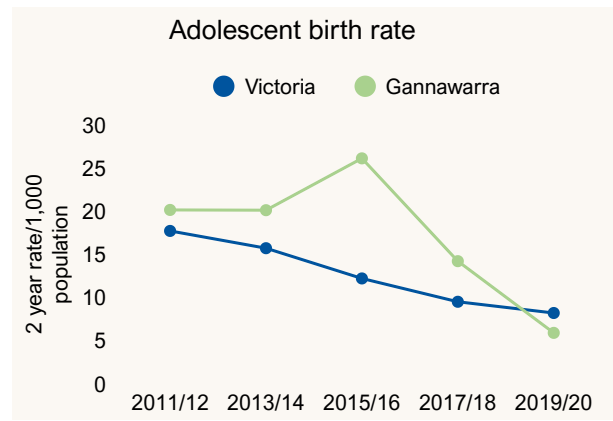
## 6.5 Sexual and reproductive health

Gannawarra's birth rate has been consistently below the Victorian rate and is decreasing. In 2022, Gannawarra's birth rate (18.1/1,000 population) is lower than the Victorian rate (20.5/1,000 population). Fertility rate measures the average number of babies born to a woman throughout her reproductive lifetime. In 2022, the fertility rate was higher in Gannawarra (2.17) compared to the Victoria rate (1.7) and Gannawarra's fertility rate is the eighth highest in Victoria. <sup>[1]</sup>

Adolescent birth rates (younger than 20 years of age) in Gannawarra have decreased significantly, from 26.1/1,000 population in 2015/2016 to 5.9/1,000 population in 2019/2020, which is now lower than the Victorian rate (8.2/1,000 population) in 2019/20.



Source: [Womens Health Atlas](#)



Source: [Womens Health Atlas](#)

Rates of Chlamydia are lower in Gannawarra for both men and women, compared with the Victorian rate.

| Newly acquired    | Chlamydia <sup>^</sup> |       | Gonorrhoea <sup>^</sup> |       | Hepatitis B <sup>^</sup> |      | Infectious Syphilis <sup>^</sup> |      |
|-------------------|------------------------|-------|-------------------------|-------|--------------------------|------|----------------------------------|------|
|                   | Female                 | Male  | Female                  | Male  | Female                   | Male | Female                           | Male |
| <b>Victoria</b>   | 324.5                  | 412.3 | 60.5                    | 281.1 | ^^                       | 0.24 | 7.43                             | 36.7 |
| <b>Gannawarra</b> | 267.1                  | 152.4 | ^^                      | ^^    | ^^                       | ^^   | ^^                               | ^^   |

Source: Victorian sexual and reproductive health and viral hepatitis strategy 2022-30: Monitoring indicators [dashboard](#).

<sup>^</sup>Rate/100,000 population, 2024

^^ less than five cases

**Women & Girls in Gannawarra**  
A SNAPSHOT OF SEXUAL & REPRODUCTIVE HEALTH IN THE REGION

**WHLM's Vision**  
All women and gender-diverse people across the Loddon Mallee Region have access to evidence-based, supportive, and culturally responsive sexual and reproductive health services, provided free of judgement and discrimination. Communities support and promote positive approaches to sexuality and its expression, enabling and empowering women to enjoy safe, respectful and pleasurable relationships and to have their voices heard.

For more information about how WHLM enhances the sexual and reproductive health of women and gender-diverse people in the Loddon Mallee region and explore their voices, experiences and stories, visit our [Health Matters Sexual and Reproductive Health Strategy 2022-2026](#).

**153** women speak a language other than English at home in 2021  
Filipino, Tagalog & Hindi are common

**Gannawarra ranks 64th out of 79 LGA's** on the Mother's Index Bunk  
This index compares scores from the indicators relating to maternal wellbeing & how social structures a better place for a mother to live.

