

# The health of Queenslanders 2018

Report of the  
Chief Health Officer  
Queensland



*The health of Queenslanders 2018.*  
*Report of the Chief Health Officer Queensland*

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**Selected photos:** Lee Haskings  
(cover, chapters 1 and 5)



# From the Chief Health Officer

What does the future hold? The next decade will bring inevitable changes and challenges to the health sector, largely associated with a growing and ageing population. In the first chapter of my 2018 report we consider these issues and how they will shape our future.

Looking back over the past 10 years we can see continued improvement in the health of Queenslanders. People are living longer, they are less likely to die early from a preventable cause and are largely able to access the services they need to treat and manage their health issues.

I am extremely pleased to see positive results from 20 years of action in Queensland to reduce tobacco smoking with the rate now at 11%. With ongoing effort, I hope we will achieve our 2020 goal of 10% and continue to reduce smoking rates to 5% or less. As a result of this success in smoking reduction, more than 300,000 Queenslanders have avoided an early death.

In Queensland, we are focussing our efforts on encouraging and supporting people to achieve a healthy weight. Change is occurring. Over the past decade many adult Queenslanders are walking more and our children are achieving quite good levels of activity, particularly at school and in their free time. We need to do something, however, about our very unhealthy diets. Too much energy-dense food from takeaways, eating out of home or consuming processed foods is making it harder to avoid weight gain. I encourage every Queenslanders to re-double their efforts to make healthier food choices. I would also like to see the food industry take a more active role in developing healthier products. It is very important we do so because we in Australia are among the most obese in the world.

The disparities in health that we have reported in the past continue to challenge us. Of primary concern is the health gap between Aboriginal and Torres Strait Islander people and other Queenslanders. Although there are improvements, a continued effort is needed at all levels of government and among communities to reduce the gap.

The health system is helping us to live longer through early diagnosis, treatment and management of disease and injury. Through their combined efforts, GPs, medical specialists, dentists and allied health practitioners as well as hospitals and other facilities are doing a brilliant job in providing services to meet the health needs of our population. The rate of increase in service provision to meet demand over the past decade is however astonishing. This trend will put our systems under extreme pressure in future years.



An important long-term strategy in addressing this future challenge is to invest more in growing a healthier population. Getting a healthy start is critical, but there are many opportunities across the life course where we can adopt healthier behaviours. We have programs and services to help people do so. I am pleased to see change occurring with Queensland becoming a healthier place to live and Queenslanders becoming informed and empowered to reduce their health risk.

A handwritten signature in blue ink that reads "Jeannette Young".

**Dr Jeannette Young PSM**  
*Chief Health Officer Queensland*

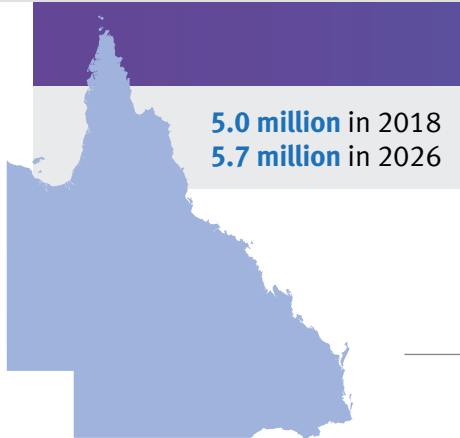
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# Key facts at a glance

## All Queenslanders




Australia  
**5<sup>th</sup> highest**  
life expectancy  
among OECD countries

**4.6%**  
Indigenous Queenslanders  
**221,000 people**

**1 in 5**  
admitted to hospital  
each year

Hospitals  
**122** public  **109** private


 **2.3 million**  
hospitalisations  
rising to  
3.7 million in 2026


 **62,779**  
births

**29,690**  
deaths

**11%**  **5%**  
adult teenage  
daily daily  
smokers smokers

Health  
conditions  
**17%**  
back  
problems

 **24 million**  
GP presentations  
rising to  
32 million in 2026

 **\$35.7 billion**  
spent on health  
10% GDP nationally

**12%**  
deafness

### Leading risk factors for disease

 **1/3** daily  
energy intake  
from **unhealthy** foods

**13%**  
allergies

**12%**  
anxiety

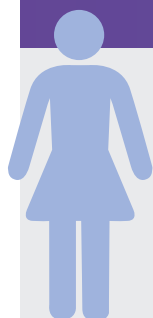
**2nd**  
Poor diet

**1st**  
Smoking

**3rd**  
Overweight  
and obesity

 **2nd best**  
nationally for  
**healthy**  
weight adults

## Females



**All females**  
**2.5 million** in 2018  
**2.9 million** in 2026

**18+ years**  
**1.9 million** in 2018  
**2.2 million** in 2026

Life expectancy  
**84.5 years**

Indigenous life expectancy  
**74.4 years**



**42%**  
**healthy**  
 weight

**12%**  
 of women  
 smoked during  
 pregnancy



**10%**  
**daily**  
 smokers

**56%**  
 participated in  
 BreastScreen  
 Queensland



**63%**

of women who smoked during pregnancy  
 lived in the most socioeconomically disadvantaged areas

## Males



**All males**  
**2.5 million** in 2018  
**2.8 million** in 2026

**18+ years**  
**1.9 million** in 2018  
**2.2 million** in 2026

Life expectancy  
**80.1 years**

Indigenous life expectancy  
**68.7 years**



**28%**  
**healthy**  
 weight

**32%**  
 ex-smokers



**12%**  
**daily**  
 smokers



**20%**  
**recent**  
 illicit drug use



**63%**  
 sufficiently active  
 for health benefit



Risky alcohol  
 consumption

↓ younger  
 males  
 ↑ older  
 males



**59%** of new  
 melanoma cases

# Key facts at a glance

## Children

0–14 years  
988,000 in 2018  
1.1 million in 2026

5–17 years  
850,000 in 2018  
954,000 in 2026



66%  
healthy  
weight



7%  
of births  
to Indigenous  
mothers



11 hours  
average **physical**  
**activity** each week

94%  
fully immunised  
1-year olds and  
5-year olds



1 in 4  
live with a  
daily smoker

1 in 10  
reported a **disability**

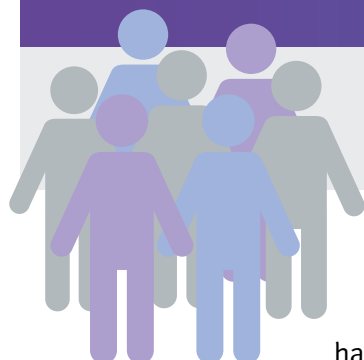
45%  
of total  
daily energy intake  
from **unhealthy** foods  
for 14–18 year olds



43%  
5–6 year olds  
had **decay experience**  
in primary teeth



## Older Queenslanders



65+ years  
766,000 in 2018  
1.0 million in 2026

65+ years  
1 in 2  
reported a **disability**

80+ years  
3 in 4  
reported a **disability**

72%  
had 3 or more  
**chronic conditions**  
diagnosed by GPs



2% met the  
**daily requirement**  
for intake of milk,  
cheese, and yoghurt



12,000  
influenza cases



44%  
sufficiently active  
for health benefit

41%  
ex-smokers



44%  
admitted to hospital  
in the previous year



93%  
sight problems



43%  
high blood  
pressure



# About this report

*The health of Queenslanders 2018* is the seventh in the series from Queensland's Chief Health Officer which began in 2006. Reports are released every two years and have three objectives:

- to provide a public assessment of the health status of the population
- to be a reference document for health practitioners in Queensland
- to inform strategic policy and planning within Queensland Health.

All reports in the series, including resources, are available at [www.health.qld.gov.au/cho\\_report](http://www.health.qld.gov.au/cho_report). Printed copies of this report are disseminated to key decision makers in the Queensland health sector and copies are available on request. Any amendments, including errata, are posted on the website as required.

## Companion documents and resources

- Printed booklet—selected indicators for Hospital and Health Services (HHSs)
- Enhanced online release—includes data visualisation for HHSs
- Factsheets released or in development
- Statistical tables—data for HHSs and primary health networks (PHNs)
- Statistical methods—descriptions in *Methods for reporting population health status*<sup>1</sup>

## Acknowledgements

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- Department of Health: System Planning Branch, Aboriginal and Torres Strait Islander Health Branch, Mental Health Alcohol and Other Drugs Branch, Office of Chief Dental Officer, Healthcare Purchasing and Funding Branch, Statistical Services Branch, Health Protection Branch, Communicable Diseases Branch, Preventive Health Branch (Cancer Screening Unit, Health and Wellbeing Unit)
- Queensland Hospital and Health Services
- Heart Foundation of Queensland
- Diabetes Australia, Queensland
- Cancer Council Queensland
- Queensland Treasury
- External experts: Professor Andrew Wilson, Brad McCulloch, Dr Stephen Begg

*The health of Queenslanders 2018* was prepared by Epidemiology, Preventive Health Branch, Prevention Division, with advice and assistance from others in Queensland Health and other government departments and agencies in Queensland.

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## Data sources

Key data sources for this report include: Death databases, hospitalisation data collections, perinatal data collection, Queensland preventive health surveys, national surveys, Queensland Cancer Registry. The investment and expertise associated with maintaining data collections and quality outputs is acknowledged.

# Indicators of progress

Table 1: Population health indicators, persons, Queensland, 2009–2018

Population	Units	Age group	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 Forecast
Total population – estimated resident	'000	0–85+	4,328.8	4404.7	4476.8	4,569.9	4,654.5	4,724.4	4,784.4	4,848.9		5,000.4
Queensland – proportion of Australia	%	0–85+	20.0	20.0	20.0	20.1	20.1	20.1	20.0	20.0		
Queensland – by remoteness												
Major cities	'000	0–85+	2,669.1	2,720.6	2,769.9	2,847.3	2,908.1	2,961.9	3,013.8	3,072.1		
Inner regional	no.	0–85+	884,321	898,003	910,332	928,510	943,731	955,346	962,822	969,324		
Outer regional	no.	0–85+	641,253	650,952	659,995	675,701	685,030	691,084	693,841	696,038		
Remote	no.	0–85+	77,182	77,543	78,135	70,414	70,002	68,621	67,175	65,407		
Very remote	no.	0–85+	56,883	57,644	58,369	47,964	47,678	47,418	46,723	45,996		
Indigenous Queenslanders												
Estimated resident population	no.	0–85+	179,957	184,551	188,954	193,506	198,206	203,045	208,026	221,276		223,883
Proportion of Queensland population	%	0–85+	4.2	4.2	4.2	4.2	4.3	4.3	4.3	4.6		4.5
Proportion of Indigenous Australians	%	0–85+	28.0	28.1	28.2	28.3	28.4	28.5	28.5	27.7		28.8
Births (includes stillbirths)	no.	births	62,051	62,032	62,181	63,723	63,173	63,823	61,903	62,779		
Infants	no.	<1	62,173	61,792	60,155	63,091	63,555	62,998	62,082	62,460		64,910
Young children	no.	1–4	236,885	242,404	244,175	249,403	253,698	255,691	255,686	255,030		261,616
Children	no.	5–17	751,332	757,903	768,241	778,659	788,794	798,664	809,132	820,691		849,734
Young adults	no.	18–29	747,028	762,704	770,841	786,542	799,125	807,745	810,971	814,228		799,717
Adults	'000	30–64	1,995.9	2,022.7	2,053.6	2,084.6	2,115.8	2,139.8	2,160.7	2,182.8		2,258.7
Older people	no.	65–74	298,523	314,679	330,620	351,418	369,959	386,825	403,746	421,038		447,635
Elderly	no.	75+	236,966	242,524	249,138	256,149	263,601	272,652	282,031	292,615		318,073
Headline indicators												
Life expectancy – males	years	at birth	79.1	79.4	79.5	79.5	79.6	79.9	80.0	80.1		
Life expectancy – females	years	at birth	83.8	83.9	84.1	84.0	84.1	84.2	84.3	84.5		
Indigenous males	years	at birth			68.7							
Indigenous females	years	at birth			74.4							
Non-Indigenous males	years	at birth			79.4							
Non-Indigenous females	years	at birth			83.0							
Median age at death	years	0–85+	79	80	80	80	80	80	80			
Indigenous	years	0–85+	57	57	58	58	58	59	59			
Non-Indigenous	years	0–85+	80	80	80	81	80	81	81			
Perinatal mortality rate												
National perinatal data collection	rate	births	11.0	10.4	9.8	10.3	9.8	9.9	9.6	9.5		
ABS definition	rate	births	10.4	10.5	9.1	10.0	9.1	9.8	9.5	9.5		
Infant mortality rate	rate	live births	5.1	5.2	5.1	4.8	4.5	4.5	4.4	4.2		
Indigenous	rate	live births	7.5	8.7	8.4	6.9	6.6	6.2	7.2	6.3		
Non-Indigenous	rate	live births	4.7	4.7	4.7	4.4	4.2	4.1	4.0	3.9		
Deaths												
All causes	no.	0–85+	26,153	26,661	27,798	27,798	27,882	28,658	28,208	29,690		
	rate	0–85+	592	584	590	571	555	552	527	538		
Premature deaths – all causes	no.	0–74	10,098	10,128	10,592	10,228	10,624	10,635	10,379			
	%	0–74	38.6	38.0	38.1	36.8	38.1	37.1	36.8			
	rate	0–74	240	233	236	220	222	216	206			
Avoidable deaths	no.	0–74	5,352	5,276	5,692	5,316	5,503	5,380	5,315			
	rate	0–74	128	122	128	115	116	111	107			
Coronary heart disease	rate	0–85+	97	92	92	82	77	74	66			
Stroke	rate	0–85+	48	47	45	43	40	38	35			
Heart failure	rate	0–85+	9.1	10.2	8.8	9.7	9.1	8.6	8.6			
All cancers – malignant neoplasms	rate	0–85+	180	179	173	174	172	169	157			
Female breast cancer	rate	0–85+	20	20	21	21	21	18	19			
Screening target age group	rate	50–69	44	41	39	48	45	32	38			
Screening target age group (2015+)	rate	50–74	46	46	43	54	49	40	41			
Cervical cancer – females	rate	0–85+	2.1	2.0	1.8	1.8	1.8	2.3	2.2			
Screening target age group	rate	20–69	2.3	2.1	2.2	1.6	2.0	2.5	2.4			
Screening target age group (2017+)	rate	25–74	2.8	2.5	2.6	2.1	2.2	3.1	2.9			
Prostate cancer – males	rate	0–85+	33	35	35	33	32	29	28			
Colorectal cancer	rate	0–85+	18	17	16	16	17	16	16			
Screening target age group (2015+)	rate	50–74	35	34	28	29	30	26	27			
Lung cancer	rate	0–85+	35	35	34	34	33	33	30			
Melanoma	rate	0–85+	6.9	7.9	7.4	7.4	8.2	6.9	5.8			
Diabetes	rate	0–85+	18	16	16	17	15	16	15			
Suicide (year of death)	rate	0–85+	12	13	15	12	15	14	14			
Suicide (year of registration)	rate	0–85+	12	13	13	14	15	14	16			
Asthma	rate	0–85+	1.7	1.5	1.5	1.5	1.7	1.1	1.4			
COPD	rate	0–85+	24	24	25	25	24	26	25			
Road transport deaths	rate	0–85+	7.8	6.3	6.6	6.3	5.9	4.7	4.3			
Falls	rate	0–85+	8.2	8.8	9.6	9.3	9.2	9.7	9.2			
Falls in older people	rate	65+	59	62	68	67	64	69	68			

Table 1: Population health indicators, persons, Queensland, 2009–2018

Hospitalisations	Unit	Age group	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
All causes	'000	0-85+	1,712.8	1,766.3	1,842.9	1,917.2	2,006.8	2,167.8	2,291.7	2,418.2		
	rate	0-85+	39,162	39,445	40,234	40,803	41,716	44,044	45,628	47,136		
	crude	0-85+	39,568	40,100	41,166	41,953	43,115	45,886	47,899	49,872		
Potentially preventable hospitalisations (Queensland Health definition)	no.	0-85+		118,731	123,125	148,071	154,825	170,539	184,243	193,634		
	%	0-85+		6.7	6.7	7.7	7.7	7.9	8.0	8.0		
	rate	0-85+		2,658	2,694	3,149	3,206	3,449	3,647	3,742		
Potentially preventable hospitalisations (National Healthcare Agreement definition)	no.	0-85+		114,037	118,016	127,918	131,909	144,719	155,990	163,607		
	%	0-85+		6.5	6.4	6.7	6.6	6.7	6.8	6.8		
	rate	0-85+		2,555	2,584	2,729	2,744	2,945	3,111	3,191		
Coronary heart disease	rate	0-85+	690	701	698	673	660	622	655	645		
Stroke	rate	0-85+	242	247	246	251	244	248	376	377		
COPD	rate	0-85+	274	278	280	287	265	284	302	322		
Asthma	rate	0-85+	177	160	161	170	157	175	176	173		
Road transport and traffic injuries	rate	0-85+	249	229	239	266	279	278	301	307		
Falls	rate	0-85+	719	739	742	798	841	879	1,007	1,042		
Falls in older people	rate	65+	2,636	2,815	2,844	3,109	3,206	3,449	4,264	4,496		
<b>Cancer incidence</b>	<b>Unit</b>	<b>Age group</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
All cancers	no.	0-85+	23,980	24,247	24,968	26,077	26,725	27,463				
	rate	0-85+	541	531	532	539	538	536				
Female breast cancer	rate	0-85+	123	124	122	127	131	129				
Screening target age group	crude	50-69	314	313	300	311	320	323				
Screening target age group (2015+)	crude	50-74	324	325	313	325	331	345				
Cervical cancer – female	rate	0-85+	7.6	8.2	7.6	9.0	8.1	8.7				
Screening target age group	crude	20-69	10.1	11.0	10.8	11.6	11.3	11.9				
Screening target age group (2017+)	crude	25-74	11.4	12.4	11.8	12.5	12.1	13.1				
Prostate cancer – male	rate	0-85+	187	169	175	172	165	154				
Colorectal cancer	rate	0-85+	64	64	63	61	59	60				
Screening target age group (2015+)	crude	50-74	141	148	139	135	123	130				
Lung cancer	rate	0-85+	48	48	46	46	46	46				
Melanoma	rate	0-85+	69	68	70	72	75	73				
<b>Disease prevalence</b>	<b>Unit</b>	<b>Age group</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Diabetes and high blood sugar												
Blood measurement	%	18+			5.0							
Self report (age standardised)	%	18+			3.9			4.3				
<b>Communicable disease notifications</b>	<b>Unit</b>	<b>Age group</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Chlamydia (STI)	no.	0-85+	16,374	19,045	18,380	18,673	20,063	20,921	20,975	22,545	23,156	
Dengue	no.	0-85+	1,029	288	186	243	487	394	285	445	292	
HIV	no.	0-85+	182	204	194	206	181	245	201	195	187	
Influenza (lab confirmed)	no.	0-85+	18,315	3,218	10,383	16,908	5,509	17,898	28,061	23,284	56,109	
Measles	no.	0-85+	32	14	18	4	52	72	21	15	8	
Meningococcal	no.	0-85+	60	53	61	64	33	40	31	45	69	
Pertussis	no.	0-85+	6,208	8,220	8,983	7,544	3,812	1,398	1,861	2,153	1,308	
Salmonellosis	no.	0-85+	2,370	2,822	2,853	2,754	3,205	4,882	5,418	4,822	4,267	
Syphilis (infectious)	no.	0-85+	193	229	339	389	333	396	572	681	1,083	
Tuberculosis	no.	0-85+	168	186	221	171	153	166	182	188	201	
<b>Immunisation</b>	<b>Unit</b>	<b>Age group</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Childhood vaccination rates	%	1 year	91.2	91.7	91.6	91.9	91.6	91.5	92.4	93.9	94.1	
	%	2 years	92.2	92.4	92.8	92.8	92.7	92.4	90.2	92.3	91.7	
	%	5 years	80.9	88.2	89.9	91.1	91.9	92.4	92.4	93.1	94.2	
<b>Protective factor prevalence</b>	<b>Unit</b>	<b>Age group</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Breastfed at discharge – total	%	newborn	90.6	91.3	92.0	92.0	92.6	92.4	92.8	92.8		
Indigenous	%	newborn	84.7	86.0	85.1	85.7	85.5	85.4	85.0	85.0		
Non-Indigenous	%	newborn	90.9	91.6	92.4	92.4	93.0	92.9	93.4	93.4		
5 or more antenatal visits – total	%	mothers	93.3	93.5	94.6	94.6	94.2	94.4	95.1	95.1		
Indigenous	%	mothers	77.8	77.7	83.4	84.4	83.9	84.4	85.9	86.8		
Non-Indigenous	%	mothers	94.2	94.5	95.4	95.3	94.8	95.1	95.7	95.7		
Excellent, very good or good health – self-rated	%	18+	84.6		84.0	83.0			83.6	83.7	84.4	85.2
Very good or good quality of life	%	18+	90.6		89.5	90.9			90.2	89.5		
Very satisfied or satisfied with health	%	18+	79.1		77.5	79.8			79.8	78.5		
Never smoked – adults	%	18+	52.3	53.3	53.0	54.8	52.9	55.2	55.7	55.3	56.2	55.9
Healthy weight in adults – measured	%	18+						35.3			(a)	
Healthy weight in adults – self report	%	18+	41.6	41.5	39.8	39.8	37.9	39.6	39.9	38.5	38.6	37.1
Healthy weight in children – measured	%	5-17						65.7			(a)	
Healthy and underweight in adults – measured	%	18+			35.1			36.3			(a)	
Healthy and underweight in adults – self-report	%	18+	44.7	44.4	42.6	42.3	41.2	42.2	42.3	41.0	41.5	39.6
Healthy and underweight in children – measured	%	5-17			72.5			73.7			(a)	
Healthy and underweight in children – proxy report	%	5-17	74.0		75.2		72.3	75.9	76.8	74.2	73.8	74.4
Sufficient physical activity (≥150mins, 5+ sessions)	%	18-75	55.5	53.5	56.1	55.1	58.0	58.8	57.5	61.3	60.6	59.7
Active every day of previous week – children	%	5-17			44.0		40.6	39.2	39.3	44.5	45.5	40.6
Any 3 of 5 sun safe behaviours – summer	%	18+		56.5	52.0	52.6			56.2	58.4		
Any 3 of 5 sun safe behaviours – summer	%	5-17						47.1				

**Table 1: Population health indicators, persons, Queensland, 2009–2018**

Protective factor prevalence	Unit	Age group	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mean daily fruit intake – adults	serves	18+	1.9	1.8	1.6	1.8	1.8	1.9	1.8	1.8	1.8	1.7
Mean daily vegetable intake – adults	serves	18+	2.5	2.6	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.4
Mean daily fruit intake – children	serves	5–17	2.0		1.9		2.0	2.0	2.0	2.2	2.2	
Mean daily vegetable intake – children	serves	5–17	2.1		2.1		2.2	2.2	2.0	2.0	2.2	
2013 Dietary Guidelines												
Adequate fruit intake – adults	%	18+					55.7	58.3	56.8	57.3	54.8	52.1
Adequate vegetable intake – adults	%	18+					7.1	9.1	7.6	6.8	8.7	8.6
Adequate fruit intake – children	%	5–17					65.0	66.7	67.7	70.0	71.4	
Adequate vegetable intake – children	%	5–17					6.3	6.2	3.7	3.7	5.3	
BreastScreen Queensland participation	%	50–69	57.9		57.8		57.6					
Screening target age group (2015+)	%	50–74							56.5			
Cervical screening participation	%	20–69	55.0		55.5		56.0		53.2			
Screening target age group (2017+)	%	25–74										
Bowel screen participation, target age (2015+)	%	50–74							40.4			
Risk factor prevalence	Unit	Age group	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Low maternal age – females	%	<20 years	5.5	5.5	5.1	5.1	4.7	4.3	3.9	3.4		
Low birthweight – total (includes stillbirths)	%	births	7.1	6.9	6.9	7.1	7.0	7.0	7.1	7.3		
Indigenous	%	births	11.6	12.1	12.0	11.7	12.0	11.0	11.4	11.2		
Non-Indigenous	%	births	6.8	6.6	6.6	6.8	6.6	6.7	6.8	7.0		
Smoking at anytime during pregnancy	%	females	18.7	17.2	16.0	15.2	14.2	13.1	12.4	12.0		
Indigenous	%	females	52.8	53.2	49.7	48.5	47.5	45.0	43.3	42.9		
Non-Indigenous	%	females	16.7	15.0	13.9	13.0	12.0	11.0	10.3	9.8		
Self rated fair or poor health – adults	%	18+	15.4		16.0	17.0			16.4	16.3	15.6	14.8
Smoke daily – adults	%	18+	15.8	15.5	14.8	14.3	15.8	14.0	12.3	11.9	11.6	11.1
Alcohol consumption (2009 Guidelines)												
Lifetime risk – adults	%	18+		22.9	22.7	21.1	20.5	18.9	22.4	21.1		22.3
Single occasion risk – weekly	%	18+		16.4	15.9	15.3	15.1	13.9	15.0	14.4		15.3
Single occasion risk – at least monthly	%	18+		32.1	34.8	29.6	30.7	29.1	31.9	30.9		31.3
Illicit drugs – used in previous 12 months	%	14+		15.1			15.5			16.8		
Underweight in adults – self report	%	18+	3.1	2.8	2.8	2.5	3.3	2.6	2.3	2.4	2.9	2.4
Overweight in adults – self report	%	18+	34.1	34.2	34.5	35.0	35.3	34.7	34.3	34.6	32.8	36.3
Obese in adults – self report	%	18+	21.3	21.4	22.9	22.7	23.4	23.2	23.4	24.4	25.7	24.2
Overweight and obese in adults – self report	%	18+	55.3	55.6	57.4	57.7	58.8	57.8	57.7	59.0	58.5	60.4
Underweight in adults – measured	%	18+						1.2			(a)	
Overweight in adults – measured	%	18+			34.5			33.4			(a)	
Obese in adults – measured	%	18+			30.4			30.2			(a)	
Overweight and obese in adults – measured	%	18+			64.9			63.6			(a)	
Overweight in children – proxy report	%	5–17	16.4		16.7		17.4	16.4	16.7	17.8	17.0	17.7
Obese in children – proxy report	%	5–17	9.5		8.1		10.2	7.7	6.5	8.0	9.2	7.9
Overweight and obese in children – proxy report	%	5–17	26.0		24.8		27.7	24.1	23.2	25.8	26.2	25.6
Underweight in children – measured	%	5–17						8.0			(a)	
Overweight in children – measured	%	5–17			18.2			19.2			(a)	
Obese in children – measured	%	5–17			9.3			7.2			(a)	
Overweight or obese in children – measured	%	5–17			27.5			26.2			(a)	
2013 Dietary Guidelines												
Inadequate fruit intake – adults	%	18+					44.3	41.7	43.2	42.7	45.2	47.9
Inadequate vegetable intake – adults	%	18+					92.9	90.9	92.4	93.2	91.3	91.4
Inadequate fruit intake – children	%	5–17					35.0	33.3	32.3	30.0	28.6	
Inadequate vegetable intake – children	%	5–17					93.7	93.8	96.3	96.3	94.7	
Inactive in previous week – adults	%	18–75	11.7	11.9	9.7	10.7	9.7	9.4	10.0	9.3	9.3	9.5
Insufficient physical activity – adults	%	18–75	32.8	34.6	34.2	34.2	32.4	31.8	32.5	29.4	30.0	30.7
Sedentary, sitting 7hrs/day, 7days/wk – adults	%	18–65	13.1		12.1							
Exceeds recommended daily screen time – children	%	5–17	22.2		43.3		33.9	32.5	37.8			
Sunburnt in previous 12 months – adults	%	18+		50.9	52.4	51.6	52.3	54.3	51.6	55.8	51.4	54.3
Sunburnt in previous 12 months – children	%	5–17					54.4	64.0				46.4

(a) 2017–18 measured data to be released in December 2018.

## Data sources and methods: indicators of progress

Additional data (males and females including confidence intervals) are available on the CHO report website.

For data prior to 2009, see previous reports of the Queensland Chief Health Officer.

Data and indicators are subject to revision and updates.

Alternate definitions

- PPHS: Data for two definitions of PPHS are included from 2010. They differ by the inclusion of diabetes complications. The AIHW (National Healthcare Agreement) definition only includes diabetes as a principal cause while the Queensland Health definition also includes diabetes as an 'other' diagnosis under certain circumstances.
- Perinatal deaths: There are two definitions used to report perinatal deaths and they differ by how stillbirths are recorded (page 115).<sup>2</sup> The preferred definition for use in Queensland is the National Perinatal Data Collection.

Rates are age standardised per 100,000 persons unless otherwise noted.

Data are consistent with reporting in other chapters including: hospitalisations from the Queensland Hospital Admitted Patient Data Collection, cancer incidence from Queensland Cancer Registry, deaths from the Queensland Registrar of Births, Deaths and Marriages<sup>3</sup>, diabetes prevalence is from the National Health Survey.

Proxy reported weight status for children does not provide reliable distinctions between healthy weight and underweight, therefore the combined category was reported.

Measured weight status data for 2017–18 to be released in December 2018 by the ABS.



# What does the future hold?



## 1

- The population has been growing and ageing over the past decade and it will continue to do so.
- Utilisation of health services such as general practitioner (GP) visits and hospitalisations, is increasing and there is no sign of a slowing in demand.
- Combined, these factors will put increasing pressure on the capacity of the health system and our ability to fund it.
- Action to improve outcomes through refocusing effort on healthcare that provides the most benefit has commenced and is expected to provide greater value to consumers, and more streamlined and effective outcomes while containing costs.
- Preventive action has delivered benefits over the past 10 years and with ongoing investments and commitment will contribute to improved health and wellbeing for Queenslanders, and over the longer term, help to constrain health expenditure.
- Health and wellbeing are central to the strategic outlook of the Queensland Government. Actions to achieve such outcomes include working across sectors and through legislation to support people to adopt healthy lifestyles and create healthy places and systems.
- Queensland has become a healthier place to live with more smoke-free environments, and better support for walking, active recreation and more sport. The food environment is beginning to change but there is still much to be done working with industry and the community to improve the food intake of Queenslanders.
- Health has been improving for many, but not all. Disparities are evident for those from poorer socioeconomic circumstances and for Indigenous Queenslanders. Greater investment in preventive action is necessary to address these gaps and investment is required early, if improvement is to be secured in the next 10 years.
- There will be a need in the years ahead to increasingly support actions to improve end of life care and choices. This may include advance care planning so that as people age or face end of life, the wishes and preference of that person and their family can influence the healthcare support provided, and potentially avoid futile care that detracts from quality of life.

## The past 10 years

The health of Queenslanders continues to improve—the result of long term investment in health and related sectors with the benefit of preventive action and effective treatment evident in better outcomes for many people.

Queenslanders are living longer, gaining an extra two years in life expectancy at birth in the past decade. The increase for males was a little better than for females—2.6 years compared with 1.6 years. Gains are slowly being achieved for Indigenous Queenslanders with a slight narrowing of the life expectancy gap which is now at about 10 years. Death rates for all Queenslanders continue to decline and as a result there are about 1000 fewer premature deaths each year than there would have been had the rates stayed the same.

Much of the advantage in longer lives and lower death rates has been achieved by preventive action, screening, early diagnosis and effective treatments for lifestyle related diseases. In fact, 90% of the reduction in all-cause deaths is due to rate decline for diseases such as stroke, coronary heart disease, lung cancer, colorectal cancer, breast cancer and COPD (chronic obstructive pulmonary disease). For Australia, the impact of risk exposure on disease burden has contracted slightly over the past eight years, showing benefits from preventive action, with smoking reduction the leading success story.

While people are living longer, they are living longer with illness and disability. The burden of chronic conditions associated with an ageing population is increasing—musculoskeletal disorders, nervous system disorders, mental disorders including dementia and substance use disorders, diabetes, vision loss and hearing loss. The prevalence of most of these conditions rises sharply with age, and as people survive into their 70s and 80s and beyond, the amount of time spent with these disorders increases, as does the treatment required.

Consequently, over the past 10 years there has been a substantial increase in the treatment and management of disease. In Queensland, presentations to GPs increased by about 700,000 per year on average (4% annual increase) and admissions to hospitals by 85,000 per year (5% annual increase). Much of this was associated with the older population—half the annual increase in GP visits and hospitalisations was for the older cohort.

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The past decade has been a period of improving health outcomes, an increasing commitment and success in prevention, offset by a rising disability burden, increasing rates of health utilisation, budgetary pressures and ongoing inequalities.

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The Queensland population is growing and ageing. Of the increase of 840,000 people over the past decade, about 230,000 were aged 65 years or older.

The past decade has seen a growing focus on promoting wellbeing. It was a key priority of the *My health, Queensland's future: Advancing health 2026* strategic outlook and integral to the *Queensland Health and Wellbeing Strategic Framework 2017 to 2026*—the blueprint for integrated actions to address overweight and obesity, smoking and skin cancer prevention. Furthermore, the 2018 Government priorities, *Our Future State*, place the health and wellbeing of Queenslanders at the core of their commitments.

The national health budget is increasing and in the latest estimate exceeded 10% of GDP (gross domestic product). As a proportion of state government spending, health continues to increase. Pressures in the health budget reflect the impact of expanding treatment options for a growing and ageing population.

There are continuing disparities in health. Tobacco smoking is a major contributor to health inequalities and a leading cause of preventable death and illness in Queensland. It will have ongoing impact on the health of those populations most affected—the socioeconomically disadvantaged and Indigenous Queenslanders. Not only is the smoking rate substantially higher in these populations, but gains are smaller which suggests disparity is increasing. This is evident in maternal smoking and adult and youth smoking. Lack of improvement can be seen in rates of death for lifestyle related chronic conditions, where rate decline is strong and sustained for most Queenslanders, but not for those from disadvantaged areas or for Indigenous Queenslanders. As a minimum, greater effort is required in preventive strategies to address the needs of these populations. Underpinning such action will be a renewed appreciation of the impact of the social determinants of health.

## Looking ahead

The next 10 years will bring inevitable changes as well as opportunities to shape our future.

The latest population projections indicate we will reach 5.7 million Queenslanders by 2026, an increase of about 880,000 people or nearly 90,000 per year. One-third will be of people aged 65 years and older, an additional 300,000 older Queenslanders. The number of children and young people will increase by 250,000 (28% of the growth) with an additional 340,000 people aged 30–64 years (37% of the increase).

The steadily changing age profile will impact on the demand for GP and hospital services. Based on current trends, the number of GP visits in Queensland is likely to increase from 24 million per year in 2016–17 to 32 million per year in 2026–27. Hospital admissions will increase by a further 1.4 million to reach 3.7 million per year in 2026. At that time, 50% are likely to be for older people, an increase of about 900,000 more hospital admissions of those aged 65 years and older.

More people are going to hospital more often, particularly those aged 65 years and older. Access appears to play a part because rates are higher and generally increasing at a greater rate in areas of socioeconomic advantage and in the more populated HHSs. Some cause-groups are likely to increase in impact over the next 10 years—admissions for investigations, treatments and procedures, symptoms and signs, musculoskeletal conditions, digestive diseases, injury, and mental disorders. In 2026, it is likely these causes combined will account for 60% of all admissions.

Increasing multimorbidity associated with chronic diseases will put pressure on health services, both in the primary care sector and the hospital system. This is a result of people living longer but not wholly free of disease. International evidence shows that the burden of illness and disability in the population will increase as the population ages, carrying into future older years a burden of chronic disease, complicated by multimorbidity which develops relatively early in adult life for some.

More diverse and complex health needs for more people will result in growing pressure on funding models. The growth in health spending nationally over the past five years has slowed, however, it continues to be greater than the growth in GDP. While some commentators would make the case that growth in health spending is inevitable and affordable<sup>4</sup>, national and state funding limits will apply. Queensland Health, along with most health service providers, is likely to face increasing pressure to increase efficiencies and maintain and improve outcomes within the context of a relatively inelastic budget.

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Knowing what we know now, and considering the evidence of trends and patterns over the past 10 years, the next decade is likely to be a time of improving health, increasing health system pressures, more knowledge and sharper investment intelligence to grow healthy people, healthy places and healthy systems in Queensland.

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The health benefit generated by prevention is likely to continue and will drive down the impact of some conditions on health system pressures, but sustained investment in preventive strategies is necessary. The goal is to reduce the prevalence of smoking, increase the proportion of people in the healthy weight range and to lift levels of physical activity. Assuming these gains are achieved and that ongoing efforts to improve social and physical environments continue, the overall health and wellbeing of the population is likely to improve and may generate health system savings among younger people over the next decade and among older generations in the longer-term.

The unequal health outcomes evident in 2018, particularly from preventable causes for people with poorer socioeconomic circumstances and for Indigenous Queenslanders, are very likely to continue. Furthermore, the health gap will most likely widen unless action is taken to address these disparities early in the next decade and to sustain action until equity of outcome is achieved. Without innovative and substantial investment at sufficient scale, the gap will not diminish. At a more fundamental level there is a need to embrace differing concepts about health and the needs of different cultures and peoples.

The knowledge to inform planning and to assess the relative benefit of investments is rapidly developing in Queensland. The objective will be to put the person at the centre of the health system, to design systems and grow a workforce that is focussed on outcomes that matter to people and are fit for purpose. Such planning is at the core of preventive investments as well as clinical systems and service delivery.

## Actions to manage our future burden

The aspiration is for Queenslanders to be the among the healthiest people in the world—a priority of the Queensland Government as described in *Our Future State: Advancing Queensland's Priorities and My health, Queensland's future: Advancing health 2026*. Empowering Queenslanders to make healthy choices and working across sectors and through legislation to build environments that favour healthier outcomes is central to the *Health and Wellbeing Strategic Framework 2017 to 2026*.

This aspiration is achievable but will require a proactive approach to keeping Queenslanders healthy and innovative responses to health system pressures.

Population growth and ageing will present the first challenge. Neither of these factors can be changed, but planning and complex modelling of alternative investments for system change are likely to result in more sustained delivery and optimise outcomes customised to the person who is at the centre of the service.

Assessing the value of healthcare practices to ensure that the system is lean, that is, the care provided is supported by evidence of its benefit or value is a priority. Work is underway in Queensland Health on multiple fronts to build on this concept and as the knowledge grows and the system adapts to the changing drivers, improved patient outcomes can be achieved, consistent with patient values and goals. Success will involve engaging health consumers in the process, balancing investments between prevention and treatment, developing the workforce to respond to change, responding to insights, optimising opportunities for data linkage and strengthening alliances. This future focus will require sustained commitment over the next decade to align health service delivery to meet the challenges ahead.

Australia is carrying a relatively larger disability burden than other high-income countries—we need to invest more in growing a healthier population. We have been successful in reducing early deaths but not as successful at preventing the diseases of old age. A sustained focus is needed to reduce preventable diseases through lifestyle and behaviour change and also to prevent and manage chronic conditions which are the cause of the high disability burden. Some of the conditions associated with ageing have low preventability, so it will be important to utilise existing evidence and invest in the kind of research that will inform this issue including how best to manage and mitigate the burden which may not be in the acute care setting. It is important that the widest possible opportunities and responses to change are considered.

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To become leaders in good health,  
we will need a proactive approach to keeping  
Queenslanders healthy and innovative  
responses to health system pressures.

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We can learn from other countries who are facing challenges similar to our own, that is, optimising health under an ageing demographic and high impact of chronic disease. Japan has a 2035 vision which is underpinned by fairness and one of their three core principles is a concept called life design—the need for solidarity built on individual autonomy, that is, empowering personal and social health choices.<sup>5</sup> The objective is a healthcare system that supports individuals to actively participate in their community and encourages proactive approaches to healthcare.

The environments in which we live shape the choices we make. We need to act where people are. We are achieving a smoke-free state, we are growing places where people can be active, including parks, walking tracks, dedicated bike paths, open spaces and networks of green spaces in neighbourhoods. Schools are embracing healthy food options as are an increasing number of workplaces. The food industry is on a journey to reformulate foods and provide more options for healthy eating. The health of Queenslanders in 2026 will show the benefit of such change if the momentum for creating healthier places continues.

There is a need to balance investments. Currently the health system focuses on treatment and management of disease with less than 2% spent on public health. Prevention is a sound investment—it improves population wellbeing, delays the onset of disease and helps to constrain increasing costs associated with an ageing population over the long term.

Finally, there will be a need in the years ahead to increasingly support actions to improve end of life care and choices. This may include advance care planning so that as people age or face end of life, the wishes and preference of that person and their family can influence the healthcare support provided. Such planning can help to guide decision-making at a future time, particularly when a person's ability to communicate those preferences is limited. The greatest benefit will be to the individual and their family as it may avoid intrusive interventions when there is no realistic hope of recovery.



# Queensland's population



# 2

- The Queensland population was estimated at 4.85 million in 2016, 5.00 million by 2018 and with continuing growth is projected to reach 5.73 million by 2026. Over the past decade, the growth rate in Queensland was third highest of the jurisdictions.
- In 2016, 15% of Queenslanders were aged 65 years and older compared with 13% in 2011. This ageing shift in the population is widespread and an ongoing trend.
- An estimated 955,000 children were living in Queensland in 2016. Numbers are projected to increase to 1.1 million by 2026.
- Queensland's population is clustered around the cities and coastlines. Less than 5% of the population lived in remote and very remote areas in 2016 (128,000), and over half in major cities.
- In 2016, there were about 221,000 Indigenous Queenslanders, representing 4.6% of the Queensland population. Queensland has the second largest Indigenous population after New South Wales and the second highest proportion after the Northern Territory. While Indigenous Queenslanders generally have a younger age profile, the proportion of older people is gradually increasing, indicative of small gains in premature death rate reduction.
- In 2015, there were more than 60,000 births and about 30,000 deaths in Queensland. Overseas and interstate migration brought 25,000 and 11,600 new residents respectively, resulting in a net gain of about 64,500 people.
- 18% of Queenslanders (about 854,000 people) were living in areas of greatest disadvantage based on a range of socioeconomic characteristics.
- More than 1.33 million Queenslanders aged 15 years and older were in full-time work (58% of the labour force) and almost 700,000 in part-time work (30%) in 2016. More than 900,000 people worked 40 hours or more per week. 1.2 million were not in the labour force.
- 18% of Queenslanders reported having a disability with 6% having a severe or profound disability in 2015.
- About 21,700 Queenslanders were homeless in 2016.
- Queensland is a state of cultural and social diversity with almost 30% of the population born overseas, 14% of households speak a language other than English at home, 17% of families are single parent families with children, and 3% of individuals identify as LGBTIQI.

## Growing and ageing

The Queensland population grew from 4.01 million in 2006 to an estimated 4.85 million in 2016, an overall increase of 841,000 people. It is projected to reach 5.00 million by 2018 and 5.73 million by 2026.<sup>6</sup>

Compared to other jurisdictions, population growth in Queensland was third highest (21% increase) after Western Australia and Victoria.<sup>7</sup>

The Queensland population in 2016 was clustered around the cities and coastlines, with more than half in major cities (3,072,000, 63%), and about one-third in inner regional (969,000, 20%) and outer regional areas (696,000, 14%).<sup>8</sup> The remainder lived in remote and very remote areas (65,000, 1.3% and 46,000, 1%, respectively).

An ageing population is a key issue in health planning and is driving a shift towards chronic disease prevention and management. In 2016, there were about 714,000 Queenslanders aged 65 years or older<sup>9</sup>, projected to increase to about one million by 2026.<sup>6</sup> Over the past decade the number of people aged 65 years and older increased by 47% while the total population increased by 21%.<sup>9</sup>

## Children and young people

In 2016, there were 955,000 children aged 0–14 years in Queensland (988,000 projected in 2018). The number of children increased by 17% in the past decade<sup>9</sup> and is projected to reach about one million by 2026.<sup>6</sup> If projection assumptions are achieved, by 2026 the number of children will be similar to the number of older people. The proportion of children in Queensland has decreased over time and is projected to fall to 19% by 2026.

There were 998,000 young people aged 15–29 years in Queensland in 2016, with the number projected to increase to 1.1 million by 2026 (11% increase). The proportion of 15–29 year olds in the population is projected to decrease, from 21% in 2016 to 19% in 2026.

## Indigenous Queenslanders

There were about 221,000 Indigenous Queenslanders in 2016 (224,000 projected in 2018<sup>10</sup>), 4.6% of the state's population.<sup>11</sup> The age profile of Indigenous Queenslanders was younger than that of the non-Indigenous population, with about one-third under the age of 15 years (75,000), and another third aged 15–34 years (74,000). In contrast, the non-Indigenous population had 19% (879,000) and 27% (1.27 million) respectively in these age groups.

Between 2011 and 2016, the number of Indigenous Queenslanders aged 65 years and older increased from 5790 to 8000, with a proportional increase from 3.1% to 3.9% of the total Indigenous Queensland population. This reflects modest gains in death rate reduction for older Indigenous Queenslanders.

In 2015, 1 in 5 (21%) Indigenous Queenslanders was of Torres Strait Islander origin (including those who identified as both Aboriginal and Torres Strait Islander people), and 3 in 4 (77%) recognised traditional country or homelands.<sup>12</sup> One-third of Indigenous Queenslanders lived in major cities (33%, 66,600), half in regional areas (51%, 109,100), 1 in 14 (7%, 14,300) in remote areas and 1 in 10 (9%, 20,100) in very remote areas in 2015.<sup>8</sup>

## Components of population growth

The largest driver of population growth in Queensland in 2015–16 was natural increase, with more than 62,000 babies born, offset by about 30,000 deaths.<sup>6</sup> Despite the high number of births, the fertility rate is falling and in 2015–16 was 1.84 babies per 1000 women aged 15–49 years. Net overseas migration contributed almost 25,000 people in 2015–16, representing early signs of recovery from previously declining migration levels in recent years. Net interstate migration from Australian states and territories contributed 11,600 people to Queensland in 2015–16. Interstate migration varies dramatically over time and shows few consistent trends but appears to be recovering after recent declines.

## Employment

Two-thirds of Queenslanders aged 15 years or older reported being in the labour force in the week before census night in 2016—a labour force participation rate of 66% or 2.31 million people.<sup>13</sup> In July 2018, the unemployment rate was 6.1%.<sup>14</sup> On census night 2016, of those employed (about 2.4 million people), 561,000 were aged 15–29 years, 707,000 aged 30–44 years, 783,000 aged 45–64 years, and more than 85,000 aged 65 years or older.<sup>15</sup> About 4 in 10 workers (about 923,000 people) completed 40 hours or more per week, 1 in 10 worked 16–24 hours per week and a further 1 in 10 worked 1–15 hours.<sup>16</sup> Long working weeks were completed by about 1 in 2 workers aged 30–64 years, and by one-third of workers in the age groups 15–29 and 65 years or older.<sup>15</sup> More than 800,000 Queenslanders aged 15 or older undertook 15 hours or more of unpaid domestic work in the week before the 2016 census. One in five couple-based families (20%) had neither person working.<sup>16</sup>

## Disabilities

There were an estimated 859,000 Queenslanders living with a disability in 2015, with 261,000 of these having a severe or profound disability that imposed limitations to their core activities (see also page 15).<sup>17</sup> Of all those reporting a disability, 340,000 people (40%) were aged 65 years or older and 75,000 (9%) were children aged 0–14 years. The majority of Queenslanders with a disability (96%) lived in a private household, either alone (21%), or with others (74%), and 4% lived in care-accommodation. Of those aged over 80 years, 33% lived in their home alone, 47% lived in a private house with others and 21% in care-accommodation. Queenslanders with a disability were more likely to live in areas of relative socioeconomic disadvantage and rely on a government pension or allowance as their main income source. However, almost four in 10 people with a disability earned an income as their main means of support. One in five persons living with a disability were in full-time or part-time employment. In 2015, an estimated 154,000 Queenslanders were primary carers and of these 66,000 were caring for someone with a disability. An additional 319,000 carers provided other than primary care, 107,000 of these for someone with a disability.

