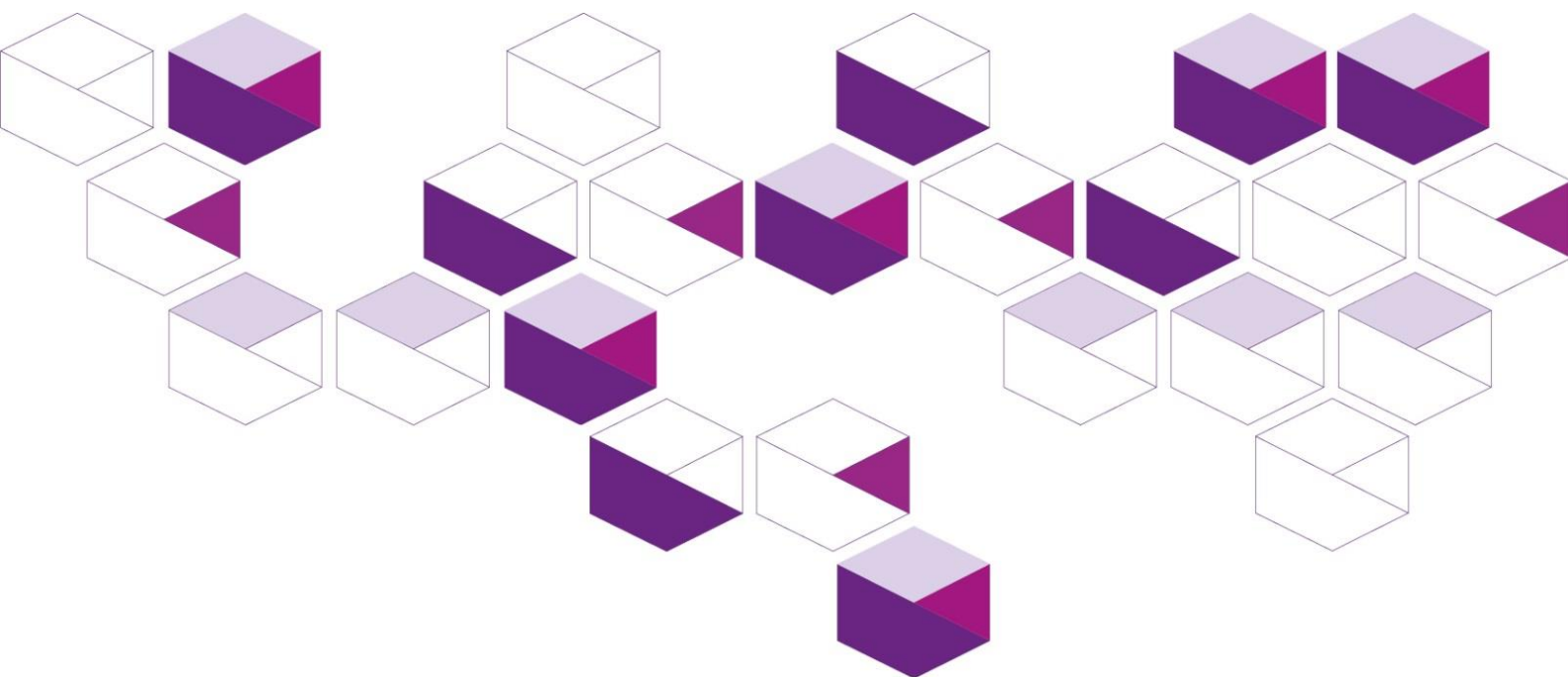




Government of **Western Australia**
South Metropolitan Health Service

City of Mandurah Health and Wellbeing Profile 2019

South Metropolitan Health Service
Health Promotion



Acknowledgment

The South Metropolitan Health Service (SMHS) respectfully acknowledges the Aboriginal Noongar people both past and present, the traditional owners of the land on which we work.

Notes

In this report:

The terms 'City of Mandurah' and 'Mandurah LGA' are used interchangeably. The use of the term 'Aboriginal' within this document refers to Australians of both Aboriginal and Torres Strait Islander people.

Important disclaimer

All information and content in this material is provided in good faith by the WA Department of Health, and is based on sources believed to be reliable and accurate at the time of development. The State of Western Australia, the WA Department of Health and their respective officers, employees and agents, do not accept legal liability or responsibility for the material, or any consequences arising from its use.

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
BMI	Body mass index
CI	Confidence interval
DoH	Department of Health, Western Australia
ERP	Estimated resident population
HWSS	Health and Wellbeing Surveillance System
LGA	Local government area
NHPA	National Health Priority Areas
RSE	Relative standard error
SMHS	South Metropolitan Health Service
SMHS- HP	South Metropolitan Health Service – Health Promotion
WA	Western Australia

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About this profile

The purpose of this profile is to provide the City of Mandurah with demographic and health-specific data to support the development of a local public health plan.