**14th out of 79 LGA's** on the Index of Relative Socio-spatial Disadvantage (IRSD)  
The Index of Relative Socio-spatial Disadvantage (IRSD) measures a range of indicators about the social and spatial conditions of people and households. A low score indicates greater disadvantage.

**WHLM have developed a snapshot of sexual and reproductive health in Gannawarra - click on image to view the snapshot.**

**WHLM have also compiled a comprehensive list of sexual and reproductive health services in the Loddon Mallee region**

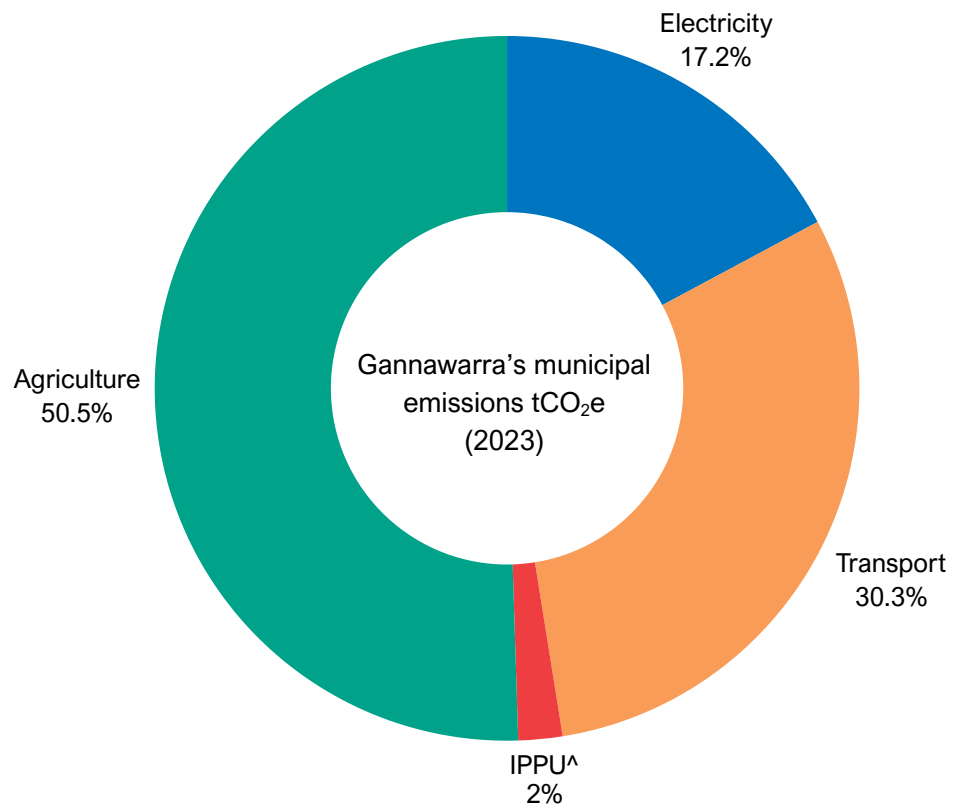
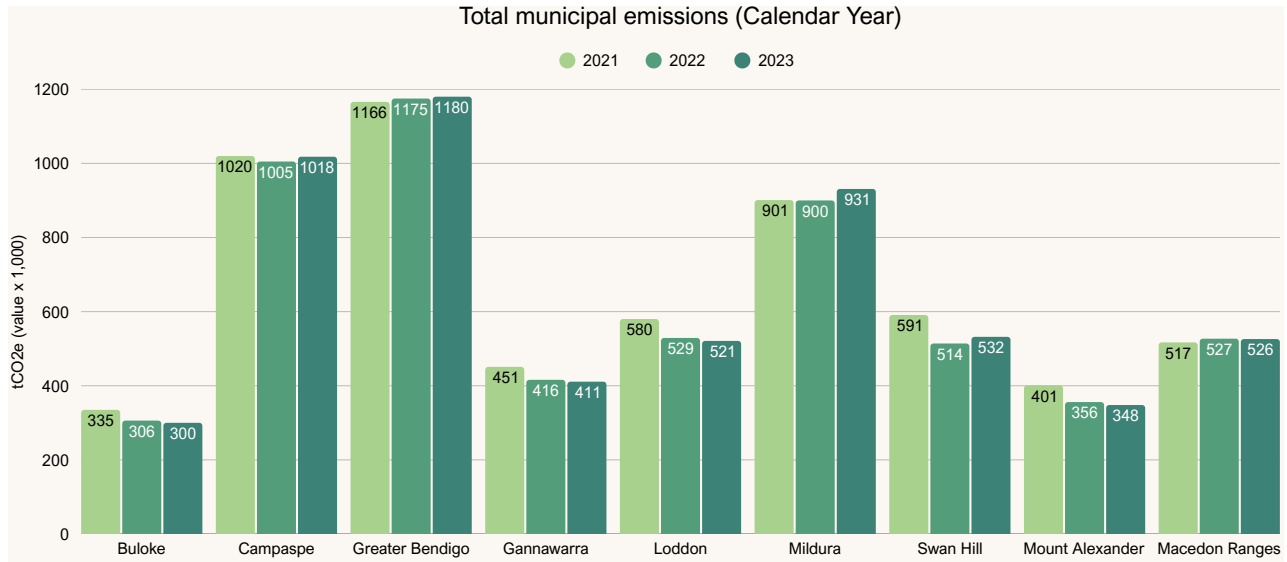
Source: [Women's Health Loddon Mallee](#), 2025