## Diversifying

Queensland is a socio-demographically and culturally diverse state:

- In 2016, 1 in 6 (18%) or about 854,000 people lived in the most socioeconomically disadvantaged areas, compared with 1 in 5 (20%) in the most advantaged areas (about 975,000 people).<sup>8</sup>
- 2.3% of the population (111,000 people) lived in remote and very remote areas in 2016.<sup>8</sup>
- 24% of those aged 15 years or older in 2016 had a low education level (year 10 equivalent or lower), slightly more than those with a bachelor degree or higher (779,630 compared with 693,410).<sup>16</sup>
- 1 in 6 families (17%) was a single parent family in 2016, and in 82% the parent was female.<sup>16</sup>
- An estimated 3% of Australian adults identified as LGBTIQ in 2014, equivalent to about 145,000 Queenslanders.<sup>18</sup> In 2016, there were 8391 same-sex couple families, 0.8% of all couple families.<sup>19</sup>
- 1 in 7 people (13%) spoke a language other than English at home in 2016, the most common languages being Mandarin, Vietnamese, Cantonese, Spanish and Italian.<sup>16</sup>

- 3 in 10 people (29%) were born outside Australia: New Zealand 4.3%, England 3.8%, India 1.0%, China 1.0% and South Africa 0.9%.<sup>16</sup>
- More than half (55%) reported both parents were born in Australia, 26% reported both parents were born overseas and 11% that one parent was born overseas.
- In 2017, 2098 humanitarian visa recipients settled in Queensland—the third highest number after NSW (6541) and Victoria (5439).<sup>20</sup>
- An estimated 21,700 people were homeless in Queensland in 2016.<sup>21</sup> While 20% of Queensland's homeless persons were Indigenous, in 2014–15 almost 1 in 3 (30%) Indigenous Queenslanders aged 15 years or older reported having been homeless during their lifetime.<sup>12</sup>
- In 2017, 8448 prisoners were in full-time custody in Queensland on an average day: 91% (7716) were males, 9% (732) were females and 32% (2704) were Indigenous Queenslanders.<sup>22</sup> There were 19,963 people in community-based correction facilities: 77% (15,339) were males, 23% (4624) were females and 23% (4599) were Indigenous Queenslanders.<sup>22</sup>

## Selected highlights from the regions

### Growth and ageing

- The population of West Moreton HHS has grown very quickly with a net growth of 36% over the past decade, followed by Gold Coast (23%), Sunshine Coast and Metro North (both 21%).<sup>23</sup> Growth was slower in Central Queensland, Darling Downs, Mackay, Townsville and Wide Bay (11–13%). There was a 10% decline in Central West and no change for North West or South West HHSs.
- The proportion of people aged 65 years and older grew significantly in each HHS, with faster than state growth occurring in Cairns and Hinterland (56% increase), Sunshine Coast (51%), West Moreton (49%), Torres and Cape, and Wide Bay (both 47%).<sup>23</sup> Slower growth occurred in Central Queensland (35%), South West and North West (both 29%) and Central West (20%).
- Of the 212,000 additional older Queenslanders, the greatest number lived in Metro North and Metro South HHSs (40,000 each), Gold Coast and Sunshine Coast (28,000 each), Wide Bay, Darling Downs and West Moreton (each between 11,000 and 16,000).

### Children and young people

- The number of children aged 0–14 years grew by 14% in Queensland over the past decade. Highest growth was seen in West Moreton (30% increase), Gold Coast (24%) and Metro North (21%) HHSs.<sup>23</sup> In contrast, Wide Bay did not change, and the number of children decreased in Central West (21% decrease), South West (12%), and North West (8%).
- The number of young people aged 15–29 years grew by 15% in Queensland over the past decade. Growth was greater than the state average in West Moreton HHS (32% increase), Torres and Cape (21%), Gold Coast, Metro North, Sunshine Coast and Metro South (all 18–20%), and slower than the state average in Cairns and Hinterland (11%), Townsville (10.5%), Wide Bay (10.5%) and Darling Downs HHSs (8%). No significant growth in the number of young people occurred in Central Queensland, Mackay and South West HHSs, while there were fewer young people than a decade ago in North West (12% decrease) and Central West (19%).

### Indigenous Queenslanders

In 2016, Cairns and Hinterland HHS had the largest Indigenous Queensland population (29,700), followed by Metro South (25,900), Metro North (22,400), and Townsville (20,900).<sup>23</sup> However, 70% of the Torres and Cape HHS were Indigenous Queenslanders, almost one-third (31%) of the North West, 13% of South West and 9% of Townsville.

Although Torres and Cape had the highest proportion of Indigenous Queenslanders, it had the fifth largest number with 18,500 people.

### Where will we be in the future?

The state population is projected to exceed 5.73 million by 2026 with differential growth in the HHSs.<sup>6</sup> Between 2016 and 2026, the largest change in absolute number of people is projected for Metro South (166,000 more people) and Metro North (145,000), followed by Gold Coast and West Moreton (about 120,000 each). A large increase is also projected for Sunshine Coast (72,000), Central Queensland and Townsville (more than 50,000 each), Mackay and Cairns and Hinterland (more than 40,000 each), Darling Downs and Wide Bay (about 30,000 each). Relatively small increases are projected for North West (7000), South West (2500), Torres and Cape, and Central West (about 1500 each).

The number of children is projected to increase in most HHSs by 2026 except in Central West, North West and South West where a small decrease is forecast.<sup>6</sup> Increases include West Moreton (27,000 more children), Metro South (27,000), Gold Coast (23,000), Metro North (21,500), Sunshine Coast (12,500), Townsville (7000), and Mackay (5000).

For older people, projected increases in number and proportion for all HHSs up to 2026 are greatest in Metro South (an extra 59,000), Metro North (54,000), Gold Coast (38,000), Sunshine Coast (33,000), West Moreton (22,000) and Wide Bay (18,000).<sup>6</sup>

### Data sources and methods: demography

The two major data sources for this chapter were:

- ABS: Estimated resident population and census with the latest estimate for 2016.<sup>9</sup>
- Queensland Government population projections 2015.<sup>6</sup>
- Updated Queensland Government projections will be released in late 2018.

For further information: Data visualisations and statistical tables online (page vii)



# Burden of disease and injury



## 3

- Burden of disease studies aim to quantify the gap between the ideal of everyone living to old age in good health, and the actual health of a population where there is illness and early death. The analytical method uses the disability adjusted life year (DALY) to estimate the cumulative health loss through disability (YLD) and death (YLL) in a population. The DALY is a single measure of health loss that allows comparability over time and between diverse populations, despite the varied impacts and outcomes of different conditions.
- For Queensland in 2011:
  - The leading cause of disease burden (DALYs) was cancer, followed by cardiovascular disease, musculoskeletal conditions and mental health disorders.
  - The three largest specific causes of premature death (YLL) were coronary heart disease, lung cancer, and suicide and self-inflicted injuries.
  - The three largest specific causes of disability (YLD) were back pain and problems, anxiety disorders and depressive disorders.
- Risk factors explained one-third of the disease burden in Queensland in 2011 with tobacco causing the most health loss, followed by poor diet and high body mass. Risk factors accounted for 43% of deaths in 2016 (about 13,000 in Queensland).
- The Indigenous Queensland disease burden was 2.2 times the non-Indigenous rate. The leading specific causes of health loss for Indigenous Australians (comparable data not available for Queensland) were coronary heart disease, suicide and self-inflicted injuries, anxiety disorders, alcohol use disorders and diabetes. The largest contributor to the health gap for Indigenous Australians was tobacco (23%) followed by poor diet (15%).
- The burden in Australia is changing and between 1990 and 2016:
  - the DALY burden increased by 24%
  - the fatal burden decreased by 12%
  - the disability burden increased by 45%.
- Among 34 high income countries in 2011, Australia was ranked:
  - ninth best for fatal burden
  - third worst for disability burden
  - eighth best for risk factor impacts.

## Queensland

In 2011, there were 907,268 years of healthy life lost to death or disability in Queensland.<sup>24,25</sup> The total disease burden (DALYs) was fairly evenly split between fatal outcomes (51% YLL) and disability burden (49% YLD). Burden due to early death was greater for males (60%) and was 1.5 times the female rate. Disability burden was similar for males and females (50%).

Data for this chapter was derived from the Australian Burden of Disease Study (ABDS)<sup>24</sup> with additional data provided to Queensland and included in a summary report.<sup>25</sup>

**Total disease burden (DALYs):** Non-communicable or chronic diseases caused 84% of loss of healthy life followed by injury (10%) and communicable, maternal and neonatal conditions (6%) in Queensland in 2011. Health loss from early death was higher for injury (81%), and communicable, maternal and neonatal conditions (67%) than chronic or non-communicable diseases (47%).

The four leading broad causes of total disease burden accounting for more than half the total burden were cancer (18%), cardiovascular disease (15%), musculoskeletal conditions (12%) and mental disorders (11%). The specific causes with the greatest impact on health loss were coronary heart disease (8%), COPD (3.8%) and lung cancer (3.4%).

**Premature death burden (YLL):** Around 466,400 years were lost due to early death in Queensland in 2011. Three-quarters of fatal burden (76%) was due to chronic conditions, 16% to injuries and 8% to communicable, maternal and neonatal conditions. The largest broad causes were cancer (33%), cardiovascular disease (22%) and injury (16%). The three largest specific causes were coronary heart disease (12%), lung cancer (6%), and suicide and self-inflicted injuries (6%).

**Disability burden (YLD):** Chronic conditions (92%) caused the majority of the disability burden (YLD) followed by injury (4%) and communicable, maternal and neonatal conditions (4%) in Queensland in 2011. The largest broad causes of disability were musculoskeletal conditions (23%), mental disorders (22%) and respiratory disorders (12%). The three largest specific causes of disability were back pain and problems (7%), anxiety disorders (6%) and depressive disorders (5%). This excludes the residual category of other musculoskeletal disorders (9.0%).

**Risk factors:** One-third (33%) of the total burden of disease and injury in Queensland was due to the joint effect of 29 risk factors. These risk factors explained 22% of the disability burden and 43% of fatal burden in Queensland (Table 2). The combined effect of the 29 risk factors resulted in 64,992 deaths of Australians in 2011, and about 13,000 were estimated to be Queenslanders.

The 10 leading risks were tobacco smoking (9.1% of DALYs), joint effect of dietary risks (7.8%), high body mass (6.5%), risky alcohol consumption (5.4%), high blood pressure (5.3%), physical inactivity (5.0%), high blood plasma glucose (2.7%), high cholesterol (2.5%), occupational exposures and hazards (2.0%) and illicit drug use (1.4%) (Table 2). The impact of these risks is described in more detail in the relevant sections of Chapter 8, commencing on page 53. For Australia, the impact of risk exposure on disease burden has contracted slightly over the past eight years<sup>24</sup>, showing benefits from preventive action, with smoking reduction the leading success story.

**Table 2: Key burden of disease metrics, by risk factor, Queensland<sup>25</sup>**

Risk factor	2011			2016	
	DALY %	YLL %	YLD %	Estimated deaths	% of deaths
<b>All risk factors (joint effect) <sup>(a)</sup></b>	<b>33</b>	<b>43</b>	<b>22</b>	<b>12,600</b>	<b>43</b>
Tobacco use	9.1	14	4.5	3,600	12
All dietary risks (joint effect) <sup>(a)</sup>	7.8	12	3.3	3,800	13
High body mass	6.5	8.1	4.9	2,400	8.2
High blood pressure	5.3	8.2	2.2	3,000	10
Physical inactivity	5.0	7.6	2.3	2,200	7.5
Alcohol use	5.4	6.2	4.6	1,300	4.3
High blood glucose	2.7	2.8	2.6	920	3.1
High cholesterol	2.5	3.8	1.0	1,000	3.5
High sun exposure	1.0	1.7	0.2	430	1.4
Illicit drug use	1.4	2.0	0.7	360	1.2
Occupational exposures and hazards	2.0	1.1	2.9	220	0.8

<sup>a</sup> Complex pathways and interactions between risk factors mean it is not possible to sum the impact of individual risk factors. The joint effect analysis should be used to examine the impact of all risk factors included in the study, and all dietary risk factors.

## Indigenous Queenslanders

Estimates for the Indigenous Australian population were produced as part of the ABDS.<sup>26</sup> While state-level data was limited, it did include critical information to assist in policy and planning within Queensland to improve the health of Indigenous Queenslanders. Information from the Australian study was supported by a Queensland specific study undertaken by Queensland Health which provides more local level data.<sup>27</sup>

After adjustments were made for age differences, the burden rate for Indigenous Queenslanders in 2011 was more than double that of non-Indigenous Queenslanders with higher burden for fatal outcomes than for disability. Chronic diseases caused 64% of total burden for Indigenous Australians, and accounted for 70% of the health gap between Indigenous and non-Indigenous Australians. More than one-third of the burden of disease in Indigenous Australians could have been prevented through modifiable risk factors.

**Total disease burden (DALYs):** The burden rate for Indigenous Queenslanders in 2011 was 2.2 times the non-Indigenous rate. Mental and substance use disorders was the leading broad cause of total burden (DALYs) for Indigenous Queenslanders (21%), followed by injuries (13%), cardiovascular disease (11%), cancer (10%), musculoskeletal (7%), infant/congenital (7%) and respiratory conditions (7%).

The largest relative difference between non-Indigenous and Indigenous Queenslanders (based on burden rate) for broad cause was for kidney/urinary disorders (6 times the non-Indigenous rate) and endocrine disorders (5.2 times the non-Indigenous rate). This is indicative of higher incidence of disease, later diagnosis and poorer management of diabetes for Indigenous Queenslanders. Cardiovascular disease and mental and substance use disorders accounted for the greatest absolute difference in rates between non-Indigenous and Indigenous Queenslanders.

Due to small numbers, jurisdictional estimates are not available at the specific cause level. Instead, Australian data are used. The five leading specific causes in 2011 for Indigenous Australians were coronary heart disease (7.2%), suicide and self-inflicted injuries (4.5%), anxiety disorders (4.4%), alcohol use disorders (4.2%) and diabetes (4.1%).

**Premature death burden (YLL):** The fatal burden rate for Indigenous Queenslanders was 2.4 times the non-Indigenous rate. The leading broad causes of premature death for Indigenous Queenslanders in 2011 were injuries, accounting for 22% of total fatal burden, cardiovascular disease (19%), cancers (18%) and infant/congenital conditions (13%).

**23%** of the **Indigenous health gap** was due to tobacco smoking—the leading contributor.

**Disability burden (YLD):** The disability burden rate for Indigenous Queenslanders was 1.9 times the non-Indigenous rate. For Indigenous Queenslanders, the leading broad causes of disability (YLD) in 2011 were mental and substance use disorders (41% of total disability burden), musculoskeletal (14%), respiratory (11%), neurological conditions (5%) and injuries (5%).

**Risk factors:** The joint effect of 29 modifiable risk factors accounted for 37% of burden for Indigenous Australians (data for Queensland is not available) (Table 3). Tobacco use accounted for 12% of DALYs and was the largest single contributing risk factor followed by dietary factors (10%), alcohol use (8%), high body mass (8%), physical inactivity (6%), high blood pressure (5%) and high blood sugar (5%). The joint effect of these risk factors accounted for 90% of the burden of endocrine disorders, 80% of the cardiovascular disease burden, 54% of cancer burden and 48% of burden due to kidney and urinary diseases, illustrating the potential for improved health outcomes for Indigenous Queenslanders through a continuing focus on prevention.

Risk factors combined, accounted for 51% of the health gap between non-Indigenous and Indigenous Australians, with tobacco a leading individual contributor explaining 23% of the gap (Table 3).<sup>26</sup> Strategies to reduce exposure to tobacco are therefore critical to closing the life expectancy gap.

Dietary factors were responsible for 15% of the gap, demonstrating an important opportunity for gain through ongoing investments to improve the nutritional status of Indigenous Queenslanders.

**Table 3: Risk factors, Indigenous Australians, 2011<sup>26</sup>**

		% total Indigenous DALY	% of health gap*
1	Tobacco use	12.3	23.3
2	Dietary risk factors (combined)	9.7	15.2
3	Alcohol use	8.3	8.1
4	High body mass	8.2	14.1
5	Physical inactivity	5.5	8.2
6	High blood pressure	4.9	8.1
7	High blood plasma glucose	4.6	8.8
8	Drug use	3.7	4.1
9	High cholesterol	2.6	3.4
10	Childhood sexual abuse	2.1	2.6
<b>Total (29 risk factors)</b>		<b>36.9</b>	<b>51.4</b>

\* between Indigenous Australians and non-Indigenous based on DALY rates.

## Queensland and Australian rankings

ABDS included limited jurisdictional comparisons. Queensland did not differ from national on the main metrics (DALYs, YLL and YLD) and had the fifth lowest rate among the eight jurisdictions for each.<sup>24</sup>

## Australia and international rankings

Australia was ranked highly for death and DALY metrics based on the 2016 global burden of disease study that compared 195 countries for 328 disease and injury causes.<sup>28</sup>

In 2016, Australia had the 10th lowest rate of total health loss having improved from 13th place in 1990. Singapore had the lowest rate of burden. After accounting for changes in age distribution, Australia's burden rate decreased by 25% between 1990 and 2016. The total burden, however, increased by 24%.

**Fatal burden:** Australia ranked in the top 10 among 34 high income countries for five of the 10 leading causes of fatal burden. Australia was ninth best of 34 countries for fatal burden, considering a composite ranking score.<sup>25</sup> Australia's fatal burden decreased by 12% between 1990 and 2016 with a 43% decrease in the burden rate.

**Disability burden:** Although life expectancy is improving we are spending more time with disability. Australia was ranked inside the top 10 among 34 high income countries for only two of the 10 leading causes of disability. Australia was third worst (31st best) out of 34 countries for disability burden, considering a composite ranking score.<sup>25</sup>

In 1990, 45% of Australia's burden was due to disabling outcomes, by 2016 this had increased to 55%. There is a disability transition in Australia where the majority of burden is now from disabling rather than fatal outcomes. Expanding morbidity along with an ageing population will put pressure on the health system in future. More needs to be done to address the disability burden in Australia.

Australia's disability burden increased by 45% between 1990 and 2016 with a 2% decrease in the disability burden rate.

**Risk factors:** In 2016, Australia was ranked inside the top 10 among 34 high income countries for five of the 10 leading risk factors. Considering a composite ranking score, overall Australia was eighth best out of 34 countries, with Japan the best, followed by Spain, France, Switzerland, Israel, Netherlands and Andorra.<sup>25</sup>

### Fatal outcomes

Australia  
**9th best**  
of 34 high income  
countries

### Disability burden

Australia  
**3rd worst**  
of 34 high income  
countries

### Risk factor exposure

Australia  
**8th best**  
of 34 high income  
countries

## Data sources and methods: burden of disease

The most recent complete burden of disease and injury study for Australia was released in 2016—the ABDS (2011 data).<sup>24</sup> It was conducted by the Australian Institute of Health and Welfare (AIHW) and adopted the methodologies of the Global Burden of Disease (GBD) study using the most recent detailed prevalence estimates specific to Australia. An update on the 2011 study is now underway.

The GBD study with the first series of reports released in 2010 represented a leap forward in methodologies. GBD now provides annual estimates with data available from the website.<sup>28</sup>

A summary burden of disease report for Queensland was released in 2017. The report and data visualisations are available from the Queensland Health website. Queensland Health has also published a Queensland specific study on the burden of disease in Queensland's Aboriginal and Torres Strait Islander people.<sup>27</sup> This study uses methods more closely aligned to the Australian burden of disease and injury 2003<sup>29</sup> and thus is not comparable to the ABDS or GBD.



# Lifetime health



# 4

- Queenslanders are generally enjoying longer and mostly healthy lives, however 13% of those years of life are lost to ill health.
- The burden of illness and disability is widespread across the life course and has an increasing impact on health service delivery, particularly as people age.
- Most infants have a healthy start to life and childhood is a period largely marked by good health. Risk behaviours and mental health issues emerge in young adults progressing through back pain into the chronic conditions of ageing such as circulatory diseases, arthritis and cancers.
- Treatment and management of disease is increasing. Over the past decade:
  - presentations to GPs increased by about 700,000 per year on average
  - admissions to hospital increased by about 85,000 per year on average.
- Utilisation of services to meet health needs is increasing at a greater rate among older people than younger—half the annual increase in GP visits and hospital admissions was for the older cohort.
- Across all age cohorts there is substantial opportunity to improve health and wellbeing by a continuing focus on healthy lifestyles.
- Many adult Queenslanders perceive they have a healthy lifestyle, but population health data would suggest otherwise.
- International evidence shows that the burden of illness and disability in the population will increase as the population ages, carrying into future older years a burden of chronic disease, complicated by multimorbidity which develops relatively early in adult life for some. Promoting good health early, and throughout the life course, will help to constrain this future burden. It will be important to also focus on keeping older people active, eating well and enjoying life in the later years.
- Achieving good health for all and supporting people to adopt a healthier lifestyle is dependent not just on personal motivation and resources, it also requires supportive social and physical environments.
- The Queensland *Health and Wellbeing Strategic Framework 2017 to 2026*<sup>30</sup> focuses on empowering people to make healthy life choices and working across sectors and through legislation to build healthier environments. As a result, Queensland is increasingly becoming a healthy place to live both now and in the future.

## Living longer

In 2014–16, life expectancy at birth for Queensland males was 80.1 years and for females 84.5 years<sup>31</sup>, a small increase from the previous estimates of 79.9 and 84.2 respectively (Table 4). Although the annual increments in life expectancy are diminishing, overall there was a 2.3-year increase for males over the past decade and a 1.6-year increase for females.

Compared to other jurisdictions, Queensland's life expectancy was fifth highest for males and females, but differed very little from that for Australia (Table 4).<sup>31</sup> The Australian Capital Territory had the highest life expectancy for males and females, and Northern Territory the lowest.

The life expectancy gap between Indigenous Queenslanders and non-Indigenous has diminished slightly and at the latest comparative assessment (2010–2012) was 10.8 years for males and 8.6 years for females (Table 4). Indigenous Queenslanders could expect to live longer than Indigenous Australians in 2010–2012, 1.3 more years for males and 2.1 years for females. Updated life expectancy estimates are due for release in late 2018.

Australia ranks highly among the 34 countries in the OECD (Organisation for Economic Co-operation and Development)

for life expectancy and was fifth highest for males and eighth highest for females in 2013 (Figure 1).

## Health adjusted life expectancy

Health adjusted life expectancy (HALE) is the average number of years at birth that a person can expect to live in full health if the current patterns of mortality and disability continue throughout their life. In 2010–12 more than one-tenth of the average Queenslanders life was spent in ill health—for males a loss of 9.1 years and for females 9.8 years (Figure 1).<sup>25</sup> Of the extra years gained as life expectancy increased in Australia between 1990 and 2016, about 80% were in good health and 20% in poor health.

In 2015, in a global assessment, Australia was close to best of OECD countries for life expectancy (fifth best considering males and females combined), but was third worst for percentage of life lived in poor health, losing 13.2% of life due to ill health and disability.<sup>32</sup> United States and Turkey were the worst performing OECD countries, losing 13.8% and 13.4% respectively of healthy life to ill health.

**Table 4: Life expectancy in years by age, sex and Indigenous status, Queensland and Australia<sup>31</sup>**

2014–2016	Males	Females		Non-Indigenous		Indigenous		Difference	
				2005–2007	2010–2012	2005–2007	2010–2012	2005–2007	2010–2012
<b>At birth</b>									
Queensland	80.1	84.5	<b>Queensland</b>						
Australia	80.4	84.6	Males	78.8	79.4	67.1	68.7	11.8	10.8
			Females	82.7	83.0	72.7	74.4	10.0	8.6
<b>At 50 years of age</b>									
Queensland	82.4	85.9	<b>Australia</b>						
Australia	82.5	85.9	Males	78.9	79.9	65.7	67.4	13.1	12.5
			Females	82.7	83.2	71.7	72.3	11.0	10.9
<b>At 80 years of age</b>									
Queensland	88.8	90.5	<b>Queensland compared to Australia</b>						
Australia	88.9	90.4	Males	-0.1	-0.5	1.4	1.3		
			Females	0.0	-0.2	1.0	2.1		

**Figure 1: Life expectancy at birth Australia and other OECD countries<sup>32</sup>**



## Living with disability

Illness and injury are the most common major life events experienced by people.<sup>33</sup> These disabilities, whether short-term acute episodes such as hay fever, or long-term chronic problems like arthritis, have an impact on the wellbeing of the individual, increase demand for health services and medications, and constrain productivity with increased related costs. Burgeoning health budgets reflect the pressure of expanding treatment options for a growing and ageing population.

There are many kinds of disability, usually resulting from illness, accidents, age or genetic disorders. Disability may affect a person's mobility, communication or learning. It can also affect their income and participation in education, social activities and the labour force. In 2015, 18% of Queenslanders reported a disability where 6% had a profound or severe core limitation.<sup>17</sup>

The proportion of the population reporting a disability increases steadily with age although the number of people peaks in the middle-age range (Figure 2):

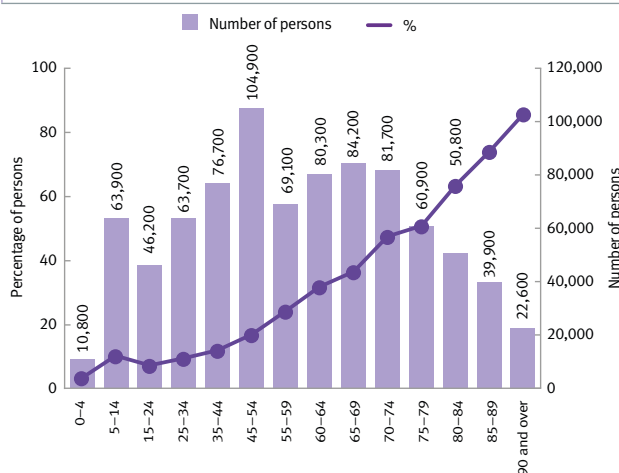
- 1 in 10 children aged 5–14 years reported a disability, as did more than half of those aged 70 years and older.
- About half (56%) of all those reporting a disability were aged between 35 and 74 years.

Disabilities are likely to be both a cause and a consequence of ill health, potentially impairing a person's capacity to take action to improve outcomes.

### Subjective measures of impaired health

In 2017, 15% of adult Queenslanders reported the loss of five or more days in a 30-day period from their usual work and family role due to physical or mental ill health.<sup>34</sup> This varied very little over the age range from 13% of those aged 18–29 years to 16% of those aged 65 years and older.

Figure 2: Prevalence of disability by age, Queensland, 2015<sup>17</sup>



Self-assessed health status reflects a person's perception of their health and also provides a measure of the overall health of the population. In 2017, more than half (52%) of adults considered themselves to be in excellent or very good health, while 16% rated their health as fair or poor.<sup>34</sup> People with chronic diseases such as diabetes or heart disease and those at higher risk due to unhealthy lifestyle choices are at least twice as likely as others to report fair or poor health.<sup>33</sup>

High levels of psychological distress are associated with underlying mental and other health problems. About 1 in 8 Queensland adults (12%) reported high or very high levels of psychological distress in 2014–15.<sup>33</sup> The highest prevalence was in 18–24 year olds (17%), decreasing with age to 10% in those aged 65 years and older. Two-thirds of adults who reported a mental health problem in 2014–15 also reported high levels of psychological distress as did one-third of people with back problems, and almost one-third of those with arthritis.

Many people experience bodily pain which can affect their role and function and impede their ability to take action to improve their health. In 2014–15, 1 in 12 Queensland adults (7.5%) reported experiencing severe or very severe bodily pain in the previous four weeks.<sup>33</sup> Adults who reported mental health problems were more likely to report bodily pain (about half did so). Prevalence was higher across a range of chronic conditions including asthma, hypertension, hay fever and heart and stroke conditions.

### The disability transition

The population health burden is changing, moving away from death outcomes and towards disabling conditions such as musculoskeletal disorders, nervous system disorders, mental disorders including dementia and substance use disorders, diabetes, vision loss and hearing loss.<sup>35</sup> The prevalence of these conditions often rises sharply with age, and as people survive into their eighties and beyond, the amount of time spent with these disorders increases, as does the treatment required.

The impact of a rising disability burden is evident in increased GP encounters for older people (doubling over a decade), an increase in health issues managed, and in tests requested (45%).<sup>36</sup> The hospitalisation rate is increasing with an additional 85,000 admissions per year, with greater growth for middle-aged adults to older people and in areas of better access.

## Getting a healthy start

Maternal health and wellbeing from pre-conception to pregnancy and inclusive of the first 1000 days have a major influence on long-term outcomes. Maternal nutrition and avoidance of toxic exposures during pregnancy provide the foundation for the child's development.<sup>37</sup> For the newborn infant, the first year of life is a significant period for appropriate feeding, including breastfeeding and care and the first 28 days are the most critical for prevention of harms or death. The maternal foundations for lifelong health persist into adulthood and influence the likelihood of future health problems.

The health and wellbeing of the father is especially important from pre-conception to pregnancy as the male contributes half of the biological foundation for the child's development, including placental function.<sup>37</sup> Families influence the resources available to provide for the feeding, care and home environment of the child, and to support the future health and wellbeing of the child.

### Births<sup>38</sup>

- In 2016, there were 62,779 babies born to 61,876 mothers in Queensland—4230 infants were born to 4178 Indigenous Queenslander mothers. The number of babies delivered in Queensland has increased by about 590 each year over the past decade.
- Three-quarters (46,163) of births in 2016 occurred in public facilities, 15,947 (25%) in private facilities, 166 were home births and 504 occurred before arrival at a facility.
- A little over half (56%) of the births in 2016 were vaginal deliveries, forceps were used in 3%, vacuum delivery in 7% and 34% were by caesarean section. The proportion of caesarean deliveries did not change over the decade up to 2016. Caesarean delivery was more common in private facilities (50% of deliveries) than in public (29%).
- Of the births that occurred in public facilities in 2016, 6130 were at the Mater Mothers' Hospital, 4569 at the Gold Coast University Hospital, 4423 at Royal Brisbane and Women's Hospital and 3374 at Logan Hospital. Eleven public facilities delivered between 1000 and 3000 infants, 23 delivered between 100 and 1000 infants and 39 delivered fewer than 100 (30 of these delivered fewer than 10 infants).

### Maternal factors<sup>38</sup>

- **Indigenous status:** 6.8% of mothers giving birth in 2016 were Indigenous Queenslander women (4178 women), with 3246 Aboriginal women, 473 Torres Strait Islander women and 459 women of Aboriginal and Torres Strait Islander origin. The number of mothers giving birth who identified as Indigenous Queenslanders increased by about 100 per year over the past decade.

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**62,779** babies were born in Queensland in 2016.

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- **Age:** 3.4% of Queensland mothers were aged under 20 years at the birth and 20% were aged 35 years or older in 2016. Older maternal age was associated with higher risk of congenital anomalies (2.5 times more likely than younger mothers in 2014–2015) and more complications including gestational diabetes (66% higher), placenta praevia (111% higher), antepartum haemorrhage (16%) and gestational hypertension (26%), but slightly lower risk of post-partum haemorrhage (6% lower).<sup>39</sup>
- **Weight status:** 19% of women were obese at the time of conception in 2016, a proportion typical of women in the child bearing age range.
- **Smoking status:** 12% of women smoked at some time during their pregnancy in 2016 (7403 women), 43% of Indigenous Queenslander women and 9.8% of non-Indigenous women. For teenagers, the smoking rate was 32%, compared to 11% for older mothers. Non-Indigenous teenagers were more likely to smoke than older non-Indigenous women (25% compared with 9.4%) while for Indigenous Queenslander women in 2016, the smoking rate in teenagers was lower than for older women (39% compared with 44%). Over the 10 years up to 2016, smoking during pregnancy by non-Indigenous women decreased by 48% and by 21% for Indigenous Queenslander women. (See pages 32 and 57)
- **Alcohol consumption during pregnancy:** In 2013, 15% of Australian women fully abstained from alcohol during their pregnancy.<sup>40</sup> There is limited data on this issue. (See page 86)
- **Gestational diabetes:** 12% of pregnant women were diagnosed with gestational diabetes in 2016.
- **Antenatal visits:** 81% of women made eight or more antenatal visits during their pregnancy in 2016, with Indigenous Queenslander women less likely to do so than non-Indigenous women (65% compared with 82%). A small number of women made one visit or none, 0.5% or 334 women and 28% of these were Indigenous Queenslanders. A further 4.2% made between two and four visits. Fewer antenatal visits increases the risk of preterm birth and poorer birth outcomes.<sup>41</sup>
- **Underlying medical conditions:** Depressive disorders and thyroid disorders were the most frequently reported underlying medical condition of mothers who gave birth in 2016 (3.8% and 3.7% respectively) followed by anaemia (2.3%), asthma (2.2%) and streptococcal infection (2.1%). A small number reported pre-existing hypertension (482 women, 0.8%) or diabetes (469 women, 0.8%).
- **Immunisation:** In 2017, 63% of pregnant women reported being immunised against whooping cough and 34% for influenza. Immunisation status was unknown for 8% and 10% respectively.



### Infant characteristics<sup>38</sup>

- **Gestation:** 9.3% (5821) of babies were premature in 2016, that is, born before 37 weeks, with 1% (599) born before 28 weeks. Indigenous Queenslander infants (that is, infants born to Indigenous Queenslander mothers) were more likely to be born prematurely than non-Indigenous (13% compared with 9%) and accounted for 1 in 10 premature births. The prevalence of premature births has increased by 5% over the past decade.
- **Birthweight:** 7.3% of babies weighed less than 2500g at birth and 11% weighed 4000g or more (2016). This includes all babies except those for whom no weight was recorded. This differs from the national definition of low birthweight (page 116).<sup>42</sup> Indigenous Queenslander infants were more likely to be low birthweight than non-Indigenous (11% compared with 7.0%) and accounted for 1 in 10 low birthweight babies. The prevalence of low birthweight has not changed over the past decade but the proportion of high birthweight (4000g or more) decreased by 13%.
- **Breastfeeding:** At discharge in 2016, 77% of infants were receiving only breastmilk, 16% received breastmilk and infant formula and 7.1% were receiving only infant formula. Younger mothers (under 20 years of age) were less likely to breastfeed (65% exclusive breastfeeding at discharge) and more likely to use infant formula (11%) than other women (77% and 6.8% respectively). By four months of age the proportion exclusively breastfed had fallen to 29% in 2014, and to 5% by six months.<sup>43</sup>
- **Immunisation:** In 2017, 94% of infants were fully immunised at one year of age (see also page 108).

### Maternal and infant deaths

- **Maternal:** Over the three years from 2012 to 2014 (inclusive), there were 11 maternal deaths in Queensland of the 187,617 women giving birth.<sup>44</sup> The maternal mortality rate (5.9 deaths per 100,000 women) was slightly lower than the national rate (6.8). For Australian women, the leading causes of the death directly linked to pregnancy were thromboembolism and obstetric haemorrhage. The most common causes of indirect maternal deaths, that is, not directly linked to the pregnancy, were cardiovascular conditions and non-obstetric haemorrhage.
- **Infant:** There were 402 stillborn infants in 2016, and a further 191 who died in the first 28 days, a total of 593 perinatal deaths.<sup>38</sup> The

stillbirth rate for Indigenous Queenslander women was 50% higher than the non-Indigenous rate when averaged over a five-year period (2009–2013). Over the longer term (1989–2013) there was a 2.2% per year decline in the stillbirth rate for Indigenous Queenslander women, there being no change in the rate for non-Indigenous women.<sup>45</sup>

### Selected highlights from the regions<sup>38</sup>

- **Maternal smoking:** The highest rate of maternal smoking was in Torres and Cape HHS, largely associated with a high Indigenous Queenslander population (Table 5). There was a nine-fold difference between Torres and Cape and Gold Coast which had the lowest prevalence.
- **Mothers obese at conception:** The highest prevalence of obesity at conception was in West Moreton and Torres and Cape HHSs while the lowest was in Gold Coast. The prevalence was at least 20% higher than the state average for West Moreton (29%), Torres and Cape (29%), Wide Bay (25%), Mackay (25%), North West (25%), Darling Downs (24%), South West (24%) and Central Queensland (22%).
- **Older mothers:** The highest proportion of mothers aged 35 years and older was in Metro North, Gold Coast and Metro South HHSs (24%, 23%, 22% respectively). The lowest was in South West (9%).
- **Premature birth:** Although the highest rates of premature birth were in North West (12%), Torres and Cape, South West and Townsville (all 11%), many of the babies born prematurely in Queensland were in Metro North and Metro South (about 2500 babies or 44% of the state total).
- **Birthweight:** Torres and Cape HHS had the highest proportion of low birthweight infants in 2016 and Mackay the lowest (Table 5). West Moreton had the highest proportion of larger babies (4000g or greater), about double that of North West which was lowest. North West and Central West had the highest proportion of infants in the weight range 2500 to less than 4000g (about 86% of infants) while Torres and Cape and West Moreton had the lowest (both 80%).

Table 5: Prevalence of selected perinatal risks by HHS, Queensland, 2016<sup>38</sup>

Smoking during pregnancy (%)	Birthweight: < 2500g (%)	Birthweight: 4000+g (%)
Torres and Cape 45	Torres and Cape 11.7	West Moreton 12.5
North West 25	Wide Bay 8.1	Sunshine Coast 11.9
Wide Bay 22	North West 8.1	Central Queensland 11.9
South West 19	Cairns and Hinterland 8.1	Wide Bay 11.5
Cairns and Hinterland 18	Townsville 8.0	Cairns and Hinterland 11.4
West Moreton 17	West Moreton 7.7	Mackay 11.0
Central Queensland 17	Darling Downs 7.5	Townsville 10.9
Darling Downs 16	Metro North 7.3	South West 10.6
Townsville 14	Queensland 7.3	Queensland 10.5
Mackay 13	Metro South 7.2	Gold Coast 10.2
Central West 13	Central West 6.9	Metro North 10.1
Queensland 12	Gold Coast 6.6	Metro South 9.9
Sunshine Coast 12	Central Queensland 6.4	Darling Downs 9.6
Metro North 10	Sunshine Coast 6.3	Torres and Cape 9.4
Metro South 9	South West 6.3	Central West 8.4
Gold Coast 5	Mackay 5.4	North West 5.9

## Children (0–14 years)

### *Burden of disease summary<sup>25</sup>*

The first year of life, particularly the first 28 days, carries the highest burden of disease and injury for children, primarily due to fatal burden in the neonatal period. Following infancy, childhood is the period of least health loss. Childhood sets the foundation for a healthy lifestyle with lifelong benefits.

**Broad causes:** During childhood, health loss was dominated by infant and congenital conditions, accounting for 41% of disease burden in 2011. Mental disorders caused 17% and injury 10%.

**Specific causes:** Complications of preterm birth and low birthweight caused 11% of health loss in children in 2011, asthma caused 6% and sudden infant death syndrome 5%.

**Risk factors:** A very small proportion of the health loss in children (1% of total burden) could be explained by the joint effect of six risk factors in 2011 (page 10). The limited risk factor assessment in this age group is partly due to lack of exposure and lack of impact information for children.

### *Population*

In 2018, 1 in 5 Queenslanders was aged 0–14 years, an estimated 988,000 children and about 9% or 79,000 were Indigenous Queensland children.<sup>10</sup>

### *Health conditions and development<sup>33</sup>*

In 2014–15, for Australian\* children aged 0–14 years:

- 12% reported sight problems (4.8% long-sighted, 4.6% short-sighted, 1.6% astigmatism).
- 11% reported asthma.
- 11% reported hay fever and allergic rhinitis.
- 10% reported allergies (6.3% were food allergies).
- 5.3% reported anxiety related disorders, an additional 2.7% had problems of psychological development and 2.3% reported behavioural, cognitive and emotional problems.
- 1.5% reported deafness with an additional 1.1% having otitis media.

\* Queensland data for this age group are not currently available.

Queensland children (in first year of school) were more likely to be developmentally vulnerable than children nationally, based on five domains in 2015<sup>46</sup>:

- 12% vulnerable for physical development (10% nationally)
- 12% for social development (10% nationally)
- 10% for emotional development (8% nationally)
- 8% for language development (7% nationally)
- 11% for communication (9% nationally).

In 2017, for Queensland children, there were 20,479 notifications for communicable diseases and related conditions.<sup>47</sup> Two-thirds or 13,441 notifications were for laboratory-confirmed influenza, 1631 for salmonellosis, 1421 campylobacter, 1223 rotavirus and 983 varicella (chickenpox/shingles).

### *Health service utilisation*

Children aged 0–14 years:

- The average young child (0–4 years) made 4.8 visits to a GP in 2016–17 and 2.5 visits for 5–14 year olds.<sup>48</sup>
- 6.3% of the total increase in GP visits in Queensland over the past decade was for children, with per capita visits decreasing slightly for 0–4 year olds (-0.5 visits) and increasing slightly for 5–14 year olds (0.3 visits).<sup>48</sup>
- 11% of children had been admitted to a Queensland hospital in 2015–16 with the proportion increasing by 14% over the past decade.
- There were 145,000 hospitalisations of children in 2015–16, 6% of total. The hospitalisation rate increased by 16% over a decade with an annual average increase of about 4000 admissions per year.
- The hospital admission rate increase was higher for Indigenous Queensland children than non-Indigenous, 35% compared with 8%. This resulted in an average annual increase of 510 admissions per year for Indigenous Queensland children compared with 3360 for non-Indigenous children.
- Admission rates for asthma did not change over a decade for non-Indigenous or Indigenous Queensland children with about 3500 hospitalisations for asthma in 2015–16.
- The leading broad causes of admission to hospital for children were respiratory conditions (21% of all admissions), injuries (14%) and digestive system diseases (9%), mainly dental conditions particularly decay (Table 7, page 32).

**11%** of children have **asthma.**

### Adopting healthy habits

Queensland children aged 5–17 years\*:

- 7.2% were obese by measurement and 19% were overweight in 2014–15.<sup>33</sup> Two-thirds (66%) were in the healthy weight range and 8.0% underweight.
- The majority of children did not meet the Australian Dietary Guidelines recommendations for the five food groups in 2011–12<sup>49</sup> (see also page 65 and following). Equally concerning is the proportion of total energy derived from unhealthy or discretionary food sources (38% in young children aged 2–3 years, and 40% in those aged 4–13 years). The consumption of discretionary foods is making a large contribution to meeting the recommendations. For example, half the recommended vegetable consumption of Queensland children was derived from discretionary foods such as potato crisps and chips, noting that only 1% of children met the guidelines. Half the achievement of recommended consumption of lean meats, poultry, fish, eggs, tofu, nuts and seeds was from discretionary sources such as hamburgers and pies.
- 7% of 12–17 year olds had smoked in the previous week in 2017.<sup>50</sup>
- About 5% of Queensland teenagers aged 14–19 years smoked daily in 2016.<sup>51,52</sup>
- 27% of children aged 0–14 years lived in a household with a daily smoker in 2014–15.<sup>53</sup>
- Children were active for 10.9 hours a week on average in 2017 (independent of the number of days they were active), with 42% of their total activity achieved in free time, 33% at school, 16% in club sport and 10% in active transport, usually to and from school.<sup>54</sup>
- 41% met the recommendation to be active for at least an hour every day in 2018 while 6% were not active on any day.<sup>34</sup>
- 94% of one year-olds were fully immunised in 2017, 92% of two year-olds and 94% of five year-olds.<sup>55</sup>
- 68% of Year 7 students completed the three-dose course of human papillomavirus (HPV) vaccine in 2017.
- 79% of Year 7 students received a dose of diphtheria-tetanus-pertussis (dTpa) vaccine in 2017.

\* For consistency with Chapter 8, children were defined as 5–17 years for the risk factor section.

### Environments to support healthy lifestyles<sup>56</sup>

Childhood sets the foundation for lifelong health and wellbeing. It is a sensitive developmental stage, along with adolescence, when social and cognitive skills, habits, coping strategies, attitudes and values are more easily acquired.<sup>57</sup> These abilities and skills strongly influence life course trajectories with implications for health in later life.

The family and home environment are central to good health and wellbeing. Families can be supported as they navigate the challenges of modern life, juggle financial pressures, balance work and family priorities and maintain healthy life choices. Known contributors to health in later life are initiating and maintaining breastfeeding, avoiding children's exposure to tobacco smoke and role models who smoke, providing a balanced nutritious diet as recommended by the dietary guidelines, using adequate sun protection, engaging in regular physical activity and limiting sedentary and screen time.

Children achieve about 40% of their activity in free time so it is important that neighbourhood environments are family-friendly. This includes parks, trails and open spaces that provide opportunities, with shade protection, for sport and unstructured play. Networks of high quality walking and cycling paths help increase physical activity for children and their families while encouraging activity throughout life.

Schools play an important role in supporting healthy life foundations. A feature of school policy in Queensland over the past decade has been the improvement in healthy food and drink supply and limiting access to unhealthy foods in the whole-school environment. Given that more than one-third of energy intake is derived from unhealthy or discretionary food sources, sustained action is needed to maintain the focus on healthy eating. In addition, children depend on activity achieved at school to contribute to their overall level of physical activity. In 2017, more than one-third of the weekly activity of a typical Queensland child was achieved at school, and much of this through the school program or curricula.<sup>54</sup>

More broadly, there is much to be done in shaping the food supply environment in Queensland to favour the consumption of healthier food choices<sup>58</sup>, reduce junk food advertising to children, provide breastfeeding facilities and, through kilojoule information on menus, assist families to make informed choices when dining out.

## Young people (15–29 years)

### Burden of disease summary<sup>25</sup>

Health loss in adolescence and early adulthood (15–29 years) was characterised by the consequences of risk taking, and mental illness. This is a period of cognitive and social change and is generally prior to the onset of many of the lifestyle related conditions and signs of bodily wear and tear. Young people as well as children have an opportunity to prevent and delay the onset of chronic conditions by adopting healthy behaviours and limiting the development of unhealthy habits. Preventing injury deaths and treating and preventing mental illness will have the greatest impact on total disease burden in young people. An underlying risk factor for young people is risky alcohol consumption.

**Broad causes:** Mental illness was the leading broad cause of health loss in 15–29 year olds in 2011 (30% of total disease burden) and was almost totally associated with disability. Injury caused a further 26% and most of this (91%) was associated with fatal burden. Respiratory diseases caused a further 8% of health loss.

**Specific causes:** Suicide and self-inflicted injury caused 11% of the health loss in 15–29 year olds in 2011, and the majority (74%) was for males. Anxiety disorders caused 7% and alcohol use disorders 6%.

**Risk factors:** One-fifth (20%) of the burden of disease and injury in young people could be attributed to the joint effect of 29 modifiable risk factors in 2011 (page 9). Alcohol use caused the greatest loss (13% of burden in this age group), followed by occupational exposures and hazards (3%) and illicit drug use (2%).

### Population

In 2018, 1 in 5 Queenslanders was aged 15–29 years, an estimated 988,000 young people, and about 6% or 60,000 were Indigenous Queenslanders.<sup>10</sup>

### Perception of health and assessment of risk

In 2017, for young people aged 18–29 years<sup>34</sup>:

- 1 in 10 (10%) reported poor or fair health.
- 1 in 8 (13%) reported reduced capacity to fulfil their usual role on five or more days in a 30-day period, due to ill health.
- 1 in 3 (36%) considered their lifestyle to be very healthy.

### Leading conditions

In 2014–15, for young Australians\* aged 15–34<sup>33</sup>:

- 38% reported a sight problem (23% short-sighted, 11% long-sighted, 6% astigmatism).
- 23% reported hay fever and allergic rhinitis.
- 14% reported allergies.
- 13% reported a back problem.
- 13% reported an anxiety condition and 9% a depressive/mood disorder.
- 11% reported asthma.
- 8% reported migraine.

\* Queensland data for 18–29 year olds are not currently available.