The information collected provides each local government with evidence to inform council, staff, the public, partners and other stakeholders on a range of public health indicators. This profile is a useful tool for local government to:

- plan effectively to improve the health and wellbeing of the community
- identify specific health concerns, high-risk groups and unmet needs
- clarify built, social, economic and natural barriers to health and wellbeing
- focus attention on health priorities
- establish the resources available to the community to respond to priority health needs
- stimulate the 'buy-in' of the community and other stakeholders.

The data presented in this profile is divided into the following sections:

- lifestyle risk factors
- physiological risk factors
- health conditions
- hospitalisations
- deaths.

WA Public Health Act 2016

Each local government is to prepare a local public health plan that applies to its local government district. Local public health plans must be consistent with the State public health plan and must address a range of specified matters. Local public health plans may be prepared in conjunction with plans for the future of the local government district prepared under section 5.56 of the Local Government Act 1995.

Health datasets

Population and census data are accessed from the Australian Bureau of Statistics (ABS) and the Australian Early Development Census (AEDC). Data was also supplied by the Commonwealth Department of Education, Employment and Workforce Relations. All other data provided are sourced from within the Epidemiology Branch, Public Health Division, Department of Health, Western Australia.

WA Health and Wellbeing Surveillance System

The WA Health and Wellbeing Surveillance System (HWSS) is managed by the Health Survey Unit in the Epidemiology Branch at the Department of Health, Western Australia (Department of Health). Householders are selected at random to participate in a computer-assisted telephone interview. Questions are asked on a range of indicators related to health and wellbeing. Topics include chronic health conditions, lifestyle, physiological and psychosocial risk factors.

Limitation of the data

It is important to be cautious when comparing the HWSS data in this profile to that in the previous profile because:

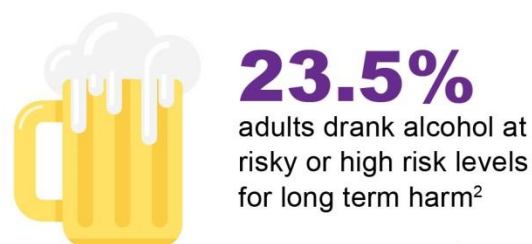
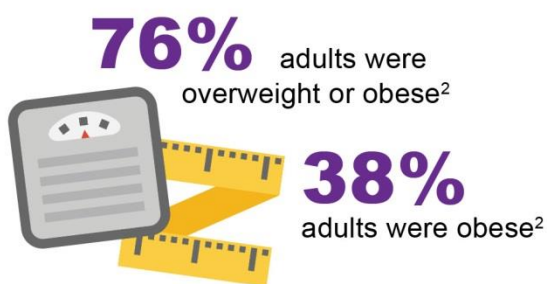
- Changes could be due to a change in the demographic mix of the population, particularly as there have been some minor revisions to LGA boundaries over time.
- As small numbers of people were surveyed in each LGA, the 95 per cent confidence intervals around the results are wide meaning that it is difficult to show any statistically significant changes from the last results.
- There are only two time points to compare so it is difficult to determine whether any increase or decrease is due to a trend or to random variability.

For these reasons, it is important not to overstate any perceived differences between the results in the last profile compared to this one.

Results are also not comparable between LGAs because, for each LGA, the minimum number of years necessary to make up a sufficient sample has been used.

This means that the time period for other LGAs may differ.

Health and wellbeing snapshot City of Mandurah profile



82.7 years

life expectancy at birth 2013–2015³



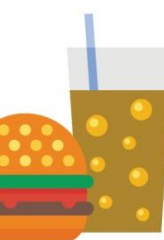
55% adults ate less than two serves of fruit daily²



28.7% adults had current high blood pressure²



26.2% adults had current high cholesterol²



38% adults ate meals from fast food outlets at least weekly²

3,885 adults were hospitalised due to injuries from accidental falls between 2012–2016¹



40% adults were not active enough²



16.5% have been diagnosed with a mental health problem in the last 12 months

Information is provided for adults aged 16 years and over in Mandurah (C) for 2015-2016.

Source:

- 1 Data generated using Health Tracks Reporting, by the Epidemiology Branch, WA Department of Health in collaboration with the Corporate Research Centre for Spatial Information (CRC-SI). Injury by external cause. 2018
- 2 Epidemiology Branch, 2018, Mandurah (C) LGA Health Profile, 2015-2016, HWSS, Department of Health, Western Australia.
- 3 Epidemiology Branch, Public and Aboriginal Health Division. Life expectancy of selected Local Government Authorities in South Metropolitan areas of Western Australia, 2013-2015. Department of Health, Western Australia.