[1] [Women's Health Loddon Mallee](#), 2025

# 7. Environment

## 7.1 Municipal emissions

The LMPHU’s climate change and health work is guided by the Loddon Mallee Climate Change and Health Framework. Greater Bendigo has the highest total municipal emissions, which aligns with its higher population number. Gannawarra’s total carbon emissions are decreasing and in 2023 was measured at 411,000 tCO<sub>2</sub>e. The top causes of carbon emissions in Gannawarra were agriculture (50.5%) and transport (30.3%).



Source: Snapshot Climate - Australian Emissions Profiles  
 tCO<sub>2</sub>e: Tonnes of Carbon Dioxide Equivalent  
<sup>^</sup>Industrial Processes and product use

## 7.2 Average temperature

Temperatures in the LMR differ significantly from north to south. The northern part of the region sees hotter summers while winters are mild. Conversely, the southern part of the region experiences cool and rainy winters and warm and arid summers. Gannawarra experiences an average maximum temperature of 30.5°C. In the elevated southern regions, the average maximum temperature is below 25°C. Frosty weather is frequent in the whole region.

| LGA (1961-1990)   | Summer (Ave °C) |             | Winter (Ave °C) |            |
|-------------------|-----------------|-------------|-----------------|------------|
|                   | Maximum         | Minimum     | Maximum         | Minimum    |
| LMR               | 28.9            | 13.5        | 13.7            | 4.1        |
| Swan Hill         | 31.2            | 15          | 15.6            | 4.6        |
| Mildura           | 31              | 14.8        | 15.9            | 5.2        |
| <b>Gannawarra</b> | <b>30.5</b>     | <b>14.7</b> | <b>14.8</b>     | <b>4.5</b> |
| Buloke            | 30              | 14          | 14.6            | 4.4        |
| Loddon            | 29.4            | 13.9        | 13.9            | 4.2        |
| Campaspe          | 29.3            | 14.1        | 13.9            | 3.9        |
| Greater Bendigo   | 28.2            | 13.4        | 13.1            | 3.9        |
| Mount Alexander   | 27              | 12          | 12              | 3.1        |
| Macedon Ranges    | 24.1            | 11.2        | 10.3            | 3.2        |