In 2017, for young people in Queensland, there were 34,111 notifications for communicable diseases and related conditions.<sup>47</sup> The leading cause was the sexually transmitted infection (STI) chlamydia which accounted for 53% or 17,969 notifications, followed by laboratory-confirmed influenza (8545 notifications), gonorrhoea (STI) (2971), campylobacter (1361), and varicella (chickenpox/shingles) (1211).

### Health service utilisation

For young people aged 15–29 years:

- The average young Queenslander made about 3.5 visits to a GP in 2016–17 (3.2 for 15–24 year olds and 3.7 for 25–34 year olds).<sup>48</sup>
- Of the total increase in GP visits in Queensland over the past decade, about 12% was due to more frequent visits of young people (a per capita increase of 0.3 visits).<sup>48</sup>
- 15% of young people in Queensland had been admitted to a hospital in 2015–16 and unlike other age groups, the proportion did not change over the previous decade.
- There were 249,000 hospitalisations of young people in 2015–16, 11% of total. The rate increased by 13% over a decade with an annual average increase of about 7000 admissions per year.
- The leading broad cause of admission to hospital for young females in this age group was pregnancy and childbirth (37% of female admissions), and injuries for males (23% of male admissions).
- Less than 2% of the 27,463 new cancer cases diagnosed in Queensland in 2014, were for young people (about 460 new cases in young people aged 15–29 years) and melanoma accounted for 25%.<sup>59</sup>



### Achieving a healthy lifestyle

Only about one-third of young people consider their lifestyle to be very healthy and it is evident there is substantial opportunity for improvement. For 18–29 year olds\* in Queensland:

- 12% smoked daily while 70% had never smoked and 7% were ex-smokers (2018).<sup>34</sup>
- 23% were obese by measurement, 17% were overweight and 59% were in the healthy/underweight range (2014–15).<sup>33</sup>
- Many young people did not meet the Australian Dietary Guidelines for the five food groups in 2011–12<sup>49</sup> (see also page 65). Of concern is the high proportion of total energy derived from unhealthy or discretionary food sources (45% in teenagers aged 14–18 years and 38% in those aged 19–30 years). The consumption of alcohol and sugary drinks is high in the 19–30 years age group, particularly for males who consumed up to 2000g of these beverages daily in 2011–12—equivalent to about three cans per day. For young females (19–30 years), consumption was lower at 1000g daily.
- 24% were risky drinkers (lifetime risk), 36% of young males, 13% of young females (2018).<sup>34</sup>
- 5% had not been active in the past week while 68% were active on most days of the week (2018).<sup>34</sup>
- 29% had undertaken strength and toning exercise on at least two days a week (2014–15).<sup>33</sup>
- Less than 10% had high blood pressure ( $>140/100$  mmHg when measured) (2014–15).<sup>33</sup>
- 64% of Year 10 students received a dose of meningococcal ACWY vaccine in 2017.

\* Age group restricted to 18–29 years due to data limitations.

**45%** of energy intake of teenagers is from unhealthy foods.

### Environments to support healthy lifestyles<sup>56</sup>

The transition from childhood to adult maturity is a challenging time for young people. The direct influence of parents and schools diminishes as young people progress through the teenage years and into their twenties. The influence of peers and social environments increases along with a growing sense of personal autonomy.

Navigating this period of transition and finding a place in society is stressful for many young people and can lead to mental health issues. Peer support, positive social environments and pathways to employment can help. Ease of access to professional support is important. Online social environments may undermine the growing independent identity of young people. It is important that the positive and negative impact of such factors is assessed and managed within families, schools and communities. Importantly, the voice and capability of young people need to be valued so they can build the skills and knowledge they need to make informed decisions and contribute to their community.

The environment can be shaped to help young people make positive choices for health and wellbeing. For example, attractive, visible, safe public spaces can provide positive opportunities for socialising while discouraging risky behaviours. Over the past 12 months, all the public universities in Queensland have adopted a smoke-free campus policy.

High consumption of unhealthy foods during the teenage years contributes to weight gain, often the first step into overweight and obesity that becomes hard to reverse. Improving the availability of healthy food options, access to drinking water and information such as kilojoule information on menus in fast food outlets may assist young people to make better choices.

Affordable transport systems and inclusive urban planning design that emphasises connectivity and active transport, assist with a sense of autonomy and belonging and help young people actively access services, education, jobs and recreational activities.

Creating complete communities with quality education and training, accessible employment opportunities, good jobs, affordable housing, retail shops and a range of accessible services, health facilities and recreational opportunities is critical to empowering people of all ages, including young people, with a sense of belonging, resilience and the basic elements for economic opportunity as well as health and wellbeing.

## Younger adults (30–44 years)

### *Burden of disease summary<sup>25</sup>*

By the fourth decade, as a result of wear and tear on the body, the burden due to musculoskeletal conditions increases while the health conditions of youth remain high.

**Broad causes:** The leading causes of disease burden in 2011 were mental disorders (23% of DALYs), injury (20%) and musculoskeletal conditions (16%).

**Specific causes:** Suicide and self-inflicted injury caused the greatest health loss among younger adults aged 30–44 years (8% of burden) in 2011. Back pain and problems was the second leading cause (6%) followed by anxiety disorders (6%).

**Risk factors:** About a quarter (26%) of the total burden of disease in the 30–44 year age group could be attributed to the joint effect of 29 modifiable risk factors in 2011 (page 9). Alcohol use caused the most health loss (10% of burden), followed by high body mass (4%), dietary risks (3%) and occupational exposures and hazards (3%).

### *Population*

In 2018, 1 in 5 Queenslanders was aged 30–44 years, an estimated 1,014,000 people and about 4% or 38,000 were Indigenous Queenslanders.<sup>10</sup>

### *Perception of health and assessment of risk*

In 2017, for younger Queensland adults aged 30–44 years<sup>34</sup>:

- 1 in 10 (11%) reported poor or fair health.
- 1 in 8 (13%) reported reduced capacity to fulfil their usual role on five or more days in a 30-day period, due to ill health.
- 1 in 3 (39%) considered their lifestyle to be very healthy.

### *Leading conditions and comorbidities*

In 2014–15, for Australian\* adults aged 35–44<sup>33</sup>:

- 47% reported a sight problem (27% short-sighted, 15% long-sighted, 8% astigmatism).
- 23% reported hay fever and allergic rhinitis.
- 19% reported a back problem.
- 13% reported an anxiety condition and 12% a depressive/mood disorder.
- 11% reported allergies.
- 11% reported ear disorders including 7% reporting deafness.
- 10% reported asthma.
- 9% reported migraine.

\* Queensland data for 30–44 year olds are not currently available.

Multimorbidity was evident in younger Queensland adults. For the age group 15–44 years in 2014–15<sup>49</sup>:

- One-third (31%) reported one chronic condition, one-eighth (13%) reported two or more chronic conditions with 56% reporting no chronic conditions.
- The three most prevalent chronic conditions in this age group were mental and behavioural problems, back problems and asthma and these were frequently reported together.
- Of the 401,000 younger adults who reported mental and behavioural disorders, 58% reported only these conditions while 43% reported a comorbid condition, usually back problems or asthma.
- Of the 286,000 younger adults who reported back pain, about 44% reported at least one other chronic condition, usually mental health and behavioural problems.
- Of the 213,000 younger adults who reported asthma, about 50% reported at least one other chronic condition, usually mental health problems.
- Of the 28,000 younger adults with diabetes, three-quarters (75%) reported at least one other chronic condition. The most common comorbid conditions of younger adults with diabetes were circulatory conditions or mental health and behavioural problems.

In 2017, for younger adults aged 30–44 years in Queensland, there were 19,812 notifications for communicable diseases and related conditions.<sup>47</sup> Laboratory-confirmed influenza accounted for nearly half (46%, 9013 notifications). Other major causes were chlamydia (STI) (3951 notifications), gonorrhoea (STI) (1472), varicella (chickenpox/shingles) (1423), and campylobacter (1298).

### *Health service utilisation*

For adults aged 30–44 years:

- The average Queensland adult aged 35–44 years made 4.2 visits to a GP in 2016–17.<sup>48</sup>
- Of the total increase in GP visits in Queensland over the previous decade, 16% was due to more frequent visits in this age group (over the decade, a per capita increase of 0.7 visits).<sup>48</sup>
- 19% of this age group had been admitted to a hospital in 2015–16 with the proportion increasing by 12% over the past decade.
- There were 340,000 hospitalisations for this age group in 2015–16, 15% of total. The rate increased by 22% over a decade with an annual average increase of about 10,000 admissions per year.

- Admission rates for lifestyle-related chronic conditions such as coronary heart disease and stroke decreased by 11% over the past 10 years, while for chronic conditions of ageing and disability (for example, mental health, musculoskeletal and neurological conditions), there was a 46% increase.
- The leading broad causes of hospital admission in this age group were pregnancy and childbirth (25% of female admissions), tests, procedures and investigations (18% of all admissions), diseases of the digestive system (11%) and mental and behavioural disorders (9%).
- 7% of all new cancer cases diagnosed in Queensland in 2014, were in younger adults aged 30–44 years (about 1800 new cases).<sup>59</sup> The leading causes were breast cancer (27% of new female cases diagnosed) and melanoma (25% of all new cases).

**25%** of younger adults are drinking alcohol at risky levels.

### Achieving a healthy lifestyle

Two-thirds of younger adults do not consider they have a healthy lifestyle and the prevalence data largely supports this perception. For Queensland adults aged 30–44 years:

- 12% smoked daily while 26% were ex-smokers and more than half (57%) had never smoked (2018).<sup>34</sup> There has been a 15% increase in smoking cessation in this age group over the past nine years.
- 33% of 35–44 year olds were obese by measurement, 37% were overweight and 30% were in the healthy/underweight range (2014–15).<sup>33</sup>
- Many adults did not meet the Australian Dietary Guidelines for the five food groups in 2011–12<sup>49</sup> (see also page 65). Of concern is the proportion of total energy derived from unhealthy or discretionary food sources: 36% for those aged 31–50 years. This is evident in the high consumption of alcohol and sugary drinks, with males in this age group consuming about 1600g daily and females about 1100g daily.
- 25% were risky drinkers (lifetime risk), 37% of males, 12% of females (2018).<sup>34</sup>
- 8% had not been active in the previous week, while 61% were active on most days of the week (2018).<sup>34</sup>
- 21% of 35–44 year olds had undertaken strength and toning exercise on at least two days a week (2014–15).<sup>33</sup>
- 16% of 35–44 year olds had high blood pressure (>140/100 mmHg when measured) (2014–15).<sup>33</sup>

### Environments to support healthy lifestyles<sup>56</sup>

Young adulthood is often a time of significant life events including establishing and maintaining a committed relationship, growing a family, building a career, securing employment and earning a living. For some young adults it involves cycles of unemployment, under-employment, unstable jobs, and escalating work demands. Secure housing can be challenging and can lead to financial stress and uncertainty. In this context, an environment that supports good health and healthy choices will have a beneficial effect on the individual, their family and their future.

Maintaining well-planned communities through pedestrian-friendly neighbourhoods, breastfeeding facilities, smoke-free and accessible open spaces for recreation and leisure, vibrant and engaging streetscapes and adequate shade and lighting, will support young adults, their friends, partners and families to live well. Active recreational opportunities and access to sporting facilities are important.

Avoiding weight gain in the midst of easily accessible, affordable, unhealthy foods and food environments is difficult. Supermarkets, food outlets and vending machines that provide sugary drinks, sweet and salty snack foods and meals with lots of kilojoules or empty energy, make it easy for busy active young adults and families to make quick unhealthy choices.

Food environments can be modified to support healthier choices for busy young adults and families—for example, health star ratings can allow people to compare similar packaged foods for the healthier choice.

## Middle-aged adults (45–64 years)

### *Burden of disease summary<sup>25</sup>*

Chronic conditions associated with age and lifestyle related behaviours were responsible for a greater proportion of burden of disease by age 45 to 64 years.

**Broad causes:** Cancer was the leading cause of health loss in adults aged 45 to 64 years (24% of burden), followed by musculoskeletal conditions (16%) and cardiovascular disease (14%) in 2011.

**Specific causes:** Coronary heart disease was the leading cause of health loss in middle-aged adults (8% of burden), followed by lung cancer (5%) and back pain and problems (5%) in 2011.

**Risk factors:** Almost two-fifths (39%) of health loss in middle-aged adults could be explained by the joint effect of risk factors in 2011 (page 10). Tobacco use was a leading cause, accounting for 13% of the burden. Dietary risks caused 10% and high body mass 9%.

### *Population*

In 2018, 1 in 4 Queenslanders was aged 45–64 years, an estimated 1,245,000 people and about 3% or 35,000 were Indigenous Queenslanders.<sup>10</sup>

### *Perception of health and assessment of risk*

In 2017, for Queensland adults aged 45–64 years<sup>34</sup>:

- 1 in 5 (18%) reported poor or fair health.
- 1 in 6 (16%) reported reduced capacity to fulfil their usual role on five or more days in a 30-day period, due to ill health.
- 1 in 2 (47%) considered their lifestyle to be very healthy.

### *Leading conditions and comorbidities*

Many middle-aged Queenslanders are living with a chronic condition. In 2014–15, for 45–64 year olds<sup>33</sup>:

- 90% reported a sight problem (62% long-sighted, 35% short-sighted, 14% other eye disorders).
- 27% reported a back problem and a further 23% reported arthritis.
- 23% reported ear problems (18% deafness and 9% other ear diseases).
- 18% reported hay fever or allergic rhinitis and a further 14% chronic sinusitis.
- 17% reported hypertension and 11% high cholesterol.
- 15% reported a heart, stroke or vascular disease or other circulatory disease.

- 14% reported anxiety related problems and 13% depressive/mood problems.
- 14% reported allergies.
- 11% reported asthma.
- 8% reported migraine.
- 7% reported diabetes.

Multimorbidity was common in middle-aged adults (45–64 years) in Queensland. In 2014–15<sup>49</sup>:

- One-third (31%) reported one chronic condition, one-third (33%) reported two or more chronic conditions and one-third (36%) reported none.
- The four most prevalent chronic conditions in this age group were diseases of the circulatory system, back problems, arthritis and mental and behavioural disorders and many people experienced these conditions together.
- Of the 307,000 middle-aged adults who reported a circulatory condition, 75% reported a comorbid condition (usually arthritis, back problems and mental health problems).
- Of the 305,000 middle-aged adults who reported back pain, about 67% reported at least one other chronic condition (usually, circulatory conditions or arthritis).
- Of the 264,000 middle-aged adults who reported arthritis, about 72% reported at least one other chronic condition (usually circulatory conditions, back pain or mental health problems).
- Of the 230,000 middle-aged adults who reported mental and behavioural disorders, 78% reported a comorbid condition (usually circulatory conditions arthritis and back problems).
- Of the 85,000 middle-aged adults with diabetes about 89% reported at least one other chronic condition. The most common comorbid conditions of middle-aged adults with diabetes were circulatory conditions, back problems, mental health problems and arthritis.

In 2017, for middle-aged adults aged 45–64 years in Queensland, there were 21,272 notifications for communicable diseases and related conditions.<sup>47</sup> More than half (58%) were for laboratory-confirmed influenza (12,400 notifications). Other leading causes were varicella (chickenpox/shingles) (2484 notifications), campylobacter (1851), chlamydia (STI) (1026), and salmonellosis (788).

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**1 in 4** middle-aged adults have **back problems**.

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### Health service utilisation

For adults aged 45–64 years:

- The average middle-aged Queenslanders made about five visits to a GP in a year—4.8 visits per year for 45–54 year olds and six visits for 55–64 year olds in 2016–17.<sup>48</sup>
- Of the total increase in GP visits in Queensland over the past decade, 22% was due to more frequent visits of middle-aged people (a per capita increase of 0.6 visits for 45–54 year olds and 0.4 for 55–64 year olds).<sup>48</sup>
- Most (80%) middle-aged Australians visiting a GP had at least one diagnosed chronic condition and for this age group, multimorbidity was common—39% of middle-aged patients had three or more diagnosed chronic conditions, 9% had six or more and 1% had 10 or more.<sup>36</sup>
- 24% of middle-aged people in Queensland had been admitted to a hospital in 2015–16 with the proportion increasing by 11% over the past decade.
- There were 646,000 hospitalisations for this age group in 2015–16, 28% of total. The rate increased by 20% over a decade with an annual average increase of about 21,000 admissions per year.
- Admission rates for lifestyle-related chronic conditions such as coronary heart disease and stroke decreased by 14% over the past 10 years, and for chronic conditions of ageing and disability (for example, mental health, musculoskeletal and neurological conditions) there was a 21% increase.
- The leading broad causes of admission to hospital were tests, procedures and investigations (29% of all admissions), digestive diseases (11%) and symptoms and signs (8%).
- One-third (33%) of the 27,463 new cancer cases diagnosed in Queensland in 2014, were in middle-aged people (about 9100 new cases in those aged 45–64 years).<sup>59</sup> The leading cancers diagnosed for females in this age group were breast cancer (37%), melanoma (13%) and colorectal cancer (8%), and for males, prostate cancer (27%), melanoma (15%) and colorectal cancer (11%).

### Achieving a healthy lifestyle

While half of middle-aged people consider they have a very healthy lifestyle, there is substantial opportunity for improvement particularly as they enter the older years and face the challenges of ageing.

For Queensland adults aged 45–64 years:

- 14% smoked daily while 36% were ex-smokers and half (48%) had never smoked (2018).<sup>34</sup>
- 36% were obese by measurement, 36% were overweight and 28% were in the healthy/underweight range (2014–15).<sup>33</sup>

- Many middle-aged adults did not meet the Australian Dietary Guidelines for the five food groups in 2011–12<sup>49</sup> (see also page 65). Of concern is the proportion of total energy derived from unhealthy or discretionary food sources: 36% for those aged 31–50 years and 35% for those aged 51–70 years.<sup>49</sup> This is evident in the high consumption of alcohol and sugary drinks. Males aged 31–50 years consumed about 1600g daily and those aged 51–70 years about 1400g daily. For females, consumption was about two-thirds that of males 1100g and 800g respectively.
- 23% were risky drinkers (lifetime risk), 33% of males, 14% of females (2018).<sup>34</sup>
- 12% had not been active in the past week while 58% were active on most days of the week (2018).<sup>34</sup>
- 18% had undertaken strength and toning exercise on at least two days a week (2014–15).<sup>33</sup>
- 29% had high blood pressure (>140/100 mmHg when measured) (2014–15).<sup>33</sup>

### Environments to support healthy lifestyles<sup>56</sup>

During middle age, the challenges of work schedules, growing and maturing families and engagement in community activity can often lead to limited time and motivation to focus on healthy lifestyle choices. As a result, body weight reaches a peak, physical activity levels are dropping, smoking rates are highest, blood pressure and cholesterol levels are rising steadily and alcohol consumption may be increasing. Chronic health conditions start to emerge and early deaths occasionally occur.

Environments can support middle-aged people to take greater care of their health. For example, in workplaces replacing unhealthy foods with healthier options can help people make better choices at canteens and in meetings. Standing desks are becoming increasingly common and may help people to manage musculoskeletal problems. Environments that allow safe active transport to and from work and other places help people to achieve more movement in what can be long sedentary days. Some workplaces make policy, cultural and physical environmental changes that promote healthy lifestyles, such as offering health checks or healthy lifestyle programs. These can be timely reminders for middle-aged people about their rising chronic disease risk and the need to consider their longer-term health outlook.

## Older people (65 years and older)

### *Burden of disease summary<sup>25</sup>*

The impact of cardiovascular disease becomes more dominant later in life, as does the impact of neurological conditions. Past and current smoking behaviours have a major impact on health and are the leading risk in older people.

**Broad causes:** Cardiovascular disease accounted for 25% of health loss in older Queenslanders, 24% was due to cancer, and 10% to neurological conditions in 2011.

**Specific causes:** Coronary heart disease was the leading specific cause of health loss in older Queenslanders, accounting for 13% of burden, followed by dementia (7%) and COPD (7%) in 2011.

**Risk factors:** Of the health loss in older Queenslanders, 40% could be attributed to the joint effect of 29 selected risk factors in 2011 (page 10). Tobacco use caused 13%, dietary risks combined caused 11% and high blood pressure 9%.

### *Population*

In 2018, 15% of the Queensland population was aged 65 years or older, an estimated 766,000 people and the majority (88%) of these were aged 65 to 84 years. Most Queenslanders are likely to live to 65 years of age (88% of males and 93% of females in 2014–16) and having done so many will live an additional 20 years (19.5 years for males and 22.3 years for females).<sup>31</sup> It was estimated about 1% or 9000 of the older cohort were Indigenous Queenslanders in 2018.<sup>10</sup>

### *Perception of health and assessment of risk*

In 2017, for Queensland adults aged 65 years and older<sup>34</sup>:

- 1 in 4 (26%) reported poor or fair health.
- 1 in 6 (16%) reported reduced capacity to fulfil their usual role on five or more days in a 30-day period, due to ill health.
- 1 in 2 (54%) considered their lifestyle to be very healthy.

### *Leading conditions and comorbidities*

Many older Queenslanders are living with a chronic condition. In 2014–15, of older Queenslanders<sup>33</sup>:

- 93% reported a sight problem (61% long-sighted, 43% short-sighted, 9% cataracts).
- 44% reported arthritis and a further 25% a back problem.
- 41% reported deafness or ear problems.
- 37% reported hypertension and 21% high cholesterol.
- 27% reported heart, stroke or vascular disease.
- 14% reported diabetes.
- 9% reported cancer.

Multimorbidity was common in adults aged 65 years and older in 2014–15<sup>49</sup>:

- More than half (57%) of older Queenslanders reported having two or more chronic conditions while about 1 in 6 (17%) reported none.
- The two most prevalent comorbid conditions were circulatory disease and arthritis and these were most often reported together, with 173,000 older adults reporting both.
- Of the 349,000 older adults with a circulatory condition, about 76% reported at least one other chronic condition.
- Of the 276,000 older adults with arthritis, about 90% reported at least one other chronic condition.
- Of the 90,000 older adults with diabetes, 95% reported at least one other chronic condition. The most common comorbid conditions were circulatory conditions and arthritis.
- Cancer and COPD were less prevalent and occurred less often as comorbid conditions (57,000 and 51,000 adults respectively).

In 2017, for Queenslanders aged 65 years and older, there were 18,308 notifications for communicable diseases and related conditions.<sup>47</sup> Two-thirds (66%) were for laboratory-confirmed influenza (11,995 notifications), and 2142 were varicella (chickenpox/shingles), 1494 campylobacter, 918 nontuberculous mycobacteria, and 670 salmonellosis.

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**45%** of older people had been  
**admitted to a hospital**  
in the previous year.

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### Health service utilisation

For adults aged 65 years and older:

- The average older Queenslanders made at least eight visits to a GP in a year—eight visits per year for 65–74 year olds, 12 visits for 75–84 year olds and 13 for those aged 85 years and older in 2016–17.<sup>48</sup>
- Of the total increase in GP visits in Queensland over the past decade, 44% was due to more frequent visits of older people (a per capita increase of 2.6 visits for 65–74 year olds, 2.3 visits for 75–84 year olds and 4.3 for those aged 85 years and older).<sup>48</sup>
- Almost all (96%) older Australians visiting a GP had one or more diagnosed chronic conditions and for this age group, multimorbidity was almost universal—72% of older patients had three or more diagnosed chronic conditions, 27% had six or more and 4% had 10 or more.<sup>36</sup>
- 45% of older people in Queensland had been admitted to a hospital in 2015–16 (40% of 65–74 year olds, 51% of 75–84 year olds and 58% of those aged 85 years and older) with the proportion increasing by about 10% over the past decade.
- There were 911,000 hospitalisations for this age group in 2015–16, 40% of total. The rate increased by 25% over a decade with an annual average increase of about 43,000 admissions per year.
- Admission rates for lifestyle-related chronic conditions such as coronary heart disease and stroke decreased by 13% over the past 10 years while for chronic conditions of ageing and disability (for example, mental health, musculoskeletal and neurological conditions), there was a 15% increase.
- The leading broad causes of admission to hospital were tests, procedures and investigations (28% of all admissions), circulatory conditions (8.4%), symptoms and signs (8.1%).
- There were on average 107,000 admissions per year for falls in older people in the past five years with a 50% increase in rates over the previous 10 years. Frailty is a recognised aspect of ageing and may contribute to the risk of falls both in the home and in a care facility or hospital.
- More than half (58%) of the 27,463 new cancer cases diagnosed in Queensland in 2014 were in older people (about 16,000 new cases in those aged 65 years and older).<sup>59</sup> Prostate cancer was the leading cancer diagnosed in older males (27%) and for females, breast cancer (23%).
- The risk of a cancer diagnosis by age 75 years was 1 in 3 in 2010–2014 and by age 85 years, 1 in 2.<sup>60</sup>

### Achieving a healthy lifestyle

While older people generally report a healthier lifestyle than younger people, there is substantial opportunity for improvement with potential health benefits and enhanced quality of life.<sup>61</sup> The elevated risk and prevalence of chronic diseases in older people can be attributed in part to unhealthy behaviours and exposures earlier in life. For Queensland adults aged 65 years and older:

- 5% smoked daily while 41% were ex-smokers and half (53%) had never smoked (2018).<sup>34</sup>
- 34% were obese by measurement, 40% were overweight and 27% were in the healthy/underweight range (2014–15).<sup>33</sup>
- Many older people did not meet the Australian Dietary Guidelines for the five food groups in 2011–12 (see also page 65). One-third (32%) of total energy intake was from unhealthy or discretionary food sources.<sup>49</sup> Very few older people (2%) met the requirement for milk, yoghurt, cheese and alternatives. In contrast, two-thirds (65%) met the requirement for grain (cereal) products.
- 15% were risky drinkers (lifetime risk), 25% of older males, 6% of older females (2018).<sup>34</sup>
- 14% of 65–75 year olds had not been active in the past week while 48% were active on most days of the week (2018).<sup>34</sup>
- 12% had undertaken strength and toning exercise on at least two days a week (2014–15)<sup>33</sup>
- 43% had high blood pressure (>140/100 mmHg when measured) (2014–15)<sup>33</sup>

### Environments to support healthy lifestyles<sup>56</sup>

Healthy ageing is about optimising opportunities for good health so that older people can continue to take an active part in society and to enjoy an independent and high quality of life. Health and wellbeing in the later years will be enhanced by lifestyle choices and good foundations established in childhood and throughout life. At all stages of life, being physically active, having a healthy diet and not smoking are the best ways to avoid disease and enjoy the benefits of good health. The social environment also plays a part. Social support and participation, education, lifelong learning and safety all contribute to health and security for older age groups.<sup>62</sup>

Creating age-friendly communities with intergenerational facilities, safe public spaces, accessible footpaths, good signage for way-finding, shaded seating and drinking water, pedestrian crossings and public toilets will encourage older people to stay active, healthy and engaged with their neighbourhoods.

Organised walking or recreation activities suitable for older people, public transport and mobility options that provide access to a range of health services and local amenities such as shops and community organisations will create diverse options for community engagement, mentoring and volunteering and enable older people to remain socially active and valued.

## The health of Indigenous Queenslanders

### *Burden of disease summary*<sup>\*25</sup>

Indigenous Queenslanders experience a disproportionate burden of disease compared with others. In 2011, the burden of disease rate for Indigenous Queenslanders was 2.2 times the non-Indigenous rate.<sup>63</sup> Dying early caused more health loss for Indigenous Queenslanders than living with poor health.

**Broad causes:** The largest cause of disease burden for Indigenous Queenslanders in 2011 was mental and substance use disorders, accounting for 21% of total DALYs.<sup>63</sup> The second largest was injuries which caused 13%. Cardiovascular diseases caused 11%, cancer 9.6% and chronic respiratory problems 7.1%.

**Specific causes:** For Indigenous Australians (data not available for Queensland) coronary heart disease was the leading cause of health loss (7.2% of burden) in 2011, followed by suicide and self-inflicted injuries (4.5%), anxiety disorders (4.4%) and alcohol use disorder (4.2%) in 2011.<sup>63</sup>

**Risk factors:** More than one-third (37%) of health loss in Indigenous Australians (data not available for Queensland) could be explained by the joint effect of risk factors in 2011 (page 11).<sup>63</sup> Tobacco use was a leading cause, individually accounting for 12% of the burden. Dietary risks caused 10%, alcohol 8.3% and high body mass 8.2%.

\* Based on the AIHW burden of disease study

### *Population*

In 2018, it was estimated that about 1 in 20 (4.5%) of the state population was an Indigenous Queenslanders, about 224,000 people (221,000 in 2016).<sup>10</sup>

### *Health conditions and development*

In 2012–13, for Indigenous Queenslanders<sup>64</sup>:

- 33% reported eyesight problems.
- 14% reported asthma.
- 11% reported heart and circulatory problems.
- 11% reported ear or hearing problems.
- 11% reported back pain problems.
- 8.5% reported arthritis.
- 7.7% reported diabetes.

Compared with the non-Indigenous population, and after adjusting for age structure, Indigenous Australians\* were<sup>64,65</sup>:

- 3.3 times more likely to have diabetes
  - 40% less likely to be undiagnosed for diabetes
  - 40% less likely to be managing their diabetes
- about twice as likely to have asthma
- more than twice as likely to have signs of chronic kidney disease
- 31% more likely to have ear disease including deafness.

\* Australian data used as comparative data for Queensland are currently limited.

In 2017, for Indigenous Queenslanders, there were 8888 notifications for communicable diseases and related conditions.<sup>47</sup> About one-third (37%, 3251) were for chlamydia (STI). The widespread influenza season in 2017 affected Indigenous Queenslanders across all ages, accounting for 29% or 2604 notifications. There were 305 notifications for mumps in 2017.

The leading causes of notifiable conditions by age group:

- For children aged 0 to 14 years there were 1701 notifications—more than half were laboratory-confirmed influenza (57%, 968 notifications) with 130 for rotavirus, 123 salmonellosis, 104 pertussis (whooping cough), and 78 mumps.
- For those aged 15–29 years there were 4596 notifications—60% were chlamydia (STI) (2744 notifications), 684 were gonorrhoea (STI), 511 for laboratory-confirmed influenza, 220 infectious syphilis and 117 mumps.
- For those aged 30–44 years there were 1197 notifications—one-third (32%) was chlamydia (STI), 378 notifications, 294 were laboratory confirmed influenza, 164 gonorrhoea (STI), 107 infectious syphilis and 96 hepatitis C.
- For those aged 45–64 years there were 839 notifications—and 61% were laboratory-confirmed influenza (513 notifications) with 50 for varicella (chickenpox/shingles), 47 chlamydia (STI), 42 hepatitis C and 38 latent syphilis.
- For those aged 65 years and older there were 365 notifications and 69% were laboratory-confirmed influenza (250 notifications), 17 varicella (chickenpox/shingles), 15 campylobacter, and 15 latent syphilis.



There has been an ongoing outbreak of infectious syphilis in north Queensland since 2011. It is currently affecting the four HHSs of Cairns and Hinterland, North West, Torres and Cape, and Townsville. Between 1 January 2011 and 31 March 2018, there were 1109 notifications of infectious syphilis:

- 99% were for Indigenous Queenslanders (1093 notifications, 16 non-Indigenous).
- 52% were females, 48% males.
- 67% were aged 15–29 years, and a further 19% were aged 30–39 years.
- Eight notifications in Indigenous Queenslanders were of congenital syphilis and six resulted in death.

The Queensland Government has committed more than \$15.7 million over three years to implement the North Queensland Aboriginal and Torres Strait Islander Sexually Transmissible Infections Action Plan 2016–2021.<sup>66</sup> Implementation of the action plan is being led by the affected HHSs through the establishment of outbreak response teams. These investments have created a number of key clinical, public health and Indigenous health worker positions.

Queensland Health is working with key health stakeholders to embed the response across both the primary and acute settings. This includes Aboriginal and Torres Strait Islander Community Controlled Health Organisations, who are well placed to provide screening and treatment in a primary care setting. Additional investment of more than \$1.4 million is being made across these organisations in north Queensland to support the increased effort to address the outbreak. These investments support increased local and regional coordination, testing, treatment, contact tracing, health promotion and community engagement activities, clinician education, enhanced data collection and surveillance of syphilis cases.

The syphilis outbreak currently impacting Aboriginal and Torres Strait Islander peoples in northern Australia is attributable in part, to limited access to primary healthcare in many communities and as a consequence additional public health services have been required to fill the gap.

### Health service utilisation

Of Indigenous Queenslanders:

- 19% had consulted a GP in the previous two weeks in 2012–13.<sup>64</sup>
- 16% had consulted another health professional in the previous two weeks in 2012–13.<sup>64</sup>
- 17% had been admitted to a hospital in the previous year in 2012–13.<sup>64</sup>
- There were 116,000 hospitalisations for Indigenous Queenslanders in 2015–16, 5% of total (see also page 44).
- The crude hospitalisation rate for Indigenous Queenslanders increased by 51% over a decade with an annual average increase of about 5500 admissions per year.
- The leading broad causes of admission to hospital were tests, procedures and investigations (40% of all admissions), injury (8%), symptoms and signs (7%) and pregnancy (7%).
- 2.8% of the 27,463 new cancer cases diagnosed in Queensland in 2014 were for Indigenous Queenslanders (782 new cases).<sup>59</sup> Two-thirds (67%) occurred in those aged 45–74 years. For females the most frequently diagnosed cancers were breast cancer (22%) and lung cancer (14%) and for males, prostate cancer (19%) and lung cancer (17%).

### Achieving a healthy lifestyle

In 2012–13, of Indigenous Queenslanders aged 15 years and older<sup>64</sup>:

- 66% were overweight or obese by measurement (29% were overweight and 37% were obese).
- 42% were current daily smokers.
- 18% were drinking alcohol at lifetime risky levels.
- 58% did not meet the recommendations for daily fruit consumption.
- 95% did not meet the recommendations for daily vegetable consumption.
- 20% had high blood pressure.
- 65% were dyslipidaemic, that is, have high cholesterol or being treated for it.

Indigenous Australians consume too little of the five major food groups and too much sugar and other discretionary foods.<sup>67</sup> More than six serves of discretionary foods are being consumed daily, where the recommendation is for small amounts, occasionally. For Indigenous Australians (19 years and older) in 2012–13, 42% of energy intake was from discretionary or unhealthy food sources. The energy intake of Indigenous Australians aged two years and older was 13% more likely to be derived from discretionary food sources.

For Indigenous Queenslander children<sup>64</sup>:

- 51% met the recommendation to be active for at least an hour every day.
- 91% of one year olds were fully immunised in 2017, 89% of two year olds and 97% of five year olds.

For Indigenous Queenslanders, compared with non-Indigenous (and adjusting for age)<sup>64,65</sup>:

- Adults were 2.5 times more likely to smoke daily.
- Teenagers aged 15–17 years were five times more likely to smoke daily (Indigenous Australians).
- Adult risky drinking (lifetime or single occasion risky drinking) was similar.
- Adults were 39% more likely to be obese but overweight prevalence was similar.
- Adults were 12% less likely to eat recommended serves of fruit.
- The prevalence of high blood pressure in Indigenous Australian adults was 17% higher than the non-Indigenous rate, and 13% higher for dyslipidaemia.

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Indigenous Queenslander adults were

**2.5 times**  
**more likely to**  
**smoke daily**  
than non-Indigenous adults.

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### *Environments to support healthy lifestyles<sup>56</sup>*

Environments that support health for Indigenous Queenslanders are not confined to the physical characteristics of the places where people live. The historical and cultural circumstances in which Aboriginal and Torres Strait Islander people exist in contemporary Australia significantly and adversely affects their health.

Their relationship to ancestral lands, seas, and waterways are fundamentally important for cultural and physical survival, and for wellbeing. These relationships are key enablers of health. Furthermore, the history of settlement in Australia has impacted on Indigenous Australians in various ways, often involving some degree of dispossession, dislocation and cultural discrimination. The consequences of colonisation have had long-term impacts—evident today in significant health disparities, conditions of daily life and more broadly the deeply rooted social determinants of health.

Addressing these health disparities will require a renewed appreciation of the underlying causes that hinder the attainment of equitable health for Aboriginal and Torres Strait Islander people. Change may mean more than increasing investment and include cultural and system level redesign.

In Queensland, Apunipima Cape York Health Council has been working with Aboriginal and Torres Strait Islander Shire Councils to create healthy places in communities to reduce sugary drink consumption, increase water consumption and increase smoke-free spaces.

The project focusses on engagement with mayors, councillors, traditional owners and elders, community organisations and community members to develop appropriate local strategies for implementation. Strategies include installation of ‘No Smoking’ signs, the development and/or strengthening of workplace smoke-free policies and the installation of water bubblers.

Community stores are also making changes to support healthy drink choices such as placing water-only fridges near the store’s entrance and selling water at cost price.

The early success of the Apunipima project has been built on respect for local leadership and by engaging and working alongside the Aboriginal and Torres Strait Islander communities. As a result, there has been an increase in supportive environments in remote settings, and an increase in awareness of health issues and readiness to take action.



## Cape York communities

*We all live here and it doesn't matter if you're old or young, or a teenager. I think everyone's got their right to say their piece of mind.*

Health and wellbeing in Cape York communities is being supported by an integrated approach to healthy places, through strong partnerships between community members, Apunipima Cape York Health Council and Aboriginal Shire Councils.

Overweight and obesity, and poor dental health are being addressed by initiatives to increase access to drinking water and decrease the availability of sugary drinks.

Tobacco smoking is being addressed by creating and maintaining smoke-free spaces, events and policies.

Local community members and organisations are actively involved in the planning and implementation of these initiatives. Community-led engagement and action has been key to facilitating change and encouraging healthy lifestyle choices.





## Selected highlights from the regions

### Maternal smoking

The rate of maternal smoking is reducing in Queensland with greater decline among non-Indigenous women than Indigenous Queensland women (48% compared with 21% over a decade).

For non-Indigenous teenage mothers, the rate of decline was lower than for older mothers (38% decrease over a decade compared to 47%), whereas for Indigenous Queensland mothers there was no difference (Table 6).

There has been widespread decline in smoking during pregnancy for all women in Cairns and Hinterland, Darling Downs and Townsville HHSs, and substantial decline in Central Queensland, Metro North and Sunshine Coast (Table 6).

### Admissions for dental decay

There were 4146 hospital admissions per year for dental decay in children aged 0–9 years (2013–14 to 2015–16) (Table 7). About 1 in 8 admissions was for Indigenous Queensland children.

Hospitalisation rates are decreasing for non-Indigenous children, with change evident in eight of 15 HHSs.

For Indigenous Queensland children, over the past 10 years the hospitalisation rate for dental decay increased by 32%. There was an increase of 278% in North West HHS and 207% in South West, but no change in any other HHS.

### Adult perception of health

About 1 in 7 (16%) adult Queenslanders reported poor health in 2017 (Table 8). The highest prevalence was in Central West and Wide Bay and lowest in Gold Coast. The age profile of an HHS may help to explain differences as older people are more likely to report poor or fair health than younger people.

In 2017, Wide Bay and Sunshine Coast HHSs had the highest proportion of adults reporting five or more days in a 30-day period out of their usual role due to ill health. Torres and Cape, Metro South and North West were the lowest.

Almost half the adult population in Sunshine Coast HHS (49%) reported having a very healthy lifestyle, significantly higher than North West (37%) (Table 8). The age profile of the HHS may help to explain this difference as older people generally report healthier lifestyles than do younger people.

## Data sources and methods: lifetime health

Multiple data sources and definitions were used in this section. For detail, refer to citations, definitions (page 115) and the companion Methods for reporting health status 2018 report.<sup>1</sup> Perinatal data for 2016 is subject to revision.

**Table 6: Trends in maternal smoking, by Indigenous status, age group and HHS, Queensland, 2006–2017<sup>38</sup>**

	Indigenous		Non-Indigenous	
	< 20 years	20+ years	< 20 years	20+ years
Cairns and Hinterland	-29%	-19%	-40%	-41%
Central Queensland	-29%	ns	-42%	-49%
Central West	ns	ns	ns	-60%
Darling Downs	-35%	-24%	-40%	-44%
Gold Coast	ns	ns	-43%	-62%
Mackay	ns	ns	-35%	-45%
Metro North	ns	-20%	-21%	-39%
Metro South	ns	ns	-44%	-51%
North West	ns	ns	ns	-62%
South West	ns	ns	ns	-55%
Sunshine Coast	-50%	ns	-20%	-38%
Torres and Cape	ns	ns	ns	-49%
Townsville	-29%	-42%	-71%	-65%
West Moreton	ns	ns	-32%	-41%
Wide Bay	ns	ns	-43%	-32%
Queensland	-24%	-21%	-38%	-47%

Total % change between 2006 and 2017

ns no significant change

**Table 7: Hospitalisations for dental decay, by HHS, children aged 0–9 years, Queensland**

HHS	Indigenous		Non-Indigenous	
	Admissions*	Trend**	Admissions*	Trend**
Cairns and Hinterland	40	ns	125	-59%
Central Queensland	36	ns	249	-31%
Central West	4	ns	19	ns
Darling Downs	46	ns	367	ns
Gold Coast	8	ns	484	-17%
Mackay	9	ns	132	-50%
Metro North	28	ns	753	ns
Metro South	44	ns	688	-51%
North West	96	278%	143	ns
South West	19	207%	54	ns
Sunshine Coast	16	ns	343	-29%
Torres and Cape	108	ns	122	ns
Townsville	35	ns	149	-44%
West Moreton	23	ns	275	-42%
Wide Bay	32	ns	243	ns
Queensland	544	32%	4,146	-19%

\* average per year (2013–2014 to 2015–16)

ns no significant change

\*\* Total % change in crude rates over 10 years: 2005–06 to 2015–16

**Table 8: Perceptions of health and lifestyles, by HHS, adults, Queensland, 2017<sup>34</sup>**

	% self reported fair or poor health	% reporting 5 or more days out of role	% reporting very healthy lifestyles
Cairns and Hinterland	16 (13-20)	15 (12-18)	45 (41-49)
Central Queensland	16 (14-19)	13 (11-16)	43 (40-47)
Central West	26 (19-35)	17 (11-24)	42 (34-51)
Darling Downs	17 (15-20)	15 (13-18)	42 (38-46)
Gold Coast	12 (9-15)	14 (11-18)	47 (43-52)
Mackay	18 (15-22)	13 (10-16)	43 (39-48)
Metro North	15 (13-18)	17 (14-20)	42 (38-46)
Metro South	14 (12-16)	11 (9-13)	43 (39-46)
North West	17 (13-23)	11 (8-17)	37 (31-45)
South West	20 (16-25)	15 (12-20)	44 (38-50)
Sunshine Coast	15 (13-18)	18 (14-21)	49 (45-54)
Torres and Cape	21 (11-36)	10 (5-20)	45 (32-59)
Townsville	17 (14-20)	15 (12-19)	44 (39-49)
West Moreton	21 (17-25)	16 (13-19)	41 (37-46)
Wide Bay	23 (20-26)	19 (16-23)	42 (38-46)
Queensland	16 (15-16)	15 (14-16)	44 (42-45)



# Death and dying



- In 2016, there were 29,690 deaths in Queensland and 90% occurred in people aged 50 years or older.
- Cancer and cardiovascular disease were the leading broad causes of death, accounting for 6 in 10 deaths.
- All-cause death rates are decreasing. The decrease is widespread but more pronounced in remote and very remote areas.
- Lower death rates are leading to longer lives. In 2016, the average age of death for Queensland males was 77 years and for females 84 years.
- Declining death rates for lifestyle-related conditions accounted for 90% of the decrease in all-cause deaths, demonstrating the benefits of investment in healthy lifestyles, earlier diagnosis, more effective treatments and screening.
- The risk of a Queenslanders dying prematurely of a lifestyle-related condition has reduced by about one-third over the past decade.
- Lifestyle-related inequalities are emerging, particularly affecting socioeconomically disadvantaged populations and Indigenous Queenslanders. More effort is needed in promoting and adopting healthy lifestyles among these populations, particularly addressing higher rates of smoking.
- While there is much variability in death burden and rate change among the HHSs, mostly the outcomes are relatively good or showing improvement. For example, among the HHSs, the northern and western HHSs have had very strong declines in all-cause death rates, premature death rates and deaths for lifestyle-related conditions (although coming off a high base). All-cause death rate decline was evident in every HHS as was the decrease in lifestyle related conditions.
- The suicide rate increased statewide by 20% over a decade. There was no increase in the Indigenous Queenslanders suicide rate. The Queensland rate was 19% higher than the national rate and 22% higher for childhood suicides.
- The Indigenous Queenslanders death rate was 49% higher than the non-Indigenous rate. For diabetes, it was 4.8 times higher and for smoking related conditions (COPD and lung cancer) it was about double. These are critical areas for prevention.
- Queensland death rates were mostly higher than national rates and for melanoma and prostate cancer they were highest of the jurisdictions.

## Causes of death

In 2016, there were 29,690 deaths of Queenslanders, 53% were males (15,855) (Table 9).

Cancer (malignant and benign neoplasms—98% were malignant cancers) was the leading broad cause of death, accounting for 31% or 9227 deaths, followed by cardiovascular disease (28% or 8310 deaths), together accounting for 6 in 10 deaths in 2016.<sup>68</sup>

The five leading specific causes of death were coronary heart disease, stroke, lung cancer, dementia and COPD (Table 9). There was a little variation by sex with prostate cancer the fifth largest cause for males, and breast cancer for females.

Leading causes of death vary substantially over the age range, as does the number of deaths (Table 10).<sup>68</sup> Infant deaths were largely related to complications of pregnancy, congenital malformations and the impact of prematurity and poor growth. Of the relatively few deaths in children, about one-tenth was due to unknown or ill-defined causes. Among young people, intentional self-harm (suicide) and injuries were the dominant causes. In the middle to older years, cancers become more prominent and in older age groups, cardiovascular disease and cancer are leading causes closely followed by COPD and dementia.

## Age at death

Almost all deaths occur in older people, and more than 90% were for those aged 50 years or older (Figure 3). In 2016<sup>68</sup>:

- 0.8% occurred in the first year of life (248 deaths).
- 2.6% occurred in children and young people aged 1–34 years (779 deaths).
- 4.6% occurred in 35–49 year olds (1353 deaths).
- 29% occurred in 50–74 year olds (8746 deaths).
- 25% occurred in 75–84 year olds (7500 deaths).
- 37% occurred in people aged 85 years and older (11,064 deaths).

A death before the age of 75 is defined as premature. In 2016, about one-third of all deaths occurred in people aged 0–74 years (11,126 deaths).<sup>68</sup> Males were more likely to die prematurely than females (44% compared with 30%). The leading causes of premature death were cancer (about 40% of premature deaths), cardiovascular disease (17%) and injuries (13%).

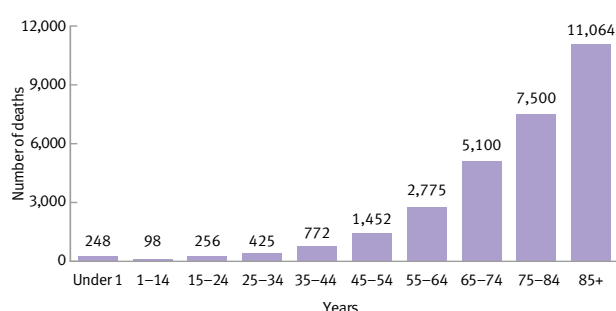
The median age of death for all Queenslanders was 80 years in 2015, older for females (84 years) than males (77 years).<sup>3</sup> The age of death varied substantially by cause—from a median of 53 years for injury, to 85 years or older for cardiovascular disease, musculoskeletal and genitourinary conditions and dementia. For malignant cancers, the median age of death was 74 years.