Illustrations: Shutterstock.com Pub # 2019-SMHS-298

Population overview

The City of Mandurah is located approximately 72 kilometres south of Perth. It is the state's second-largest city and the largest regional city in Western Australia covering an area of 173.5km. It is comprised of the suburbs of Barragup, Bouvard, Clifton, Coodanup, Dawesville, Dudley Park, Erskine, Falcon, Furnissdale, Greenfields, Halls Head, Herron, Lakelands, Madora Bay, Mandurah, Meadow Springs, Parklands, San Remo, Silver Sands, Stake Hill, and Wannanup. It is bordered by the Indian Ocean to the west, with Jarrah forests and farmlands of the Darling Range leading east to the bordering wheat belt.

Table 1: 2016 Census population estimates for the Mandurah (C) LGA

Total Population	80,813	100%
Male	39,188	48.5
Female	41,620	51.5

Source: ABS (2016). Socio-economic Indexes for Areas (SEIFA).

Table 2: 2016 Population for the Mandurah (C) LGA by age group and sex

Age Group	Number	Percentage (%)
0–4	4,669	5.8
5–14	9,890	12.2
15–24	9,189	11.3
25–44	18,078	22.4
45–64	20,669	25.7
65+	18,316	22.6

Source: ABS (2016). Socio-economic Indexes for Areas (SEIFA).

Socio-economic disadvantage

Although the overall level of health and wellbeing of Australians is relatively high compared with other countries, there are significant disparities in the health outcomes of different populations within Australia. In particular, people who live in areas with lower socio-economic conditions tend to have worse health than people from other areas. Previous analysis has shown that disadvantaged Australians have higher levels of disease risk factors and lower use of preventative health services than those who experience socio-economic advantage (ABS, 2016).

The socio-economic indexes for areas (SEIFA) scores are made up of four indices which summarise a variety of social and economic variables such as income, educational attainment, employment and number of unskilled workers. SEIFA scores are based on a national average of 1000 and areas with the lowest scores are the most disadvantaged.

Based on the 2016 ABS census data, the City of Mandurah had a SEIFA Index of relative socio-economic disadvantage score of 971. The SEIFA index scores for LGAs within the South Metropolitan Health Service (SMHS) ranged of scores from 945 to 1088¹. Table 3 shows the SEIFA scores for each suburb within the City of Mandurah.

Table 3: SEIFA Index of Relative Socio-Economic Disadvantage scores by suburb, Mandurah (C) LGA, 2016

Suburb	SEIFA score	Usual resident population
Barragup	N/A	N/A
Bouvard	973	826
Clifton	N/A	N/A
Coodanup	844	3,932
Dawesville	1,007	5,824
Dudley Park	962	6,240
Erskine	981	4,665
Falcon	970	5,164
Furnissdale	N/A	N/A
Greenfields	918	9,855
Halls Head	1,022	13,870
Herron	1,001	440
Lakelands	1,007	4,830
Madora Bay	1,058	2,728
Mandurah	860	7,837
Meadow Springs	997	8,195
Parklands	1,032	581
San Remo	1,042	964
Silver Sands	1,004	1,258
Stake Hill	N/A	N/A
Wannanup	1,023	3,621

Source: SEIFA scores for each census collection (CD) district in the City of Mandurah is available from: Australian Bureau of Statistics (2016). 1 The indexes and supporting material are found in the ABS publication Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia (2016). N/A = SEIFA data not available.

Life expectancy

Life expectancy at birth, 2013 - 2015 (Table 4), for residents in the Mandurah LGA is lower than WA State for both males and females; 80.1 years and 85.5 years respectively.

Table 4: Life expectancy at birth for the Mandurah (C) LGA, 2013 - 2015

Population	Male	Female	Total
City of Mandurah LGA	80.1	85.5	82.7
WA State	81.3	85.8	83.6

Source: Epidemiology Branch, Public and Aboriginal Health Division. Life expectancy of selected Local Government Authorities in South Metropolitan areas of Western Australia, 2013-2015. Department of Health, Western Australia

Health and wellbeing data

Data from the WA HWSS, ABS Census and AEDC are presented as the proportion of the population (or prevalence) reporting a particular attribute. While data from Census (ABS and AEDC) reports point prevalence, representing the proportion of the population who have a condition at the time of the survey, data from the HWSS reports period prevalence, measuring the proportion of the population who have a condition within a specified period of time.

Lifestyle risk factors

The data for lifestyle risk factors shown in Tables 5 to 7 is based on responses to HWSS from 358 adults (aged 16 years and older) in the Mandurah LGA, and 12,845 adults within the state, who were surveyed over the period of January 2015 to December 2016. This data was weighted to compensate for oversampling in the rural and remote areas of WA and then adjusted to the age and sex distribution of the WA population using the 2015 Estimated Resident Population.

Curbing the rise in overweight and obesity

Being overweight or obese can contribute to the development of chronic conditions, such as cardiovascular disease, type 2 diabetes, osteoarthritis, some cancers and sleep apnoea. As excess body weight increases, so does the risk of chronic disease and mortality. Respondents were asked about their height and weight. Body mass index (BMI) was derived from these figures by dividing weight in kilograms by height in metres squared, after adjustment for errors.