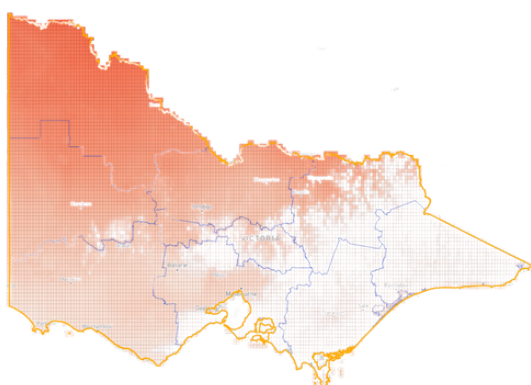
Source: [Loddon Mallee Environmental Scan | Emergency Management Victoria, 1961-1990](#)

### Projected number of days above 35°C in 2030s and 2090s by Bureau of Meteorology Forecast Districts.

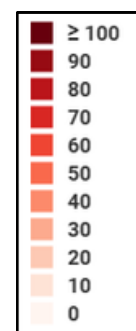
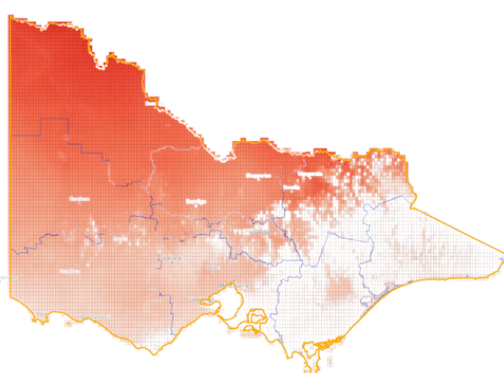
These data demonstrate that the Mallee and Murray areas are projected to experience increasing days above 35°C, which will impact health and wellbeing. Heat kills more Australians than any other natural disaster.

Heat can cause serious and potentially fatal health problems such as heat exhaustion and heatstroke, trigger sudden events like heart attack or stroke, or worsen existing medical conditions like kidney or lung disease. <sup>[1]</sup>

2030s (2015-2044)



2090s (2075-2104)



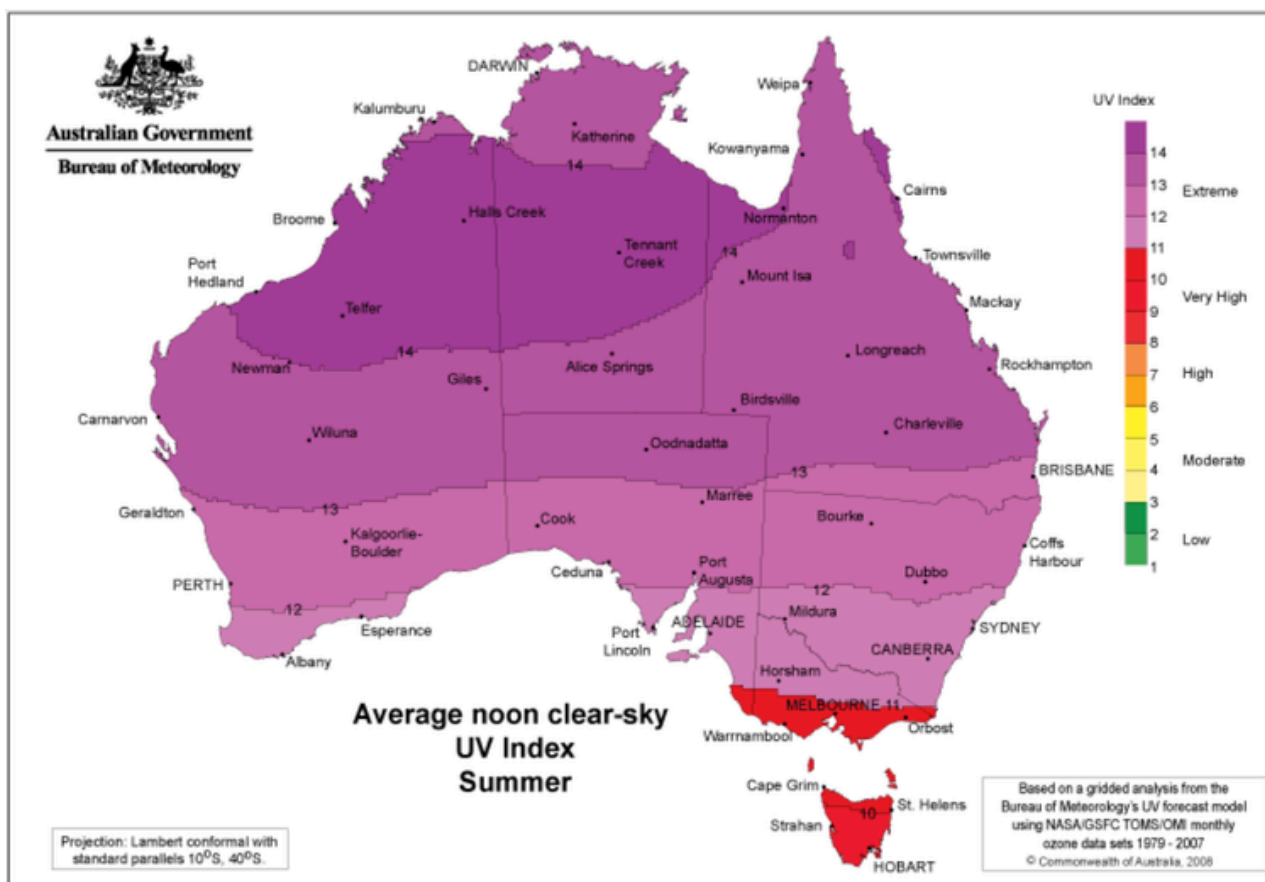
Source: Victorian Government, Energy, Environment and Climate Action