**Table 9: Leading causes of death, by sex, Queensland, 2016<sup>68</sup>**

Rank	Persons		Males		Females	
	Cause	Deaths	Cause	Deaths	Cause	Deaths
1	Coronary heart disease	3,809	Coronary heart disease	2,154	Coronary heart disease	1,655
2	Stroke	2,066	Lung cancer	1,100	Stroke	1,205
3	Lung cancer	1,741	Stroke	861	Dementia	914
4	Dementia	1,417	COPD	812	Lung cancer	641
5	COPD	1,372	Prostate cancer	687	Breast cancer	560
6	Colorectal cancer	882	Suicide	525	COPD	560
7	Diabetes	842	Dementia	503	Alzheimer disease	391
8	Prostate cancer	687	Colorectal cancer	495	Colorectal cancer	387
9	Suicide	673	Diabetes	474	Diabetes	368
10	Alzheimer disease	602	Pancreatic cancer	285	Influenza and pneumonia	284
11	Breast cancer	566	Influenza and pneumonia	213	Pancreatic cancer	256
12	Pancreatic cancer	541	Alzheimer disease	211	Suicide	148
13	Influenza and pneumonia	497				
	<b>All causes</b>	<b>29,690</b>	<b>All causes</b>	<b>15,855</b>	<b>All causes</b>	<b>13,835</b>

Table 10: Leading causes of death, by age, Queensland, 2016<sup>68</sup>

<b>Under 1 year (total)</b>	<b>248</b>	<b>1–14 years (total)</b>	<b>98</b>
Complications of pregnancy and delivery	66	Ill-defined and unknown causes	11
Prematurity and poor growth	33	Leukemia and similar cancers	9
Ill-defined and unknown causes	23	Cerebral palsy and other syndromes	8
Congenital malformations – circulatory	21	Accidental drowning	8
Congenital malformations – musculoskeletal	13	Brain and similar cancers	6
<b>15–34 years (total)</b>	<b>681</b>	<b>35–64 years (total)</b>	<b>4,999</b>
Intentional self-harm	232	Digestive cancers	638
Car occupant in transport accident	60	Coronary heart disease	496
Accidental poisoning	57	Respiratory cancers	419
Ill-defined and unknown causes	25	Intentional self-harm	339
Accidental drowning and submersion	17	Breast cancer	233
<b>65–84 years (total)</b>	<b>12,600</b>	<b>85+ years (total)</b>	<b>11,064</b>
Digestive cancers	1,401	Coronary heart disease	1,893
Respiratory cancers	1,098	Dementia	1,167
Coronary heart disease	1,407	Stroke	1,116
COPD	841	Other forms of heart disease	806
Stroke	777	COPD	549

Figure 3: Number of deaths, by age, Queensland, 2016<sup>68</sup>Table 11: Leading causes of death, Indigenous Queenslanders, 2016<sup>68</sup>

Cause	no.	%
<b>All causes</b>	<b>884</b>	<b>100</b>
Coronary heart disease	124	14.0
Diabetes	74	8.4
Lung cancer	67	7.6
COPD	56	6.3
Suicide	52	5.9

## Deaths of Indigenous Queenslanders

There were 884 deaths of Indigenous Queenslanders in 2016 (Table 11).<sup>68</sup> The death rate was 49% higher than the non-Indigenous rate after accounting for differences in age between the two populations.

The leading cause of Indigenous Queensland death in 2016 was coronary heart disease, followed by diabetes, lung cancer, COPD and suicide (Table 11).<sup>68</sup> Averaged over a three-year period (2013–2015), the Indigenous Queensland death rate for diabetes was 4.8 times the non-Indigenous rate, and for the two conditions most associated with smoking (lung cancer and COPD) it was almost double (90% higher) the non-Indigenous rate. The Indigenous Queensland suicide rate was about 60% higher than the non-Indigenous rate in 2015.<sup>3</sup>

Over the past decade (2005 to 2015) the all-cause death rate for Indigenous Queenslanders decreased by 11%, a smaller decrease than the non-Indigenous decline of 17%.<sup>3</sup> The diabetes death rate decreased by 39% over 10 years, there being no change in the non-Indigenous

rate. The suicide rate did not change, where the non-Indigenous rate increased by 20%. For stroke, there was a 39% decline in the non-Indigenous rate with no change in the rate for Indigenous Queenslanders. For many other conditions, small numbers of deaths annually for Indigenous Queenslanders limited trend assessment. This included causes such as lung cancer, COPD, colorectal cancer, pneumonia and influenza, and road transport accidents. Furthermore, there was no change in the rate of early deaths (0–49 years) for Indigenous Queenslanders over the past decade where the non-Indigenous rate decreased by 16%.

Indigenous Queenslanders were more likely to die at a younger age.<sup>3</sup> There was a 21-year difference in median age of death between Indigenous Queenslanders and non-Indigenous (59 years compared to 80 years in the three-year period 2013–2015) and this was similar for males and females (56 years and 77 years for males respectively, 62 years and 84 years for females).

## Major trends

The death rate for all causes decreased by 15% over the decade up to 2015 (Figure 4, Table 12) with decline evident for males (17%) and females (13%).<sup>3</sup>

The **risk of dying prematurely** from a **lifestyle related chronic disease** has **decreased by**

**29%** over the past decade.

The greatest decrease in rates was for deaths from pneumonia and influenza, followed by coronary heart disease and stroke (Figure 4). Decline was evident for many major causes including lung cancer (males only), female breast cancer and colorectal cancer. There was no change in death rates for asthma, diabetes or melanoma.

The World Health Organization set a voluntary global target of a 25% relative reduction in risk of premature death from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases between 2010 and 2025.<sup>69</sup> Queensland is on track to achieve this target with a 29% reduction in risk of dying prematurely from a lifestyle related chronic disease over the decade up to 2015 (30% reduction for males, 27% for females) (Figure 4). This is evidence of the positive impact of reduced risk through healthier lifestyles (smoking reduction and improved physical activity), better monitoring and management of metabolic risk factors including blood pressure, screening, earlier diagnosis, and more effective treatments.

Over the past decade, there was a 20% increase in deaths due to suicide (36% increase for females, 17% increase for males) (Figure 4).

There was an increase in the death rate for COPD, but this was entirely due to female increase there being no change for males. It is likely the increase reflects the later uptake of smoking among women, and the subsequent lag in quitting.

## Lifestyle related differences in death outcomes

The group of conditions most sensitive to lifestyle improvement are also some of the leading causes of death: coronary heart disease, stroke, lung cancer, COPD, breast cancer, colorectal cancer and diabetes. The death rate for these conditions has decreased as noted above, however, there is substantial variation across population groups<sup>3</sup>:

- **Socioeconomic:** Rates of death due to lifestyle related chronic conditions in disadvantaged areas were 50% higher than those in advantaged areas in 2015. Furthermore, the gap is widening because in disadvantaged areas there has been no change in death rates for these conditions whereas for advantaged areas there was a 20% drop between 2009 and 2015. Considering smoking related conditions specifically, decline was evident in death rates for lung cancer in all areas except the most disadvantaged. For COPD, the death rate increased by 39% over 10 years in the most disadvantaged areas, while there was no change in rates in all other areas.
- **Remoteness:** Rates of death due to lifestyle-related chronic conditions in remote and very remote areas were 33% higher than in major cities in 2015. Six years ago (in 2011) they were 80% higher. The narrowing of the gap is a result of rapid decline in death rates for these conditions in remote and very remote areas (halving between 2009 and 2015), whereas in major cities there was a modest decrease of 21%.
- **Indigenous Queenslanders:** Rates of death due to lifestyle related chronic conditions for Indigenous Queenslanders were about 70% higher than the non-Indigenous rates in 2015. Over the past decade there was a 31% decrease in non-Indigenous rates contrasting with a 22% decrease for Indigenous Queenslanders.

Figure 4: Death trends (total % change) for selected leading causes, by sex, Queensland, 2005–2015<sup>3</sup>





Overall, this data shows there is opportunity to improve health outcomes in socioeconomically disadvantaged areas and among Indigenous Queenslanders through a stronger focus on prevention. It is evident that substantial benefit has been generated from preventive action in remote and very remote areas probably largely associated with gains in Torres and Cape, North West and South West HHSs.

### Selected highlights from the regions

The HHSs have differing death burden and trends and this section profiles HHSs based on leading causes and conditions (Table 12).<sup>3</sup>

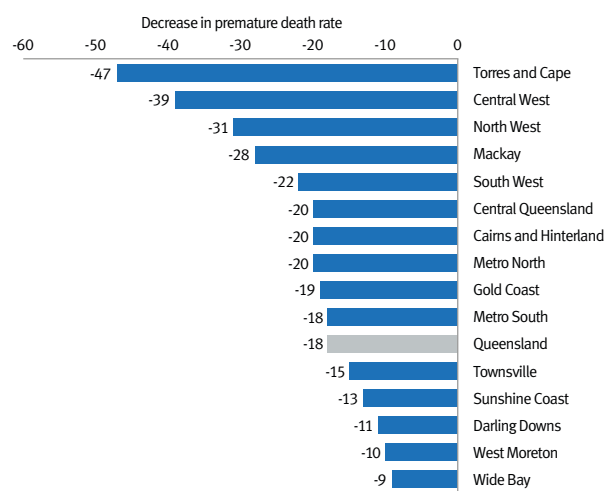
- The median age of death varied by 21 years between the HHSs (averaged over the three-year period 2013–2015 to minimise volatility in data). The youngest median age of death was in Torres and Cape (61 years) and the oldest in Metro North and Sunshine Coast (82 years).
- For Indigenous Queenslanders, there was a 15-year difference between highest and lowest age of death (highest was in Central West at 69 years and lowest in West Moreton and North West at 54 years).
- For non-Indigenous Queenslanders, there was also a 15-year difference between highest and lowest (highest was in Sunshine Coast and Metro North at 82 years and lowest in Torres and Cape at 67 years).
- The biggest difference within an HHS between non-Indigenous and Indigenous Queenslanders was the 23-year difference evident in West Moreton (77 years compared to 54 years), Metro North (82 years compared to 59 years) and Sunshine Coast (82 years compared to 59 years).

Death rates due to all causes were higher in eight HHSs and lower in two. Highest all-cause death rates (30–40% higher than the state average) were in two remote HHSs with high Indigenous Queensland populations (Torres and Cape and North West). The rates in Sunshine Coast and Gold Coast were 8% lower than the state average.

Over the past 10 years, all-cause death rates have decreased across all HHSs, with the greatest decrease in the northern and western HHSs of Central West, Torres and Cape, North West and South West (Table 12). The smallest gains were in Wide Bay and Darling Downs. There was also a widespread decrease in premature death rates (Figure 5).

Death rates for seven lifestyle related conditions varied. Rates were higher than the state average in North West, Townsville, Darling Downs, West Moreton, Wide Bay and Metro South, and lower in Sunshine Coast and Gold Coast (Table 12). Improvement in lifestyles will generate benefits across the state particularly in the six HHSs with higher rates. A downward trend in rates for these conditions across all HHSs demonstrates some improvements are being achieved but there remains substantial potential for preventive action to improve outcomes particularly in Wide Bay, Metro South and Darling Downs where rate decline was smaller.

**Figure 5: 10-year trends in premature deaths, by HHS, Queensland, 2005–2015<sup>3</sup>**



**Table 12: Relative burden in leading causes of death and 10-year trends, by HHS, Queensland<sup>3</sup>**

HHS	Relative to Queensland (2013–2015)*	10-year trends (2005–2015)
<b>Cairns and Hinterland</b>	7% higher for all causes 21% higher for Indigenous all causes** 35% higher for COPD 12% lower for CHD 22% higher for all injuries 31% higher for suicide	18% decrease for all causes 32% decrease for 7 lifestyle related conditions 50% decrease for CHD 40% decrease for stroke 44% decrease for colorectal cancer 29% decrease for pneumonia and influenza
<b>Central Queensland</b>	20% higher for COPD 30% higher for diabetes 67% higher for road traffic accidents	21% decrease for all causes 33% decrease for 7 lifestyle related conditions 53% decrease for CHD 38% decrease for stroke 43% decrease for breast cancer
<b>Central West</b>	65% higher for CHD 97% higher for all injuries	39% decrease for all causes 35% decrease for 7 lifestyle related conditions 35% decrease for CHD
<b>Darling Downs</b>	8% higher for all causes 10% higher for 7 lifestyle related conditions 15% higher for CHD 29% higher for diabetes 2.3 times higher for road transport accidents 19% higher for stroke	11% decrease for all causes 26% decrease for 7 lifestyle related conditions 42% decrease for CHD 30% decrease for stroke
<b>Gold Coast</b>	8% lower for all causes 42% lower for Indigenous all causes** 10% lower for 7 lifestyle related conditions 11% lower for CHD 17% lower for COPD 23% lower for diabetes 31% lower for road transport accidents 11% lower for stroke	15% decrease for all causes 31% decrease for 7 lifestyle related conditions 41% decrease for CHD 48% decrease for stroke 15% decrease for lung cancer
<b>Mackay</b>	86% higher for pneumonia and influenza	26% decrease for all causes 39% decrease for 7 lifestyle related conditions 53% decrease for CHD 34% decrease for stroke
<b>Metro North</b>	3% lower for all causes 5% lower for 7 lifestyle related conditions 14% lower for COPD 8% lower for CHD 45% lower for road transport accidents 15% lower for suicide 16% lower for all injuries	16% decrease for all causes 31% decrease for 7 lifestyle related conditions 45% decrease for CHD 41% decrease for stroke 17% decrease for lung cancer 35% decrease for melanoma 68% decrease for pneumonia and influenza 52% decrease for road transport accidents 33% increase for suicide
<b>Metro South</b>	6% higher for 7 lifestyle related conditions 13% higher for CHD 37% lower for road transport accidents 16% lower for suicide 14% lower for all injuries	10% decrease for all causes 24% decrease for 7 lifestyle related conditions 37% decrease for CHD 35% decrease for stroke 12% decrease for lung cancer 62% decrease for road transport accidents 20% increase for suicide

HHS	Relative to Queensland (2013–2015)*	10-year trends (2005–2015)
North West	41% higher for all causes 65% higher for Indigenous all causes** 43% higher for 7 lifestyle related conditions 54% higher for CHD 3.4 times higher for diabetes 63% higher for all injuries	30% decrease for all causes 44% decrease for 7 lifestyle related conditions
South West	2 times higher for COPD	27% decrease for all causes 42% decrease for 7 lifestyle related conditions
Sunshine Coast	8% lower for all causes 15% lower for 7 lifestyle related conditions 22% lower for CHD 37% lower for diabetes 38% lower for pneumonia and influenza	11% decrease for all causes 28% decrease for 7 lifestyle related conditions 41% decrease for CHD 44% decrease for stroke 28% decrease for diabetes 55% decrease for pneumonia and influenza
Torres and Cape	32% higher for all causes 41% higher for 7 lifestyle related conditions 5.8 times higher for diabetes	30% decrease for all causes 41% decrease for 7 lifestyle related conditions
Townsville	30% higher for Indigenous all causes** 6% higher for 7 lifestyle related conditions 19% higher for all injuries	19% decrease for all causes 32% decrease for 7 lifestyle related conditions 44% decrease for CHD 37% decrease for stroke 21% decrease for lung cancer 31% decrease for colorectal cancer 34% decrease for prostate cancer
West Moreton	7% higher for all causes 11% higher for 7 lifestyle related conditions 30% higher for COPD 12% higher for coronary heart disease	14% decrease for all causes 30% decrease for 7 lifestyle related conditions 48% decrease for CHD 40% decrease for stroke 19% decrease for lung cancer 34% increase for COPD 40% increase for suicide
Wide Bay	7% higher for all causes 39% lower for Indigenous all causes** 7% higher for 7 lifestyle related conditions 10% higher for all malignant cancers 25% higher for COPD 68% higher for road transport accidents 18% higher for all injuries	11% decrease for all causes 23% decrease for 7 lifestyle related conditions 42% decrease for CHD 26% decrease for colorectal cancer 52% decrease for pneumonia and influenza 39% increase for COPD
Queensland		15% decrease for all causes 29% decrease for 7 lifestyle related conditions 43% decrease for CHD 39% decrease for stroke 13% decrease for lung cancer 14% decrease for female breast cancer 17% decrease for colorectal cancer 13% decrease for prostate cancer 46% decrease for pneumonia and influenza 48% decrease for road transport accidents 20% increase for suicide 13% increase for COPD

\* Based on age standardised rates averaged over three years (2013–2015) \*\* Compared to Indigenous state rate

CHD Coronary heart disease

COPD Chronic Obstructive Pulmonary Disease

## National and international comparisons

Queensland is a middle-ranking state among the Australian jurisdictions for death outcomes, and rates are mostly higher than national (Table 13)<sup>68,70</sup>:

- The infant mortality rate in Queensland was 29% higher than the national rate in 2016, and over the previous decade 26% higher on average.
- Cardiovascular disease death rates are higher than national and among the highest of the jurisdictions.
- The all-cancer death rate in Queensland was similar to national although for melanoma and prostate cancer, Queensland was higher than national and highest of the jurisdictions.
- For falls, the Queensland death rate was 27% lower than national, and second lowest among the jurisdictions.

Australia generally performs well internationally for death outcomes (Table 13). For example, in 2012, among 35 OECD countries, Australia was<sup>71</sup>:

- in the top 10 for all-cause deaths, cervical cancer, lung cancer, breast cancer and stroke
- middle ranking for coronary heart disease, prostate cancer, diabetes, suicide, transport injury, COPD and falls
- in the bottom 10 countries for melanoma.

There are limitations in international comparisons that have been described elsewhere<sup>72</sup>, although among OECD countries these limitations rarely prevent comparability.

**Table 13: Death related health outcomes, interstate, national and international comparisons<sup>68,71</sup>**

Death indicator (rate*)	Queensland compared to national (2016)	Ranking (1=best)	
		Queensland compared to other jurisdictions 2016	Australia compared to OECD 2012
Median age of death	1.4 years earlier	7 of 8	
Infant mortality	29% higher	6 of 8	14 of 35
Indigenous infant mortality	2% higher	3 of 5	
All causes (standardised)	Similar	4 of 8	2 of 35
Cardiovascular disease	3% higher	6 of 8	
– Coronary heart disease	8% higher	7 of 8	17 of 35
– Stroke	8% higher	7 of 8	8 of 35
All cancers	4% higher	7 of 8	10 of 35
– Lung cancer	6% higher	7 of 8	9 of 35
– Melanoma	29% higher	7 of 7	34 of 35
– Breast cancer	4% lower	3 of 7	8 of 35
– Prostate cancer	13% higher	7 of 7	19 of 35
– Colorectal cancer	8% higher	6 of 7	8 of 35
– Cervical cancer	10% higher	4 of 5	5 of 35
Diabetes	6% lower	3 of 8	18 of 35
COPD	Similar	5 of 8	21 of 35
Transport injury	5% higher	4 of 7	21 of 35
Falls	27% lower	2 of 7	22 of 35
Suicide	19% higher	5 of 8	17 of 35
Childhood suicide (5–17 years)	22% higher	5 of 8	

\* Age standardised rates were used for comparison where available

## Data sources and methods: deaths

In this chapter, deaths were reported from two sources:

- ABS Cause of death file: based on year of registration.<sup>68</sup> 2016 deaths are subject to revision.
- Queensland Register of Births, Deaths and Marriages (data obtained by Queensland Health) for reporting up to 2015 and based on year of death.<sup>3</sup>

For standardised rates, the reference population was Australia 2001.

Deaths of Queensland residents in Queensland or interstate were included, but not deaths that occurred overseas. All death data is reported according to the underlying cause.

Lifestyle related chronic conditions included: coronary heart disease, stroke, diabetes, COPD, breast cancer, lung cancer and colorectal cancer. ICD codes for these conditions are defined.<sup>1</sup>

Trend analysis was undertaken using Poisson regression methods.<sup>1</sup>

The most recent complete set of death data for OECD reporting was 2012.<sup>71</sup>

For further information:

- *The health of Queenslanders, 2016*<sup>73</sup> (and earlier reports in the series)
- *Methods for reporting population health status 2018*<sup>1</sup>
- ABS publications: *Cause of death*<sup>68</sup>, *Deaths*<sup>70</sup>
- Statistical tables online (page vii)



# The growing hospital burden



- In 2015–16 there were 2.3 million admissions of Queensland residents to public and private hospitals.
- About 1 in 5 Queenslanders was admitted to a hospital at least once in 2015–16.
- The number of admissions increased by an average of 85,000 per year over the past decade.
- About half (48%) of the increase in admissions was due to increasing rates of hospitalisation, 40% to population growth and 12% to ageing.
- Based on current trends, the average number of hospitalisations is projected to reach 3.7 million by 2026–27 (67% increase over a decade). Apart from population growth, contributing factors are:
  - increasingly higher rates of admission for middle to older age groups
  - greater growth in two leading broad cause groups—admissions for investigations, procedures, tests and for symptoms and signs
  - better access to hospital services—appears to be a contributing factor in the increase over the past decade.
- About 15% of hospitalisations were associated with preventable risk factors such as overweight and obesity, high blood pressure and smoking.
- Hospitalisations for lifestyle related conditions such as coronary heart disease, stroke, lung and other cancers, and chronic respiratory disease have decreased or remained steady in many HHSs. In contrast, there has been an increase in hospitalisations for all causes in all HHSs.
- The crude hospitalisation rate for Indigenous Queenslanders increased by 51% over a decade in contrast to a 29% increase for non-Indigenous Queenslanders.
- About 8% of hospitalisations could theoretically have been avoided with timely treatment in an ambulatory setting, that is, they were potentially preventable hospitalisations (PPHs). More than half were for young children and older people.
- Admission rates for children increased statewide by 14% over a decade, largely because of rate increase in the larger HHSs (Metro South, Metro North, Gold Coast and Sunshine Coast).

## Headline hospital statistics

In 2015–16 in Queensland there were:

- 122 public hospitals (four were public psychiatric hospitals) and 109 private hospitals (53 free-standing day hospitals and 56 other private hospitals)<sup>74</sup>
- 2,365,682 hospital admissions (includes interstate and other visitors) where 55% (1,293,125) were to public hospitals and 62% (1,455,010) were same-day admissions<sup>75</sup>
- 5,373,469 non-admitted patient service events provided by 118 public hospitals<sup>76</sup>
- The average length of stay was 2.7 days. Excluding same day admissions, this rises to 5.5 days.

In 2016–17, there were 1,457,083 presentations to the 27 public emergency departments in Queensland.<sup>77</sup>

In this chapter, hospitalisation data is derived from Queensland Hospital Admitted Patient Data Collection unless otherwise noted.

In 2015–16, 1.0 million Queenslanders were admitted to hospital on at least one occasion,

**1 in 5** or **22%**  
of the population.

## Trends in admissions and underlying pressures

The number of admissions to hospitals is increasing each year—from 1.2 million in 2002–03 to 2.3 million in 2015–16 (Queensland residents). Over the past 10 years there has been a 59% increase in the number of admissions (an increase of 85,000 more admissions each year on average). The crude rate increased by 30%, and after adjusting for age, by 23%.

Over the past 10 years, for admitted patients, there has

been a downward trend in length of stay, with decline evident in all HHSs. Decreasing length of stay impacts on the relative increase in total patient days. These measures should also be assessed when considering trends in admission rates.

In 2015–16, there were about 2.3 million admissions of Queensland residents, representing 1.0 million unique individual patients. Considering the population of 4.8 million, this approximates to 22% or one in every five Queenslanders being admitted to a hospital (public or private, excluding public psychiatric) at least once in that year. The proportion admitted increases with age, from 11% of children aged 0–14 years, rising to 24% of 45–64 year olds, 51% of 75–84 year olds and 58% of those aged 85 years and older. In all age groups except those aged 15–29 years there has been a slow steady increase in the proportion of people being admitted to hospital each year—an overall increase of 14% over the past decade.

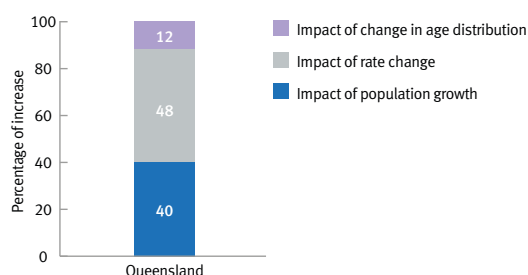
The dominant driver of the increase in hospital admissions in Queensland in the decade up to 2015–16 was increasing rates of admission, independent of population growth or ageing (Figure 6a). This factor, that is, more people being admitted to a hospital more often, accounted for almost half the increase (48%), with population growth accounting for 40%, and ageing 12%.

The pattern of change varied markedly across HHSs. Excluding the four very small HHSs which show relatively volatile patterns, there were some key differences (Figure 6b):

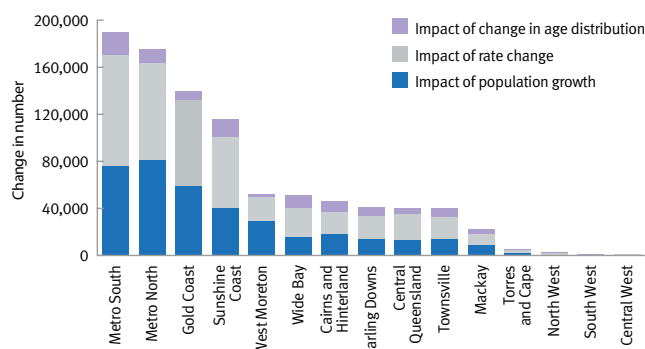
- Population growth was the key driver in West Moreton, accounting for 56% of the increase.
- Admission rate increase was the leading factor in Torres and Cape, Central Queensland, Gold Coast and Sunshine Coast, accounting for over 50% of the increase in these four HHSs.
- Ageing had a bigger impact in Wide Bay than in other HHSs (accounting for 23% of growth).

**Figure 6: Underlying drivers of increase in admitted patient hospitalisations, Queensland, 2006–07 to 2015–16**

### a. Queensland



### b. HHSs



## Leading causes for admitted patients

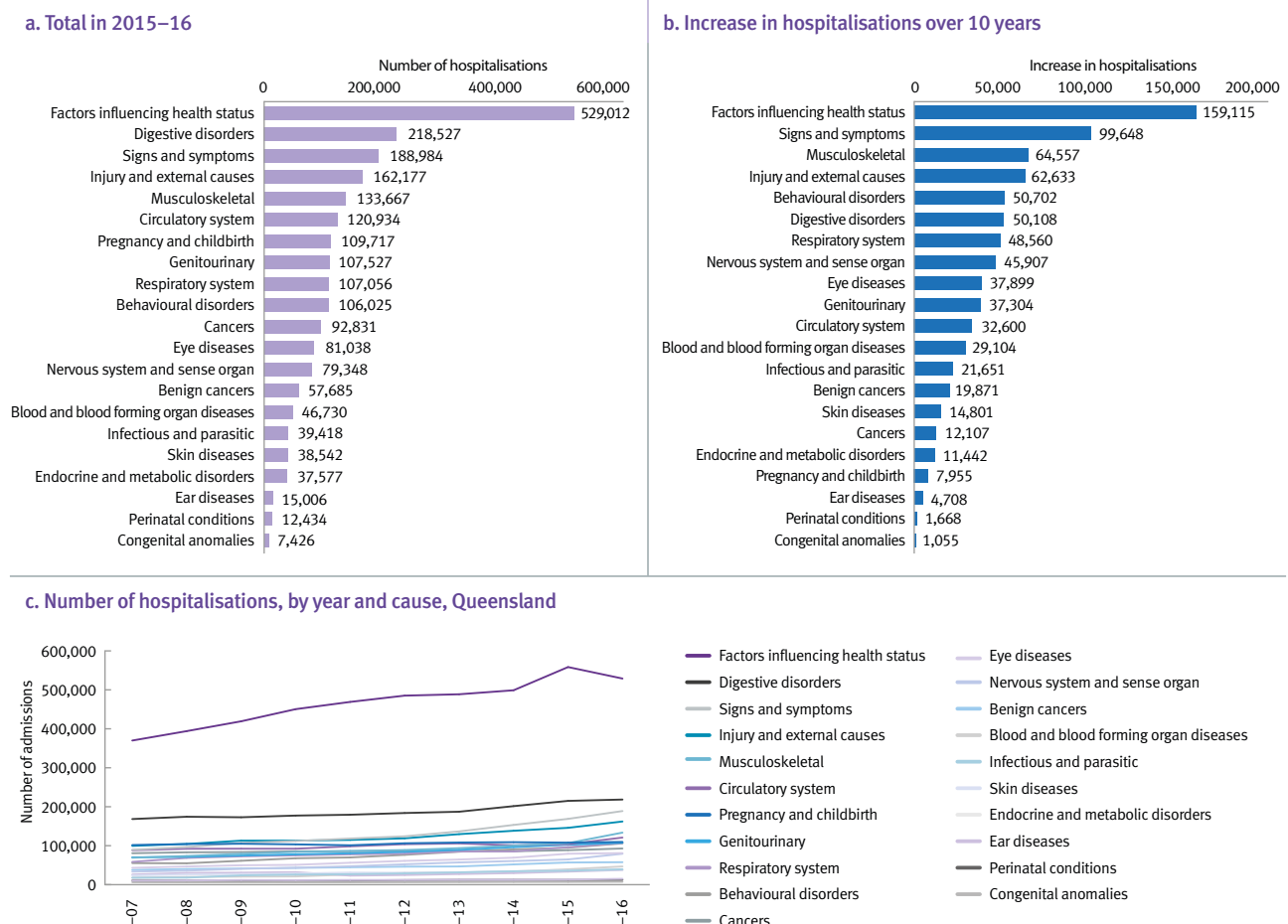
In 2015–16, based on principal diagnosis and using the ICD classification of causes<sup>78</sup>:

- The leading broad cause of admissions was for ‘factors associated with health status’, that is, investigations, treatments and procedures which accounted for 1 in 4 or about 530,000 admissions. hospitalisations in 2015–16 (Figure 7a,c). The leading specific cause within this broad group was renal dialysis, typified by a relatively large number of hospitalisations for a small number of people.
- Digestive system diseases accounted for 219,000 admissions (1 in 10 of total), with dental conditions a leading specific cause.
- Admissions associated with ‘signs and symptoms’ such as chest pain, fainting, and other symptoms accounted for about 189,000 hospitalisations or one-twelfth of total.

The broad causes that have increased the most over the past 10 years were (Figure 7b,c):

- admissions for ‘factors associated with health status’, that is, investigations, treatments and procedures (20% of total increase)
- symptoms and signs (12%)
- musculoskeletal conditions (8%)
- injury (8%).

Figure 7: Causes of admitted patient hospitalisations, Queensland



## Hospitalisations for Indigenous Queenslanders

- There were 116,000 hospitalisations for Indigenous Queenslanders in 2015–16, 5% of the Queensland total (see also page 28).
- The leading broad causes of admission for Indigenous Queenslanders in 2015–16 were tests, procedures and investigations (40% of total), injury (8%), symptoms and signs (7%), and pregnancy (7%).
- The crude hospitalisation rate for Indigenous Queenslanders increased by 51% over a decade with an annual average increase of about 5500 admissions per year. In contrast the non-Indigenous rate increased by 29%.
- For trends in childhood admissions by selected cause, see page 18.

**15%** of hospitalisations are associated with modifiable risk factors.

## Potentially preventable hospitalisations

In 2015–16, there were about 184,000 hospitalisations that theoretically could have been avoided through preventive care and early disease management delivered in the ambulatory setting—primary healthcare, GP or community health centre—based on the Queensland Health definition of the national indicator potentially preventable hospitalisations (PPHs). The national definition of PPHs includes diabetes as the principal cause of the hospitalisation only, while the Queensland Health definition also includes diabetes as an additional cause in designated principal cause conditions. See page 117 for definition. This section uses the Queensland Health definition for consistency with other reports by Queensland Health.

Selected characteristics of PPHs in 2015–16:

- **Proportion of all hospitalisations:** PPHs accounted for 8% of total (6.8% using the national definition).
- **Leading causes:** diabetes complications accounted for 25% of PPHs, urinary tract infections 10%, cellulitis 9%, COPD 9% and dental conditions 8%.
- **Trends:** PPH rates (age-adjusted) increased by 14% over the past five years.
- **Age profile:** Almost 60% of PPHs were for young children (10% for 0–9 year olds) or older people (47% for 65 years and older).
- **Socioeconomic differences:** PPH rates in disadvantaged areas were 84% higher than advantaged areas (age-adjusted).

- **Remoteness:** PPH rates were 8–9% higher in regional areas than in major cities and 51% higher in remote and very remote areas (age-adjusted).
- **Indigenous Queenslanders:** PPH rates for Indigenous Queenslanders were 2.7 times non-Indigenous rates (age-adjusted).
- **HHSs:** eight of the 15 HHSs had higher age-adjusted PPH rates than the state average for example, Torres and Cape and North West were about double the state average. Six HHSs had slightly lower rates. However, most HHSs (12 of the 15) were within 20% of the state average.

## Hospitalisations associated with lifestyle related risk factors

In 2015–16, the combined effect of selected risk factors resulted in about 347,000 hospitalisations, 15% of total hospitalisations in Queensland and 15% of patient days (Table 14).<sup>25</sup> Over 50% of the hospitalisations occurred in people aged 65 years and older, illustrating the impact of risk on chronic disease burden. Males experienced a greater proportion (53% of total burden).

High body mass was the largest cause of risk-attributable hospitalisations and patient days (much of this was associated with renal dialysis with its unique admission patterns), followed by high blood pressure and tobacco (Table 14).<sup>25</sup>

The impact of individual risk factors on the hospital burden varied over the age course<sup>25</sup>:

- In childhood (0–14 years), exposure to second-hand smoke caused the greatest number of risk-attributable hospitalisations, followed by harms associated with alcohol misuse in adults.
- For young people aged 15–29 years, alcohol was the greatest cause of hospitalisation followed by occupational exposures and hazards, and illicit drug use.
- High body mass index (BMI) caused the greatest number of risk-attributable hospitalisations in younger adults aged 30–44 years, followed by alcohol.
- In early middle age (45–64 years) the leading causes of risk-attributable hospitalisations were the chronic disease risks of high BMI, tobacco, high blood pressure, poor diet, physical inactivity and alcohol.
- Among older adults (65 years and older), high blood pressure and high BMI were the largest contributors to the risk-attributable hospital burden while chronic kidney disease with its high repeat admission characteristic was the largest individual cause for both of these risk factors.



**Table 14: Hospitalisations attributed to leading risk factors\*, Queensland, 2015–16<sup>25</sup>**

	Hospitalisations	Patient days
High body mass	100,600	256,500
High blood pressure	67,300	220,400
Tobacco	58,700	204,700
Joint diet impact	48,300	169,500
Alcohol	46,200	146,100
Physical inactivity	41,900	111,100
Sun exposure	23,800	35,200
Occupational exposures	20,200	71,500
High cholesterol	13,800	47,900
Illicit drug use	9,500	40,700
Unsafe sex	2,700	7,500
<b>Joint effect all risks</b>	<b>347,400</b>	<b>1,013,900</b>

\* Note 1. Hospitalisations cannot be summed across risk factors due to shared effect which is only accounted for in joint factor analysis.

Note 2. Intimate partner violence and child sex abuse have not been included in this list although they are leading causes of burden due to limitations in attributing morbidity impacts to hospitalisations.

## Selected highlights from the regions

More information on HHS rates and trends is available from the data visualisations online and the HHS booklet (page vii).

### • All causes:

- Crude admission rates were highest in Wide Bay HHS partly due to an older population
- Admission rates increased between 2006–07 and 2015–16 in all HHSs with the greatest increase in Sunshine Coast, Gold Coast, Torres and Cape and Wide Bay HHSs (about 30% increase).

### • Lifestyle related chronic conditions:

- See page 116 for definition
- Crude admission rates were highest in Wide Bay HHS
- Admission rates for lifestyle-related chronic conditions remained stable or decreased between 2006–07 and 2015–16 in most HHSs with four exceptions: Torres and Cape (26% increase), Wide Bay (19% increase), Sunshine Coast and Cairns and Hinterland (both 10% increase).

### • Risk factor attributable hospitalisations:

- Age-adjusted rates were highest in Torres and Cape (double the state average in 2015–16)
- Cairns and Hinterland was 40% higher than the state average and Wide Bay 23% higher.

### • PPHs:

- Crude PPH rates were up to 50% higher in the four remote HHSs (Torres and Cape, North West, Central West and South West) and in Wide Bay
- For all other HHSs the crude PPH rate was within 20% of the state average. Age-adjusted rate variation is discussed on the previous page.

### • Hospitalisations for children:

- Admission rates for children aged 0–14 years were higher than the state average in six HHSs—North West, Central West, South West, Torres and Cape, Wide Bay and Sunshine Coast
- Admission rates were lower for three HHSs—Mackay, West Moreton and Townsville
- There was a 14% increase in admission rates in Queensland between 2006–07 and 2015–16, mainly because admission rates increased in the larger HHSs of Metro South (by 19%), Metro North (22%), Sunshine Coast (41%), Gold Coast (46%) and also in Cairns and Hinterland (14%). Rates decreased in Mackay (by 23%) and Townsville (by 7%) and were steady in all other HHSs.

## Where will we be in 2026?

Hospital admissions have increased by an average of about 85,000 each year. Based on trends over the past decade, by 2026–27 it is likely there will be about 3.7 million admissions per year in Queensland (Figure 8).

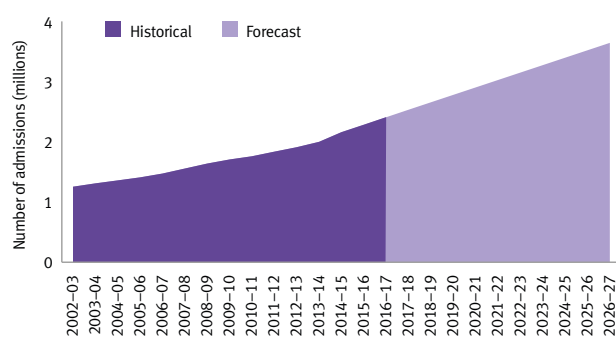
Factors associated with higher rates and projected increase:

- **Age:** Admissions for middle-aged to older Queenslanders, particularly 65–79 year olds, are increasing more rapidly than other age groups and are projected to account for one-third of the projected increase by 2026–27 (Figure 8). Complex health needs in this older age group are likely to exacerbate this trend.<sup>79</sup>
- **Sex:** Admissions for females are increasing at a slightly faster rate than for males and are projected to account for 55% of all admissions in 2026–27.
- **Causes:** Admissions for two broad causes, that is, investigation, treatments and procedures, and symptoms and signs, are both large causes of hospitalisation and are increasing. Similarly, hospitalisations for musculoskeletal conditions, digestive diseases, injury, and mental disorders are contributing to the increase (Figure 7c). If current trends continue, these six broad cause groups will account for 60% of the 3.7 million admissions in 2026–27.
- **Access:** Admission rates are about 20% higher in socioeconomically advantaged areas than disadvantaged areas and are increasing at a slightly faster rate suggesting that access is an important factor.

- **HHSs:** Admission rates have increased faster in Gold Coast and Sunshine Coast reflecting the driving influence of availability. Rates have also increased in Torres and Cape where much of the increase in recent years was associated with increasing admission rates for Indigenous Queenslanders aged 50 years and older. The large HHSs of Metro South and Metro North will continue to grow and account for almost 40% of admissions in the state.

By 2026, the annual number of **hospital admissions** is projected to **increase by 60%**

**Figure 8: Past growth and forecast increase\* in admitted patient hospitalisations, Queensland**



\* Based on past trends

## National comparisons

Variation in the way data on hospital services is collected may limit the comparability of regional and jurisdictional reporting over time.

Provision of services in Queensland per head of population differed from national, being:

- 13% higher for admitted services in 2015–16.<sup>75</sup>
- 20% lower for non-admitted services in 2015–16.<sup>76</sup>

Average length of stay in private hospitals in Queensland was similar to the national average (2.3 days compared to 2.2 days nationally in 2015–16), and for public acute hospitals shorter than the national average (2.8 days compared to 3.1 nationally).<sup>75</sup>

Within the OECD, Australia was a middle ranking country for non-admitted services and overnight hospitalisation rates (16th highest of 33 countries) and at the shorter end for overnight length of stay (25th highest of 32 countries).<sup>75</sup>

## Data sources and methods: hospitalisations

In this chapter, hospitalisations were derived from two sources:

- Queensland Hospital Admitted Patient Data Collection.
- AIHW reports on Australian hospital statistics.

The terms 'hospitalisation' or 'admission' have been used to refer to an admitted patient episode of care, also known as a separation.

Although there are national standards for data on hospital services, variation remains: this includes variation in coding and reporting as well as variation in admission and treatment guidelines and procedures. This report does not identify all such caveats and readers are referred to national reports on hospitals.

Hospitalisations were reported by principal diagnosis, unless noted otherwise.

Hospitalisations for lifestyle-related conditions include coronary heart disease, stroke, colorectal cancer, breast cancer, lung cancer and COPD. Diabetes is not included due to variation in coding rules over the past decade.<sup>1</sup>

For standardised rates, the reference population was Australia 2001.

This section largely uses crude rates to rank and compare HHSs — the rationale for doing so is documented.<sup>1</sup>

Trends were based on statistical significance using Poisson regression methods.<sup>1</sup>

For further information:

- *The health of Queenslanders 2016* (and earlier reports in the series)
- *Methods for reporting population health status 2018*<sup>1</sup>
- AIHW publications: Australian hospital statistics<sup>75-77</sup>
- HHS booklet and statistical tables online (page vii)

# The cost of delivering health



# 7

- Health is the largest component of state government expenditure and accounted for 36% of Queensland Government expenditure in 2017–18.
- \$35.7 billion from all funding sources was spent on health in Queensland in 2015–16, about one-fifth of national spending on health.
- Government (State and Commonwealth) spending accounted for two-thirds of health funding, out-of-pocket costs for individuals 15%, health insurance funds 8% and 7% from other sources.
- Nationally, health spending as a proportion of GDP reached 10.3% in 2015–16.
- Australia was ranked 13th highest of 34 OECD countries for total health spending in 2016, with the United States highest followed by Switzerland and Germany.
- Australia is among the top 20% of OECD countries that have achieved relatively high life expectancy for moderate cost.
- Total health expenditure is continuing to increase faster than GDP, but the relative increase year on year has slowed.
- Hospitals account for 41% of recurrent spending in Queensland, GP and specialist consultations 18%, pharmaceuticals 12% and public health 1.3%.
- Cardiovascular disease accounted for 11% of recurrent health spending nationally and was the largest contributor to the average annual increase over the past eight years.
- Costs for admissions for symptoms, infections and skin disorders have grown relatively quickly over the past eight years and accounted for 16% of the total dollar increase.
- More than half of total spending is for people in the age range 45 to 84 years and the greatest increase has been for those aged 50 to 74 years, although per capita health costs are highest for the oldest cohort (85 years and older).
- Per capita spending for Indigenous Queenslanders is more than double that for non-Indigenous, and is consistent with the relatively higher disease burden (2.2 times).
- Investment in prevention generates dividends both now and in the future. For every dollar invested in selected public health interventions in high income countries, there was a \$14 yield.

## Health system expenditure

A total of \$35.7 billion from all sources, including federal and state governments, was spent on health in Queensland in 2015–16.<sup>80</sup> Expenditure in Queensland was 21.5% of Australian health expenditure (\$170.4 billion), reasonably consistent with Queensland's population share (20.0% in December 2016).<sup>9</sup>

The Queensland Government spent \$16.9 billion on health in 2017–18. It was the largest component of state government expenditure (36%) followed by education (20%).<sup>81</sup> In 2018–19, health is budgeted to cost \$17.3 billion.

Per capita recurrent spending (all sources) in Queensland (\$6900 per person) was similar to national spending in 2015–16 (\$6671 per person) and fourth highest of the jurisdictions (Figure 9a).<sup>80</sup>

About one-third of all state government tax revenue is spent on health (31% in 2015–16). The Queensland proportion was second highest after ACT in the seven-year period since 2008.<sup>80</sup> Nationally, as a proportion of Australian Government tax revenue, health spending was steady at about 26% over this period.

National spending on health accounted for 10.3% of GDP in 2015–16, having increased from 8.7% a decade ago.<sup>80</sup> While national health expenditure grew at the rate of 5% per year in this period, GDP grew more slowly, 2.8% per year. Annual growth in health spending has fluctuated over the past decade with some slowing evident. The same is true for growth in GDP.

# \$35.7 billion

from all sources was **spent on health** in Queensland in 2015–16.

## Who pays?

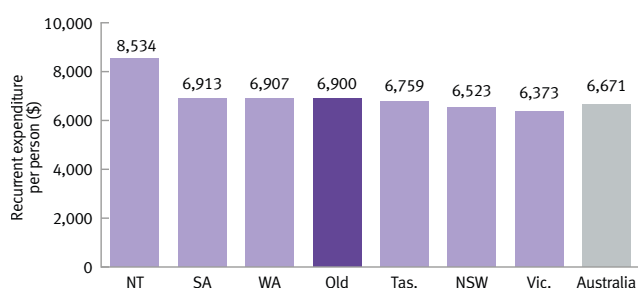
Government was responsible for two-thirds of health spending in 2015–16 in Queensland with the Australian Government accounting for 40% and the Queensland Government 29% (Table 15).<sup>80</sup> Health insurance funds were the source of 8%, individuals 15% and the remaining 7% was from other sources. The distribution of source funding was similar across all states and territories in Australia.

**Table 15: Health expenditure, by source of funding, Queensland, 2015–16<sup>80</sup>**

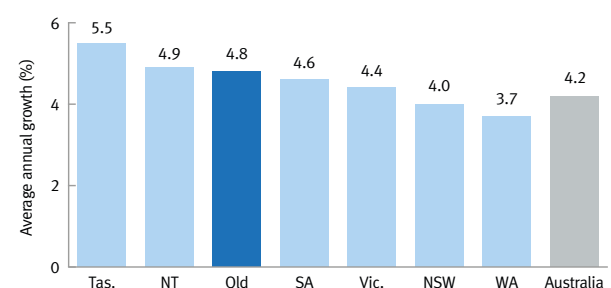
Source	\$m	% of total
<b>Government</b>	24,658	69.1
<i>Australian</i>	14,318	40.1
<i>State/territory and local</i>	10,340	29.0
<b>Non-government</b>	11,015	30.9
<i>Individuals</i>	5,410	15.2
<i>Health insurance funds</i>	2,988	8.4
<i>Other</i>	2,617	7.3
<b>Total</b>	<b>35,672</b>	<b>100</b>

**Figure 9: Per capita recurrent health expenditure, by jurisdiction<sup>80</sup>**

**a. 2015–16**



**b. Average annual growth, 2004–05 to 2015–16**





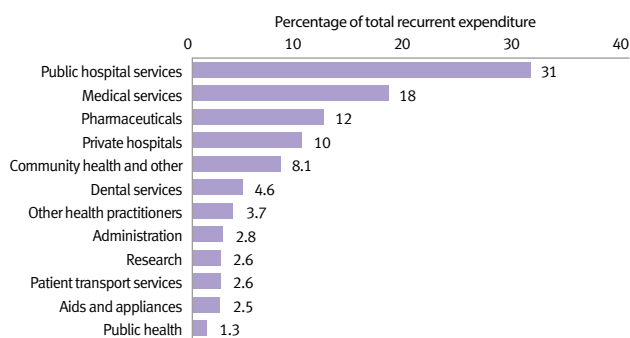
## How was the health dollar spent?

More than 40% of recurrent spending in Queensland in 2015–16 was for hospital services, 31% for public hospitals and 10% for private hospitals (Figure 10).<sup>80</sup> GP and specialist consultations accounted for almost one-fifth (18%), with pharmaceuticals (benefit paid and other medications) 12%.

Dental services accounted for 4.6% of recurrent spending. This includes services provided by registered dental practitioners with services funded by health funds, state government and individual 'out of pocket' payments.

Public health spending (includes screening, immunisation, communicable disease control, environmental health, food standards and hygiene, selected health promotion programs, prevention of hazardous and harmful drug use and public health research) accounted for 1.3% of total recurrent expenditure in 2015–16 having peaked at 2.3% in 2007–08.