Healthy eating

Eating fruit and vegetables is important for health and protects against the risk of various diseases, including coronary heart disease, type 2 diabetes, stroke and digestive system cancers. It is recommended that Australian adults aged 18 years and over eat two serves of fruit and five serves of vegetables daily.

A more active SMHS

Physical inactivity is associated with several chronic health conditions, including coronary heart disease, stroke and diabetes. Being physically active reduces the risk of developing such conditions and improves general physical and mental wellbeing. The Australian Physical Activity and Sedentary Guidelines for adults aged 18 to 64 years recommend accumulating 150 to 300 minutes of moderate intensity physical activity or 75 to 150 minutes of vigorous intensity physical activity, or an equivalent combination of both moderate and vigorous activities, each week.

Making smoking history

Smoking increases the risk of developing a number of health conditions, including respiratory disease, coronary heart disease, stroke and several cancers including lung and mouth cancers. Respondents were asked about their smoking status (including cigarettes, cigars and pipes). Current smoking status was re-categorised into those who smoke (daily or occasionally), ex-smokers and those who have never smoked regularly. Respondents who had tried cigarettes and had smoked 100 or more cigarettes in their lifetime were classified as ex-smokers, while those who had smoked less than 100 cigarettes were classified as having never smoked.

Reducing harmful levels of alcohol use

Excessive alcohol consumption increases the risk of some health conditions, including coronary heart disease, some cancers, stroke, blood pressure, liver and pancreatic disease. It also increases the risk of accidents and mental illness.

Respondents were asked about their alcohol drinking habits, including how many days a week they usually drink and how many drinks they usually consume. The information was categorised into risk levels based on the 2009 National Health and Medical Research Council guidelines (which categorise any drinking by children and young people under 18 years of age as risky drinking).

Lifetime risky drinking has the potential for alcohol-related harm over a lifetime of drinking. For healthy men and women drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol related disease or injury.

Single-occasion risky drinking is the risk of harm due to a single occasion of drinking and for healthy men and women, drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.

For women who are pregnant, planning a pregnancy or breastfeeding not consuming alcohol is the safest option (National Health and Medical Research Council, 2009).

Preventing injury and promoting safer communities

Injuries are often described as unintentional and intentional. Unintentional injuries include most transport, poisoning, falls, drowning, and fire and burn injuries.

Intentional injuries include interpersonal violence, suicide and self-harm. In some cases it may not be possible to determine whether an injury has been intentional or unintentional.

Community injuries are those that are typically sustained in places such as the home, workplace or street. They do not include injuries due to complications of medical or surgical care, or other unclassified injuries.

Table 5: Prevalence of lifestyle risk factors for adults (aged 16 years and over), Mandurah (C) LGA and WA State, January 2015 – December 2016

Risk factors	Mandurah LGA		WA
	Prevalence estimate	Estimated population	Prevalence estimate
Currently smokes	7.3*	4,925	11.8
Eats less than 2 serves of fruit daily	55.2	37,099	50.3
Eats less than 5 serves of vegetables daily	88.3	59,322	88.4
Risky/high risk drinking for long term harm (a)	23.5	15,818	27.5
Risky/high risk drinking for short term harm (b)	9.6*	6,472	10.0
Insufficient physical activity (c)	40.1	26,070	36.4

Source: WA Health and Wellbeing Surveillance System, Epidemiology Branch, DoH WA.

Notes:

* Prevalence estimate has a relative standard error between 25 per cent and 50 per cent and should be used with caution.

(a) As a proportion of all adult respondents 16 years and over. Drinks more than 2 standard drinks on any day. Any alcohol consumption by persons 16 or 17 years classified as high risk.

(b) As a proportion of all adult respondents 16 years and over. Drinks more than 4 standard drinks on any day. Any alcohol consumption by persons 16 or 17 years classified as high risk.

(c) Completes less than 150 minutes of physical activity per week (adults 18+ years)

Physiological risk factors

Physiological risk factors such as high cholesterol, high blood pressure, and overweight or obesity can be major contributors to ill health and chronic disease. These risk factors are expressed through physical changes in the body and are highly interrelated (AIHW, 2016). They can be managed through a combination of medications, population-based interventions and modification of lifestyle behaviours.

Blood pressure

High blood pressure is a major risk factor for the development of coronary artery disease, stroke and renal failure.

Cholesterol level

Cholesterol is a fatty substance produced by the liver and carried by the blood to the rest of the body. Its natural function is to supply material for cell walls and hormones, but high blood cholesterol can form plaque that clogs the blood vessels supplying blood to the heart and certain other parts of the body. High blood cholesterol can be a major risk factor for coronary heart disease, ischaemic stroke and peripheral vascular disease (AIHW, 2016).