[1] [Better Health Channel](#), Extreme Heat, Victorian Department of Health

### 7.3 Ultraviolet radiation

Exposure to Ultraviolet (UV) radiation from the sun and other sources, such as solariums, is the major cause of skin cancer. Australia has some of the highest levels of UV radiation in the world. Sun exposure has been estimated to cause around 95% of melanoma cases in areas of high exposure, such as Australia and around 99% of non-melanoma skin cancers in Australia. [1]

The map below show the average summer (noon clear sky) solar ultraviolet values over Australia. The Loddon Mallee region experiences extreme UV index.



Source: Australian Bureau of Meteorology.

[1] Australian Government, Cancer Australia

## 7.4 Bushfire prone areas

Most of the LMR is classified as a bushfire prone area (97.8%). This means high bushfire hazards in the LMR, many of which intersect with settlements and areas are experiencing growth in rural residential zones and tourism. Gannawarra has 98.7% of its area as bushfire prone.

The fire danger period in Victoria has become lengthier, indicating a trend towards extended fire seasons. The seasonal fire restriction dates are determined by the municipality and are dependent on factors such as amounts of rain, grassland curing (grass dies, dormant or dry out), and other local conditions.

Smoke from fires, including planned burns, can also pose a hazard within the LMR. The individuals most at risk from smoke exposure include young children, adults over 65 years of age, people with asthma or existing heart or lung conditions, pregnant women, outdoor workers, and smokers. Bushfire-prone areas are either subject to or likely to be subject to bushfires and require specific bushfire construction standards.