**Figure 10: Recurrent spending on goods and services, Queensland, 2015–16<sup>80</sup>**



## Cost by disease group

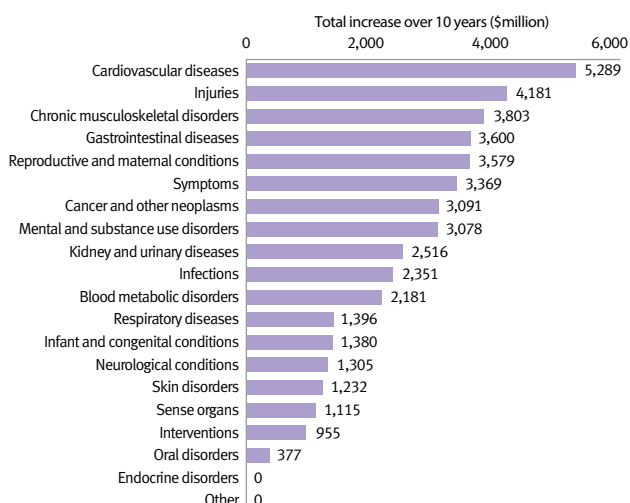
Nationally, cardiovascular disease was the leading cause of admitted patient expenditure in 2012–13 (11% of total), followed by injuries (9.0%), reproductive and maternal conditions (7.8%), gastrointestinal diseases (7.8%) and chronic musculoskeletal disorders (7.7%).<sup>82</sup>

When considering change in admitted patient expenditure, it is important to consider the absolute increase as well as the relative increase. Cardiovascular disease, injuries and chronic musculoskeletal conditions accounted for almost one-third of the total or absolute increase in admitted patient expenditure between 2004–05 and 2012–13 (Figure 11a). In contrast, expenditure for conditions which grew the most, that is, had the highest relative increase were admissions associated with symptoms, infections and skin disorders (Figure 11b). The size and growth of spending on chronic musculoskeletal conditions is noteworthy. Costs associated with admissions for these conditions increased by about 70% over the decade and were the third largest contributor to the absolute increase in this period.

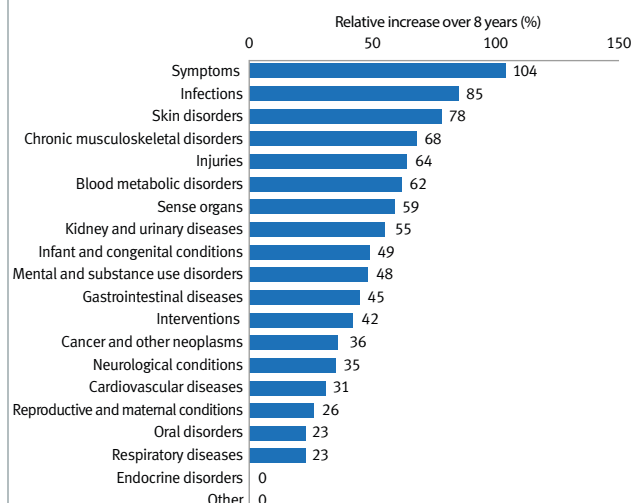
**1.3%** of total recurrent health expenditure was for public health services.

**Figure 11: Change in admitted patient hospital expenditure by disease group, Australia, 2004–05 to 2012–13<sup>82</sup>**

### a. Absolute increase



### b. Relative increase



## Selected trends

- Total health expenditure increased by 69% in Queensland over the decade up to 2015–16, compared with 59% nationally, based on constant prices for this period:<sup>80</sup>
  - Recurrent spending increased by 39%, equivalent to a real increase of \$194 per person per year
  - Queensland had the second highest increase in per capita recurrent expenditure among the jurisdictions after Tasmania (42%), while nationally it was 34%
  - Capital spending averaged 7.3% in the six-year period up to 2015–16 but varied from year to year. Overall, government was the source of two-thirds of capital expenditure in Queensland in this period
  - Admitted patient hospital expenditure increased by 49% in Queensland in the eight-year period up to 2011–12, compared with 46% nationally.<sup>82</sup> For spending on public hospitals alone this represented a real increase of \$69 per person per year—nationally it was \$72 per person per year.
- National health spending as a proportion of GDP increased by 18% over 10 years (from 8.7% in 2005–06 to 10.3% in 2015–16).
- Over the decade up to 2015–16, the contribution of individuals, state government and health insurance funds to total health expenditure increased by 79%, 78% and 77% respectively, while the increase in the contribution of the Australian Government was lower at 58%.
- One-eighth (12%) of the increase in expenditure nationally for admitted patient services between 2004–15 and 2012–13 was associated with cardiovascular disease, while admissions for symptoms have grown the most (doubled).

Per capita **recurrent spending on health increased by 39%** in Queensland in a decade, about **\$190 more** per person per year.

## Spending over the life course

Per capita admitted patient spending increased with age, averaging \$11,300 per Queensland for those aged 85 years and older in 2012–13 (Figure 12a). However, more than half of admitted patient hospital expenditure was for people aged 45–84 years—less than 10% was for those aged 85 years and older (Figure 12b). Furthermore, the biggest increases in per capita spending (admitted patients) over the past eight years occurred in those aged 50–74 years.

## Health costs in future

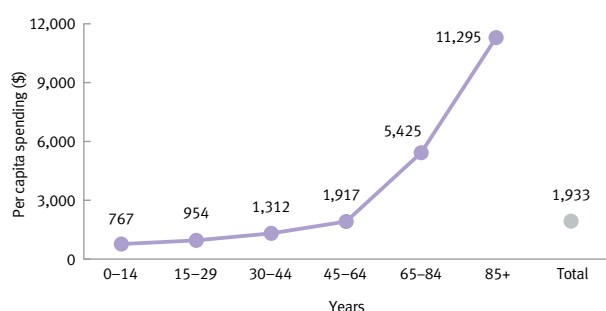
The most recent national forecasts in health expenditure were published in 2008.<sup>83</sup> At the time it was estimated that total health and residential aged care expenditure would almost triple between 2003 and 2033, with spending accounting for 12.4% of GDP in 2033 (9.3% in 2003). The 2033 forecast is likely to be an underestimate given that health spending alone in 2015–16 was 10.3%, about half way through the forecast period.

Demographic factors, that is, population growth and ageing were estimated to account for 44% of the projected increase nationally.<sup>83</sup> Treating people more often was, however, the biggest driver, accounting for 50% of total. Health price inflation had minimal impact (5% of the increase) while changing disease rates were estimated to reduce spending by 1.5%.

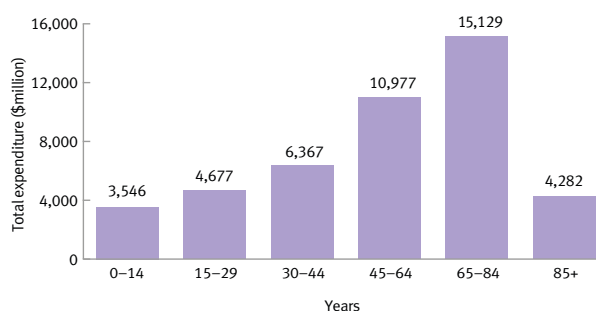
Based on the modelling<sup>83</sup>, the disease groups projected to contribute most to overall health expenditure in the 30-year period were neurological conditions (mainly dementia), respiratory, cardiovascular, digestive and musculoskeletal conditions. Diabetes was projected to increase five-fold, although only accounting for 4% of the total increase.

Figure 12: Total hospital admitted patient expenditure, Australia, 2012–13<sup>82</sup>

### a. Per capita (Queensland estimated from national)



### b. By age group



## Expenditure on health for Indigenous Queenslanders

In 2010–11, per capita health spending by state government for Indigenous Queenslanders was 2.2 times that for non-Indigenous Queenslanders (\$4784 compared to \$2141).<sup>84</sup> This recognises the relatively higher burden of disease for Indigenous Queenslanders (2.2 times in 2011).<sup>25,26</sup> Relative spending on health in Queensland for Indigenous people was fifth highest among the jurisdictions with Western Australia highest at 3.5 times.<sup>84</sup>

More than 90% of health funding for Indigenous Australians was by government, 45% by the Australian Government and 47% by state and territory governments in 2010–11.<sup>84</sup> Out-of-pocket payments by individuals, health insurance funds and other non-government sources accounted for 9% of total.

Genitourinary diseases (includes renal disease and dialysis) accounted for 11% of admitted patient expenditure for Indigenous Australians, mental and behavioural disorders was 11%, with unintentional injuries and maternal conditions accounting for 8% each.<sup>85</sup> These were also the leading causes of disease burden for Indigenous Australians in 2011.<sup>26</sup>

## Rationale and economic benefits of prevention

Investment in prevention today generates health dividends tomorrow and into the future. There is an economic rationale for investing in prevention. Gathering evidence points to very high returns with gains evident in society at large and in the health system through reduced incidence and severity of disease. Not all benefits are measured—they are evident in better quality of life and wellbeing and the beneficiaries are Queensland families and communities.

There is broad scope for prevention as about one-third of the disease burden can be attributed to the combined effect of modifiable risk factors—these same risk factors account for about 15% of hospital admissions in Queensland.

Improvements in the health of Queenslanders over recent decades can in part be attributed to success in reducing risk factors such as smoking, high blood pressure and physical inactivity.<sup>86</sup>

- 90% of the decline in all-cause death rates over the past decade was associated with declining rates of lifestyle related chronic diseases such as coronary heart disease, stroke, lung and other cancers and chronic respiratory disease.
- Hospitalisation rates for lifestyle related chronic conditions are decreasing or steady and this is in marked contrast to increasing rates for most other causes.

Looking ahead, there is ongoing potential to reduce pressure in the health system:

- Healthcare costs peak across the middle to older years. These are also the peak age groups for total hospitalisations as the incidence of chronic diseases rises along with signs of bodily wear and tear. Increasing the period of good health, wellness and vitality has the potential to delay the onset of illness and infirmity and potentially compress it to a very short period before death. If this can be achieved, health system costs will be constrained.<sup>61</sup> In an ideal world, we live long healthy lives with health decline occurring at the point of death or very close to it. Promoting healthy lifestyles is essential to achieving this outcome. It cannot be achieved with improvements in treatment alone.
- Many of the larger causes of disease burden in Queensland have relatively high levels of preventability, for example, cardiovascular disease, type 2 diabetes, selected cancers, some chronic respiratory diseases.<sup>25</sup> The economic impact of this burden will be evident in the health sector, including primary healthcare as well as hospitals and allied services. It will also be evident in reduced productivity and will have flow-on effects for welfare and other support payments.
- Some of the largest causes of hospitalisation can be reduced or prevented:
  - Renal dialysis is the largest cause of hospital admission and while acknowledging the complexity of treatment, preventing its progression to this outcome through body weight reduction, healthier food choices and increased physical activity should be the goal
  - Preterm birth has a substantial impact on the incidence of hospitalisations for children, accounting for 1 in 4 patient days. Improvement is possible in the antenatal period by reducing maternal smoking and providing support for regular antenatal check-ups.
- Successful prevention could contribute to better use of health system resources. If the population were healthier, the need for services to treat chronically unwell people could be reduced, providing more resources for restorative services.
- Australia is carrying a relatively larger disability burden compared to other high income countries<sup>25</sup>, which suggests that we need to invest more in growing a healthier population. In recent decades, substantial progress has been achieved in reducing early deaths and Australia has moved up the life expectancy rankings among similarly developed nations. We are lagging however, close to the bottom of the OECD ladder for disability burden. The consequence of high disability burden is that more treatment services are required and there will be other impacts on the economy and society. A sustained focus is needed in Australia to continue to reduce preventable diseases through

lifestyle and behavioural change, but also to prevent and manage chronic conditions which are the cause of the high disability burden. These include age related musculoskeletal and neurological conditions and also mental disorders. Furthermore, it will be critical that we make good health and wellbeing the goal for every Australian.

Public health interventions can be highly cost effective. A recent systematic review and analysis of existing public health interventions delivered in the United Kingdom, Western Europe, United States, Canada, Japan, Australia and New Zealand showed that for Australia, for every dollar invested there was a return of \$14, in addition to the return of the original investment back to the wider health and social economy.<sup>87</sup>

The analysis considered a range of benefits and showed that the return on investment varied across type of intervention:

- Upstream interventions delivered on a broad scale generally achieved greater returns, particularly legislation (average return on investment of 46:1).
- Return was lower for healthcare public health interventions (median return on investment of 5:1)
- Health promotion interventions had the lowest return (median return on investment of 2:1).

The benefits of population-level public health expenditure accrue over the long term, unlike those of clinical treatments which have an immediate impact with less certain long-term impacts.

Reductions in common behavioural risk factors may provide substantial benefits to society. Simulation models for the Australian population showed that potential cost savings from reducing six behavioural risk factors including intimate partner violence, high risk alcohol consumption, poor diet, physical

inactivity, tobacco smoking, high BMI was \$8.9 billion in Australia—\$3.5 billion in productivity gains and \$5.3 billion in health sector savings.<sup>88</sup> This represents a potential cost savings of 2% of annual health expenditure in Australia.

Spending on health is an investment in people and the systems that sustain them. The Queensland Government has recognised the importance of improved wellbeing as a core priority of *My Health, Queensland's future: Advancing health 2026*. Sustained investment in prevention of ill health, particularly addressing the key risks of smoking, poor diet, inactivity, obesity and sun exposure will be essential to achieving the *Health and Wellbeing Strategic Framework* targets for 2026. Success in this area will help to constrain health system pressures.

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Australia is in the  
**top 20%**  
 of **OECD countries** for **long life expectancy**  
 at moderate cost.

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## International comparisons

Australia was ranked 13th highest of 34 OECD countries for total health spending (per capita) as a proportion of GDP in 2016.<sup>71</sup> The United States was highest, followed by Switzerland and Germany. Considering only government spending, Germany was top spender followed by Sweden, Japan and Norway. Australia was 18th. Voluntary (that is, all non-government) spending on health as a proportion of GDP was highest in the United States and more than double that of any other country. Australia was ranked seventh.

Considering the relative ranking of health expenditure and life expectancy among OECD countries, Australia performs very well and is among the top 20% to achieve long life expectancy at moderate cost. This contrasts with the United States where moderate life expectancy is achieved at relatively greatest cost.

## Data sources and methods: expenditure

In this chapter, national and state health expenditure data was primarily derived from the AIHW reports which are cited.

Expenditure data includes spending on:

- health goods such as medications, health aids and appliances
- health services such as hospital, dental and medical
- public health activities including immunisation and screening
- other activities that support health systems such as research and administration.

Capital consumption or depreciation is included as part of recurrent expenditure. Investment in new buildings is included as capital expenditure.

Data are reported in constant prices (adjusted for inflationary effects). OECD comparisons are based on most recent online statistics release and cited.



# Risk and protective factors



- The prevalence of daily smoking in Queensland has more than halved in the past 20 years to 11% in 2018. Youth smoking is decreasing rapidly—about 5% of Queensland teenagers aged 14–19 years smoked daily in 2016. Two-thirds of women who smoked during pregnancy lived in the more socioeconomically disadvantaged areas. Maternal smoking is 4 times higher in Indigenous Queenslander mothers than non-Indigenous.
- Most Queenslanders do not meet the guidelines for healthy eating from healthy food sources. The over-consumption of unhealthy food and drinks is contributing more than one-third to total energy intake and impacting on subsequent weight gain.
- Maintaining a healthy weight is a challenge for many Queenslanders—1 in 4 children and 2 in 3 adults are overweight or obese. Obesity in children living in disadvantaged areas was 2.5 times that of those in advantaged areas.
- Three-quarters of risky alcohol drinkers are male. Consumption is decreasing among younger adult males and increasing among older males. Many pregnant women do not completely stop drinking alcohol during their pregnancy.
- Many Queenslanders are keeping active with 60% of adults sufficiently active for health benefit. Adults need to sustain physical activity throughout their life to stay healthy longer. Most children (71%) are active on four or more days per week, however, less than half (41%) are active daily—free-time and schools are key settings for daily activity.
- About half of 5–6 year olds had decay experience in their primary teeth and one-third of those aged 6–14 years, in their permanent teeth. One-quarter of hospitalisations for dental conditions were for children aged up to 14 years.
- High blood pressure and high blood cholesterol are leading metabolic risk factors for cardiovascular disease—about 1 in 4 adults have high blood pressure and about 1 in 3 adults have high cholesterol. Two-thirds of adults at risk of a cardiovascular event are not receiving the recommended treatment to reduce blood pressure and cholesterol.
- Sun protection behaviours are effective in limiting exposure to ultraviolet radiation that leads to 6% of all cancers—only about 1 in 2 children and 1 in 5 adults used daily sun protection, and 1 in 2 (children and adults) were sunburnt in the previous 12 months.
- Screening programs improve the health outcomes of Queenslanders through early detection of breast, cervical and bowel cancers. About half the target age groups are participating in the national screening programs—56% for BreastScreen Queensland, 53% for cervical cancer screening and lower at 40% for bowel cancer screening.
- About 1 in 6 Queenslanders aged 14 years and older had used an illicit drug in the previous 12 months—cannabis was most commonly used (12%), while 4% misused painkillers and analgesics. An increase in the use of ‘ice’ (crystal meth) resulted in a 20-fold increase in related hospitalisations over the past six years.
- Immunisation coverage remained high with over 90% of children fully immunised.
- Young women and Indigenous Queenslander women have experienced higher rates of domestic and family violence—1 in 20 women experienced violence in the past year.
- Environmental risks to health occur from foodborne pathogens, lead exposure, illegal drug laboratories in housing, and the quality of drinking water.



## Graeme's story

*It was time to give it up.*

Retired miner Graeme is enjoying a smoke-free lifestyle after successfully quitting with support from [Quitline](#) and using nicotine replacement therapy.

After smoking for over 50 years, Graeme was motivated to stop smoking when he saw the [10,000Lives Central Queensland](#) launch on television. Graeme said Quitline has helped him to approach quitting with a plan and a positive frame of mind.

Graeme has volunteered to share his story with others including his fellow miners and let them know of the support available from Quitline to quit smoking.



**1 in 9**  
adults  
smokes daily



**Smoking**  
is the leading cause of  
**premature death**  
and disease



**1 in 4**  
children  
lives with a daily smoker

# Smoking

Smoking continues to be the leading cause of premature death and disease in Queensland, despite a significant reduction in rates over recent decades. The disease burden remains high because of the considerable lag period between smoking and adverse health outcomes, rather than a lack of progress in reducing the prevalence of smoking. Smoking also remains a leading contributor to health inequalities based on socioeconomic status, geographical remoteness and Indigenous status.

Tobacco is highly addictive and various strategies help smokers to quit, prevent smoking uptake and reduce exposure to other people's smoke. Smoking increases the risk of diseases such as lung cancer, COPD and coronary heart disease. Smoking carries a high social and financial cost largely associated with the impact of early death. Tobacco use was the leading individual risk factor in Queensland and Australia in 2011, responsible for 9% of total disease burden.

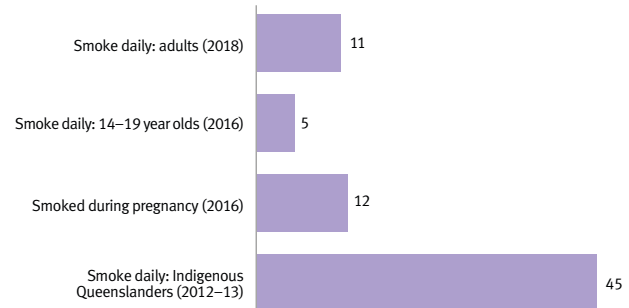
Among socioeconomically disadvantaged groups, higher rates of smoking contribute to poorer health and financial stress, both of which create social conditions that make quitting more difficult. Smoking is a significant contributor to the 10-year health gap between Indigenous Queenslanders and non-Indigenous. Despite a relatively small decline in daily smoking among non-remote Indigenous Queenslanders between 2002 and 2014–15, there has been no change among those living in remote areas.

Women who smoke during pregnancy increase the risk of adverse birth outcomes and risk of disease later in life. Although maternal smoking is declining overall, high rates persist among pregnant women living in socioeconomically disadvantaged areas, pregnant teenagers and Indigenous Queenslander mothers. Furthermore, exposure to tobacco use by role models such as parents continues to normalise smoking among children and young people, perpetuating smoking uptake.

Smoke-free healthcare facilities support patients to quit smoking including those admitted to mental health facilities. This can be challenging as the smoking prevalence among adults living with mental health issues is high. In addition, for those admitted to a hospital for a mental health condition, the immediate priority will be the treatment of their presenting condition.

Improvement is evident among young people with a relatively rapid decline in youth smoking, combined with an increase in those who have never smoked. However, new generations of young people are still likely to consider taking up smoking, and therefore prevention strategies must be alert, active and ongoing. The evidence is building on the influence of novel products on young people as a gateway to future smoking. Experimentation

Figure 13: Smoking prevalence, Queensland



## What are the numbers?

- An estimated 424,000 Queensland adults smoked daily in 2018: 230,000 were males.
- An estimated 593,000 adult males and 493,000 females were ex-smokers in 2018.
- 19,000 Queensland teenagers aged 14–19 years smoked daily in 2016.
- 49,000 Indigenous Queenslander adults smoked daily in 2012–13.
- About 7400 women smoked at some time during their pregnancy in 2016—1800 were Indigenous Queenslander women.
- 246,000 children aged 0–14 years lived in a household with a daily smoker in 2014–15, and 42,000 or 17% were Indigenous Queenslander children.
- 115,000 Queensland adults were currently using e-cigarettes in 2018 (based on 2015–16 prevalence) and 382,000 had ever tried them.



with e-cigarettes by young people has the potential to increase future smoking and nicotine dependence.

Over recent decades the success of multifaceted tobacco initiatives has resulted in declining smoking rates. However, there is still the challenge to address disparities and reduce smoking associated with social disadvantage and Indigenous status.



# Smoking

## Prevalence and differentials

In 2018, of adult Queenslanders (Figure 13, Table 17)<sup>34</sup>:

- 11% smoked daily.
- 5% were current smokers but not daily.
- 28% were ex-smokers.
- 56% never smoked.

Among Queenslanders:

- The age of initiation of tobacco use was 16.1 years in 2016.<sup>52</sup>
- 5% of Queensland teenagers aged 14–19 years smoked daily in 2016.<sup>51,52</sup>
- 7% of Queensland school students aged 12–17 years smoked in the previous week in 2017.<sup>50</sup>
- 12% of women smoked at some time during their pregnancy in 2016.<sup>38</sup>
- 39% of smokers lived in a household with children in 2017–18.<sup>34</sup>
- 27% of children aged 0–14 years lived in a household with a daily smoker in 2014–15.<sup>53</sup>
- 22% of adults reported being frequently exposed to second-hand smoke in public places in 2015.<sup>89</sup>
- 10% of adults had ever tried an e-cigarette, and 3% were current e-cigarette users in 2015–16.<sup>34</sup>
- About 8% of Queensland school students aged 12–17 years had ever used e-cigarettes, and of those about one-third had done so in the previous month in 2017.<sup>50</sup>

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**11%** of Queensland adults **smoked daily** in 2018.

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### By sex

In 2018 the adult male daily smoking rate was 22% higher than the female rate (12% compared with 10%, Table 17).<sup>34</sup> Males were 24% more likely to be ex-smokers than females. Females were 21% more likely to have never smoked than males.

In 2016 Queensland females, on average, started smoking about one year earlier than males (15.6 years of age compared with 16.5 years).<sup>51,52</sup>

Teenage males and females (aged 12–17 years) were equally likely to have smoked in the previous week (in 2017).<sup>50</sup>

Adult males were more likely to have ever tried e-cigarettes than females (12% compared with 9%) and to currently use e-cigarettes (4% compared with 2%) in 2015–16.<sup>34</sup>

Queensland schoolboys aged 12–17 years were twice as likely as schoolgirls to have ever used e-cigarettes (11% compared with 5% in 2017).<sup>50</sup>

### By age

Older males were more likely to be an ex-smoker than any other age group, indicating a history of smoking—more than half of males aged 65 years and older were ex-smokers in 2018.<sup>34</sup> Two-thirds of females aged 65 years and older had never smoked.

Older Queensland students were more likely than younger students to have ever used e-cigarettes—about 13% of students aged 16–17 years compared with 9% of students aged 14–15 years and 2% of students aged 12–13 years.<sup>50</sup>

### By socioeconomic status

There is a socioeconomic gap in daily smoking in Queensland—rates in the most disadvantaged areas were more than double (2.4 times) those in advantaged areas in 2018 (17% compared with 6.8%) (Figure 14).<sup>34</sup>

Adults living in advantaged areas were 26% more likely than those in disadvantaged areas to have never smoked (63% compared with 50% in 2018).<sup>34</sup>

The proportion of ex-smokers was 29% higher in disadvantaged areas than in advantaged areas illustrating a greater past history of smoking in disadvantaged areas.<sup>34</sup>

Daily smoking in unemployed adults was 2.3 times that of the employed (25% compared with 11% in 2018).<sup>34</sup>

### By remoteness

Rates of daily smoking were higher outside major cities—41% higher in outer regional areas and 66% higher in remote areas than in major cities in 2018 (Figure 15).<sup>34</sup>

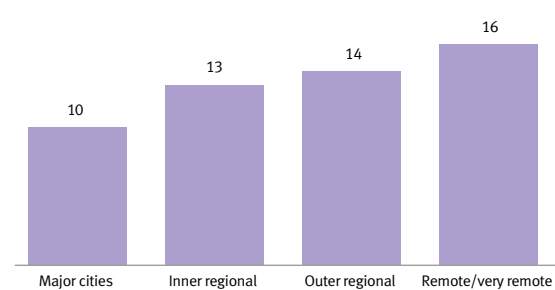


# Smoking

Figure 14: Daily smoking by quintile of socioeconomic disadvantage/advantage, Queensland, 2018<sup>34</sup>



Figure 15: Daily smoking by remoteness, Queensland, 2018<sup>34</sup>



## Indigenous Queenslanders

In 2012–13, 45% of Indigenous Queenslander adults smoked daily.<sup>65,90</sup> After adjusting for age differences, the Indigenous daily smoking rate was 2.5 times the non-Indigenous rate.<sup>65</sup>

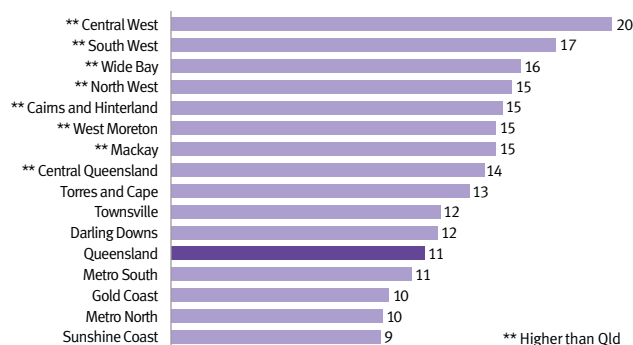
Young Indigenous Australians (15–17 years) were almost five times more likely to smoke daily than non-Indigenous youth (18% compared with 3.9% in 2012–13), indicating that a focus on reducing smoking uptake remains a critical factor in tobacco control among Indigenous Queenslanders.<sup>65</sup>

More than half of Indigenous Queenslander children (0–14 years) lived with a daily smoker, compared with one-quarter of non-Indigenous children (57% compared with 24% in 2014–15).<sup>53</sup>

## Regional Queenslanders

In 2017–18, daily smoking rates were higher than the state average in eight HHSs—varying from 74% higher in Central West to 24% higher in Central Queensland (Figure 16).

Figure 16: Daily smoking by HHS, percentage, adults, Queensland, 2017–18<sup>34</sup>



More information on HHSs is available from the data visualisations and statistical tables online (page vii).

Indigenous Queenslander children were

**2.4 times** more likely  
to live in a household with a smoker  
than non-Indigenous children.

## Maternal smoking

One in 8 (12%) women smoked at some time during their pregnancy in 2016 (about 7400 women).<sup>38</sup> Of these, about 1 in 6 quit during the first 20 weeks and 9.5% of women continued to smoke after 20 weeks of gestation. (For further detail see Table 6, page 32)

About two-thirds (63%) of women who smoked at some point during pregnancy were living in socioeconomically disadvantaged areas (around 4600 women).<sup>38</sup> The smoking rate for pregnant women living in disadvantaged areas was 5.4 times that of those living in advantaged areas (24% compared with 4.3% in 2016).<sup>38</sup>

The prevalence of maternal smoking in remote areas was three times that in major cities (28% compared with 9%).<sup>38</sup>

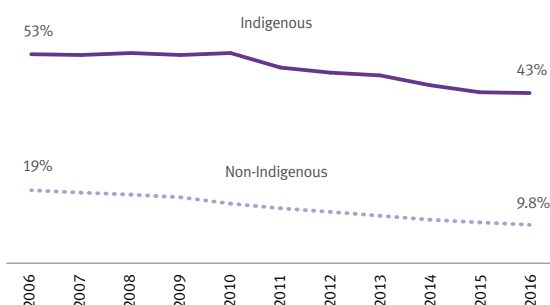
For teenagers, the maternal smoking rate was 32%, compared to 11% for older mothers. While there has been an improvement in maternal smoking over the past decade, the decrease among teenagers was not as great as that for older mothers (–32% compared with –41% between 2006 and 2017).

Maternal smoking was higher among Indigenous Queenslander mothers—they were four times more likely to have smoked at some time during pregnancy than non-Indigenous mothers in 2016 (43% compared with 10%).<sup>38</sup> (For further detail see Table 6, page 32.)

Non-Indigenous teenagers were more likely to smoke than older non-Indigenous women (25% compared with 9.4%) while for Indigenous Queenslander women in 2016, the smoking rate in teenagers was lower than for older women (39% compared with 44%).

# Smoking

**Figure 17: Maternal smoking by Indigenous status, 2006–2016<sup>38</sup>**



Rates of smoking during pregnancy declined for both Indigenous and non-Indigenous mothers between 2006 and 2016. However, the relative gap has widened—Indigenous Queenslander mothers were about three times as likely as non-Indigenous mothers to smoke at any point during their pregnancy in 2006, and about four times as likely in 2016 (Figure 17). Nevertheless there has been a 10 percentage point decrease in smoking among Indigenous Queenslander women over 10 years.

Rates varied by age group and HHS (for further detail see Table 6, page 32). In 2016, the proportion of pregnant women who smoked during pregnancy was highest in Torres and Cape (45%), North West (25%) and Wide Bay (22%), and lowest in Gold Coast (5.5%), Metro South (8.9%) and Metro North (10%), compared with 12% statewide.<sup>38</sup>

Maternal smoking in Queensland was 21% higher than national, and equal third highest (with South Australia) among the jurisdictions for mothers who smoked at any time during pregnancy following Northern Territory and Tasmania and in 2016.<sup>42</sup>

Maternal smoking is declining but still

**7400 women**  
smoked during their pregnancy.

## How we compare

### Nationally

Compared with other jurisdictions, the prevalence of daily smoking for Queensland adults was 19% higher than national in 2016 and was ranked third highest following Northern Territory (highest) and Tasmania.<sup>51,52</sup>

For Indigenous Australians, the rate was similar to national and Queensland was ranked fourth highest following Northern Territory (highest), Western Australia and Victoria in 2014–15.<sup>12</sup>

### Internationally

Of 35 OECD countries with comparable data for daily smoking, Australia was ranked sixth lowest in 2017 (or latest available data) for persons aged 15 years and older.<sup>71</sup> Mexico had the lowest smoking rates, followed by Iceland, Sweden, Norway and the United States.

## Trends

Daily smoking has halved since 1998 and the proportion who never smoked has doubled (Figure 18).

The prevalence of daily smoking continues to decline, a 43% decrease between 2002 and 2018—similar for males and females.<sup>91</sup> Rates declined across all ages—the greatest decline was among young adults aged 18–29 years—53% decrease between 2002 and 2018, 46% for those aged 30–44 years, 29% for 45–64 year olds, and 24% for those aged 65 years or older (Figure 19).<sup>91</sup>

Daily smoking declined more in the most advantaged areas—51% decrease compared with 28% decrease in disadvantaged areas between 2004 and 2018 indicating a widening socioeconomic gap.<sup>91</sup> While the rate of smoking was higher in remote and very remote areas than in cities the rate of decline was similar.

While the cessation rate increased by 10% across Queensland over the past nine years (Figure 21), there was no change in cessation based on areas of socioeconomic disadvantage or by remoteness.<sup>91</sup>

Nationally, about 1 in 14 (7.1%) teenagers aged 12–17 year olds had tried or ever used e-cigarettes in 2016, a significant increase from 4.3% in 2013.<sup>52</sup>

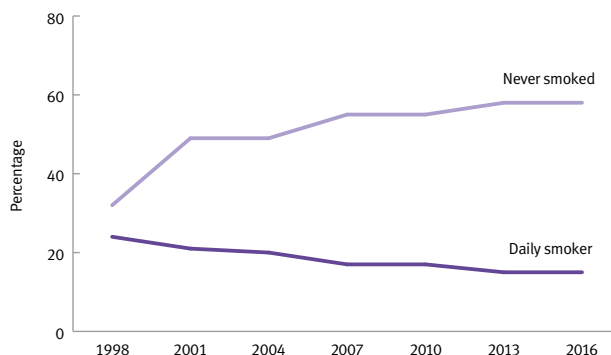
If the prevalence of daily smoking continues to decline at a similar rate as it has over the past decade, in 2026 there will be about 353,000 adults smoking daily, about 132,000 fewer than there would be if the 2018 rate was to prevail in 2026.

## Tobacco smoking

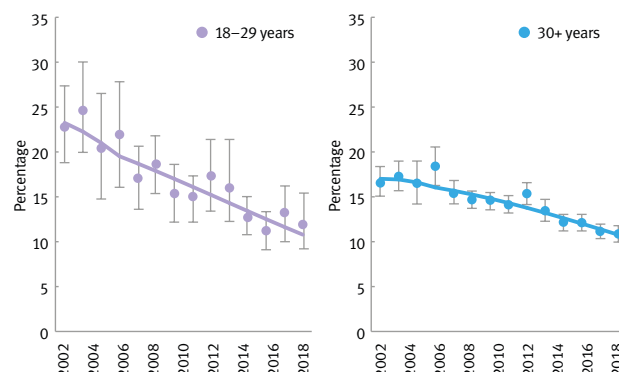
is the **leading modifiable risk factor** associated with the disease burden.

# Smoking

**Figure 18: Daily smoking and never smoked, adults, Queensland, 1998–2016<sup>52</sup>**



**Figure 19: Trends in daily smoking by age group, Queensland, 2002–2018<sup>34</sup>**



## Impacts and costs

### Burden of disease

In 2011, of the modifiable risk factors, tobacco smoking was responsible for the greatest disease burden in Queensland (9% of total DALYs) (Table 2, page 10).<sup>25</sup> The majority of burden was associated with premature death and accounted for one-seventh (14%) of the total YLL burden. Males experienced the majority of the tobacco related burden (62%) and more than half (55%) was associated with being older (aged 65 years and older).

The two leading specific conditions associated with tobacco smoking were COPD and lung cancer, accounting for 31% and 30% of smoking burden respectively in 2011, followed by coronary heart disease (13%), stroke (4%), oesophageal cancer (3%) and the remaining 19% for a number of other diseases.<sup>25</sup> Conversely, 80% of the lung cancer burden was due to tobacco smoking, 75% of the COPD burden and 54% of the oesophageal cancer burden.<sup>24</sup>

### Life expectancy

For smokers, the risk of dying prematurely diminishes with increasing time since smoking cessation, where the life expectancy of ex-smokers who quit before age 45 years is similar to those who had never smoked.<sup>92</sup> Smokers are likely to die 10 years earlier than non-smokers.

In 2011, smoking accounted for 23% of the health gap between Indigenous Australians and non-Indigenous—the largest contributing risk factor (Table 3, page 11).

### Deaths

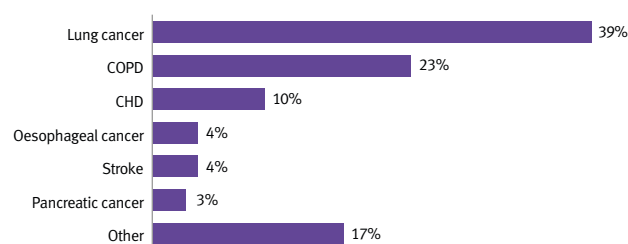
In 2016, it was estimated that smoking accounted for 3600 deaths (12% of all deaths) in Queensland<sup>25,93</sup> (Table 9, page 34). Two-thirds of current smokers are likely to die of smoking-related illness.<sup>92</sup> Of the deaths due to tobacco exposure, 1741 were from lung cancer, 1370 from COPD and 360 from coronary heart disease (Figure 20).<sup>25</sup>

### Disability and hospitalisations

Of the risk factors, smoking was the largest cause of disability in Queensland in 2011, causing 4.5% of YLD burden (Table 2, page 10).<sup>25</sup>

In 2015–16, smoking accounted for about 58,700 hospitalisations<sup>25</sup>, of which 35,372 were males and 23,411 females (total patient days were 204,700).<sup>93</sup> Of the 58,700 hospitalisations 22% were for COPD, 22% lung cancer, 11% coronary heart disease, and 15% accounted for stroke and other cardiovascular diseases. Hospitalisations attributed to tobacco exposure were associated with being older—over half (57%) were in those aged 65 years and older.

**Figure 20: Deaths due to tobacco, Queensland, 2011**



Over the past nine years,  
**adult smoking rates**  
 have declined across all HHSs.

# Smoking

In 2014–15, after accounting for age, adults with current self-reported mental or behavioural problems that had lasted for at least six months were 53% more likely to smoke daily than those without these problems (22% compared with 15%).<sup>49</sup> People living with psychotic illness have considerably higher prevalence of smoking than the general population—two-thirds (66%) of people who were treated for psychosis were current smokers (aged 18–64 years in 2010), and were smoking on average 21 cigarettes per day.<sup>94</sup>

In 2016, Australian adult daily smokers were twice as likely to report high or very high levels of psychological distress and twice as likely to have been diagnosed or treated for a mental health condition compared with those who had never smoked.<sup>52</sup>

## Health and community costs

In 2004–05, the total cost of smoking in Australia was estimated at \$32 billion, where 38% (\$12 billion) related to tangible costs including the health system, labour, crime and other quantifiable impacts. The remaining \$19.5 billion (62%) was for intangible costs and tobacco-related loss of life.<sup>95</sup> More recent data is not available.

Based on Queensland's share of the Australian population, tobacco smoking was estimated to cost the Queensland economy \$2.4 billion in 2004–05. A small percentage (3%) was associated with health costs including hospital, medical, related aged care, pharmaceutical and ambulance services and a greater proportion (97%, \$1.15 billion) was associated with net labour costs including lost productivity and household finances. Intangible costs due to premature death were estimated at \$3.9 billion, contributing to the overall cost of smoking to Queensland in 2004–05 of about \$6.3 billion.

The full costs of smoking extend beyond the individual consumer to be borne by the rest of society. Although the smoking prevalence has continued to decline, the significant lag period between smoking and the adverse impacts on health and the workforce have meant the overall social costs of smoking continue to increase.<sup>95</sup> Looking forward, the real smoking costs can be expected to eventually decline if smoking prevalence remains low and the positive impacts are realised in society.

Figure 21: Trends in smoking initiation and cessation, Queensland<sup>91</sup>

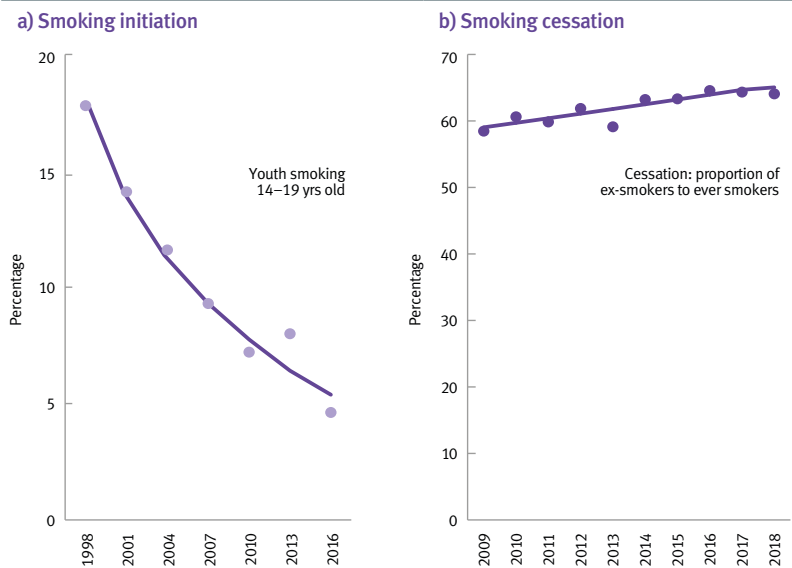


Table 16: Nine-year trends in daily smoking by HHS, adults Queensland, 2009 to 2018<sup>91</sup>

HHS	Trend
Gold Coast	-44% sig
Torres and Cape	-42% sig
Darling Downs	-40% sig
Sunshine Coast	-40% sig
West Moreton	-33% sig
Metro South	-31% sig
Metro North	-31% sig
North West	-29% sig
Townsville	-29% sig
Central Queensland	-27% sig
Cairns and Hinterland	-27% sig
Mackay	-20% ns
South West	-14% ns
Wide Bay	-12% ns
Central West	-3% ns
Queensland	-31% sig

sig: significant decline      ns: non significant trend



# Smoking

## 20 years of smoking reduction

Over the past twenty years (1998–2018), the Queensland Government has successfully implemented a comprehensive range of tobacco control initiatives including introducing some of the toughest legislation in the country (Figure 22). Queensland was recognised as a national leader in 2017 and 2018 for achieving outstanding results from tobacco initiatives, especially in the protection of Queenslanders from second-hand smoke in indoor and outdoor public places, workplaces and public transport.<sup>96</sup> Community expectations for smoke-free environments was an important driving factor in these changes.

Success is evident in the steady reduction in smoking, with the rate more than halving over 20 years. In 1998, 24% of adults smoked daily, and in 2018, 11% did so. It is estimated there are about 480,000 fewer adults smoking daily in 2018 than there would have been if the smoking rate had remained at 24%. As about two-thirds of regular smokers are likely to die from a smoking related illness, some 300,000 Queenslanders have avoided an early death.

There has been widespread decline in smoking across regional Queensland. The latest data is showing a 40% decrease in rates of adult smoking in four of the 15 HHSs over the past eight years, with strong gains evident in all other HHSs (Table 16).

Youth smoking is decreasing rapidly. Smoking starts in the teenage years and the 70% reduction in daily smoking rates among those aged 14–19 years is indicative of a reduction in uptake (Figure 21a). This will provide a lifelong benefit to this generation and contribute to lower incidence and severity of disease, generating benefits to the health system through reduced demand for services over the longer term. Productivity gains will also be achieved with fewer people dying prematurely. Reduced rates of youth smoking have been a major influence in achieving smoking rate reduction in Queensland.

More people are quitting. The cessation rate in Queensland has been steadily increasing with a 10% improvement in the past nine years (Figure 21b). This reflects an increasing proportion of ex-smokers. Reducing the period of exposure to tobacco decreases the disease risk associated with smoking. For example, if a person quits by 45 years of age, the long-term impact of smoking is equivalent to that of a person who has never smoked.<sup>92</sup>



Queensland is becoming increasingly smoke-free. Legislative change over the past 20 years has contributed to a changing culture and re-set community norms about smoking (Figure 22). The first important step was the introduction of legislative measures to prevent the supply of tobacco to children, followed closely by the first bans on smoking at indoor public places and workplaces. Over time, retail controls have continued to be strengthened with bans introduced prohibiting advertising, display and promotion of tobacco products, as well as restrictions on pack size and on the supply of flavoured or novelty tobacco products. Smoke-free public places have also been extended over the last two decades and now apply at many high-density public areas such as public transport waiting points, building entrances and hospitals, as well as at places where families and young people gather to spend time together such as beaches, playgrounds, skate parks, sporting events and national parks.

Success in smoking reduction has been hard won and has come as a result of sustained commitment in the health sector in Queensland over the past 20 years, combined with significant and strategic action at a national level. Future success is not assured and challenges remain. Tobacco smoking is still the leading cause of preventable illness and premature death in Queensland due to the long lag in health impacts from exposure. In 2016, an estimated 3600 people died from illnesses caused by their smoking—a number more than 10 times the annual road toll.

A new generation of potential smokers is reaching young adulthood every year so it is most important that strategies continue and are effective at preventing uptake.

# Smoking

Furthermore, the evidence is building on the influence of novel products which may serve as a gateway to future smoking. Experimentation with e-cigarettes by young people has the potential to increase uptake and nicotine dependence. A resurgent tobacco industry determined to secure future markets and potentially position themselves as a part of the solution, may promote the use of these devices as 'reduced risk' products.<sup>97</sup>

Lifetime use of e-cigarettes doubled between 2013 and 2016. Current smokers were six times more likely to have ever used e-cigarettes than non-smokers.<sup>52</sup> The promoted use of e-cigarettes as an aid for smoking cessation is not supported by robust evidence.<sup>97,98</sup>

Smoking is a key contributor to health inequalities. The most unequal health outcomes in Queensland are those for Indigenous Queenslanders and people from low socioeconomic circumstances.

The smoking rate among Indigenous Queenslanders was 2.5 times the non-Indigenous rate (page 57).

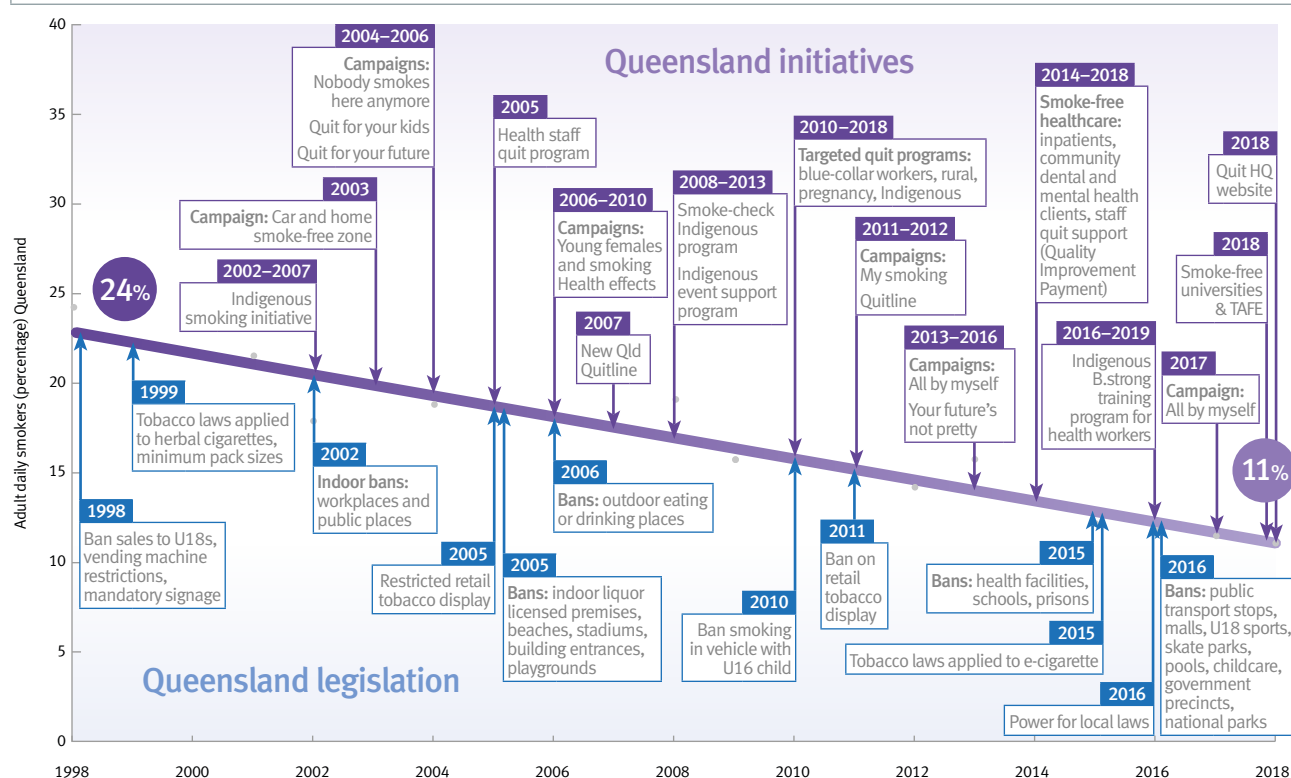
Initiation is high with smoking rates in young Indigenous Australians more than five times the non-Indigenous rate (among 15–17 year olds in 2012–13, page 57).