Body weight

Being overweight or obese can contribute to the development of chronic conditions, such as cardiovascular disease, type 2 diabetes, osteoarthritis, some cancers and sleep apnoea. Excess body weight increases the risk of chronic disease and mortality exponentially (Hruby et al 2016). Respondents were asked how tall they are and how much they weigh. A BMI was derived from these figures by dividing weight in kilograms by height in metres squared, after adjustment for errors in the self-reported height and weight. The BMIs were then categorised. Adults with a BMI greater than 25kg/m² are considered to be overweight, and those with a BMI greater than 30kg/m² to be obese. BMI may not be a suitable measure for athletes who have a muscular build, older people and some ethnic groups.

Obesity

Obesity is the result of many complex systems including food supply, transport, urban design, business, socio-cultural, marketing, communications, education, health, trade, legal, economic, and governance systems (World Obesity Federation, 2015). Rates of overweight and obesity among adults have increased over time, driven by a general increase in body mass index (BMI). Since 2002, there has been a significant increase in the mean BMI for both men and women (Tomlin et al, 2015).

Table 6: Prevalence of physiological risk factors for adults (aged 16 years and over), Mandurah (C) LGA and WA State, January 2015 – December 2016

Risk factors	Mandurah LGA		WA
	Persons (%)	Estimated population	Persons (%)
Current high blood pressure (a)	28.7	19,256	16.0
Current high cholesterol (b)	26.2	17,582	17.5
Overweight (c)	38.3	25,715	38.9
Obese (c)	37.8	25,379	27.7

Source: WA Health and Wellbeing Surveillance System, Epidemiology Branch, DoH WA.

Notes: (a) Currently have high blood pressure or take medication for high blood pressure. Of those who have had their blood pressure measured.

(b) Currently have high cholesterol or take medication for high cholesterol. Of those who have had their cholesterol measured.

(c) BMI of 25 to < 30 = overweight; BMI of 30+ = obese. Self-reported height and weight have been adjusted for under-reporting (i.e. over-estimating of height and under-estimating of weight).

Health conditions

Chronic diseases, also known as non-communicable diseases, are broadly defined as health conditions that usually have a number of contributing factors, develop gradually, and have long-lasting effects. Some diseases may lead to many years of disability and require long-term management, while others can cause premature death. They include diseases such as cardiovascular disease, type 2 diabetes, respiratory diseases, musculoskeletal conditions (including back problems, arthritis and osteoporosis), mental and substance use disorders, some cancers, and oral diseases.

Chronic health conditions are a major concern because they can have a significant impact on a person's life, particularly because of the ageing population. They have a profound impact on an individual's health and wellbeing and place an enormous burden on families, carers and the healthcare system. These conditions develop over a long period of time and can often be modified by changes in lifestyle.

Diabetes mellitus

Diabetes is a condition where the body is unable to maintain normal blood glucose levels and contributes significantly to ill health, disability and premature death in Australia (AIHW, 2015).

Cardiovascular disease

Cardiovascular disease (CVD) is the term used for group of conditions that affect the heart and blood vessels. CVD includes heart, stroke and vascular diseases, coronary heart disease. Stroke and heart failure are the most common and serious types of cardiovascular diseases. Despite declining mortality and hospitalisation rates CVD are a leading underlying cause of death in Australia and remain a major health problem (AIHW, Welfare, 2018).

Cancer (excluding skin cancer)

Cancer is a diverse group of diseases in which some of the body's cells become defective and multiply out of control. These abnormal cells form tumours and invade and damage the tissues around them. They can also spread to other parts of the body and cause further damage. If the spread of tumours is not controlled they can result in death (AIHW, 2017).

Asthma

Asthma is a reversible narrowing of the airways in the lungs. Symptoms include wheezing, coughing, tightness of the chest, breathing difficulties and shortness of breath.

Arthritis and musculoskeletal conditions

Arthritis and osteoporosis are musculoskeletal conditions that can greatly reduce a person's quality of life. Arthritis causes inflammation of the joints, while osteoporosis is a disease where bone density and structural quality deteriorate, leading to an increased risk of fracture.

Injury

An injury can be unintentional, for example a fall, or intentional, for example inter personal violence. Injuries generally occur as the direct result of a specific incident or event.

Example of injuries can include:

- falls
- violence
- suicide and self-harm
- road trauma
- poisoning
- burns
- drowning.

Injury is a significant public health concern and a major burden on the health care system, through disability and premature death.

Table 7: Top 10 hospitalisations due to injury and poisoning per injury category for Mandurah (C) LGA, 2011 - 2015

Injury category	Total number
Accidental falls	3,283
Abnormal reaction following implant of artificial internal device	1,225
Accidental exposure to other & unspecified factors	1,144
Abnormal reaction following other surgical procedures	671
Motor vehicle/motorcycle occupant/rider injured in transport accidents	610
Accidents caused by objects that cut or pierce	499
Intentional self-poisoning by poisoning, including by motor vehicle exhaust	378
Accidentally hit, struck or crushed by object	350
Abnormal reaction following other medical procedures	332
Abnormal reaction following removal of other organ (partial)	313
(total)	

Source: Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI). Generated using data from the Hospital Morbidity Data System, Purchasing and System Performance Division, Western Australian Department of Health.