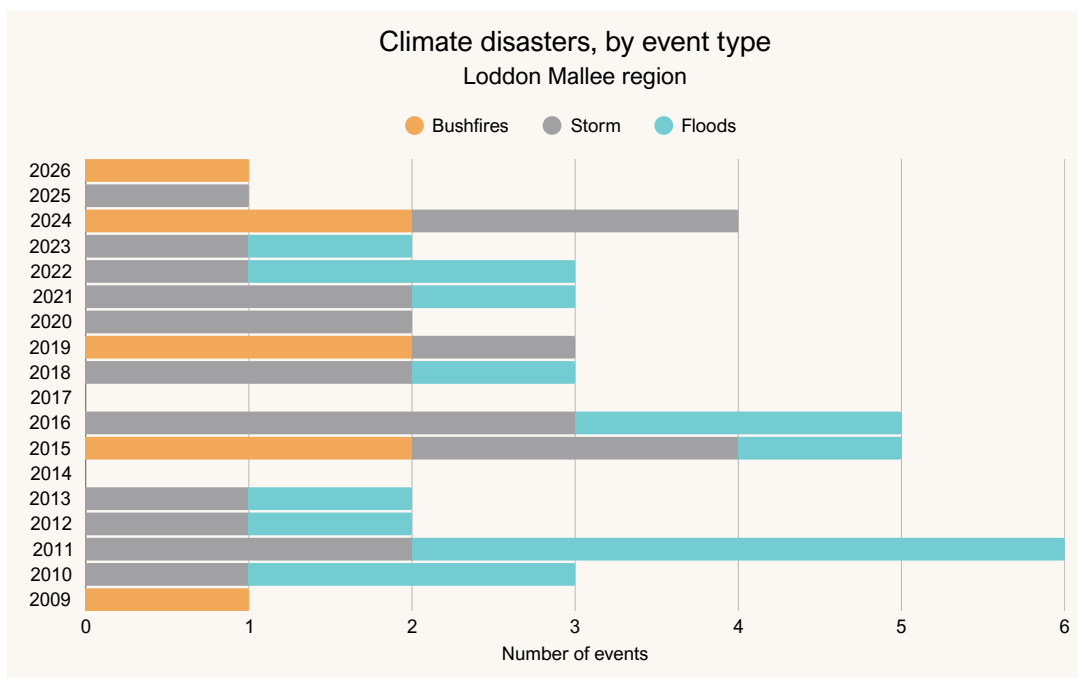
|                   | Bushfire prone area (%) | Bushfire prone area (km2) | Total area (km2) |
|-------------------|-------------------------|---------------------------|------------------|
| Buloke            | 97.6                    | 7,807                     | 8,000            |
| Campaspe          | 97.7                    | 4,415                     | 4,519            |
| <b>Gannawarra</b> | <b>98.7</b>             | <b>3,701</b>              | <b>3,750</b>     |
| Greater Bendigo   | 97.6                    | 2,930                     | 3,000            |
| Loddon            | 100                     | 6,694                     | 6,696            |
| Macedon Ranges    | 98.6                    | 1,723                     | 1,748            |
| Mildura           | 98.3                    | 21,710                    | 22,083           |
| Mount Alexander   | 99.8                    | 1,527                     | 1,530            |
| Swan Hill         | 92.0                    | 5,625                     | 6,115            |
| Victoria          | 97.8                    | 5,625                     | 6,115            |

Source: [Loddon Mallee Environmental Scan | Emergency Management Victoria](#)