Rates of maternal smoking are higher among Indigenous Queensland mothers—they were four times more likely to have smoked at some time during pregnancy than non-Indigenous mothers in 2016 (page 32). While there has been a decrease in maternal smoking over the past decade, the rate of decline for Indigenous Queensland mothers is about half that of non-Indigenous mothers. Furthermore, 57% of Indigenous Queensland children live in a household with a smoker.

Significant challenges remain as the socioeconomic gap is widening. The burden of smoking rests heavily on the most disadvantaged populations. Over the past eight years compared to adults living in the most advantaged areas, for those in disadvantaged areas:

- smoking rates were three times higher and the downward trend was slower (14% compared with 41%)
- rates of cessation were lower and fewer gains have been achieved (5% increase compared with 10%)
- youth smoking rate was double and downward trends slower (13% compared with 37%)
- maternal smoking rate was higher (5.4 times) and downward trend lower (21% compared with 48%).

Figure 22: Smoking prevalence and key tobacco initiatives, Queensland, 1998–2018



# Smoking

Table 17: Smoking prevalence, adults, Queensland, 2018<sup>34</sup>

		Current daily	Current – not daily	Ex-smoker	Never smoked
18+ years	Persons	11.1 (10.2–12.1)	4.7 (3.9–5.6)	28.4 (27.1–29.6)	55.9 (54.3–57.4)
	Male	12.2 (10.7–13.9)	5.9 (4.8–7.3)	31.5 (29.6–33.4)	50.4 (48.1–52.8)
	Female	10.0 (8.9–11.2)	3.6 (2.6–4.9)	25.4 (23.8–27.0)	61.1 (59.1–63.0)
Persons	18–24 years	11.2 (7.2–17.0)	13.2 (8.7–19.6)	*4.1 (2.5–6.7)	71.5 (64.2–77.8)
	25–34 years	11.9 (9.6–14.6)	6.8 (5.1–8.9)	18.1 (15.5–21.2)	63.2 (59.4–66.9)
	35–44 years	12.0 (10.2–14.1)	5.6 (4.2–7.4)	27.0 (24.3–30.0)	55.3 (52.0–58.6)
	45–54 years	14.9 (12.8–17.2)	2.1 (1.3–3.1)	33.0 (30.1–36.0)	50.1 (46.9–53.2)
	55–64 years	12.5 (10.9–14.5)	1.9 (1.3–2.9)	40.2 (37.4–43.0)	45.4 (42.5–48.2)
	65–74 years	6.7 (5.6–7.9)	*0.9 (0.5–1.6)	43.6 (41.1–46.2)	48.8 (46.2–51.4)
	75+ years	2.4 (1.6–3.6)	*1.2 (0.6–2.2)	38.1 (34.8–41.4)	58.4 (55.0–61.8)
Males	18–24 years	*13.3 (6.9–23.9)	*13.7 (8.0–22.6)	*5.2 (2.8–9.7)	67.8 (56.7–77.2)
	25–34 years	11.6 (8.3–16.1)	9.7 (6.9–13.4)	19.1 (15.1–23.8)	59.6 (53.8–65.2)
	35–44 years	13.5 (10.8–16.8)	7.8 (5.4–11.1)	24.8 (21.0–29.0)	53.9 (49.0–58.8)
	45–54 years	15.8 (12.6–19.6)	*1.9 (1.1–3.1)	33.4 (29.1–37.9)	49.0 (44.2–53.8)
	55–64 years	15.3 (12.6–18.4)	*2.9 (1.8–4.8)	42.9 (39.0–47.0)	38.9 (34.9–43.0)
	65–74 years	7.2 (5.7–9.1)	*1.4 (0.7–2.8)	55.3 (51.5–59.0)	36.1 (32.5–39.9)
	75+ years	*1.6 (0.9–2.8)	**	59.4 (54.1–64.5)	38.6 (33.6–43.9)
Females	18–24 years	*9.1 (5.4–15.0)	*12.7 (6.5–23.3)	*3.0 (1.3–6.6)	75.2 (65.3–83.0)
	25–34 years	12.1 (9.3–15.6)	*3.9 (2.3–6.5)	17.2 (13.8–21.2)	66.9 (61.9–71.5)
	35–44 years	10.5 (8.3–13.3)	3.6 (2.3–5.5)	29.2 (25.3–33.5)	56.7 (52.2–61.1)
	45–54 years	14.0 (11.5–17.0)	*2.3 (1.2–4.2)	32.6 (28.9–36.6)	51.1 (46.9–55.3)
	55–64 years	9.8 (8.0–12.1)	*0.9 (0.5–1.6)	37.4 (33.7–41.3)	51.8 (47.9–55.7)
	65–74 years	6.2 (4.8–7.9)	*0.4 (0.2–1.0)	32.1 (28.9–35.4)	61.3 (58.0–64.6)
	75+ years	*3.0 (1.7–5.0)	*1.8 (0.9–3.6)	21.2 (18.0–24.9)	74.0 (70.0–77.7)
Socioeconomic status	Disadvantaged	16.6 (14.7–18.7)	3.9 (2.8–5.2)	29.6 (27.4–31.9)	49.9 (47.2–52.7)
	Quintile 2	12.5 (11.0–14.1)	4.9 (3.5–6.8)	32.4 (30.1–34.7)	50.2 (47.6–52.8)
	Quintile 3	11.5 (9.5–13.8)	2.6 (1.8–3.6)	30.1 (27.5–32.9)	55.8 (52.5–59.1)
	Quintile 4	8.8 (7.1–11.0)	*4.6 (2.7–7.7)	27.3 (24.4–30.3)	59.3 (55.6–62.8)
	Advantaged	6.8 (4.5–10.2)	7.3 (5.2–10.3)	22.9 (20.1–26.0)	63.0 (58.8–66.9)
Remoteness	Major cities	9.6 (8.3–11.1)	5.5 (4.3–7.0)	26.6 (24.9–28.3)	58.4 (56.1–60.6)
	Inner regional	13.1 (11.6–14.8)	3.2 (2.4–4.3)	32.8 (30.8–34.9)	50.9 (48.6–53.2)
	Outer regional	13.5 (11.8–15.4)	3.4 (2.6–4.5)	29.3 (27.0–31.7)	53.8 (50.9–56.6)
	Remote/very remote	15.9 (13.4–18.8)	*5.0 (2.9–8.5)	29.2 (26.0–32.6)	49.9 (46.0–53.8)


\* Estimate has a relative standard error of 25% to 50% and should be used with caution.

\*\* Estimate has a relative standard error greater than 50% and is not reported.



## Albert's story

*My coach and I discussed my goals, portion control, nutrition, exercise and what I had achieved each fortnight, including weight loss.*

*My health  
for life* 

Albert is retired and has a complex medical history including multi-site cancers, a painful knee condition requiring surgery, and spinal damage, leaving him an incomplete paraplegic. As he was unable to exercise his weight had significantly increased.

While waiting for knee surgery, Albert was referred by the [Get Set for Surgery](#) program to [My health for life](#). This motivated him to tackle his physical limitations and manage his weight through regular exercise and a balanced diet. Albert says he now plans his meals, rides his tricycle and lifts weights to stay active and keep his weight down.



**Less than 10%**  
of Queenslanders consume  
sufficient vegetables



**Poor diet**  
is a risk factor for  
chronic disease



**More than 1/3**  
of total daily energy  
is consumed from  
unhealthy foods



# Food and nutrition

Good nutrition is necessary to maintain healthy weight, mental and physical health, resistance to infection, quality of life, and protection against chronic disease, disability and premature death.

This section includes an assessment of food consumption in Queensland based on the five food groups of the Australian Dietary Guidelines, a summary on infant nutrition, an update on fruit and vegetable consumption and the impact of diet on the health system and society.

The guidelines recommend Australians enjoy a wide variety of nutritious foods in sufficient amounts to meet energy needs, and limit the intake of food and drinks containing saturated fat, added salt, added sugar and alcohol. Despite the abundance of healthy food available in Queensland, most people were not meeting the recommendations for daily dietary intakes.

Furthermore, people are over-consuming discretionary or unhealthy foods and drinks that are not necessary for a healthy diet and contribute to weight gain. These unhealthy foods are significant contributors to total daily energy intake. A concern is that these foods are also contributing to the five food groups. For example, potatoes in the form of chips and fries are contributing to vegetable serves, despite being discretionary due to added fat and salt.

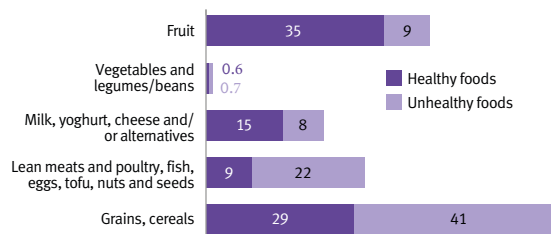
Food is frequently used in symbolic ways, playing an integral role in social bonding, relationships, and religious and social celebrations. It is a significant component of the cultural diversity in Australia. Food avoidance (for allergies, cultural, religious or ethical reasons), eating disorders and food insecurity contribute to the complexity of maintaining a healthy diet for some people.

Given the amount of food and drink consumed outside of the home, increasing the availability of healthier options is important. This can be achieved by reducing portion sizes, reformulating food and drinks to lower saturated fat, added sugar and/or salt content, adding more vegetables to meals, offering fruit, vegetable-based side dishes and water as the default options, and the use of wholegrain breads and flours. Food manufacturers, food service businesses and retailers are central to healthier options being available to Queenslanders.

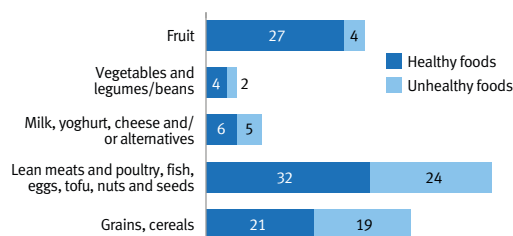
Changing the food and drink supply in communities, workplaces, health facilities, schools and clubs, can support people to make healthier choices, as can social marketing, community education, front-of-pack food labelling with nutritional profiles and kilojoule information on menus.

**Figure 23: Proportion meeting recommended consumption of the five food groups of the Australian Dietary Guidelines from healthy foods, and additional discretionary or unhealthy foods, children and adults, Queensland, 2011–12<sup>49</sup>**

## a. Children



## b. Adults



## What are the numbers?

- In 2018, based on self-report data an estimated:
  - 1.8 million adults and 243,000 children were not meeting recommendations for fruit consumption
  - 3.5 million adults and 805,000 children were not meeting recommendations for vegetable consumption.
- Almost all infants receive breastmilk at birth. At six months of age, 2 in 3 were receiving some breastmilk and at 12 months, 1 in 3.



# Food and nutrition

## Are Queenslanders meeting the Australian dietary guidelines?

The 2013 *Australian Dietary Guidelines*<sup>99</sup> recommend the consumption of five food groups: 1) fruit 2) vegetables and legumes/beans 3) milk, yoghurt, cheese and/or alternatives 4) lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes and beans and 5) grains (includes cereal foods, mostly wholegrain and/or high cereal fibre varieties). Consumption is recommended in quantities that are appropriate to life stage, sex, and energy needs.

Included within the guidelines is the recommendation to limit the consumption of discretionary foods, that is, foods that provide excess energy (kilojoules) and have little nutritional value, such as sweets, snacks, processed meats, potato chips, pastries, cakes, ice-cream, alcohol and sugary drinks. Those who are sedentary, short for age, or trying to lose weight do not need the additional energy from unhealthy discretionary foods to meet their nutrient needs. Those who are a healthy weight, more active or taller than average should consume healthy foods for extra energy, however, they may choose some unhealthy foods in small amounts on occasion for variety—contributing no more than 10% of total energy.<sup>99,100</sup>

Most Queenslanders do not meet the recommendations for any of the five food groups regardless of whether consumption is from healthy food sources or unhealthy discretionary food sources (Table 18).<sup>49</sup> Consumption of discretionary foods and drinks is widespread in the Queensland diet. More than one-third (37%) of the total daily energy intake by Queenslanders aged two years and older was from discretionary foods in 2011–12, and was highest for 14–18 year olds (45%).<sup>49</sup> Among Australian children, the consumption of discretionary hot foods, such as pies and hot chips, and sugary drinks throughout childhood by those living in the most disadvantaged areas accounted for an 11% excess weight gain compared with those living in the advantaged areas.<sup>101</sup> For Queensland males aged 19 years and older the proportion of daily energy from alcoholic drinks was relatively high at about 7–8%.<sup>49</sup>

This section reports on the extent to which the diet of average Queensland children and adults met the recommendations of the Australian Dietary Guidelines based on 24-hour food recall diaries, and the additional consumption from discretionary (unhealthy) food sources (Table 18).

---

**37%** of the **energy intake** of Queenslanders is from **unhealthy food sources**.

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### Group 1: Fruit

In 2011–12, 35% of Queensland children and 27% of Queensland adults met the recommendation for daily fruit consumption based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 44% and 31% respectively. These unhealthy sources were mostly fruit from non-alcoholic drinks, and in cereals and cereal products.<sup>102</sup>

### Group 2: Vegetables and legumes/beans

In 2011–12, 0.6% of Queensland children and 4% of Queensland adults met the recommendation for daily vegetable consumption based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 1.3% and 6% respectively. These unhealthy sources were mostly potatoes as chips and fries, potato snack foods, and pastries.<sup>102</sup>

### Group 3: Milk, yoghurt, cheese and/or alternatives

In 2011–12, 15% of children and 6% of adults met the recommendation for milk, yoghurt, cheese and/or alternatives based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 23% and 11% respectively. These unhealthy sources were mostly ice-cream, chocolate products and high saturated fat pizza.<sup>102</sup>

### Group 4: Lean meats, poultry, fish, eggs, tofu, nuts/seeds, and legumes/beans

In 2011–12, 9% of children and 32% of adults met the recommendation for lean meats and alternatives based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included this rises to 31% and 56% respectively. These unhealthy sources were mostly higher fat meat from sausages, lamb, mutton, ham and other processed meats.<sup>102</sup>

### Group 5: Grain (cereal) foods

In 2011–12, 29% of children and 21% of adults met the recommendation for grain (cereal) foods based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 70% and 39% respectively. These unhealthy sources were mostly pastries, cakes and muffins, sweet biscuits, and cereal products.<sup>102</sup>

### Unsaturated spreads and oils

The consumption of small amounts of unsaturated fats and oils is recommended for a healthy diet to provide essential fatty acids and fat soluble vitamins.<sup>99</sup> About half (52%) of Australian children and one-third (34%) of Australian adults exceeded the recommendation, usually from healthy foods.<sup>102</sup>

# Food and nutrition

**Table 18: Recommended consumption of food from the five food groups, children and adults, Queensland, 2011–12<sup>49</sup>**

Five food groups		5–17 years			18+ years		
		% meeting recommendation			% meeting recommendation		
		Total foods	Healthy foods	Unhealthy foods	Total foods	Healthy foods	Unhealthy foods
Fruit	Persons	44	35	9	31	27	4
	Males	40	31	9	36	31	5
	Females	48	39	10	26	23	3
Vegetables and legumes/beans	Persons	1.3	0.6	0.7	6	4	2
	Males	1.1	0.6	0.5	6	4	2
	Females	1.4	0.6	0.8	6	5	2
Milk, yoghurt, cheese and/or alternatives	Persons	23	15	8	11	6	5
	Males	23	14	9	17	11	7
	Females	23	16	7	6	2	4
Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans	Persons	31	9	22	56	32	24
	Males	41	13	28	64	37	27
	Females	20	5	15	47	27	20
Grain (cereal) products	Persons	70	29	41	39	21	19
	Males	74	29	45	47	24	24
	Females	65	29	36	31	18	14

	Up to one third (0–33%) of the total food group consumed from unhealthy foods
	Between one third and up to two thirds (34–65%) of the total food group consumed from unhealthy foods
	Two thirds or more (66–100%) of the total food group consumed from unhealthy foods

## Salt intake

Australian adults continue to exceed the maximum added salt intake of 5g per day recommended by the World Health Organization. Males consumed up to double the recommended daily amount at 10g per day, compared with 7g per day for females.<sup>103</sup>

## Sugar sweetened drinks

The recommendation is for Australians to limit their intake of added sugars from foods and drinks.<sup>99</sup> The consumption of sweetened drinks was a key component of added sugar intake. Water is recommended as the drink of choice.<sup>99</sup>

Half (51%) of Queensland children and one-third (33%) of Queensland adults consumed sugar sweetened drinks in the previous 24 hours in 2011–12.<sup>49</sup> The prevalence of daily sugar sweetened drink consumption by adults and children in Queensland did not differ from national consumption in 2011–12.<sup>49</sup> Consumption of sugar sweetened drinks and sugar intake declined in Australia between 1995 and 2011–12, by 23% for children and 6% for adults.<sup>104</sup> Despite this decline, added sugar intake remains too high.

## Food avoidance

In 2011–12, 17% of Queenslanders aged two years or older reported avoiding a food due to allergy or intolerance, which was the same as the national rate.<sup>100</sup> Queenslanders were less likely to avoid particular foods for cultural, religious or ethical reasons than nationally (4% compared with 7%).<sup>100</sup>

## Food security

The reality of food security in some households is an additional barrier to meeting the dietary guidelines. Food security requires constant access to sufficient, safe, nutritious food to maintain a healthy and active life—financial barriers to purchasing food impact on food security.<sup>100</sup> The tendency to overcome financial barriers to food security by ‘filling up’ on cheaper, unhealthy foods rather than healthy foods is a short-term fix that may lead to longer term malnutrition and chronic health issues.<sup>105</sup>

In 2011–12, 5.2% of Queenslanders aged two years or older were living in a household that had run out of food in the previous 12 months (nationally 4.0%), and of these less than half were unable to buy more food and about one-third went without food.<sup>100</sup>

Among Indigenous Australians aged two years or older, 22% were living in a household that had run out of food in the previous 12 months in 2012–13, and the percentage was higher (31%) for those living in remote areas.<sup>64</sup> One-third (7.0%) went without food, higher (9.2%) for those in remote areas in 2012–13.<sup>64</sup>

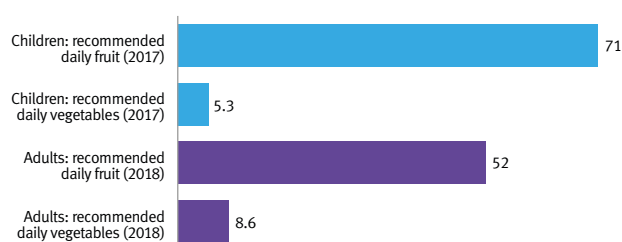
# Food and nutrition

## Fruit and vegetable consumption in children and adults

Prevalence data was based on adult self-report in 2018, and proxy report for children in 2017, and may significantly over-estimate actual consumption considering data from food recall diaries (as reported on the previous page).

The recommended intakes are an average to aim for each day and the number of recommended serves per day varies by age group and sex for both children and adults.<sup>99</sup>

**Figure 24: Recommended daily fruit and vegetable consumption, children and adults, Queensland<sup>34</sup>**



In Queensland (Table 19, Figure 24)<sup>34</sup>:

- 71% of children (in 2017) and 52% of adults (in 2018) met the recommendation for daily serves of fruit.
- 5.3% of children (in 2017) and 8.6% of adults (in 2018) met the recommendation for daily serves of vegetables.

### By sex

Compared to adult males in 2018 (Table 19), adult females were<sup>34</sup>:

- 13% more likely to consume the recommended daily serves of fruit
- three times more likely to consume the recommended daily serves of vegetables.

Among children, there was no difference between girls and boys for their daily intake of fruit or vegetables in 2017.<sup>34</sup>

### By age

Older adults (65 years and older) were 18% more likely to meet the recommended serves of fruit than those aged 18–24 years in 2018 (Table 19).<sup>34</sup>

Younger children (5–7 years) were 52% more likely to consume the recommended daily serves of fruit than older children 16–17 years in 2017 (Table 19).<sup>34</sup>

Less than 10% of children and adults met the recommendation for daily serves of vegetables (Figure 24, Table 19). There was no difference between age groups.

More adults achieved the daily consumption of three or more serves of vegetables (40% in 2018), with higher consumption for females than males (48% compared with 32%).<sup>34</sup> There was no difference in achieving three or more serves of vegetables between age groups.

One-third (33%) of children consumed three or more serves of vegetables daily in 2017.<sup>34</sup>

### By socioeconomic status

For adults in 2018 the recommended daily consumption of fruit or vegetables did not differ by socioeconomic status (Table 19).<sup>34</sup>

Children living in the most advantaged areas were 17% more likely to meet the recommendation for daily fruit consumption than those in the most disadvantaged areas in 2017. There was no difference for daily vegetable consumption.

### By remoteness

The recommended daily consumption of fruit or vegetables did not differ by area of remoteness for children in 2017 or adults in 2018 (Table 19).<sup>34</sup>

### Indigenous Queenslanders

In 2012–13, 41% of Indigenous Queenslander adults consumed the recommended serves of fruit, and 4.2% consumed the recommended serves of vegetables per day.<sup>90</sup> Fruit consumption was about 12% lower than for non-Indigenous adults after adjusting for age differences but did not differ for vegetable consumption.

For Indigenous Queenslander children, 68% consumed the recommended serves of fruit per day and 8.9% consumed the recommended serves of vegetables. Fruit and vegetable consumption did not differ from that of non-Indigenous children.

For children, since 2013, the prevalence of **recommended fruit consumption** has

**increased by 10%**

while **vegetable consumption** has

**decreased by 32%.**



# Food and nutrition

## Regional Queenslanders

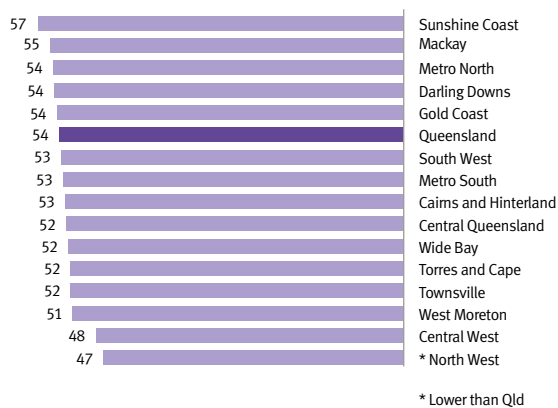
For adults in 2017–18, the prevalence of recommended daily fruit consumption in North West HHS was 13% lower than the state average but did not differ for the remaining HHSs (Figure 25).<sup>34</sup>

For adults in 2017–18, the prevalence of recommended daily vegetable consumption in Sunshine Coast HHS was 36% higher than the state average but did not differ for the remaining HHSs (Figure 26).<sup>34</sup> About one-third

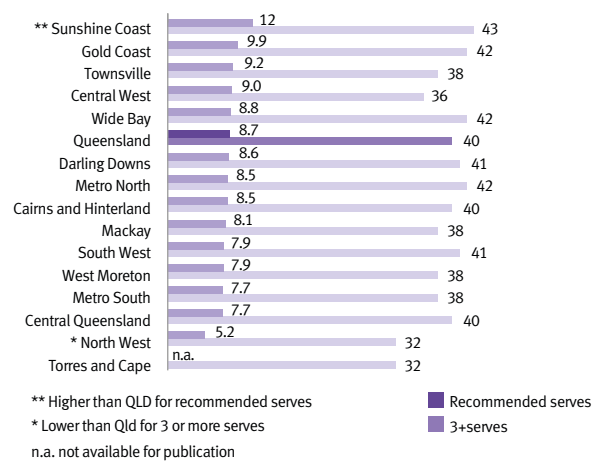
or more of adults achieved the daily consumption of three or more serves of vegetables, across the HHSs in 2017–18 (Figure 26). There was little variation among the HHSs with the exception of North West HHS which was 20% lower than the state average.

There were no differences for children between the HHSs and the state average for recommended daily fruit and vegetable consumption in 2015–16.<sup>34</sup>

**Figure 25: Proportion meeting recommended daily fruit consumption, by HHS, adults, Queensland, 2017–18<sup>34</sup>**



**Figure 26: Proportion meeting recommended daily vegetable consumption, and consuming three or more daily serves of vegetables, by HHS, adults, Queensland, 2017–18<sup>34</sup>**



More information on HHSs is available from the data visualisations and statistical tables online (page vii).

## How we compare

### Nationally

Queensland adults did not differ from national for recommended fruit or vegetable consumption in 2014–15.<sup>33</sup> Queensland was ranked second highest among the jurisdictions for recommended daily fruit consumption (after Western Australia), and third highest for vegetables (after Tasmania and Western Australia).

Queensland children did not differ from children nationally in their fruit and vegetable consumption in 2014–15.<sup>33</sup> Queensland was ranked fourth highest of the jurisdictions for recommended daily serves of fruit and sixth highest for vegetables.

### Internationally

Australians (aged 15 years and older) had the highest proportion of daily fruit consumption and the second highest daily vegetable consumption (behind Korea) among 27 OECD countries in 2014 (or nearest year).<sup>71</sup>

## Trends

The prevalence of recommended fruit consumption for adults has not changed over the past 10 years (2008–2018). The trend did not vary by age or socioeconomic status, although there was year to year variation.<sup>91</sup>

For children the prevalence of recommended daily fruit consumption increased by 9.9% between 2013 and 2017.<sup>91</sup> The trend did not vary by age or socioeconomic status.

For adults the proportion meeting the recommended vegetable consumption has not changed over the past 10 years (2008–2018).<sup>91</sup> However, for younger adults (18–29 years) there was a 62% increase in prevalence. For those aged 30–44 years it was steady, it declined by 23% for middle-aged adults (45–64 years) and by 32% for those aged 65 years and older.

# Food and nutrition

For adults, the prevalence of consuming three or more serves of vegetables daily (less than the recommendation) decreased by 8.7% between 2008 and 2018.<sup>91</sup> The trend did not differ by age.

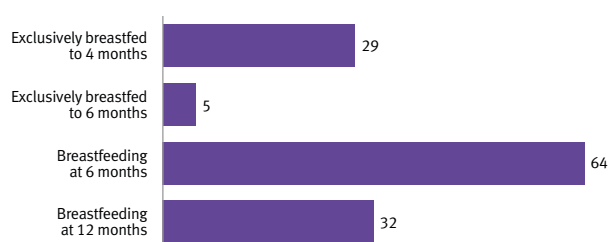
For children, the proportion meeting the recommended daily serves of vegetables declined by 32% between 2013 and 2017.<sup>91</sup> The trend did not differ by sex, age or socioeconomic status.

## Infant feeding

Breastfeeding provides optimal infant nutrition and has important health benefits for mothers, as well as social and economic benefits. The 2012 *Australian Infant Feeding Guidelines* encourage and support exclusive breastfeeding to around 6 months of age, and continued breastfeeding until 12 months of age and beyond.<sup>106</sup>

The introduction of solid foods between six and 12 months of age should complement breastmilk or infant formula, and be highly nutritious. Cow's milk is not recommended for children until around 12 months of age.

Figure 27: Prevalence of breastfeeding, Queensland, 2014<sup>43</sup>



In 2014<sup>43</sup> (Figure 27):

- 96% of infants aged up to two years had ever been breastfed, while exclusive breastfeeding was initiated for 92%.
- 29% of infants were exclusively breastfed to four months of age and 5% to six months.
- 64% were receiving some breastmilk at six months and 32% at 12 months.
- At four months of age, 36% of infants had been introduced to solid or semi-solid foods, while 26% were consuming them daily.
- 7% of infants were consuming cow's milk at 10 months.

There were some signs of improvement in infant nutrition between 2003 and 2014<sup>43</sup>:

- While the proportion of infants exclusively breastfed to four months did not change between 2008 and 2014, the proportion receiving some breastmilk at each month in the first year has increased—from 33% in 2003 to 48% in 2014 at nine months of age, and from 17% in 2003 to 32% in 2014 at 12 months. This was mirrored by a decrease in the proportion of children receiving formula at each month over the first year.
- The continuation of breastfeeding (or infant formula) as the main food was supported by the decrease in the proportion of infants receiving solid food daily at four months of age, from 59% in 2003 to 22% in 2014.
- The recommendation to introduce cow's milk from 12 months of age or older was supported by the decrease in the proportion of infants who consumed cow's milk at 10 months of age, from 35% in 2003 to only 7% in 2014.
- In 2003, about three times as many infants were consuming sweetened drinks as in 2014: 38% compared with 12% at 12 months of age and 61% compared with 26% at two years of age.

## Impacts and costs

### Burden of disease

The combined impact of dietary factors was the second largest cause of health loss in Queensland in 2011, accounting for 7.8% of the total burden of disease and injury (Table 2, page 10).<sup>25,93</sup> When considered individually, a diet low in fruit explained 1.9% of the total burden, and a diet low in vegetables explained 1.5% (proportions cannot be summed due to shared effects). Dietary risks (combined) explained 39% of cardiovascular disease burden and 7.2% of cancer burden in 2011. Individually, low fruit consumption explained 10% of the cardiovascular disease burden, and 2.5% of cancer burden. Low vegetable consumption explained 9.3% of the cardiovascular disease burden, and 0.6% of cancer burden.

Among Indigenous Australians, dietary risks (combined) were the second largest cause of health loss accounting for 9.7% of the total burden of disease and injury, and 15% of the health gap between Indigenous Australians and non-Indigenous (Table 3, page 11).<sup>26</sup>

# Food and nutrition

## Deaths

In 2016, the combined impact of dietary risks accounted for an estimated 3800 deaths in Queensland (13% of all deaths) (Table 2, page 10).<sup>25,93</sup> Diets low in fruit accounted for an estimated 950 deaths, and low in vegetables an estimated 750 deaths in 2016.

## Disability and hospitalisation

Dietary risks (combined) caused 3.3% of the total disability burden in 2011.<sup>25,93</sup> The combined impact of dietary risks accounted for 48,300 hospitalisations (2% of total) and 169,500 patient days in 2015–16.<sup>25,93</sup>

Combined dietary risks was associated with about 21,300 hospitalisations for coronary heart disease, 8700 for stroke and 8100 for bowel cancer in 2015–16 (Figure 28).<sup>93</sup> When considered individually, a diet low in fruit resulted in 4900 hospitalisations for coronary heart disease and 3800 for stroke. A diet low in vegetables resulted in 4300 hospitalisations for coronary heart disease and 3600 for stroke.

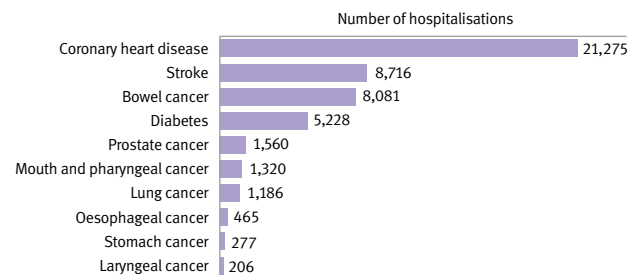
## Household expenditure on food

In 2015–16, Queensland households in the highest income category (by quintile) spent more than double (\$302 weekly) that of the lowest quintile (\$131).<sup>107</sup> The average weekly spend in Queensland was \$218, compared with \$237 nationally in 2015–16. Queenslanders spent a further \$31 per week on alcoholic drinks, similar to national. One-third (31%) of the weekly expenditure on food and non-alcoholic drinks by Queensland households was for meals outside of the home, fast food and takeaway food, followed by 12% on meat including the discretionary higher fat and processed meat (and excluding fish and seafood), 11% on condiments, confectionary, food additives and packaged prepared meals, and 8.8% on bakery products, flour and cereals including the discretionary foods of cakes, biscuits and puddings. Only 6.4% was spent on fresh and frozen vegetables and 6.1% on fruit and nuts.

## Health expenditure

In 2008, it was estimated that inadequate fruit and vegetable consumption resulted in \$206 million in health sector costs nationally, and \$63 million in production losses.<sup>108</sup> Based on population share, that was a total of \$54 million in Queensland, where 77% or \$41 million was associated with costs to the health sector. An estimated \$595 million of federal government health expenditure and \$384 million of state and territory government health expenditure was attributed to the low consumption of vegetables in 2015–16.<sup>109</sup> If the average vegetable consumption were 10% higher, it was estimated the government expenditure would have been reduced by \$100 million in 2015–16 dollars.

**Figure 28: Hospitalisations for combined dietary risks, by cause, Queensland, 2015–2016<sup>25,93</sup>**



**15%** of the **health gap** between non-Indigenous and Indigenous Queenslanders was **due to dietary factors**.

# Food and nutrition

Table 19: Recommended daily fruit and vegetable consumption, adults and children, Queensland<sup>34</sup>

Adults (2018)			Children (2017)		
	Recommended daily serves			Recommended daily serves	
	fruit	vegetables		fruit	vegetables
<b>18+ years</b>			<b>5–17 years</b>		
Persons	52.1 (50.6–53.7)	8.6 (7.8–9.6)	Persons	71.4 (69.2–73.5)	5.3 (4.3–6.5)
Male	48.8 (46.4–51.1)	4.2 (3.3–5.4)	Male	68.9 (65.8–71.8)	5.0 (3.8–6.7)
Female	55.3 (53.3–57.4)	12.8 (11.5–14.3)	Female	74.1 (70.9–77.0)	5.5 (4.1–7.4)
<b>Persons</b>			<b>Persons</b>		
18–24 years	53.2 (45.6–60.7)	*8.4 (4.9–14.1)	5–7 years	86.3 (82.6–89.3)	5.4 (3.5–8.3)
25–34 years	45.2 (41.3–49.2)	8.0 (6.1–10.4)	8–11 years	74.7 (70.8–78.2)	6.0 (4.2–8.5)
35–44 years	48.5 (45.1–51.8)	8.3 (6.5–10.5)	12–15 years	63.4 (59.1–67.5)	5.0 (3.4–7.3)
45–54 years	48.9 (45.7–52.1)	10.4 (8.6–12.5)	16–17 years	56.9 (51.2–62.4)	*4.1 (2.4–6.7)
55–64 years	54.1 (51.2–56.9)	8.4 (7.0–10.0)			
65–74 years	62.3 (59.8–64.7)	8.4 (7.2–9.8)			
75+ years	63.4 (59.9–66.7)	8.2 (6.6–10.2)			
<b>Males</b>			<b>Males</b>		
18–24 years	50.8 (39.4–62.0)	**	5–7 years	87.1 (82.3–90.7)	*8.0 (4.8–13.1)
25–34 years	41.2 (35.6–47.0)	*2.0 (1.1–3.8)	8–11 years	74.6 (69.1–79.4)	5.3 (3.3–8.5)
35–44 years	47.4 (42.5–52.4)	*6.2 (3.7–10.1)	12–15 years	59.1 (53.3–64.7)	*2.6 (1.4–4.8)
45–54 years	49.7 (44.9–54.5)	4.3 (2.7–6.8)	16–17 years	47.5 (39.5–55.6)	*4.5 (2.3–8.8)
55–64 years	46.8 (42.8–50.9)	3.2 (2.2–4.6)			
65–74 years	55.6 (51.8–59.3)	4.0 (2.9–5.5)			
75+ years	60.2 (55.1–65.2)	7.5 (5.2–10.7)			
<b>Females</b>			<b>Females</b>		
18–24 years	55.8 (45.8–65.3)	*12.2 (6.9–20.8)	5–7 years	85.5 (79.4–90.0)	**
25–34 years	49.2 (43.9–54.6)	13.9 (10.5–18.2)	8–11 years	74.8 (69.1–79.8)	*6.7 (4.0–11.0)
35–44 years	49.5 (45.0–54.0)	10.3 (8.0–13.3)	12–15 years	67.9 (61.4–73.8)	7.6 (4.7–11.9)
45–54 years	48.2 (44.0–52.4)	16.0 (13.2–19.4)	16–17 years	66.8 (59.3–73.5)	**
55–64 years	61.3 (57.4–65.0)	13.6 (11.1–16.5)			
65–74 years	68.9 (65.6–72.0)	12.8 (10.7–15.2)			
75+ years	65.8 (61.0–70.3)	8.8 (6.7–11.6)			
<b>Socioeconomic status</b>			<b>Socioeconomic status</b>		
Disadvantaged	47.2 (44.5–49.9)	7.1 (5.9–8.5)	Disadvantaged	66.7 (61.8–71.4)	*5.9 (3.6–9.6)
Quintile 2	53.5 (50.8–56.1)	9.5 (7.8–11.4)	Quintile 2	67.5 (62.9–71.9)	5.0 (3.4–7.3)
Quintile 3	52.5 (49.0–55.9)	8.5 (6.9–10.3)	Quintile 3	70.3 (65.3–74.9)	5.2 (3.5–7.8)
Quintile 4	53.0 (49.2–56.7)	8.4 (6.7–10.6)	Quintile 4	74.9 (69.9–79.4)	.8 (3.6–9.4)
Advantaged	54.0 (49.7–58.2)	9.5 (7.1–12.6)	Advantaged	77.9 (72.8–82.2)	*4.4 (2.6–7.4)
<b>Remoteness</b>			<b>Remoteness</b>		
Major cities	52.6 (50.3–54.9)	8.9 (7.7–10.3)	Major cities	73.9 (70.9–76.7)	4.6 (3.4–6.3)
Inner regional	51.4 (49.1–53.7)	8.6 (7.5–9.9)	Inner regional	71.0 (66.8–74.9)	6.0 (4.1–8.6)
Outer regional	51.9 (48.9–54.9)	7.4 (6.1–8.8)	Outer regional	62.3 (57.2–67.1)	5.7 (3.6–8.9)
Remote/very remote	48.8 (44.9–52.7)	8.7 (6.1–12.3)	Remote/very remote	71.6 (62.4–79.2)	*10.4 (6.1–17.2)

\* Estimate has a relative standard error of 25% to 50% and should be used with caution.

\*\* Estimate has a relative standard error greater than 50% and is not reported.



# Weight status

About one-third of Queensland adults and two-thirds of children are currently in the healthy weight range. After several decades of increase, rates of obesity appear to be steady in Queensland.

Obesity remains a major issue with 30% of adults obese, and of those about one-third are severely obese (12% or about 460,000 adults)—a similar proportion to the number of smokers. The average obese adult would need to lose 29kg to achieve a healthy weight, a total excess of 33,700 tonnes among all obese adults in Queensland.

Avoiding weight gain is a challenge for many Queenslanders and over the past decade the average Queenslanders has gained a kilogram every four to five years. Many Queenslanders have taken action to either maintain their weight or lose weight through strategies such as reduced portion sizes and increased physical activity.

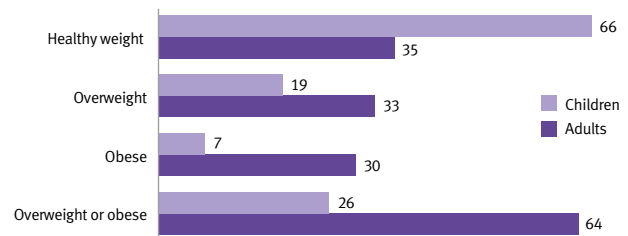
The pathway to obesity is complex—a combination of food (energy in), physical activity (energy out), genetics and environment. Over the past 30 years, changes to the environment in which we live, work and play have made it easier to consume excess energy compared to our needs. For example, readily available, cheap, energy-dense and nutrient-poor foods and drinks in combination with work and leisure activities that are mainly sedentary have been driving increases in obesity in Queensland and Australia.

The financial cost of obesity is high and directly impacts on the health system through disability and hospitalisations. Community costs occur through productivity losses including absenteeism from work, loss of wellbeing and premature death.

Continued downward pressure on obesity must be maintained through investment in a range of preventive health initiatives including front-of-pack food labelling, kilojoule information on menus, social marketing campaigns and healthy lifestyle programs to improve eating patterns, increase physical activity and reduce sedentary behaviours.

With two-thirds of adults being overweight or obese, changing norms and culture about body weight may take time to achieve. Widespread action is required with governments, community groups, industry, media, families and individuals all having a role to play. We need community infrastructure that promotes active transport and physical activity and healthy food and drink supply strategies in schools, sporting clubs and hospitals.

**Figure 29: Measured weight status\*, children and adults, Queensland, 2014–15<sup>49</sup>**



\* Measured data for 2017–18 is due for release in December 2018.

## What are the numbers?

In 2018, based on measured prevalence in 2014–15:

- An estimated:
  - 558,000 children and 1.4 million adults were healthy weight
  - 163,000 children and 1.3 million adults were overweight
  - 61,000 children and 1.2 million adults were obese.
- Adult obesity prevalence did not change between 2011–12 and 2014–15, consistent with national trends.
- Childhood obesity prevalence did not change between 2007–08 and 2014–15, consistent with national trends.
- The prevalence of overweight and obesity (combined) in Queensland adults and children was similar to national prevalence in 2014–15, and among jurisdictions, Queensland was ranked fourth highest for adults and fifth highest for children.





## Tevita's story

*Since losing the weight, I feel great. I feel lighter on my feet, I can move easier and faster, I'm stronger and have heaps more energy. I can play a full game of rugby.*

Brisbane schoolboy Tevita was headed for bariatric surgery, weighing 178kg in April 2016. This was a turning point for Tevita, who lost more than 65kg in 12 months by making changes to his diet and activity levels. Tevita credits the support of his family, friends and the weight management clinic at the Queensland Children's Hospital for his successful weight loss.

*'When I was at my heaviest and the word surgery was mentioned, I knew I didn't want to go down that road, so I chose instead to change the way I eat, exercise more and get healthier. My mum and sister help prepare my meals and are always encouraging me to stay on track. My mates have been very supportive too, always pushing me to keep going and do better.'*



**2 in 3**  
children  
were **healthy weight**

The average **obese adult** in  
Queensland would need to



**lose**  
**29kg**  
to reach a **healthy weight**



**1 in 3**  
adults  
was **healthy weight**

# Weight status

The reporting of overweight and obesity is based on body mass index (BMI). BMI is calculated by dividing a person's weight in kilograms by their height in metres squared. It categorises people's weight status into underweight, healthy weight, overweight, or obese.

The preferred use of physical measurements of weight and height to calculate BMI provides higher accuracy, however, collection is costly. Weight and height were measured during the national health survey interviews held in 2007–2008<sup>110</sup>, 2011–2012<sup>111</sup> and 2014–15<sup>33</sup> (Table 20).<sup>49</sup> The survey was repeated in 2017–18 and will provide updated measured prevalence once data becomes available from December 2018.

Self-reported or proxy-reported data were collected annually in Queensland state surveys and are used for trend reports and regional assessments.<sup>34,91</sup>

Adult self-report underestimates the true prevalence of overweight and obesity because people tend to underestimate their weight and overestimate their height.

## Prevalence and differentials

Height and weight data were recorded by physical measurement (Table 20)<sup>33,49</sup>, proxy-report for children aged 5–17 years (Table 21)<sup>34</sup>, and adult self-report (Table 22).<sup>34</sup>

### Healthy weight

- Measured: 35% of adults and 66% of children were healthy weight in 2014–15.<sup>33,49</sup>
- Self/proxy-reported: 37% of adults were healthy weight and 74% of children were healthy weight/underweight\* in 2018.<sup>34</sup>

### Overweight

- Measured: 33% of adults and 19% of children were overweight in 2014–15.<sup>33</sup>
- Self/proxy-reported: 36% of adults and 18% of children were overweight in 2018.<sup>34</sup>

### Obesity

- Measured: 30% of adults and 7.2% of children were obese in 2014–15.<sup>33</sup>
- Self/proxy-reported: 24% of adults and 7.9% of children were obese in 2018.<sup>34</sup>

\* Proxy-reported weight status for children does not provide reliable distinctions between healthy weight and underweight, therefore the combined category was reported (Table 21).

## Overweight and obesity

- Measured: 64% of adults and 26% of children were overweight or obese in 2014–15.<sup>33</sup>
- Self/proxy-reported: 60% of adults and 26% of children were overweight or obese in 2018.<sup>34</sup>

## Underweight

- Measured: 1.2% of adults and 8.0% of children were underweight in 2014–15.<sup>49</sup>
- Self-reported: 2.4% of adults were underweight in 2018.<sup>34</sup>

## By sex

By measurement in 2014–15, the average adult male weighed 88.4kg and was 176.7cm tall, while the average adult female weighed 72.4kg and was 162.7cm.<sup>49</sup>

Based on self-report in 2018, the average male weighed 87.3kg and was 178.1cm tall, while the average female was 72.0kg and 164.5cm.<sup>34</sup>

Adult females were 36% more likely to be a healthy weight than males in 2018 based on self-reported data (Table 22). This difference was mainly due to the higher prevalence of self-reported overweight for males (43% compared with 30%) while obesity was similar.

By measurement or proxy-report for children there was no difference between girls and boys for any weight category.<sup>33,34</sup>

## By age

In 2014–15 based on measurement, the average Queensland adult was overweight, independent of sex or age group (Figure 30).<sup>33</sup> The average younger female (18–34 years) was closest to the healthy weight range, and the average male aged 45–74 years was closest to the obese range.

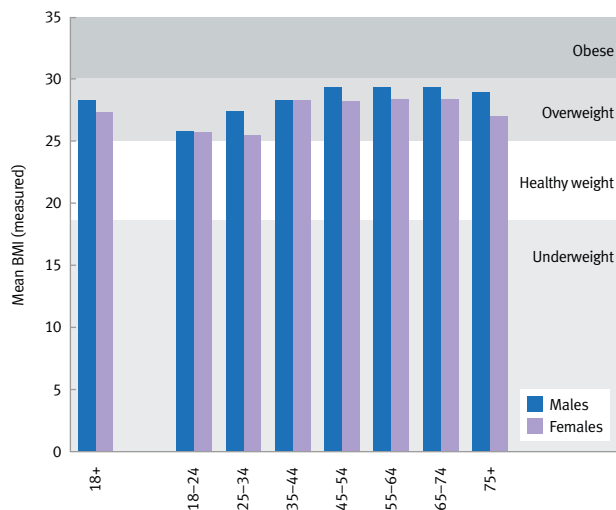
The prevalence of self-reported overweight and obesity increased with age up to 74 years and then decreased (Table 22). Obesity prevalence peaked in adults aged 55–64 years in 2018.

Proxy-reported childhood healthy weight/underweight, overweight, obesity and the combined category of overweight and obesity, did not differ by age in 2018 (Table 21).



# Weight status

Figure 30: Measured weight status of average adult, by age group and sex, Queensland, 2014–15<sup>49</sup>



## By socioeconomic status

Based on measured estimates in 2014–15, adults in disadvantaged areas were 29% less likely to be in the healthy weight and underweight category and 49% more likely to be obese than those in advantaged areas.<sup>49</sup> Considering those with a BMI of 35 or greater, there was a larger differential—those in disadvantaged areas were 2.8 times more likely to be severely obese than those in advantaged areas.

Children living in the most disadvantaged areas were 2.5 times more likely to be obese than children in the most advantaged areas, based on proxy-reported data in 2018 (Table 21). Conversely, children living in the most advantaged areas were 25% more likely to be healthy weight than those in the most disadvantaged areas. Overweight prevalence did not differ.