Mental health

Mental health conditions include short-term conditions, such as depression and anxiety, and long-term conditions, such as chronic depression and schizophrenia. Mental health problems are associated with higher rates of death, poorer physical health and increased exposure to health risk factors.

Mental health involves the capacity to interact with people and the environment and refers to the ability to negotiate the social interactions and challenges of life without experiencing undue emotional or behavioural incapacity. Mental health is also referred to as psychosocial health, as it involves aspects of both social and psychological behaviour.

Table 8: Prevalence of psychosocial risk factors for adults (aged 16 years and over), Mandurah (C) LGA and WA State, January 2015 – December 2016

Risk factors	Mandurah LGA		WA
	Persons (%)	Estimated population	Persons (%)
High/very high psychological distress (a)	14.3*	9,573	9.3
Current Mental health problem (b)	16.5	11,096	14.6
Stress related problem (c)	11.0*	7,371	9.6
Anxiety (c)	11.1*	7,469	9.0
Depression (c)	9.4*	6,318	8.3

Source: Epidemiology Branch, 2018, Mandurah (C) LGA Health Profile, 2015-2016, HWSS, WA Department of Health: Perth.

Notes:

* Prevalence estimate has a relative standard error between 25 per cent and 50 per cent and should be used with caution.

(a) Often or always feels a lack of control over life in general.

(b) Diagnosed by a doctor with a stress related problem, depression, anxiety or any other mental health problem in the last 12 months.

(c) Diagnosed by a doctor in the last 12 months.

Psychological distress

Psychological distress may be determined in ways other than having been diagnosed or treated for a mental health condition. The Kessler 10 (K10) is a standardised instrument that measures psychological distress by asking ten questions about levels of anxiety and depressive symptoms experienced in the past four weeks. Each item on the K10 is scored and then summed, resulting in a range of possible scores from 10 to 50. These are then categorised into low, moderate, high and very high levels of psychological distress. Low level psychological distress is regarded as not requiring any intervention, moderate and high levels require self-help, and high and very high levels require professional help.

Feelings of lack of control

Perceptions of control relate to an individual's belief as to whether outcomes are determined by external events outside their control or by their own actions. Feelings of lack of control have been found to have adverse effects on health and to increase the risk of mortality.

Self-harm

Self-harm describes any behavior in which someone intentionally causes harm or injuries to themselves. It is often a way of coping with or expressing difficult feelings and emotions that become overwhelming and overpowering to the individual.

Most frequently self-harm takes the form of cutting, burning and non-lethal overdoses. It can however be any behaviour that causes injury, no matter how minor or high-risk the behaviour and whilst many people who self-harm may not intend to end their lives, the consequences of such risky behaviour can be fatal (Sane Australia, 2018).

Table 9: Total number of hospitalisations due to intentional self-harm, Mandurah (C) LGA and WA State, 2011 - 2015

Risk factor	Mandurah LGA	WA
Intentional self-harm	622	21,609

Source: Hospital Morbidity Data System, DoH WA.

Communicable diseases

Notifiable diseases

Under the Western Australian Health Act of 1911 and following the recent enactment of the Public Health Act 2016 (Part 9), any medical practitioner or nurse practitioner attending a patient who is known, or suspected, to have a notifiable disease has a legal obligation to report it to the WA Department of Health (DoH). In addition, laboratory notification is mandatory for all notifiable diseases.

Notifiable diseases are entered into the **Western Australian Notifiable Infectious Diseases Database (WANIDD)** and cross-checked for duplication. Some diseases, including suspected meningococcal disease and measles, require the practitioner to notify the DoH urgently by telephone and these are marked on the notification form.

Communicable disease notifications are used to inform public health interventions and enhance the prevention and control of these diseases. The data for notifiable diseases are shown in Table 10.

Table 10: Notifiable diseases, Mandurah (C) LGA compared to metro and WA State (per 100,000 persons), 2011 - 2015

	Mandurah LGA	Metro	WA
Enteric disease	164.2	167.9	176.9
Vector borne diseases	187.5	76.6	87.8
STI's	601.7	482.5	541.6
Vaccine preventable diseases	383.8	386.3	397.2

Source: WA Notifiable Infectious Diseases Database, Public Health Division, Western Australian Department of Health.

For residents of the Mandurah (C) LGA, childhood immunisations, and notifiable diseases were similar to, or better than, State values.

Hospitalisations

Potentially preventable hospitalisations

Potentially preventable hospitalisations (also known as ambulatory care sensitive conditions) are admissions to hospital for a condition where the hospitalisation could have been prevented. The provision of appropriate individualised preventative health interventions and early disease management usually delivered in primary care and community-based care settings (including by general practitioners, medical specialists, dentists, nurses and allied health professionals) can prevent any unnecessary hospitalisations.