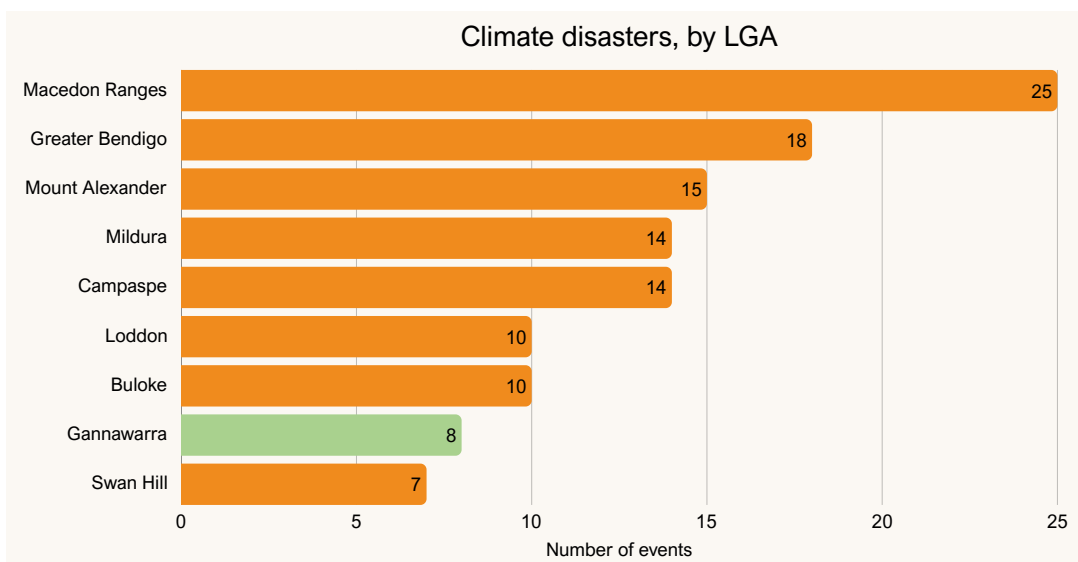
## 7.5 Climate emergencies

Climate change is increasingly affecting the frequency, intensity, and duration of extreme weather events in our region. Rising temperatures, shifting rainfall patterns, and more severe storm systems are contributing to a greater incidence of natural hazards such as bushfires, floods, and heatwaves. Acting as a risk multiplier, climate change not only amplifies the severity of these disasters, threatening lives, livelihoods, health and property, but also places significant pressure on disaster management systems.

The Disaster Recovery Funding Arrangements (DRFA) provide a framework for joint federal and state cost-sharing of disaster relief and recovery measures. These arrangements are triggered by state government when a natural disaster requires a coordinated multi-agency response and exceeds the small disaster financial threshold. Between 2019 and February 2026, 35 climate-related disaster events (storms, floods, bushfires) in the Loddon Mallee region have activated the DRFA, with multiple climate disaster events most years. Between 2019 to 2026, there were 8 climate disaster events that activated the DRFA in Gannawarra.



Source: [Australian Government Department of Home Affairs, Disaster assist, 2009 -2026](#)



Source: [Australian Government Department of Home Affairs, Disaster assist, 2009 -2026](#)

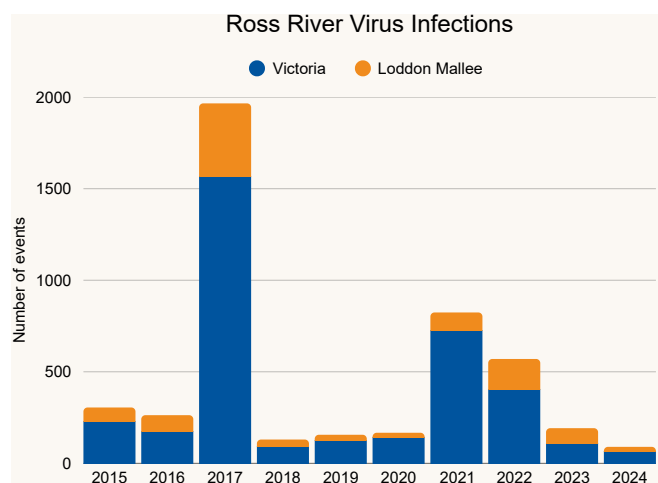
## 7.6 Mosquito borne disease

In 2024, there have been five mosquito-borne viruses identified across Victoria that pose public health risk in Victoria with the potential for local transmission. These were Japanese encephalitis virus, Murray Valley encephalitis virus, Ross River virus, Barmah Forest virus and West Nile virus Kunjin strain (otherwise known as Kunjin virus).<sup>[1]</sup>

Mosquito surveillance is conducted throughout the Victorian mosquito breeding season by the Department of Health each year. In inland areas, the mosquito season typically starts from early November through to late April the following year, while in coastal areas it typically starts earlier and ends later. The mosquito trapping sites within the Loddon Mallee region includes Campaspe, Gannawarra, Mildura and Swan Hill.