Children in disadvantaged areas were

**2.5 times**  
more likely to be  
**obese**

than children in advantaged areas.

## By remoteness

The prevalence of self-reported adult obesity in areas outside major cities varied from 35% higher in inner regional areas to 39% higher in remote areas in 2018 (Table 22). Overweight prevalence did not differ, while the combined category of overweight and obesity was about 12% higher outside major cities. Adults living in major cities were 27% more likely to be healthy weight compared to those in remote areas.

There was no difference in the prevalence of proxy-reported childhood healthy weight/underweight, overweight or obesity (or combined) between major cities, and regional and remote areas in 2018 (Table 21).

## Indigenous Queenslanders

In 2012–13, more than two-thirds (70%) of Indigenous Queensland adults were measured as overweight or obese—30% were overweight and 40% were obese.<sup>90</sup> After adjusting for age differences, Indigenous Queenslanders were 39% more likely to be obese and 25% less likely to be healthy weight by measurement (12% more likely to be overweight or obese) compared with non-Indigenous adults.<sup>90</sup> Indigenous Queenslanders were third highest of the jurisdictions for overweight and obesity after New South Wales and Western Australia.<sup>64</sup>

In 2012–13, 30% of Indigenous Queensland children were measured as overweight or obese—17% overweight and 13% obese—and did not differ from non-Indigenous.<sup>90</sup>

## Regional Queenslanders

The prevalence of self-reported adult healthy weight was 12% higher in Gold Coast HHS than the state average in 2017–18 (Figure 31a).<sup>34</sup> Six HHSs had lower prevalence of self-reported adult healthy weight, varying from 24% lower in Wide Bay to 13% lower in West Moreton.

Eight HHSs had higher prevalence of self-reported adult overweight and obesity (combined) than the state average in 2017–18, varying from 9% higher in Mackay to 14% higher in Central West (Figure 31b).<sup>34</sup> Gold Coast HHS had an 11% lower prevalence.

In 2017–18, there was no difference across Queensland for self-reported adult overweight with one exception—while the prevalence of self-reported adult overweight was 13% lower in West Moreton HHS, the corresponding prevalence of obesity was 39% higher (Figure 31c).

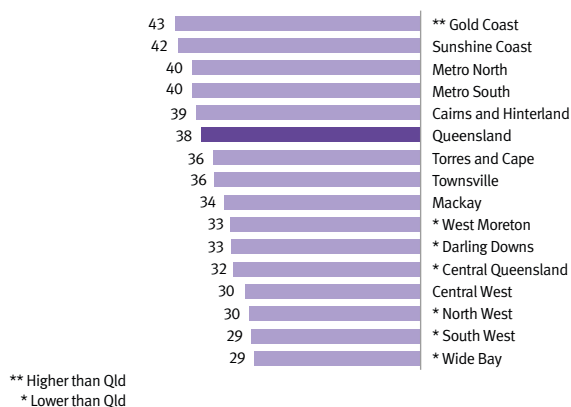
Seven HHSs had higher prevalence of self-reported adult obesity than the state average in 2017–18, varying from 20% higher in Darling Downs to 45% higher in Central West (Figure 31d).<sup>34</sup> Prevalence was lower in Sunshine Coast HHS and Gold Coast HHS (both 20%).



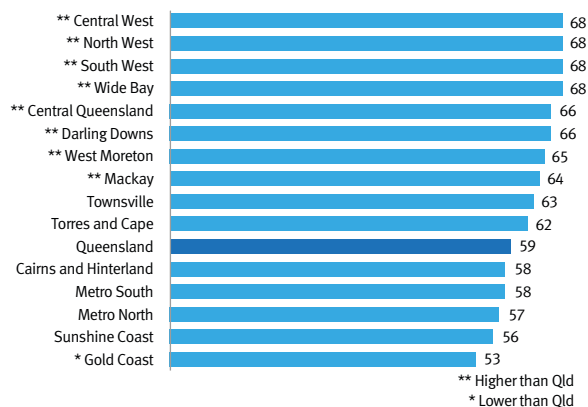
# Weight status

Figure 31: Self-reported weight status, by BMI category and HHS, adults, Queensland, 2017–18<sup>34</sup>

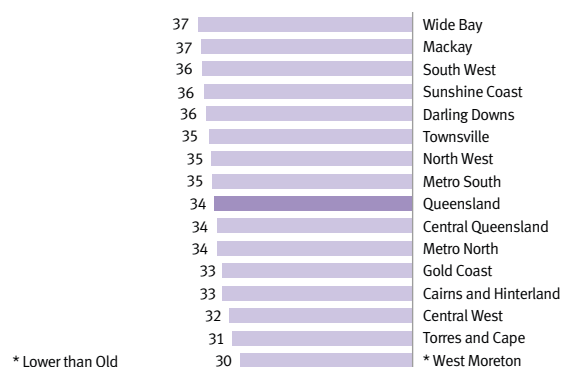
## a. Adults, healthy weight



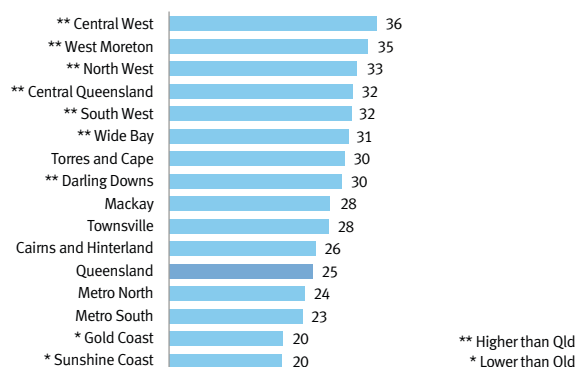
## b. Adults, overweight and obesity (combined)



## c. Adults, overweight



## Adults, obese



Among HHSs, the mean self-reported weight of adults varied by 9.2kg while height varied by less than 2cm in 2017–18.<sup>34</sup> The highest mean weight for females and males was in Central West (Figure 32). The variation was greater among males (11.1kg difference between highest and lowest) than females (9.5kg).

In 2017–18, proxy-reported childhood healthy weight and obesity did not differ between HHSs from the state

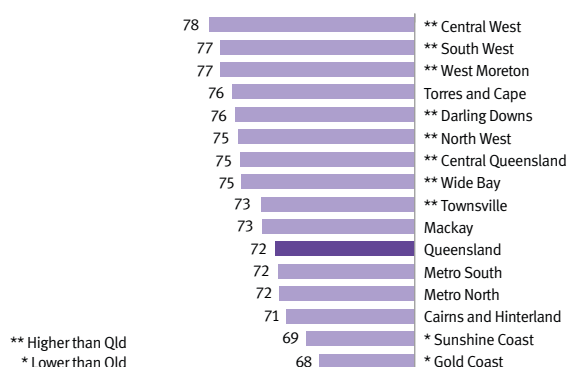
average with one exception—Metro North had a lower prevalence of childhood obesity than the state (5.2% compared with 8.8%). Although the prevalence of overweight and obesity combined varied, none of the HHSs differed significantly from the state average.<sup>34</sup>

*More information on HHSs is available from the data visualisations, HHS booklet and statistical tables online (page vii).*

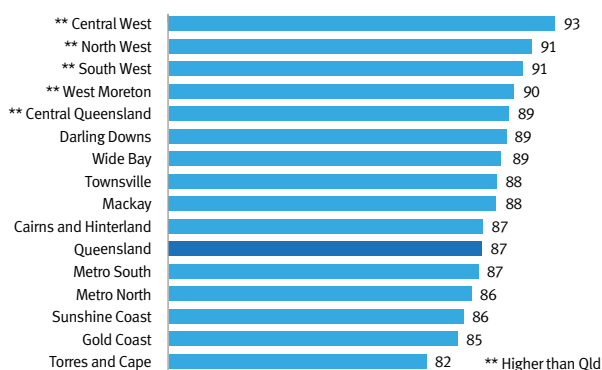
# Weight status

Figure 32: Mean adult weight (kg), by sex and HHS, adults, Queensland, 2017–18<sup>34</sup>

## a. Adult females



## b. Adult males



## How we compare

### Nationally

In 2014–15, based on measurement, Queensland adults were similar to national for rates of overweight, obesity and combined overweight and obesity.<sup>33</sup> After adjustment for age differences, Queensland was ranked second highest for healthy weight (after Western Australia), lowest for overweight (Australian Capital Territory was highest), and equal second highest for obesity (Tasmania was highest).<sup>33</sup>

In 2014–15, based on measurement, Queensland children were similar to national for rates of healthy weight, and for combined overweight and obesity.<sup>33</sup> After adjustment for age differences in children, Queensland was ranked fifth for healthy weight (South Australia was highest), fourth for overweight (Victoria was highest), and fourth for obesity (Northern Territory was highest).<sup>33</sup>

### Internationally

Based on measured data for 35 OECD countries in 2015 (or nearest year), Australia was ranked fifth highest for measured adult obesity following the United States, Mexico, New Zealand and Hungary. Australia was about 40% above the OECD average.<sup>71</sup> The 2017 OECD report recognised the positive impact of Australia's efforts to reduce obesity through front-of-pack food labelling with nutritional profiles and kilojoule information on menus.<sup>71</sup>

## Trends

For adults, the prevalence of measured obesity did not change between 2011–12 and 2014–15, having increased by 22% in the three years up to 2011–12.<sup>112</sup> The prevalence of measured overweight, and combined overweight and obesity, did not change between 2007–08 and 2014–15.

For children, the prevalence of measured overweight and obesity did not change between 2007–08 and 2014–15.<sup>112</sup>

The prevalence of self-reported healthy weight in adults declined by 9.5% in the past 10 years (2008–2018).<sup>91</sup> There was greater decline among younger adults (17% for those aged 18–29 years) and older adults (18% for 65 years and older) than other age groups (30–64 years) where there was no change in prevalence.

For children, the prevalence of proxy-reported healthy weight/underweight did not change between 2011 and 2018.<sup>91</sup> There were no differences in trend by sex, age or socioeconomic areas.

The average adult gained 290g per year between 2004 and 2010, a kilogram every three to four years.<sup>91</sup> Since then weight gain has slowed and between 2011 and 2018, the average increase was 116g per year—equivalent to a kilogram every nine years. Over the full period since 2004, the average adult male increased from 82.8kg to 85.9kg, that is a kilogram increase every five years. The average female increased from 66.4kg in 2004 to 71.1kg in 2018, a kilogram increase every four years.

In Queensland, if the prevalence of adult overweight and obesity remains the same as that measured in 2014–15 (64%), in 2026 there will be 2.8 million overweight or obese adults, that is, 375,000 more than in 2018.

Among Queensland children, if the prevalence of overweight and obesity remains the same as that measured in 2014–15 (26%), in 2026 there will be 250,000 overweight or obese children, that is 27,000 more than in 2018.

# Weight status

## Impacts and costs

### Burden of disease

High body mass accounted for 6.5% of total burden (DALYs) in Queensland in 2011 (compared with 5.5% nationally).<sup>24,25</sup> It was the third largest cause of disease burden of the risk factors, after smoking and the combined effect of all dietary factors.

In Queensland, high body mass affected the total disease burden through its impact on coronary heart disease (accounting for 30% of BMI attributable DALYs), diabetes (20%), osteoarthritis (9%) and stroke (8%).<sup>25</sup> The majority of the total burden in Queensland in 2011 was associated with premature death (68% YLL) with 32% due to disability (YLD).<sup>93</sup> Conversely, 25% of coronary heart disease and 54% of diabetes was due to high body mass.

### Life expectancy

Obesity reduces life expectancy and there are many studies that have quantified its impact.<sup>113</sup> While the mortality risk from excess body weight increases from BMI of 25, that is, the overweight category, it is not substantial until BMI exceeds 32–35, that is, among the severely obese.

It has become evident over the past three decades that, while obesity has been increasing, life expectancy has also increased, not decreased as had been predicted.<sup>114</sup> There are reasons for this contradictory outcome, including more effective treatment and management of obesity related diseases, as well as improvement in other risks, enabling people to lead longer, but less healthy lives.<sup>115–117</sup> This reflects a decoupling of risk factor prevalence from impact as reported for New Zealand.<sup>118</sup>

Gains in the medical management of blood pressure and cholesterol over recent decades in Australia, for example, are helping to mitigate the cardiovascular effects of the obesity epidemic. It may also be that the negative effect of current obesity on life expectancy will be realised in the future.<sup>117</sup> Conversely, healthy weight was associated with a life free of chronic disease and an increase in the period of life spent in full health.<sup>119</sup>

### Deaths

In 2016, high body mass accounted for an estimated 2400 deaths in Queensland (8.2% of all deaths).<sup>24,25,93</sup> If all those who were overweight or obese were within the healthy weight range, about 1 in 6 premature deaths could be avoided.<sup>120</sup>

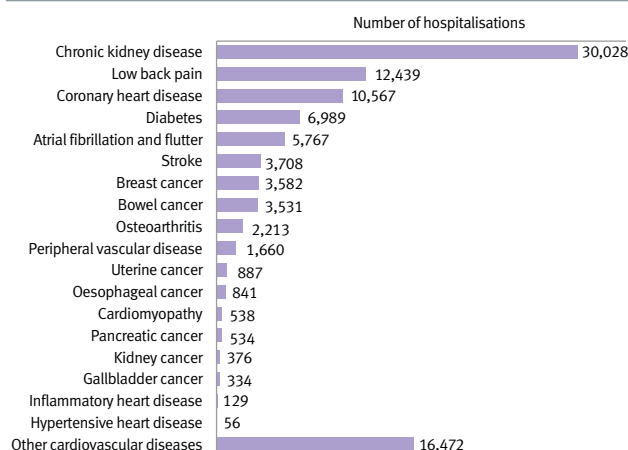
### Disability and hospitalisation

High body mass caused 4.9% of the total disability burden (YLD) in Queensland in 2011.<sup>24,25</sup> Obesity reduces health and wellbeing, with obese adults more than twice as likely to report poor health as healthy weight adults in 2011–12, about three times as likely to be dissatisfied with their health and twice as likely to report poor quality of life.<sup>34</sup>

Obesity increases the risk of chronic disease, particularly diabetes. In 2011–12, Queensland adults who had been measured as obese were about four times as likely to also have diabetes (based on blood measurement) as those who were not obese. The prevalence of diabetes was 11% among obese adults compared with 2.6% in non-obese adults.<sup>49</sup> Although about 90% of obese adults did not have diabetes at the time of the survey in 2011–12, of those adults with diabetes (and about 87% of these had type 2), almost two-thirds were obese. More recently, in 2014–15, adults who were severely obese (by measurement) were eight times more likely to report diabetes than healthy weight adults.<sup>49</sup>

High body mass accounted for about 100,600 hospitalisations and 256,500 patient days in Queensland in 2015–16<sup>25</sup>, about 4% of the 2.4 million hospitalisations for all causes in that year.<sup>93</sup> About one-third (30%) of the hospitalisations were associated with chronic kidney disease, where the vast majority of hospital admissions (81%) were for dialysis.<sup>25</sup> About 20% of hospitalisations for high body mass were associated with stroke and other cardiovascular diseases, and 10% with coronary heart disease (Figure 33).<sup>121</sup> In 2013–14, when adjusted for the frequency of repeat admissions for diabetes-related renal dialysis, about 2% of patients accounted for 55% of hospitalisations due to excess body mass. With renal dialysis excluded, 1.8% of hospitalisations was due to excess body mass.<sup>93</sup> Additional information is reported on page 44 and in statistical tables online (page vii for more details).

**Figure 33: Hospitalisations for high body mass, by cause, Queensland, 2015–16<sup>93</sup>**



# Weight status

Reductions in body mass will reduce the risk of some cancers.<sup>122</sup> The cancer types that can be explained by high body mass include uterine cancer (53% attributable to high BMI), oesophageal (49% attributable), breast (39%), kidney (30%), liver (29%), gallbladder (28%), colorectal (15%), pancreatic (10%), and ovarian (5%).<sup>93,122</sup> Overall, about 27% of the new cases of these nine cancers diagnosed in 2012–13 could be attributed to high body mass. Predictive modelling for Queenslanders with high body mass has demonstrated that a 2kg weight loss has the potential to reduce the number of new cases by 210, a 5kg loss could reduce cases by 500, and a 10kg loss by 930.<sup>93</sup> If all people maintained a healthy body mass, there could be 2200 fewer cancer cases.

---

If all people  
**maintained a healthy weight**  
there could be  
**2200 fewer**  
**cancer cases**  
**diagnosed.**

---

## Health and community costs

The financial cost of obesity is high and was estimated in 2015 at \$8.6 billion nationally (about \$1.72 billion in Queensland).<sup>123</sup> Of this, 44% was due to health system costs (\$0.76 billion in Queensland), 40% to tax foregone (\$0.75 billion), 12% to productivity losses including absenteeism (\$0.20 billion), and 4% to government subsidies. The impact of loss of wellbeing and early death was assessed at \$47.4 billion nationally (\$9.5 billion in Queensland) taking the total cost of obesity in Queensland in 2015 to \$11.2 billion.

## Causes of obesity

The pathway to obesity is complex—a combination of food (energy in), physical activity (energy out), genetics and environment. Our environments have had major changes over the past three decades in ways that make it easier to over-consume food and drinks relative to our energy needs and increasingly sedentary lifestyles. These environmental changes are a major contributor to overweight and obesity among Queenslanders and Australians.

Weight status results from the complex interaction of physiological, biological and genetic factors with behaviours, lifestyles, personal histories and environmental settings. For example, adults who were inactive or insufficiently active in 2012, were 65% more likely to be obese than those who met the guidelines for physical activity.<sup>124</sup>

Food avoidance (for allergies or cultural, religious or ethical reasons), eating disorders and food security are contributors to the complexity of eating healthy foods and maintaining a healthy weight.

Childhood overweight and obesity is a major concern as a metabolically unhealthy life course is established at a younger age.<sup>125,126</sup> For adults who may have never experienced the benefits of healthy weight, it is especially difficult to change the metabolic pathways to obesity.<sup>125</sup>

Across Australia, obesity is more prevalent in regional areas than the major cities.<sup>127</sup> A social gradient of obesity is evident where lower levels of education are associated with increased likelihood of transitioning from healthy weight to overweight and obesity.

The environments in which people live have physical surroundings, socioeconomic opportunities or conditions that may promote weight gain.<sup>128</sup> Infrastructure that provides for increased physical activity through active transport (for example walking and cycling) and use of public transport has contributed to healthier weight status.<sup>129</sup> The complexity of obesity demands interventions and efforts at the individual, family, community, industry and population levels.



# Weight status

Table 20: Measured weight status, children and adults by year and sex, percentage, Queensland and Australia<sup>49,110</sup>

	Children (5–17 years)		Adults	
	Queensland	Australia	Queensland	Australia
Persons by year				
<b>2014–15</b>				
Underweight	8.0 (4.8–11.2)	5.7 (4.5–6.9)	1.2 (0.7–1.7)	1.6 (1.3–1.9)
Healthy weight	65.7 (60.7–70.7)	66.7 (64.4–69.0)	35.3 (33.1–37.5)	35.0 (34.0–36.0)
Overweight	19.2 (15.2–23.2)	20.2 (18.2–22.2)	33.4 (31.4–35.4)	35.5 (34.6–36.4)
Obese	7.2 (4.4–10.0)	7.4 (6.1–8.7)	30.2 (27.8–32.6)	27.9 (26.9–28.9)
Overweight/obese	26.2 (21.9–30.5)	27.4 (25.2–29.6)	63.6 (61.5–65.7)	63.4 (62.4–64.4)
<b>2011–12</b>				
Healthy weight/underweight	72.5 (68.6–76.4)	74.3 (72.6–76.0)	35.1 (33.2–37.0)	37.2 (36.3–38.1)
Overweight	18.2 (15.5–20.9)	18.3 (16.9–19.7)	34.5 (32.7–36.3)	35.3 (34.6–36.0)
Obese	9.3 (7.0–11.6)	7.4 (6.4–8.4)	30.4 (28.8–32.0)	27.5 (26.7–28.3)
Overweight/obese	27.5 (23.6–31.4)	25.7 (24.1–27.3)	64.9 (63.0–66.8)	62.8 (61.9–63.7)
<b>2007–08</b>				
Healthy weight/underweight	73.3 (67.3–79.3)	75.3 (72.5–78.1)	39.2 (36.5–41.9)	38.8
Overweight	17.9 (12.7–23.1)	17.2 (15.1–19.3)	35.9 (33.4–38.4)	36.7 (35.5–37.9)
Obese	8.8 (4.8–12.8)	7.5 (5.8–9.2)	24.9 (22.4–27.4)	24.6 (23.5–25.7)
Overweight/obese	26.7	24.7	60.8 (58.1–63.5)	61.2 (60.2–62.2)
<b>2014–15 by sex</b>				
<b>Males</b>				
Underweight	5.8 (1.0–9.8)	5.7 (4.0–7.4)	1.1 (0.3–1.9)	1.2 (0.9–1.5)
Healthy weight	67.0 (60.6–73.4)	65.9 (62.9–68.9)	28.3 (24.9–31.7)	28.1 (26.6–29.6)
Overweight	18.3 (13.2–23.4)	21.9 (19.4–24.4)	38.4 (35.1–41.7)	42.4 (41.0–43.8)
Obese	7.4 (4.1–10.7)	6.6 (4.9–8.3)	31.9 (28.3–35.5)	28.4 (26.9–29.9)
Overweight/Obese	26.9 (21.4–32.4)	28.4 (25.5–31.3)	70.7 (67.3–74.1)	70.8 (69.2–72.4)
<b>Females</b>				
Underweight	8.8 (3.5–14.1)	5.7 (4.2–7.2)	1.2 (0.4–2.0)	2.1 (0.7–2.5)
Healthy weight	63.8 (55.9–71.7)	67.5 (64.1–70.9)	42.4 (39.8–45.0)	41.7 (40.3–43.1)
Overweight	19.3 (13.1–25.5)	18.2 (15.5–20.9)	28.6 (26.2–31.0)	28.8 (27.6–30.0)
Obese	7.1 (2.1–12.1)	8.2 (6.2–10.2)	28.4 (25.6–31.2)	27.4 (26.1–28.7)
Overweight/Obese	27.2 (19.8–34.6)	26.6 (23.3–29.9)	56.6 (54.1–59.1)	56.3 (55.0–57.6)

Note: Confidence intervals were not available for all estimates.

2017–18 measured data to be released in December 2018.

Table 21: Proxy-reported weight status, children 5–17 years, percentage, Queensland, 2018<sup>34</sup>

		Healthy weight/ underweight	Overweight	Obese	Overweight/obese
5–17 years	Persons	74.4 (72.1–76.5)	17.7 (15.9–19.7)	7.9 (6.7–9.4)	25.6 (23.5–27.9)
	Males	73.5 (70.4–76.4)	17.9 (15.5–20.7)	8.6 (6.9–10.7)	26.5 (23.6–29.6)
	Females	75.3 (71.9–78.4)	17.5 (14.8–20.5)	7.3 (5.6–9.4)	24.7 (21.6–28.1)
Persons	5–7 years	70.4 (64.9–75.3)	17.3 (13.4–22.0)	12.4 (9.0–16.7)	29.6 (24.7–35.1)
	8–11 years	70.2 (65.8–74.2)	21.4 (17.8–25.5)	8.4 (6.2–11.2)	29.8 (25.8–34.2)
	12–15 years	80.2 (76.7–83.3)	14.8 (12.1–18.0)	4.9 (3.5–7.0)	19.8 (16.7–23.3)
	16–17 years	77.5 (72.5–81.8)	16.5 (12.7–21.2)	6.0 (4.1–8.8)	22.5 (18.2–27.5)
Males	5–7 years	70.5 (62.8–77.1)	15.8 (10.9–22.3)	13.7 (9.0–20.5)	29.5 (22.9–37.2)
	8–11 years	69.4 (63.4–74.7)	22.7 (17.8–28.5)	8.0 (5.4–11.5)	30.6 (25.3–36.6)
	12–15 years	80.4 (75.8–84.3)	14.5 (11.1–18.8)	5.0 (3.3–7.6)	19.6 (15.7–24.2)
	16–17 years	72.5 (65.4–78.6)	18.6 (13.6–25.1)	8.9 (5.6–13.8)	27.5 (21.4–34.6)
Females	5–7 years	70.2 (62.3–77.1)	18.9 (13.2–26.3)	10.9 (6.8–16.8)	29.8 (22.9–37.7)
	8–11 years	71.0 (64.4–76.8)	20.2 (15.2–26.2)	8.8 (5.6–13.6)	29.0 (23.2–35.6)
	12–15 years	80.0 (74.5–84.6)	15.1 (11.1–20.2)	*4.9 (2.7–8.5)	20.0 (15.4–25.5)
	16–17 years	82.7 (75.2–88.3)	14.3 (9.1–21.7)	**	17.3 (11.7–24.8)
Socioeconomic status	Most disadvantaged	65.7 (60.1–71.0)	22.4 (18.0–27.6)	11.8 (8.5–16.2)	34.3 (29.0–39.9)
	Quintile 2	71.1 (66.4–75.5)	19.9 (16.3–24.1)	9.0 (6.3–12.6)	28.9 (24.5–33.6)
	Quintile 3	72.7 (67.8–77.1)	18.4 (14.8–22.7)	8.9 (6.2–12.6)	27.3 (22.9–32.2)
	Quintile 4	79.1 (74.0–83.5)	15.1 (11.3–19.9)	5.8 (3.7–8.9)	20.9 (16.5–26.0)
	Most advantaged	81.9 (76.6–86.3)	13.3 (9.5–18.4)	4.8 (3.0–7.6)	18.1 (13.7–23.4)
Remoteness	Major cities	75.5 (72.2–78.5)	16.5 (13.9–19.4)	8.0 (6.3–10.3)	24.5 (21.5–27.8)
	Inner regional	73.2 (69.2–76.9)	19.4 (16.2–23.1)	7.4 (5.5–9.8)	26.8 (23.1–30.8)
	Outer regional	72.8 (68.2–77.0)	17.6 (14.2–21.7)	9.5 (7.0–12.9)	27.2 (23.0–31.8)
	Remote/very remote	68.7 (59.8–76.4)	27.4 (20.0–36.4)	*3.9 (2.3–6.5)	31.3 (23.6–40.2)

\* Estimate has a relative standard error of 25% to 50% and should be used with caution. \*\* Estimate has a relative standard error greater than 50% and is not reported.

Note: Proxy-reported weight status for children does not provide reliable distinctions between healthy weight and underweight, therefore the combined category was reported (see page 75).

Table 22: Self-reported weight status, adults, percentage, Queensland, 2018<sup>34</sup>

		Underweight	Healthy weight	Overweight	Obese	Overweight/obese
18+ years	Persons	2.4 (1.9–3.1)	37.1 (35.6–38.7)	36.3 (34.8–37.8)	24.2 (23.0–25.4)	60.4 (58.8–62.0)
	Male	1.0 (0.6–1.5)	31.4 (29.1–33.7)	43.2 (40.9–45.5)	24.5 (22.7–26.3)	67.7 (65.3–69.9)
	Female	3.8 (2.9–5.0)	42.8 (40.7–44.9)	29.5 (27.7–31.4)	23.9 (22.3–25.5)	53.4 (51.2–55.5)
Persons	18–24 years	*7.0 (4.1–11.8)	52.2 (44.4–59.9)	29.0 (22.1–37.0)	11.8 (8.2–16.7)	40.8 (33.3–48.6)
	25–34 years	*1.5 (0.8–2.5)	43.3 (39.3–47.3)	34.0 (30.3–38.0)	21.3 (18.2–24.6)	55.3 (51.2–59.3)
	35–44 years	*2.4 (1.4–4.0)	35.8 (32.6–39.1)	38.5 (35.3–41.9)	23.3 (20.6–26.1)	61.8 (58.4–65.0)
	45–54 years	*1.3 (0.7–2.2)	32.0 (29.1–35.1)	37.4 (34.4–40.6)	29.3 (26.5–32.2)	66.7 (63.6–69.7)
	55–64 years	*1.3 (0.7–2.3)	31.8 (29.2–34.6)	36.1 (33.4–38.9)	30.8 (28.2–33.4)	66.9 (64.1–69.5)
	65–74 years	1.8 (1.1–2.7)	28.8 (26.5–31.2)	39.1 (36.6–41.6)	30.3 (28.0–32.8)	69.4 (67.0–71.8)
	75+ years	3.4 (2.4–4.9)	36.0 (32.6–39.5)	41.7 (38.2–45.4)	18.8 (16.5–21.5)	60.6 (57.0–64.0)
Males	18–24 years	**	53.5 (41.9–64.8)	32.8 (22.2–45.4)	12.1 (7.4–19.1)	44.8 (33.6–56.6)
	25–34 years	**	34.4 (29.0–40.2)	41.9 (36.1–48.0)	22.4 (17.9–27.8)	64.4 (58.6–69.8)
	35–44 years	**	28.0 (23.7–32.7)	50.1 (45.1–55.0)	21.4 (17.8–25.6)	71.5 (66.8–75.8)
	45–54 years	**	24.3 (20.3–28.7)	44.1 (39.3–48.9)	30.8 (26.6–35.4)	74.9 (70.5–78.9)
	55–64 years	*0.6 (0.3–1.2)	25.8 (22.4–29.5)	41.8 (37.8–45.9)	31.8 (28.1–35.9)	73.6 (69.9–77.0)
	65–74 years	**	25.9 (22.6–29.4)	43.2 (39.5–46.9)	30.3 (26.9–34.0)	73.5 (70.0–76.8)
	75+ years	*2.2 (1.0–4.5)	30.8 (26.3–35.7)	48.9 (43.6–54.1)	18.2 (14.8–22.2)	67.1 (62.1–71.7)
Females	18–24 years	*12.7 (7.1–21.5)	50.9 (40.7–61.0)	25.0 (17.2–34.8)	*11.5 (6.6–19.4)	36.5 (27.3–46.7)
	25–34 years	*1.7 (0.9–3.2)	52.1 (46.7–57.5)	26.1 (21.7–31.1)	20.1 (16.4–24.4)	46.2 (40.9–51.6)
	35–44 years	*4.3 (2.5–7.3)	43.5 (39.0–48.1)	27.1 (23.3–31.4)	25.1 (21.4–29.1)	52.2 (47.6–56.8)
	45–54 years	*1.7 (0.9–3.2)	39.3 (35.2–43.6)	31.2 (27.4–35.2)	27.9 (24.3–31.7)	59.0 (54.8–63.2)
	55–64 years	*2.0 (1.0–4.1)	38.0 (34.1–42.0)	30.3 (26.9–34.0)	29.6 (26.3–33.2)	60.0 (55.9–63.9)
	65–74 years	2.9 (1.8–4.8)	31.8 (28.6–35.1)	35.0 (31.7–38.4)	30.3 (27.2–33.7)	65.3 (61.9–68.6)
	75+ years	4.5 (3.0–6.6)	40.2 (35.5–45.1)	35.9 (31.2–41.0)	19.4 (16.2–22.9)	55.3 (50.4–60.1)
Socioeconomic status	Disadvantaged	2.3 (1.7–3.3)	31.9 (29.1–34.8)	33.6 (31.1–36.3)	32.1 (29.7–34.7)	65.8 (62.9–68.6)
	Quintile 2	*3.2 (1.8–5.4)	34.3 (31.8–36.9)	34.8 (32.5–37.2)	27.8 (25.6–30.0)	62.6 (59.8–65.2)
	Quintile 3	1.9 (1.2–3.0)	37.7 (34.3–41.3)	36.3 (33.1–39.7)	24.0 (21.3–26.9)	60.4 (56.8–63.8)
	Quintile 4	*2.8 (1.6–4.9)	36.2 (32.5–40.0)	37.1 (33.6–40.8)	23.9 (21.0–27.1)	61.0 (57.1–64.7)
	Advantaged	*2.0 (1.1–3.3)	44.7 (40.5–49.0)	39.1 (34.8–43.5)	14.3 (11.9–17.0)	53.3 (49.0–57.6)
Remoteness	Major cities	2.8 (2.0–3.8)	39.0 (36.7–41.3)	36.8 (34.6–39.1)	21.4 (19.8–23.2)	58.2 (55.9–60.5)
	Inner regional	1.7 (1.1–2.6)	35.3 (33.0–37.6)	34.1 (32.0–36.3)	28.9 (26.9–31.0)	63.0 (60.7–65.3)
	Outer regional	2.1 (1.5–3.0)	33.6 (30.6–36.7)	36.7 (34.0–39.5)	27.6 (25.1–30.2)	64.3 (61.2–67.3)
	Remote/very remote	1.6 (1.0–2.4)	30.6 (27.2–34.1)	38.1 (34.3–41.9)	29.8 (26.0–33.9)	67.9 (64.3–71.3)

\* Estimate has a relative standard error of 25% to 50% and should be used with caution. \*\* Estimate has a relative standard error greater than 50% and is not reported.

# Alcohol consumption

Alcohol is widely used in Australian society, with relatively high community acceptance and approval of its use. While most people consume alcohol at levels that pose little or no risk to themselves or others, 1 in 5 adult Queenslanders is drinking at risky levels. The impact of risky alcohol drinking is evident through a range of short and longer-term health, social, cultural and economic harms.

Three-quarters of risky drinkers are males, however, there are differences for men across their life course. Since 2010, fewer younger adult males have been drinking at risky levels, but consumption by older males is increasing. This pattern may pose further complexities for individuals and the healthcare system given an ageing population with an increased prevalence of chronic diseases, and greater use of prescription medications, in combination with risky levels of alcohol consumption. Older people may also experience greater difficulties with pain and medication management, social isolation, poor health and loss of independent living that may lead to increased and riskier alcohol use.

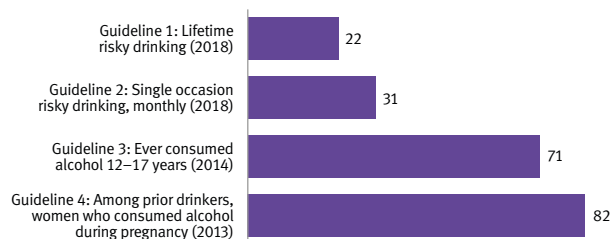
At the other end of the age spectrum, the age at first use of alcohol has increased. This is a positive trend as delayed onset of alcohol use contributes to reduced levels of risky consumption and longer-term harms and costs.

For women of childbearing age, the safest option is to avoid alcohol when planning for pregnancy, during pregnancy and when breastfeeding. Highly risky alcohol consumption prior to pregnancy is a key predictor of continuing consumption during pregnancy. There is a risk that alcohol consumption during pregnancy can lead to poorer birth outcomes and neurodevelopmental and behavioural abnormalities of the baby.

Alcohol is a frequent contributor to violence that impacts on families, communities and frontline service providers such as nursing and medical staff, ambulance officers and police. Alcohol is a common contributor to detention by police and contact with the criminal justice system. Drug induced deaths and injuries often occur in association with alcohol intoxication. There is increased community awareness of the potential life-threatening consequences of violence occurring near entertainment precincts. Alcohol plays a role in some cases of domestic violence and associated homicides.

The *National Drug Strategy 2017–2026*, and sub-strategy the *National Alcohol Strategy 2018–2026* (in development), aim to prevent and minimise harm from the misuse of alcohol.<sup>130</sup> These strategies embed a commitment to harm minimisation in national policy, and identify priorities for action across the pillars of demand, supply and harm reduction.

**Figure 34: Alcohol consumption by Australian guidelines, percentage, Queensland<sup>34</sup>**



## What are the numbers?

- 853,000 adults exceeded the guideline for lifetime risky drinking in 2018, and 625,000 were males.
- 1.2 million adults exceeded the guideline for single occasion risky drinking at least monthly in 2018, and 819,000 were males.
- 175,000 secondary students (aged 12–17 years) had consumed alcohol in the previous 12 months and 109,000 in the previous four weeks in 2017.
- 16.1 years was the average age of first serve of alcohol in 2016.

**Figure 35: Australian guidelines to reduce health risks from drinking alcohol, 2009<sup>131</sup>**

<b>Guideline 1: lifetime risk</b>
Healthy men and women
<i>No more than 2 standard drinks on any one day</i>
<b>Guideline 2: single occasion risk</b>
Healthy men and women
<i>No more than 4 standard drinks on a single occasion</i>
<b>Guideline 3: risks for adolescents</b>
Children and young people under 18 years of age
<i>Not drinking is the safest option</i>
<b>Guideline 4: risks to fetus and breastfeeding baby</b>
Pregnant and breastfeeding women
<i>Not drinking is the safest option</i>

It is acknowledged that the actions of government, in partnership with other agencies and the community, contribute to reducing harms associated with alcohol misuse.



# Alcohol consumption

The measurement and monitoring of alcohol consumption is based on the 2009 National Health and Medical Research Council (NHMRC) guidelines (Figure 35).<sup>131</sup> A standard drink is any drink containing 10g of alcohol. These guidelines have been set to reduce health risks from alcohol consumption.

Since 2010, **risky alcohol consumption** among young males has decreased by **31%**

## Prevalence and differentials

Consumption of alcohol is common among Queenslanders. Based on the national guidelines (Figure 34, Figure 35)<sup>34</sup>:

- 22% of adults exceeded Guideline 1 for lifetime risky drinking in 2018
- 31% of adults exceeded Guideline 2 for single occasion risk at least monthly in 2018
- 52% of secondary students aged 12–17 years had consumed alcohol in the previous 12 months in 2017, and 32% had done so in the previous four weeks<sup>50</sup>—conflicting with Guideline 3 that the safest option for those aged under 18 years of age is to not drink alcohol
- 82% of women who consumed alcohol prior to pregnancy continued to drink alcohol during pregnancy<sup>40</sup>—conflicting with Guideline 4 that the safest option is to avoid alcohol during pregnancy.

The average age of first serve of alcohol increased to 16.1 years of age in 2016 (compared with 15.7 years in 2013), and was similar to national.<sup>51,52</sup>

### By sex

Adult males were two to three times more likely than females to drink at risky levels in 2018 with 33% drinking at levels for lifetime risk compared with 12% for females, and 44% at levels for single occasion risk on a monthly basis compared to 20% for females (Table 23).<sup>34</sup>

Among secondary students in 2017, boys and girls were equally likely to have had an alcoholic drink in the previous 12 months.<sup>50</sup>

### By age

Lifetime risky alcohol consumption varied very little by age for adult males in 2018 with about 1 in 3 exceeding the guidelines in young adulthood and into their seventies (Table 23).

Females were less likely to exceed the risky drinking guidelines—about 1 in 9 for lifetime risk and 1 in 5 for single occasion risk in 2018 (Table 23). Drinking patterns in females decreased markedly with increasing age.

Among secondary students in 2017, older age was associated with increased consumption of alcohol. The prevalence of having had an alcoholic drink in the previous 12 months increased from 30% among 12–13 year olds to 55% among 14–15 year olds and 78% among 16–17 year olds.<sup>50</sup>

### By socioeconomic status

There was no difference in risky alcohol consumption among areas of socioeconomic advantage and disadvantage whether drinking at lifetime risk or single occasion risk in 2018 (Table 23).

### By remoteness

In 2018, adults living in remote areas were 58% more likely to exceed the lifetime risk guidelines, and 32% more likely to exceed single occasion risk (at least monthly), than those in major cities (Table 23).

### Indigenous Queenslanders

Lifetime risky drinking among Indigenous Queensland adults did not differ from non-Indigenous. After adjusting for age, there was no difference for lifetime risk or yearly single occasion risk in 2012–13 (latest data available).<sup>65</sup> Alcohol use was, however, the third largest risk associated with disease burden for Indigenous Australians (see page 11).

Among Indigenous communities, the social determinants of harmful alcohol use include stress, early life experiences, social exclusion, social support, addiction and the impact of the availability of food, transport and work.<sup>132</sup> Some remote Indigenous communities have high levels of risky drinking that are contributing to social harms including violence.<sup>133</sup>

### Regional Queenslanders

In 2015–16 (latest data for HHSs), lifetime risky alcohol consumption was higher than the state average for six HHSs—53% higher for Central West, 37% for North West, 34% for Mackay, 32% for South West, 18% for Cairns and Hinterland and 15% for Sunshine Coast. Darling Downs was 31% lower.<sup>34</sup>

Single occasion risky consumption (at least monthly) was higher than the state average in six HHSs—45% higher in North West and about 20% higher for Mackay, Central West, South West, Cairns and Hinterland and Central Queensland. Darling Downs was 15% lower.

*More information on HHSs is available from the data visualisations and statistical tables online (page vii).*



# Alcohol consumption

## How we compare

### Nationally

In 2016, the prevalence of lifetime risky drinking in Queensland was 13% higher than national. Queensland was ranked second highest following Northern Territory.<sup>52</sup>

In 2016, the prevalence of single occasion risky drinking (at least monthly) in Queensland was 12% higher than national. Queensland was ranked second highest following Northern Territory.<sup>52</sup>

### Internationally

Australia had the 15th highest per capita consumption of alcohol (persons 15 years and older) among 35 OECD countries in 2013.<sup>71</sup> Annual alcohol consumption in Australia at 9.7 litres per capita was 8% higher than the OECD average of 9.0 litres per capita.<sup>71</sup>

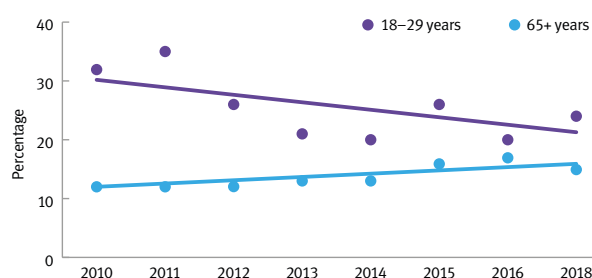
Per capita **alcohol consumption** is at the **lowest level nationally** since the 1960s.

## Trends

The prevalence of lifetime risky alcohol consumption did not change between 2010 and 2018. There were age differences for adult males—a 32% increase for older males (65 years and older) and 31% decrease for young males (18–29 years) (Figure 36).<sup>91</sup>

Since 2010, young adults (18–29 years) have decreased the number of drinks they have on any drinking day from 3.7 drinks in 2010 to 3.3 drinks in 2018, a decline of 0.4 drinks per drinking day.<sup>91</sup> For older adults there was no change. This decrease was almost entirely due the decrease among young males who decreased their drinks on a drinking day from 4.4 drinks in 2010 to 3.9 drinks in 2018 a decrease of 0.6 drinks over the period. There was no corresponding decrease for females of the same age who were consuming 2.8 drinks per drinking day.

**Figure 36: Trends in prevalence of lifetime risky alcohol consumption, adult males aged 18–29 years and 65 years or older, Queensland, 2010–2018<sup>91</sup>**



Nationally, in 2016–17, there were 185.8 million litres of pure alcohol available for consumption from alcoholic beverages, 9.4 litres per person.<sup>134</sup> Per capita consumption decreased by about 10% over the previous decade and was at its lowest level since 1961–62 (9.4 litres per person).

Of the total amount of pure alcohol available for consumption in 2016–17, beer contributed 39%, wine 38%, spirits 13%, ready to drink beverages (RTDs) 6% and cider 3%.<sup>134</sup> Per capita consumption of beer peaked in the 1970s and 80s and since then has halved. Per capita consumption of wine has been steady over the past decade but prior to that it had been increasing and is now about three times consumption in the 1960s. Per capita consumption of RTDs has decreased by about 20% over the past decade while per capita consumption of cider, although very low, has increased five-fold over a decade.

## Impacts and costs

### Burden of disease

Of the risk factors, alcohol was the fourth largest cause of disease and injury burden in Queensland in 2011, accounting for 5.4% of total DALYs.<sup>24,25</sup> The total burden of alcohol was 20% higher in Queensland than nationally in 2011.<sup>135</sup>

Overall, males experienced 72% of the burden due to alcohol.<sup>93</sup> Alcohol use affected the total burden largely through its impact on alcohol use disorders, injuries and falls (Figure 37).<sup>93</sup>

### Deaths

In 2016, alcohol use accounted for an estimated 1300 deaths in Queensland (4.3% of all deaths).<sup>24,25</sup>

Alcohol was the seventh most common substance present in drug induced deaths in Australia in 2016, accounting for 12% of deaths—benzodiazepines were highest (37%) and other opioids second (30%). All of these deaths were due to multiple drug overdose.<sup>68</sup>

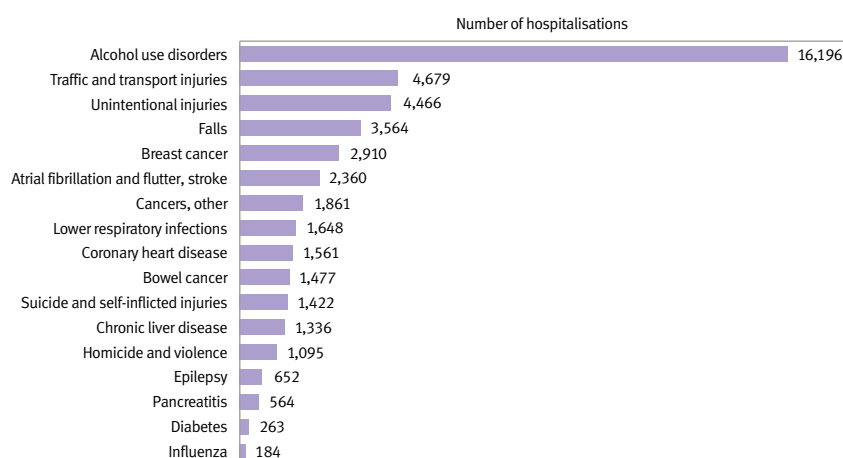
### Disability and hospitalisation

Alcohol use caused 4.6% of the total disability burden (YLD) in Queensland in 2011.<sup>24,25</sup>

Alcohol use caused about 46,200 hospitalisations and 146,100 patient days in Queensland in 2015–16, 2% of the 2.4 million hospitalisations for all causes in that year.<sup>93</sup> One-third (35%) was associated with alcohol use disorders, followed by falls (7.7%), breast cancer (6.3%), and road traffic injuries (6.3%) (Figure 37).<sup>93</sup> Hospitalisation data does not fully reflect the impact of alcohol on the health system.<sup>73</sup>

# Alcohol consumption

Figure 37: Number of hospitalisations due to alcohol consumption, Queensland, 2015–16<sup>93</sup>



## Expenditure

The most recent national assessment of the costs of alcohol use was in 2004–05.<sup>95</sup> Based on Queensland's share of the Australian population in 2004–05, the financial cost of alcohol consumption to the Queensland economy was \$2.2 billion, with \$400 million spent on healthcare, \$720 million in productivity losses including absenteeism, \$310 million in home production losses, \$320 million in crime and \$440 million in road transport injuries.

Health system costs were 18% of the tangible or financial costs. Intangible losses associated with early death and wellbeing losses were assessed at \$0.9 billion taking the total cost of excess alcohol to Queensland society in 2004–05 to \$3.06 billion. However, more than 80% of the financial costs associated with alcohol occurred outside the health system.

## Women of childbearing age

The NHMRC guidelines recommend that not drinking is the safest option for women during pregnancy, breastfeeding and planning for pregnancy.<sup>131</sup> There is insufficient data to fully understand the extent of alcohol consumption during pregnancy and breastfeeding among Queensland women. This section includes information from a longitudinal cohort study of Australian women<sup>136,137</sup> and a national survey.<sup>51,52</sup>

Insights are obtained from a nationally representative cohort study of Australian women born between 1973 and 1978 who were surveyed prospectively from 1996 (the women would be aged 40–45 years in 2018).<sup>136</sup> From a sample of 1600 women who were pregnant between 2000 and 2006, 1 in 5 (22%) drank alcohol and smoked tobacco prior to pregnancy and most of these women changed these behaviours during their pregnancy—3 in 4 (73%) drank less alcohol, 3 in 4 (72%) smoked less, and 1 in 2 (53%) drank less and smoked less.<sup>137</sup>

While most women are motivated to reduce their alcohol consumption during pregnancy, many do not completely stop drinking. From the same nationally representative cohort study<sup>136</sup>, 4 in 5 (82%) women who drank alcohol prior to pregnancy continued to do so during pregnancy at lower levels.<sup>40</sup> Highly risky alcohol consumption prior to pregnancy was a key predictor of continuing consumption during pregnancy—most notably, women who drank at risky levels on single occasions prior to pregnancy were more than twice as likely to continue drinking during pregnancy.<sup>40</sup>

Data from the 2016 national drug survey showed for Queensland women who were pregnant, 1 in 2 (55%) reported not drinking alcohol and 44% drank less alcohol during pregnancy.<sup>51,52</sup> For those who were breastfeeding, 43% did not drink alcohol and 54% drank less alcohol.