Generally, the main causes for admission to hospital differ from those of death. The data for the top 10 potentially preventable hospitalisations and rates for Mandurah are shown in Table 11.

Table 11: Top 10 potentially preventable hospitalisations and rates for Mandurah (C) LGA residents by condition, 2011- 2015

Condition	Number of persons	Percentage (%) of all cases
Chronic obstructive pulmonary disease (COPD)	1,589	13.3
Urinary tract infections, including pyelonephritis	1,520	12.7
Dental conditions	1,351	11.3
Cellulitis	1,048	8.8
Congestive cardiac failure	1,024	8.6
Iron deficiency anaemia	938	7.9
Diabetes complications	828	6.9
Angina	788	6.6
ENT infections	720	6.0
Convulsions and epilepsy	489	4.1

Source: Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI). Generated using data from the Hospital Morbidity Data System, Purchasing and System Performance Division, Western Australian Department of Health.

Alcohol and other drug related deaths and hospitalisations

Alcohol, drug related deaths and hospitalisations are estimated based on the proportion of cases for a particular condition that could be prevented if consumption of alcohol and other drugs was eliminated from the population. Epidemiological modelling is used to derive the proportion, so rather than actual counts of deaths or hospitalisations, estimates are reported. The data for the number of alcohol-related hospitalisations in the City of Mandurah LGA are shown in Table 12.

Table 12: Number of alcohol-related hospitalisations, Mandurah (C) LGA; by year, age group and gender, 2011 – 2015

Year	Age group		Gender		Total
	Less than 18 years	18 years and above	Male	Female	
2011	28	573	360	242	602
2012	27	581	381	227	607
2013	31	637	401	267	668
2014	20	674	416	279	695
2015	31	674	432	273	705
Total	137	3,139	1,988	1,288	3,276

Note: Counts of less than 5 have been suppressed in this report to protect privacy and data confidentiality. Other numbers have been suppressed to prevent back-calculations of smaller numbers.

Source: Epidemiology Branch (2017) Alcohol-related hospitalisations and deaths, WA Department of Health.

Deaths

Avoidable mortality is defined as deaths before the age of 75 years from conditions which are potentially avoidable given the present health system, available knowledge about social and economic policy impacts, and health behaviours. The data for the top 10 avoidable deaths for Mandurah by condition are shown in Table 13.

Table 13: Top 10 total avoidable deaths for Mandurah (C) LGA residents by condition, 2011-2015

Condition	Number of persons	Percentage (%) of all cases
Ischaemic heart disease	86	17.4
Suicide and self-inflicted injuries	60	12.1
Chronic Obstructive Pulmonary Disease (COPD)	41	8.3
Colorectal cancer	38	7.7
Breast cancer	36	7.3
Skin cancer	26	5.3
Diabetes	23	4.6
Accidental poisoning by and exposure to noxious substances	21	4.2
Cerebrovascular diseases	21	4.2
Transport accidents	20	4.0

Source: Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI). Generated using data from the Death Registrations, Registry of Births, Deaths and Marriages; Cause of Death, Australian Bureau of Statistics.

Conclusion

The increasing prevalence of preventable chronic health conditions due to lifestyle, physiological and psychosocial risk factors, outlined in this profile present challenges for all tiers of government.

The focus on the prevention of health conditions is expected to continue and will target risk factors such as physical inactivity, unhealthy eating, harmful alcohol use, injury and smoking as well as the promotion of psychological wellbeing.

This profile informs local government, the public, partners and other stakeholders about the health and wellbeing of the general population and different groups within the community. It is important to consider the entire community and pay particular attention to those who might be more vulnerable to poor health and wellbeing.

The information gathered in this health and wellbeing profile provides the evidence to support local government to develop local public health plans to protect and promote health.

In developing a local public health plan, this profile provides support to:

- identifying specific health concerns
- clarifying built, social, economic and natural barriers to health and wellbeing
- focusing attention on health priorities
- Identifying high risk groups and unmet needs
- establishing the resources available to the community
- responding to priority health needs
- stimulating the 'buy-in' of the community and other stakeholders.