### Ross River virus

Ross River virus is a mosquito transmitted disease that occurs throughout most regions of Australia including regional Victoria, particularly around inland waterways and coastal regions. All 9 LGAs within the Loddon Mallee are considered endemic. Epidemics occur from time to time and are related to environmental conditions that encourage mosquito breeding such as heavy rainfall, floods, high tides and temperature. The number of notifications of Ross River Virus from Loddon Mallee ranges from 25 to 397 in a year. In 2023 43.2% of all Victorian notifications were from the Loddon Mallee.



Source: Victorian Department of Health, surveillance summary report

[1] Victorian Department of Health, [Mosquito surveillance report](#)

## 8. Data resources

|   |   |
|---|---|
| <b>LMPHU</b>                              | <a href="https://www.bendigohealth.org.au/LMPHU/">https://www.bendigohealth.org.au/LMPHU/</a>   |
| <b>ABS Quick Stats</b>                    | <a href="https://abs.gov.au/census/find-census-data/quickstats/2021/POA3523">https://abs.gov.au/census/find-census-data/quickstats/2021/POA3523</a>           |
| <b>AECD</b>                               | <a href="https://www.aedc.gov.au/data-explorer/">https://www.aedc.gov.au/data-explorer/</a>   |
| <b>AIHW</b>                               | <a href="https://www.aihw.gov.au/about-our-data/aihw-data-by-geography">https://www.aihw.gov.au/about-our-data/aihw-data-by-geography</a>                     |
| <b>Crimes Statistics Agency</b>           | <a href="https://www.crimestatistics.vic.gov.au/">https://www.crimestatistics.vic.gov.au/</a>   |
| <b>PHN Exchange</b>                       | <a href="https://www.phnexchange.com.au/">https://www.phnexchange.com.au/</a>   |
| <b>Social Health Atlas</b>                | <a href="https://phidu.torrens.edu.au/social-health-atlases">https://phidu.torrens.edu.au/social-health-atlases</a>   |
| <b>Victorian Population Health Survey</b> | <a href="https://vahi.vic.gov.au/reports/victorian-population-health-survey-2023">https://vahi.vic.gov.au/reports/victorian-population-health-survey-2023</a> |
| <b>Womens Health Atlas</b>                | <a href="https://victorianwomenshealthatlas.net.au/#/">https://victorianwomenshealthatlas.net.au/#/</a>   |

## 9. Notes on statistical significance

### **Public Health Information Development Unit/Social Health Atlas**

Statistical significance was assessed using indirect age standardisation and standardised ratios (SRs). Expected numbers were calculated by applying age-specific Australian standard rates to the local population age structure. Observed numbers were compared with expected numbers and statistical significance was evaluated using a Z-score calculation, with 95% confidence intervals around the SR to indicate reliability. More information on this calculation is available at the [Public Health Information Development Unit](#).

### **Victorian Population Health Survey**

Statistical significance differences between estimates were deemed to exist where the 95% confidence intervals for percentages did not overlap. More information is available in the Methodology section of the [Victorian Population Health Survey](#).

## 10. Abbreviations

| Abbreviation table |   |
|--------------------|---|
| AEDC               | Australian Early Development Census   |
| AIHW               | Australian Institute of Health and Welbeing   |
| ARI                | Average recurrence interval   |
| COPD               | Chronic Obstructive Pulmonary Disease   |
| Greater Bendigo    | City of Greater Bendigo   |
| IRSD               | Index of Relative Socio-economic Disadvantage   |
| LGA                | Local government area   |
| LMPHU              | Loddon Mallee Public Health Unit  |
| LMR                | Loddon Mallee region  |
| LGBTIQA+           | Lesbian, gay, bisexual, transgender, intersex, queer, asexual and other sexually or gender diverse people |
| MMM                | Modified Monash Model   |
| NBCSP              | National Bowel Cancer Screening Program   |
| NDIS               | National Disability Insurance Scheme  |
| PHN                | Primary Health Network  |
| STI                | Sexually Transmitted Infection  |



LODDON MALLEE  
PUBLIC HEALTH UNIT