References

- Australian Bureau of Statistics (2016). Health and socio-economic disadvantage of area. In *Australian Social Trends 1999*. Cat. no. 4102.0. Canberra: ABS.
- Australian Bureau of Statistics (2016) *SEIFA-Technical Paper 2016*. Cat No. 2039.0.55.001. Canberra: ABS
- Australian Institute of Health and Welfare (AIHW) (2016). *Australia's health 2016*. Australia's health series no. 15. Cat. no. AUS 199. Canberra: AIHW.
- Australian Institute of Health and Welfare (AIHW) (2015). *Diabetes mellitus*. Canberra: AIHW. Accessed 17 September 2018. Retrieved from: <http://www.aihw.gov.au/diabetes/>.
- Australian Institute of Health and Welfare (AIHW) (2011). *Cardiovascular disease: Australian facts 2011*. Cat. no. CVD 53. Canberra: AIHW. Accessed 17 September 2018. Retrieved from: <http://www.aihw.gov.au/publication-detail/?id=10737418510>
- Australian Institute of Health and Welfare (AIHW) (2017). *Cancer in Australia 2017*. Cancer series no.101. Cat. no. CAN 100. Canberra: AIHW.
- Chronic Disease Prevention Directorate (2017). *Western Australian Health Promotion Strategic Framework 2017–2021*. Perth: Department of Health.
- Health and Wellbeing Surveillance System: Epidemiology Branch (2018). *Mandurah (C) LGA Health Profile 2015-2016*, Perth: Department of Health.
- Hruby, A., Manson, J. E., Qi, L., Malik, V. S., Rimm, E. B., Sun, Q., ... Hu, F. B. (2016). Determinants and Consequences of Obesity. *American Journal of Public Health, 106*(9), 1656–1662. <http://doi.org/10.2105/AJPH.2016.303326>
- Merema, M. & Radomiljac, A. (201). *Health and Wellbeing of Adults in Western Australia 2017, Overview and Trends*. Department of Health, Western Australia.
- Middleton, K. R., Anton, S. D., and Perri, M. G. (2013). Long-Term Adherence to Health Behavior Change. *American Journal of Lifestyle Medicine, 7*(6), 395–404. <http://doi.org/10.1177/1559827613488867>
- National Health and Medical Research Council (NHMRC) (2009). *Australian Guidelines to Reduce Health Risks from Drinking Alcohol*. Canberra: National Health and Medical Research Council.
- Pellmar, T. C., Brandt Jr, E. N., & Baird, M. A. (2002). Health and behavior: the interplay of biological, behavioral, and social influences: summary of an Institute of Medicine report. *American Journal of Health Promotion, 16*(4), 206-219. Retrieved from: <https://www.ncbi.nlm.nih.gov/books/NBK43743/> doi:10.17226/9838
- Petticrew, M., Whitehead, M., Macintyre, S. J., Graham, H., & Egan, M. (2004). Evidence for public health policy on inequalities: 1: the reality according to policymakers. *Journal of Epidemiology and Community Health, 58*(10), 811–816. doi:10.1136/jech.2003.015289
- Sane Australia (2018). *Self-harm*. Retrieved from <https://www.sane.org/information-stories/facts-and-guides/self-harm>
- Swinburn, B., Dietz, W., & Kleinert, S. (2015). A Lancet Commission on obesity. *The Lancet, 386*(10005), 1716-1717. doi: [https://doi.org/10.1016/S0140-6736\(15\)00722-9](https://doi.org/10.1016/S0140-6736(15)00722-9)

Tomlin, S., Joyce, S., & Radomiljac, A. (2016). *Health and wellbeing of adults in Western Australia 2015, Overview and Trends*. Department of Health, Western Australia. Retrieved from: ww2.health.wa.gov.au/~/_/media/Files/Corporate/Reports%20and%20publications/Population%20surveys/Health-and-Wellbeing-of-Adults-in-Western-Australia-2015-Overview-and-Trends.ashx

Health status report on Alcohol and drug disorders hospitalisations for the Mandurah (C) LGA. Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI).

Hospital Morbidity Data System, Purchasing and System Performance Division, Western Australian Department of Health. Accessed Wednesday, 6 June 2018 by Le Jian (Epidemiology).

Summary of population characteristics and the health and wellbeing of residents of the Mandurah (C) LGA. Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI). Accessed Tuesday, 5 June 2018 by Le Jian (Epidemiology).

Top fifteen causes of hospitalisations by external cause for Mandurah (C) LGA residents. Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI).

Generated using data from the Hospital Morbidity Data System, Purchasing and System Performance Division, Western Australian Department of Health. Accessed Tuesday, 5 June 2018 by Le Jian (Epidemiology).

Top fifteen causes of hospitalisations by principal diagnosis for Mandurah (C) LGA residents. Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI).

Generated using data from the Hospital Morbidity Data System, Purchasing and System Performance Division, Western Australian Department of Health. Accessed Tuesday, 5 June 2018 by Le Jian (Epidemiology).

Top fifteen causes of avoidable death for Mandurah (C) LGA residents. Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI).

Generated using data from the Death Registrations, Registry of Births, Deaths and Marriages; Cause of Death, Australian Bureau of Statistics. Accessed Wednesday, 6 June 2018 by Le Jian (Epidemiology).

Top fifteen causes of death for Mandurah (C) LGA residents. Epidemiology Branch, Public Health Division, Department of Health WA in collaboration with the Cooperative Research Centre for Spatial Information (CRCSI).

Generated using data from the Death Registrations, Registry of Births, Deaths and Marriages; Cause of Death, Australian Bureau of Statistics. Accessed Wednesday, 6 June 2018 by Le Jian (Epidemiology).

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