# Alcohol consumption

## Neurodevelopmental impairment: fetal alcohol spectrum disorder

Alcohol consumption during pregnancy has been associated with poorer birth outcomes and neurodevelopmental impairment. Fetal alcohol spectrum disorder (FASD) describes the range of permanent and severe neurodevelopmental impairments that result from an acquired brain injury in the fetus caused by prenatal alcohol exposure.<sup>138</sup>

FASD occurs across all parts of Australian society—it is likely to be under-recognised and under-diagnosed. Guidelines for diagnosis have been developed.<sup>138</sup> Children with FASD may be misdiagnosed with a range of mental health, learning, behavioural, and other neurodevelopmental disorders.<sup>139</sup> The lifelong effects of FASD are costly to health, education, disability and justice systems, and to the families living with FASD.<sup>140</sup>

FASD data is variable and incomplete, and a nationally representative prevalence estimate is unavailable.<sup>141</sup> A study of 10–17 year olds held in youth detention, in Western Australia in 2015–2016, found 88% had severe neurodevelopmental impairment and 36% were diagnosed with FASD.<sup>142</sup>

FASD is a preventable disability. The safest option is for women to avoid drinking alcohol during pregnancy, breastfeeding or planning for pregnancy.<sup>131,138</sup>

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Many women continue  
**drinking alcohol**  
**during their pregnancy**  
 and  
**while breastfeeding**  
 although at a lower level.

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## Alcohol and other drug treatment services

In Queensland, mental health, alcohol and other drug services are delivered through HHSs and funded non-government providers.

Specialist alcohol and other drug services provide treatment for people living with moderate-to-severe problematic substance use. Treatment may include withdrawal management, medication assisted treatment, psychosocial intervention, rehabilitation and harm reduction services.<sup>143</sup>

In 2016–17, 168 publicly funded alcohol and other drug treatment agencies in Queensland provided 44,396 treatment episodes to 33,541 clients (98% of episodes were for their own alcohol and other drug use).<sup>144</sup> Among clients, 52% were aged 20–39 years and 67% were male.

Cannabis was the most common drug of concern for Queensland clients (33% of episodes in 2016–17) as a result of the clients being diverted to treatment by the police and justice system (alcohol was the second most common, 31%, followed by amphetamines, 21%).<sup>144</sup>

Among Queensland clients in 2016–17, there were age differences, with 76% of clients aged 60 years or older having sought treatment for alcohol misuse, and 65% of those aged 10–19 years having sought treatment for cannabis misuse.<sup>144</sup>

For Queenslanders with opioid dependence, pharmacotherapy was delivered through 253 prescribers in 2016–17, and the majority of dosing points were located in pharmacies (493 of 600 sites).<sup>145</sup> On an average day in Queensland in 2017, about 6600 people received opioid pharmacotherapy (62% were males).

# Alcohol consumption

Table 23: Alcohol consumption, adults, percentage, Queensland, 2018<sup>24</sup>

		Abstainers	Lifetime risky drinking	Single occasion risky drinking at least monthly	Single occasion risky drinking at least weekly
18+ years	Persons	17.1 (16.0–18.1)	22.3 (21.1–23.7)	31.3 (29.8–32.9)	15.3 (14.2–16.5)
	Males	13.5 (12.0–15.0)	33.2 (31.0–35.5)	43.5 (41.2–45.9)	23.5 (21.5–25.6)
	Females	20.5 (19.1–22.1)	11.9 (10.7–13.2)	19.6 (17.9–21.4)	7.4 (6.4–8.6)
Persons	18–24 years	9.2 (5.9–14.0)	23.7 (17.7–30.9)	46.0 (38.5–53.6)	18.6 (13.2–25.4)
	25–34 years	12.2 (9.8–15.0)	25.0 (21.7–28.6)	40.2 (36.4–44.2)	17.6 (14.8–20.8)
	35–44 years	15.6 (13.1–18.3)	25.0 (22.3–27.9)	36.0 (32.8–39.2)	17.3 (15.0–19.9)
	45–54 years	15.7 (13.6–18.2)	23.6 (21.0–26.3)	30.4 (27.5–33.4)	16.3 (14.1–18.7)
	55–64 years	18.9 (16.8–21.2)	23.0 (20.7–25.5)	24.7 (22.4–27.2)	15.3 (13.3–17.5)
	65–74 years	22.4 (20.4–24.6)	18.7 (16.8–20.7)	19.1 (17.1–21.1)	10.2 (8.8–11.8)
	75+ years	36.0 (32.7–39.4)	9.2 (7.6–11.3)	9.6 (7.8–11.8)	5.3 (4.0–7.1)
Males	18–24 years	*8.0 (3.7–16.4)	34.7 (24.6–46.4)	55.4 (43.9–66.4)	26.4 (17.5–37.8)
	25–34 years	9.0 (6.3–12.7)	37.9 (32.4–43.8)	54.7 (48.8–60.6)	27.6 (22.7–33.1)
	35–44 years	12.8 (9.6–16.9)	37.2 (32.7–42.0)	50.8 (45.8–55.7)	26.0 (22.0–30.4)
	45–54 years	15.1 (11.8–19.1)	31.4 (27.2–35.9)	40.6 (36.0–45.3)	22.9 (19.2–27.0)
	55–64 years	17.1 (14.1–20.6)	33.9 (30.2–37.8)	36.3 (32.5–40.3)	23.7 (20.4–27.3)
	65–74 years	15.0 (12.6–17.9)	28.9 (25.6–32.3)	30.1 (26.8–33.6)	17.7 (15.1–20.6)
	75+ years	22.4 (18.5–26.8)	17.4 (14.0–21.4)	19.2 (15.4–23.6)	11.2 (8.2–15.0)
Females	18–24 years	*10.4 (6.3–16.9)	12.4 (7.6–19.7)	36.3 (27.4–46.3)	*10.5 (6.0–17.8)
	25–34 years	15.3 (11.7–19.8)	12.2 (9.3–15.9)	25.9 (21.6–30.8)	7.8 (5.5–10.9)
	35–44 years	18.2 (14.8–22.1)	13.2 (10.6–16.4)	21.7 (18.3–25.5)	8.9 (6.8–11.7)
	45–54 years	16.3 (13.6–19.4)	16.3 (13.5–19.6)	20.9 (17.7–24.5)	10.2 (8.0–12.9)
	55–64 years	20.7 (17.8–23.9)	12.1 (9.7–15.0)	13.1 (10.8–15.9)	6.8 (4.9–9.4)
	65–74 years	29.7 (26.8–32.9)	8.6 (6.9–10.6)	8.2 (6.5–10.2)	2.9 (2.0–4.1)
	75+ years	46.8 (42.1–51.5)	2.8 (1.8–4.3)	2.1 (1.3–3.3)	*0.7 (0.4–1.4)
Socioeconomic status	Disadvantaged	23.6 (21.2–26.2)	21.0 (18.9–23.3)	29.2 (26.6–31.9)	14.1 (12.5–16.0)
	Quintile 2	17.0 (15.4–18.8)	27.1 (24.7–29.5)	33.7 (31.1–36.3)	18.4 (16.3–20.7)
	Quintile 3	16.6 (14.4–19.0)	21.8 (19.4–24.3)	32.2 (29.1–35.5)	14.8 (12.8–16.9)
	Quintile 4	15.7 (13.4–18.3)	19.5 (16.8–22.4)	27.2 (24.0–30.7)	13.1 (10.8–15.7)
	Advantaged	13.1 (10.8–15.9)	22.4 (18.6–26.8)	34.2 (29.9–38.7)	16.1 (12.7–20.2)
Remoteness	Major cities	15.8 (14.4–17.4)	20.8 (18.9–22.8)	30.7 (28.5–33.0)	14.4 (12.8–16.3)
	Inner regional	18.9 (17.2–20.6)	23.3 (21.4–25.3)	31.0 (28.8–33.3)	15.6 (14.0–17.4)
	Outer regional	19.5 (17.0–22.4)	24.9 (22.7–27.3)	32.1 (29.5–34.8)	16.6 (14.8–18.7)
	Remote/very remote	17.8 (15.0–20.9)	32.8 (29.2–36.6)	40.5 (36.5–44.6)	22.8 (19.5–26.6)

\* Estimate has a relative standard error of 25% to 50% and should be used with caution.

Note 1: Low risk drinking has not been included, and neither has more than monthly occasion risky drinking.

Note 2: Single occasion risky drinking at least monthly also includes at least weekly drinking.



# Physical activity

Regular physical activity reduces the risk of cardiovascular disease, type 2 diabetes, some cancers, and depression. It improves wellbeing and helps in weight maintenance.

The average Queensland child is accumulating about 11 hours a week in physical activity—about eight hours in free time and at school. Club-based sport accounted for an additional 1.5 hours, and about one hour in active transport to and from school and other places. Free time and school settings are central to physical activity in childhood.

Queensland adults have become increasingly active over the past decade with 60% meeting the guidelines for sufficient physical activity for health benefit in 2018, however annual gains have slowed in recent years.

Increased walking is a key contributor to the improved levels of physical activity. This increase is largely being achieved by employed adults (full-time or part-time) with the trend evident in cities, regional areas and remote areas.

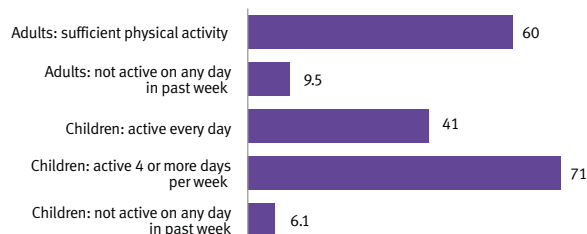
Healthy ageing is about optimising opportunities for good health including older people remaining physically active. Supporting older Queenslanders to stay healthy longer is a priority.

Active recreation and sport systems in combination with accessible environments support physical activity participation by all Queenslanders across the lifespan. Local environments with green space that are walkable, enjoyable and safe, encourage and support daily physical activity.

Recommended strategies to improve physical activity include:

- promoting active, healthy lifestyles for Queenslanders of all ages, including in retirement
- establishing physical activity in childhood as a part of everyday life and daily routines
- avoiding sedentary behaviours and lifestyles
- providing safe environments for walking and active transport.

**Figure 38: Physical activity, adults and children, percentage, Queensland, 2018<sup>34</sup>**



## What are the numbers?

In 2018, based on self/proxy report data, an estimated:

- 2.1 million Queensland adults were sufficiently active
- 336,000 adults were not active in the past week
- 345,000 Queensland children met the recommendation of being active every day of the week
- 600,000 children were active on four or more days in the week
- 52,000 children were not active in the past week.





## Laura's story

*My fitness levels have improved, I have lost a lot of weight and now I can play with my grandchildren.*

In 2011, Laura joined the Heart Foundation walking group in the Morayfield shopping centre. Laura was motivated to lose weight and improve her heart health. Regular walking and making healthy changes to her diet have resulted in over 60kg maintained weight loss.

*'I now walk Monday to Friday at the centre and I have become a walk organiser. I have met so many new people and made so many friends. Everybody made me feel so welcome. If it rains we don't get wet and in the heat, we keep cool. We really have no excuse not to attend!'*



**60%**  
of  
**adults**  
are **sufficiently active**  
for health benefit



**Daily physical  
activity**  
reduces the risk  
of cardiovascular disease



**41%**  
of  
**children**  
are **active every day**

# Physical activity

The measurement and monitoring of physical activity in this section is based on multiple indicators including those derived from the *Australian physical activity and sedentary behaviour guidelines*.<sup>146</sup> For adults to be sufficiently active to obtain health benefit, they need to have participated in at least 150 minutes of moderate intensity physical activity on at least five sessions in the previous week. For children, the recommended physical activity was a minimum of one hour every day. This section reports on achievement of the recommendations, activity levels that are not meeting the guidelines and inactivity.

## Prevalence and differentials

In Queensland in 2018 (Figure 38, Table 24)<sup>34</sup>:

- 60% of adults were sufficiently active in the previous week, that is they were active for the recommended minimum of 150 minutes of moderate intensity physical activity on at least five sessions in the previous week
- 41% of children were active for the recommended minimum of one hour every day
- 31% of adults were insufficiently active in the past week due to the limited time (less than 150 minutes) or number of sessions (less than five sessions per week) spent on physical activity
- 71% of children were active on four or more days per week
- less than 10% of adults and children reported no physical activity at any time in the previous week (9.5% adults and 6.1% children)—that is, they were inactive.

Among adults in 2014–15<sup>33</sup>:

- 1 in 5 (21%) had undertaken strength or toning activities on two or more days in the previous week, 5% had done so on one day and 74% had done none.

The most common forms of activity for adults in 2013–14 (of those who had participated at least once in some type of sport or physical activity in the previous 12 months) were<sup>147</sup>:

- walking for exercise (19%)
- attending a gym (17%)
- jogging (7%), cycling (6%) or swimming (6%).

Most school children were participating in some form of physical activity in 2017<sup>54</sup>:

- 98% in some form of activity at school
- 91% in their free time at home or local environment
- 66% in club-based physical activities, 44% in individual sports and 39% in team sports
- 65% in active transport, 45% for school trips and 45% for other trips.

School children averaged about 11 hours per week of physical activity in 2017<sup>54</sup>:

- 4.4 hours (41%) during the child's free time
- 3.5 hours (33%) at school
- 1.7 hours (16%) in club based sport
- one hour (10%) through active transport.

## By sex

In 2018, adult males were 11% more likely to be sufficiently active than females (Table 24).<sup>34</sup> Females were 22% more likely to be insufficiently active. There was, however, no difference in levels of inactivity.

For children, boys were 23% more likely to be active daily than girls (45% compared to 36%). There was no difference in levels of inactivity in the past week.

Adult females did not differ from males for:

- frequency of exercising for fitness, recreation, sport or transport on five or more days in the previous week, 40% for males and 36% of females in 2014–15<sup>33</sup>
- frequency of strength and toning activities on two or more days a week, 21% of males and 20% of females in 2014–15<sup>33</sup>
- participation in sport and physical recreation activities in the previous 12 months, 55% of females and 53% of males in 2013–14.<sup>147</sup>

## By age

In 2018, the prevalence of sufficient physical activity in adults decreased with increasing age: from 71% in 18–24 year olds to 40% in those aged 75 years and over, with a similar age pattern for males and females (Table 24).<sup>34</sup> The prevalence of various types of physical activity also decreased with age:

- Young people (18–24 years) were 2.4 times more likely than those aged 65 years and older to participate in strength or toning activities on two or more days per week (29% compared with 12% in 2014–15)<sup>33</sup>
- The highest participation in sport and recreation was 64% for 18–24 year olds and the lowest was 40% for those aged 65 years and older in 2013–14.<sup>147</sup>

For children, the prevalence of being active daily was highest for 5–7 year olds (63%) and lowest for 16–17 year olds (18%) with a similar age pattern for boys and girls. Participation in organised sport declined in the senior high school years: from 82% of 8–11 year olds and 77% of 12–15 year olds to 51% of 16–17 year olds, with a similar age pattern for boys and girls in 2016 (Table 24).



# Physical activity

## By socioeconomic status

In 2018, Queensland adults living in the most advantaged areas were 27% more likely to be sufficiently active than those in the disadvantaged areas—who were twice as likely to report no activity in the previous week (14% compared with 6.8%) (Table 24).<sup>34</sup>

Queensland children did not differ in their physical activity across socioeconomic areas in 2018, based on achieving the recommended one hour every day (Table 24).<sup>34</sup>

There were socioeconomic differences in children's participation in organised sport in 2016.<sup>34</sup>

- Children living in socioeconomically advantaged areas were 33% more likely to play organised sport in the previous 12 months than those living in disadvantaged areas (84% compared with 64%).
- Children in higher income households were 2.2 times more likely to have participated in club based organised sport than those from lower income households (67% compared with 31%), and 72% more likely to participate in school-based organised sport (60% compared with 35%).

## By remoteness

The prevalence of sufficient physical activity for adults differed very little by remoteness (Table 24).

Adult inactivity was higher outside major cities—15% of adults in remote areas and 12% in inner regional areas, compared with 8.1% in major cities in 2018.<sup>34</sup>

Children living in regional areas were 29% more likely to meet the recommendation than children in major cities (46% inner regional areas and 48% outer regional areas compared with 36% in 2018), where children living in remote areas did not differ (Table 24).

## Indigenous Queenslanders

In 2012–13<sup>148</sup>, 1 in 3 (31%) Indigenous Queensland adults in non-remote areas was sufficiently active for health benefit, compared with 41% for non-Indigenous, and 2 in 3 had not been active in the previous week (26%) or were insufficiently active (42%), similar to non-Indigenous.

About half (49%) of Indigenous Queensland children were active for the recommended minimum one hour per day in the previous three days, similar to non-Indigenous.

## Regional Queenslanders

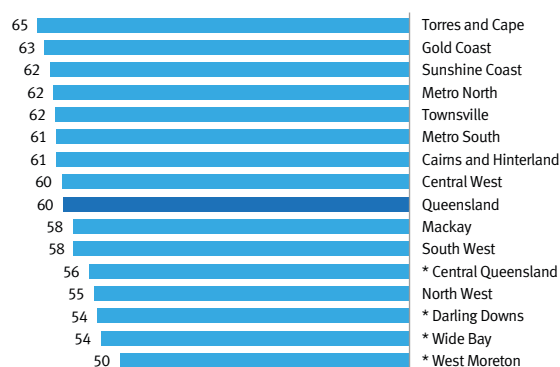
In 2017–18, the prevalence of sufficient activity in adults was lower than the state average in four HHSs (West Moreton, Wide Bay, Darling Downs and Central Queensland) (Figure 39).<sup>34</sup>

In 2017–18, the prevalence of children being active every day was 45% higher in South West HHS than the state average, 20% higher in Central Queensland, Cairns and Hinterland, and Wide Bay HHSs, and 16% lower in Metro South HHS (Figure 39).<sup>34</sup>

More information on HHSs is available from the data visualisations, HHS booklet and statistical tables online (page vii).

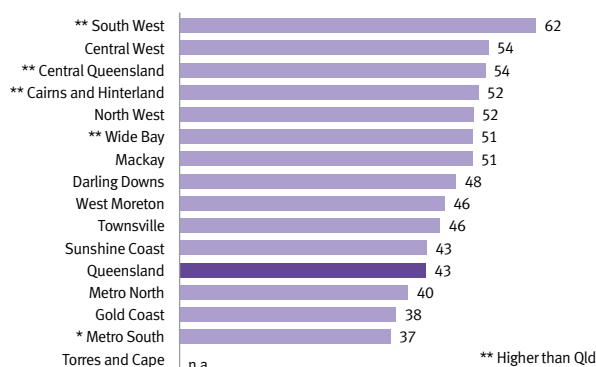
Figure 39: Sufficient physical activity by HHS, adults and children, Queensland, 2017–18<sup>34</sup>

### a. Adults



\* Lower than Qld

### b. Children



\*\* Higher than Qld  
\* Lower than Qld  
n.a. not available



# Physical activity

## How we compare

### Nationally

In 2014–15, the Queensland adult prevalence of sufficient physical activity was 9% lower than national.<sup>33</sup> Queensland was ranked seventh highest among the jurisdictions (ACT was highest and Tasmania lowest).<sup>33</sup>

Queensland was similar to national for strength and toning activities on two or more days in the previous week, and Queensland was ranked seventh highest of the jurisdictions in 2014–15 (ACT was highest and Tasmania lowest).<sup>33</sup>

The prevalence of recommended activity was 18% higher for Queensland children aged 2–17 years than nationally in 2011–12, and Queensland was ranked third highest following Northern Territory and South Australia.<sup>149</sup>

Activity levels in Queensland children were

**18% higher**  
than children nationally.

## Trends

The prevalence of sufficient physical activity in adults increased by 15% over the past 10 years (2008–2018) and increases occurred across all age groups.<sup>91</sup> However, larger gains were made in the preceding years—sufficient physical activity increased by 35% (6.2% per year) between 2004 and 2009, and slowed to an increase of 13% (1.5% per year) between 2010 and 2018.

The amount of time Queensland adults spent walking each week increased substantially from an average of about 120 minutes per week in 2004 to 220 minutes in 2018. Adults who were employed (full-time, part-time or casual) made the greatest gains in walking time with an average increase from 100 minutes per week in 2004 to about 240 minutes in 2018. Those not in the workforce (includes retired) also increased their walking time over these 14 years, but by a smaller amount (from about 160 minutes on average to 190 minutes per week). There was no change among those who were unemployed. These changes were independent of the remoteness or socioeconomic characteristics of the place where people lived.

The prevalence of daily physical activity in children remained steady between 2011 and 2018.

The gains in adult physical activity have diminished in recent years and based on current trends, in 2026 there will be about 2.3 million adult Queenslanders achieving sufficient physical activity, an increase of about 229,000 adults from 2018.

## Impacts and costs

### Burden of disease

Physical inactivity accounted for 5.0% of total burden (DALYs) in 2011, and was the fifth largest risk factor associated with health loss.<sup>25</sup> More than half the physical activity related health loss was associated with coronary heart disease (52% of the DALY burden), diabetes (15%) and bowel cancer (12%).

### Deaths

In 2016, physical inactivity accounted for an estimated 2200 deaths in Queensland (7.5% of all deaths).<sup>25,93</sup>

### Disability and hospitalisation

Physical inactivity accounted for 2.3% of disability burden (YLD) in 2011.<sup>25</sup>

Physical inactivity accounted for about 41,900 hospitalisations and 111,100 patient days in Queensland in 2015–16.<sup>93</sup> These hospitalisations were associated with coronary heart disease (33%), breast cancer (27%), bowel cancer (21%), diabetes (9.8%) and stroke (9.2%).

### Expenditure

In 2008 it was estimated that insufficient physical activity resulted in \$672 million in health sector costs nationally, and \$1135 million in production losses (includes workforce, household productivity and leisure time).<sup>108</sup> Based on population share for Queensland, an estimated \$134 million was associated with health sector costs and \$227 million was for production losses, a total of \$361 million in costs resulting from insufficient physical activity. More recent data is not available.

## Young children and 24-hour movement

In 2017 the 24-hour movement guidelines for babies, toddlers and pre-schoolers (aged up to five years) were released and focus on various ways to engage in physical activity, limit sedentary behaviour, and ensure good quality sleep.<sup>146</sup> Screen-based inactivity was not recommended for children younger than two years, and up to one hour at a time for children aged 2–5 years. During sedentary periods, quality behaviours such as reading, singing, doing puzzles and storytelling with a caregiver was recommended.

# Physical activity

## Keeping children active at school and home

### *Are children meeting the guidelines?*

The foundation for lifelong physical activity is established in childhood. The Australian guidelines recommend that school-aged children and adolescents engage in at least one hour of physical activity every day of moderate-to-vigorous intensity.<sup>146</sup> Despite this recommendation (to accumulate at least seven hours per week), the reality is children are not necessarily achieving this duration of activity every day but rather in longer sessions on fewer days of the week. This pattern of physical activity results in a lower number of children meeting the daily recommendation despite regularly achieving more than the required number of hours per week on average (based on latest Queensland data).<sup>34</sup>

### *When are children active?*

For Queensland school children in 2017, 41% of their proxy-reported physical activity was achieved during free time, 33% in school, 16% at club based sport and 10% in active transport.<sup>54</sup> The average Queensland child accumulated about 11 hours per week in physical activity, with about eight hours being achieved in their free time and at school, about 1.7 hours in club-based sport, and about one hour in active transport to and from school and other places. Free time at school and within local environments is therefore important for physical activity from childhood to adolescence.<sup>54</sup> Additional opportunities for activity occur through the physical education curriculum and school-organised sports that occur during school time and outside of school hours.

### *What are the barriers to children being active?*

Parents have an important influence on children's physical activity. Children whose parents knew the guideline for children's daily physical activity were twice as likely to meet the recommendation in 2017 as children whose parents did not have this knowledge.<sup>54</sup> Half (55%) of Queensland parents reported their child participated in school-based sport and 26% reported their child had access to these sporting activities but did not participate.<sup>54</sup> For the remaining 19%, school-based sport was not available, highlighting an opportunity to expand access through their local schools.

An identified barrier to young children participating in organised out-of-school hours activities was the parent's perception that the child was too young to start playing organised sport.<sup>150</sup> Participation by younger children in team sports may be constrained by parents, although age-modified sport formats, equipment and rules are utilised to promote skill development and minimise injury.

### *What about children with a medical condition or disability?*

Based on proxy-report in 2017–18, 14% of Queensland school children were limited in their ability to be physically active or play sport due to a medical condition, such as asthma, autism spectrum, and neurological and musculoskeletal conditions.<sup>34</sup> Children with a medical condition were 24% less likely to be active daily than those without a condition (34% compared with 45%), and 18% less likely to be active on four or more days per week (61% compared with 75%). There were no differences between girls and boys.

Children living with a chronic condition may be discouraged from participating in physical activity, however, unnecessary restrictions deny the child the potential benefits from their involvement in appropriate activities. Childhood chronic conditions such as congenital heart disease, cerebral palsy, chronic asthma and other respiratory conditions can be accommodated within exercise sessions where the benefits to the child outweigh any risk of injury or worsening of the chronic condition.<sup>151</sup>

Active recreation and sport programs increasingly encourage the inclusion of children living with disability.<sup>152</sup> In 2015, 1 in 10 children aged 5–14 years reported a disability—5% had a profound or severe core activity limitation of communication, mobility and self-care.<sup>17</sup> Practical modifications to equipment and the set-up of games to meet the needs of the individual players ensure inclusion of children with a disability.

### *Are children active beyond school?*

Club-based sport accounted for an additional 1.7 hours of activity for Queensland children beyond school-based activities. Participation in an individual sport was higher than a team sport (44% compared with 39% in 2017).<sup>54</sup>

Organised active recreation and sport often occurs outside of school hours with two-thirds (62%) of Queensland children aged up to 14 years participating at least once per week in 2017 (an increase from 55% in 2016).<sup>150</sup> There were age differences in participation. As a single activity, 30% of Australian children aged up to 14 years participated in swimming outside of school hours in 2016–2017.<sup>150</sup> Learning to swim was the most popular activity for 34% of children up to four years of age, and swimming continued to be popular with 44% of 5–8 year olds participating outside of school hours.

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Queensland children are accumulating about

**11 hours a week**  
of activity on average.

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# Physical activity

Team sports become increasingly popular between nine and 14 years of age—football and soccer for boys (30% participation at age 9–11 years and 27% at 12–14 years) and netball for girls (24% at age 9–11 years and 31% at 12–14 years).<sup>150</sup> Participation in team sports typically requires recurrent scheduled commitment and older children may be more able to adhere to these schedules.

Free time, active transport and active recreation represent important opportunities that significantly expand children's physical activity beyond the time they spend at school. Keeping more children active early in childhood and sustaining this activity through adolescence sets the pathway for healthy, active lifestyles in adulthood.



## Active lifestyles for all Queenslanders

### How are Queenslanders keeping active?

Many Queenslanders have embedded regular and sustained physical activity into their everyday life and daily routines. Increased walking is an important contributor to the overall increase in physical activity. This increase is largely being achieved by employed adults (full-time or part-time) rather than those who are not employed. The upward trend is evident in cities, regional areas and remote areas. Being employed remains strongly associated with physical activity compared with those who are unemployed or unable to work. The working population who can maintain full-time or part-time work were more likely than non-workers to achieve daily physical activity.

Walking for recreation is the most popular physical activity—43% of Australian adults participated in 2017 (52% of adult females and 33% of males).<sup>153</sup> Fitness clubs and gym activities ranked second—35% of females and 29% of males participated.<sup>153</sup> The benefits of participation in physical activities and sport extended beyond physical health to include enjoyment, socialising and improved wellbeing.<sup>153</sup>

The promotion of fitness and weight loss continues to raise the health consciousness of Queenslanders. The growth in the fitness industry and personal training reflects an increased demand from Queenslanders to support active lifestyles—across Australia about one in four gyms and fitness centres (23%) and one in four (24%) personal trainers were located in Queensland in 2017–18, slightly higher than would be expected based on population share.<sup>154,155</sup>

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**47%** of adults  
walk for recreation.

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### What about Queenslanders living with disability?

Supporting physical activity for adults living with disability can be a challenge due to the type of disability and availability of suitable programs to match the individual. In 2015, 18% of Queensland adults reported a disability where 6% had a profound or severe core activity limitation of communication, mobility and self-care.<sup>17</sup> The proportion of Queenslanders reporting a disability increases steadily with age—about half (56%) of all those reporting a disability were aged 35–74 years, and 3 in 4 of those aged 80 years and older reported a disability (Figure 2, page 15).<sup>17</sup>

A disability can restrict learning and employment opportunities, and in turn limit the achievement of daily physical activity through getting to and from school or work. However, there are few disabilities or chronic conditions that completely preclude participation in any physical activity or organised sport.<sup>153</sup> Among Australian adults living with a disability or physical condition that restricted their life in some way, 69% participated in organised sports at least once per week compared with 84% for those without a disability in 2017.<sup>153</sup>

### How can our environments keep Queenslanders active?

Local environments provide opportunities for daily physical activity through walkability and accessibility to transport options (active and public). Developing active recreation environments and sport systems to support participation across the lifespan will contribute to lifelong health and healthy ageing. Green space needs to be accessible by Queenslanders of all ages and those living with disabilities. Encouraging appropriate physical activity as part of everyday life in Queensland communities will be key to achieving greater health gains. This will be driven by improvements to the walkability and availability of green spaces where we live, work, learn, play and do business, as well as when travelling between local destinations.

# Physical activity

Table 24: Physical activity, adults and children, percentage, Queensland, 2018<sup>34</sup>

Adults (self-reported)				Children (proxy-reported)			
	Sufficient physical activity: 150 minutes or more over at least 5 sessions in past week	Insufficient physical activity: insufficient time or sessions	Inactive: not active on any day in past week		Sufficient physical activity: active every day of the past week	Active 4 or more days of the past week	Inactive: not active on any day in past week
<b>18+ years</b>				<b>5–17 years</b>			
Persons	59.7 (58.1–61.3)	30.7 (29.2–32.2)	9.5 (8.7–10.4)	Persons	40.6 (38.2–43.1)	70.6 (68.4–72.8)	6.1 (5.1–7.3)
Male	62.9 (60.5–65.2)	27.7 (25.6–30.0)	9.3 (8.1–10.7)	Male	44.7 (41.4–48.0)	74.0 (71.0–76.8)	5.2 (4.0–6.7)
Female	56.6 (54.4–58.8)	33.7 (31.6–35.7)	9.7 (8.6–10.9)	Female	36.4 (33.0–39.9)	67.1 (63.6–70.4)	7.1 (5.5–9.0)
<b>Persons</b>				<b>Persons</b>			
18–24 years	71.0 (63.8–77.3)	24.5 (18.6–31.5)	*4.5 (2.4–8.1)	5–7 years	62.5 (57.2–67.6)	88.5 (85.0–91.2)	*1.3 (0.7–2.6)
25–34 years	62.7 (58.6–66.7)	30.0 (26.3–33.9)	7.3 (5.2–10.1)	8–11 years	47.2 (42.8–51.6)	75.9 (71.6–79.7)	*3.2 (1.9–5.2)
35–44 years	59.7 (56.4–63.0)	32.2 (29.2–35.4)	8.1 (6.4–10.1)	12–15 years	26.7 (23.1–30.7)	60.5 (56.2–64.6)	10.4 (8.1–13.4)
45–54 years	60.7 (57.6–63.8)	28.6 (25.9–31.6)	10.6 (8.9–12.7)	16–17 years	18.3 (14.5–22.8)	50.3 (44.5–56.1)	11.6 (8.5–15.6)
55–64 years	55.8 (52.9–58.6)	31.1 (28.6–33.8)	13.1 (11.4–15.0)				
65–74 years	48.3 (45.7–50.9)	37.5 (35.0–40.1)	14.2 (12.5–16.1)				
75+ years	39.8 (30.9–49.5)	46.7 (37.5–56.2)	13.5 (9.0–19.6)				
<b>Males</b>				<b>Males</b>			
18–24 years	73.3 (62.2–82.0)	22.9 (14.7–33.9)	**	5–7 years	69.4 (62.5–75.6)	89.4 (84.8–92.7)	n.a.
25–34 years	65.7 (59.5–71.4)	27.1 (22.0–33.0)	*7.2 (4.3–11.8)	8–11 years	49.9 (44.2–55.6)	79.6 (74.4–84.0)	*3.5 (1.7–6.9)
35–44 years	64.2 (59.3–68.8)	28.0 (23.8–32.5)	7.8 (5.4–11.3)	12–15 years	29.9 (24.7–35.6)	64.6 (58.5–70.3)	8.3 (5.6–12.1)
45–54 years	65.3 (60.6–69.7)	25.0 (21.1–29.4)	9.7 (7.3–12.9)	16–17 years	21.7 (16.3–28.2)	54.9 (46.9–62.6)	9.9 (6.6–14.6)
55–64 years	57.3 (53.2–61.3)	29.0 (25.5–32.8)	13.7 (11.3–16.6)				
65–74 years	51.5 (47.6–55.3)	33.9 (30.3–37.6)	14.7 (12.1–17.6)				
75+ years	41.4 (28.5–55.6)	48.6 (35.1–62.4)	*10.0 (5.4–17.7)				
<b>Females</b>				<b>Females</b>			
18–24 years	68.8 (59.1–77.1)	26.1 (18.4–35.5)	*5.2 (2.3–11.0)	5–7 years	55.2 (47.3–62.9)	87.5 (81.8–91.5)	n.a.
25–34 years	59.8 (54.3–65.1)	32.8 (27.8–38.2)	7.4 (4.9–11.1)	8–11 years	44.3 (37.8–51.1)	72.0 (65.1–78.0)	*2.9 (1.4–5.8)
35–44 years	55.4 (50.8–59.9)	36.3 (32.0–40.9)	8.3 (6.3–10.9)	12–15 years	23.4 (18.5–29.1)	56.1 (50.0–62.1)	12.7 (9.1–17.6)
45–54 years	56.5 (52.3–60.6)	32.0 (28.2–36.1)	11.5 (9.2–14.3)	16–17 years	14.9 (10.1–21.6)	45.7 (37.3–54.2)	13.3 (8.5–20.2)
55–64 years	54.3 (50.3–58.2)	33.2 (29.6–37.1)	12.5 (10.3–15.0)				
65–74 years	45.1 (41.7–48.6)	41.1 (37.7–44.7)	13.7 (11.5–16.3)				
75+ years	38.3 (26.7–51.4)	44.7 (32.7–57.4)	*17.0 (10.1–27.3)				
<b>Socioeconomic status</b>				<b>Socioeconomic status</b>			
Disadvantaged	52.7 (49.7–55.7)	33.1 (30.3–36.1)	14.1 (12.3–16.2)	Disadvantaged	42.9 (37.6–48.4)	73.2 (68.2–77.6)	4.2 (2.9–6.1)
Quintile 2	55.5 (52.7–58.3)	33.1 (30.4–35.8)	11.4 (9.7–13.4)	Quintile 2	47.4 (42.6–52.3)	73.5 (68.8–77.7)	5.5 (3.8–7.9)
Quintile 3	62.4 (59.0–65.7)	28.2 (25.2–31.3)	9.4 (7.8–11.3)	Quintile 3	44.6 (39.5–49.8)	71.9 (67.1–76.3)	5.0 (3.4–7.3)
Quintile 4	59.9 (56.1–63.7)	33.3 (29.7–37.1)	6.8 (5.4–8.5)	Quintile 4	36.2 (30.9–41.8)	68.0 (62.6–73.0)	7.8 (5.4–11.3)
Advantaged	66.8 (62.4–70.9)	26.4 (22.7–30.5)	6.8 (4.8–9.6)	Advantaged	32.7 (27.1–38.7)	67.1 (61.3–72.5)	7.8 (5.1–11.6)
<b>Remoteness</b>				<b>Remoteness</b>			
Major cities	61.6 (59.3–63.9)	30.3 (28.1–32.5)	8.1 (6.9–9.4)	Major cities	36.4 (33.0–39.9)	68.3 (65.0–71.5)	6.2 (4.8–7.9)
Inner regional	55.0 (52.5–57.4)	32.8 (30.5–35.2)	12.2 (10.7–13.9)	Inner regional	46.4 (42.0–50.9)	74.7 (70.7–78.4)	5.6 (3.9–8.1)
Outer regional	59.1 (56.0–62.3)	30.2 (27.2–33.5)	10.6 (9.2–12.3)	Outer regional	47.7 (42.9–52.6)	73.3 (69.0–77.3)	5.6 (3.9–8.0)
Remote/very remote	56.8 (52.5–60.9)	28.6 (25.1–32.4)	14.6 (11.2–18.8)	Remote/very remote	45.9 (37.6–54.4)	72.8 (64.1–80.0)	*9.4 (4.4–19.0)

\* Estimate has a relative standard error of 25% to 50% and should be used with caution.

\*\* Estimate has a relative standard error greater than 50% and is not reported.

n.a. not available for publication



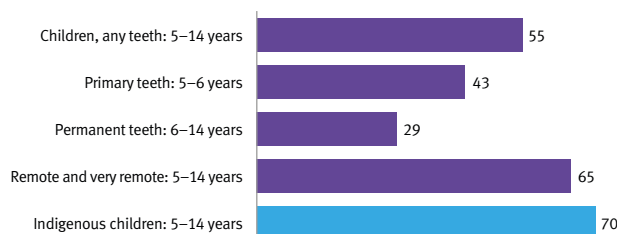
# Dental and oral health

Oral health is fundamental to an individual's overall health, wellbeing and quality of life. The major oral diseases are tooth decay (dental caries), gum disease (periodontal disease) and oral cancers. Oral diseases are among the most common and costly health problems experienced by Queenslanders.

Improving oral health outcomes including reducing the risk of decay, requires a focus on healthy eating, good oral hygiene, regular access to dental services beginning in the infant years, and access to fluoride through community water supplies and oral care products.

This section draws on data collected by the Queensland Health oral health services<sup>156</sup> and national surveys.<sup>33,157</sup> Decay experience is defined as teeth that are decayed, missing or filled because of decay.

**Figure 40: Prevalence of decay experience, children attending Queensland Health oral health services, 2014–15 to 2016–17<sup>156</sup>**



## What are the numbers?

- Of the 31,000 children aged 5–6 years who attended the oral health services\* in 2016–17, 13,350 had experienced tooth decay.

\* Data excludes Central West and North West HHSs.

## Prevalence of dental decay in children

Decay experience in children attending Queensland Health oral health services (2014–15 to 2016–17)<sup>156</sup>:

- 55% of 5–14 year olds in any teeth—24% had four or more teeth affected (Figure 40).
- 43% of 5–6 year olds in their primary teeth—21% had four or more teeth affected.
- 50% of 5–10 year olds in their primary teeth—24% had four or more teeth affected.
- 29% of 6–14 year olds in their permanent teeth—12% had three or more teeth affected.

In 2012–14, the prevalence of decay experience in the primary teeth of children aged 5–6 years in Queensland was 24% higher than children nationally.<sup>158</sup>

## How does it differ?

In children attending Queensland Health oral health services (2014–15 to 2016–17)<sup>156</sup>:

- 52% of 5–6 year olds in socioeconomically disadvantaged areas had decay experience in their primary teeth, compared to 31% of those in advantaged areas (see HHS booklet for more detail).
- 63% of 5–14 year olds in socioeconomically disadvantaged areas had decay experience, compared to 46% of those in advantaged areas.
- 65% of 5–14 year olds in remote and very remote areas had decay experience, compared with 55% in major cities and regional areas.
- 70% of Indigenous Queensland children aged 5–14 years had decay experience, compared with 54% of non-Indigenous children.

- 41% of Indigenous Queensland children aged 5–14 years had four or more teeth affected by decay, compared with 24% of other Queenslanders.
- For 5–14 year olds the prevalence of decay experience was higher than the state average for Darling Downs, Metro South, Torres and Cape, and Wide Bay HHSs, and lower in others including Gold Coast, Metro North, and Townsville HHSs.

## Use of dental services

In 2014–15<sup>157</sup>:

- 46% of Queenslanders aged two years and older had consulted a dental practitioner in the previous 12 months (47% nationally). Queensland was ranked sixth highest among eight jurisdictions.
- 26% of Queenslanders had not consulted a dental practitioner within the previous two years, and 5.4% never had. This compares with the national prevalence of 26% and 5.5% respectively.
- Australian adults who were current smokers were less likely than ex-smokers or those who had never smoked to have visited a dental practitioner in the previous 12 months (35% compared with 48%), as were those who were obese compared to healthy weight (42% and 49% respectively), those who engaged in low or no exercise compared to more active adults (43% and 52%) and those who exceeded the alcohol consumption guidelines compared to those who did not (45% and 51%).

# Dental and oral health

## Impacts and costs

### Dental conditions

- There were 27,569 hospitalisations for dental conditions in 2015–16. Two-thirds were for children and young people (23% for 0–14 years and 46% for 15–29 years) and one-third for adults and older people (28% for 30–64 years and 6% for 65 years and older).
- Over the past decade the admission rate for dental conditions for children has remained steady while for young and middle-aged people (15–64 years) it decreased by about 10%. For older people, there was a modest rate increase of 20%, while the number of admissions increased by 80%.

### Dental decay

- There were on average about 4150 hospital admissions per year for dental decay in children aged 0–9 years (2013–14 to 2015–16) and 13% were for Indigenous Queenslander children (Table 7, page 32).
- Admission rates for non-Indigenous children were higher than the state average in six of 15 HHSs, with the highest rates in North West HHS (2.6 times the state average). If the rate of admission were similar to the state rate there would have been about 360 fewer admissions in these six HHSs—almost 80% of the excess was in Darling Downs, Gold Coast and Wide Bay.
- Admission rates for Indigenous Queenslander children were higher than the state average in three of 15 HHSs, with highest rates in North West and Torres and Cape (three times the state average), and South West HHSs (Figure 41). If the admission rates were similar to the state rate, there would have been about 100 fewer admissions for Indigenous Queenslander children in these three HHSs.
- Over the past 10 years, the admission rate for dental decay in children decreased by 19% for non-Indigenous children and decrease was evident in eight of 15 HHSs (Table 7, page 32). The admission rate increased for Indigenous Queenslander children across the state by 32%.

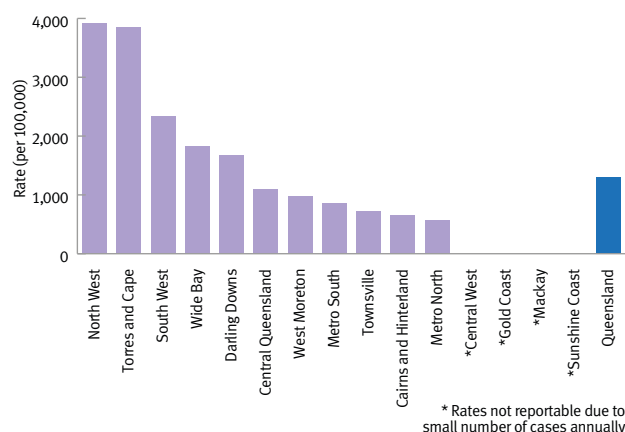
### Expenditure

Oral health was the third largest cause of recurrent, allocated health system expenditure in 2008–09 accounting for 9.7% of spending nationally—95% was for the cost of services provided by private and other dental services.<sup>159</sup>

In 2015–16, \$1.52 billion was spent in Queensland on dental services (Figure 10, page 49).<sup>80</sup>

Considering only admitted patient expenditure, in 2012–13, \$377 million was spent nationally on oral disorders (about \$75 million in Queensland).<sup>82</sup>

**Figure 41: Hospitalisations for dental decay in Indigenous Queenslander children (0–9 years), 2015–16**



## Causes and prevention

Many factors protect against dental disease including oral hygiene behaviours, use of dental services, diet, cessation of smoking, and access to the protective effect of fluoride.

### Dietary patterns

The main preventable risk factor for tooth decay in children and adults is the consumption of sugary food and drink. Tooth decay can be avoided by making healthy food choices and minimising snacking between meals. Drinking plenty of tap water, especially fluoridated water, reduces the risk of decay.

### Smoking

Smoking is an important preventable risk factor for many oral diseases including gum disease, which may lead to tooth loss. Smokers are more than three times as likely to develop oral cancer<sup>160</sup>, and the risk increases when smoking and high alcohol consumption occur together.<sup>161</sup> Smoking cessation can reduce the risk of some oral diseases.<sup>161</sup> Smoking also affects oral health by staining teeth, changing taste, causing bad breath and by making the mouth more susceptible to infections.<sup>161</sup>

### Fluoride

Fluoride plays a crucial role in reducing tooth decay and can be delivered through a range of methods, predominantly toothpastes and fluoridated water. Community water fluoridation is a cost-effective and equitable means of increasing exposure to the protective effects of fluoride, thereby reducing tooth decay across the population.<sup>162</sup> In 2008, prior to the introduction of the *Water Fluoridation Act 2008*, 4% of Queenslanders had access to fluoridated water. By 2012, this figure had risen to 87%. Since then it has fallen to 72% following decisions of some local councils.



### Thang's story

*This is a dental home the family can come to.*

Dimity is an Oral Health Therapist. The Metro South Refugee Health Service works in partnership with Metro South Oral Health to support the health needs of refugee families. It is recognised that people from refugee backgrounds often have pressing oral health needs due to lack of access to care and prolonged periods of displacement.

Man and Thang arrived in Australia from Myanmar in June 2018 with their two children. Thang was experiencing severe dental pain and the staff at the Logan Oral Health Centre performed an immediate tooth extraction. The Centre now provides the family with ongoing oral health treatment and education including information on how to best care for their teeth, including instructions on how to assist and supervise their children's tooth brushing, limiting sweet and sticky food, and drinking plenty of tap water.



**43%**

5–6 year olds had  
decay experience



**1/4**

of hospitalisations  
for dental conditions  
were in children

**70%**

of Indigenous  
Queenslander children  
aged 5–14 years had  
decay experience

# High blood pressure and cholesterol

High blood pressure and high blood cholesterol are described as metabolic risk factors, particularly important in the development of cardiovascular disease, diabetes and kidney disease.

High blood pressure, often referred to as hypertension, is prolonged elevation of the blood pressure. Population reporting of blood pressure was assessed by physical measurement in 2014–15<sup>33</sup>, and cholesterol and other lipids in a blood measurement survey in 2011–12.<sup>111</sup>

High blood pressure is a leading risk factor for total disease burden in people over the age of 65 years, and is the leading individual risk for cardiovascular disease. Although population health gains have been achieved through monitoring blood pressure and cholesterol<sup>86</sup>, there is opportunity for further improvement considering the high proportion of undiagnosed risk in many adults or insufficient treatment to fully reduce risk. Improved lifestyles have potential to minimise risk in many cases, either in combination with medications or alone. This may include reducing salt intake, increasing physical activity and maintaining a healthy weight.

**Figure 42: High blood pressure and total cholesterol, adults, Queensland<sup>33,49</sup>**



## What are the numbers?

Based on nationally measured prevalence, in 2018 an estimated:

- 880,000 adults had measured high blood pressure (based on prevalence in 2014–15)
- 1.2 million adults had measured high cholesterol (based on prevalence in 2011–12).

## What is the prevalence and how does it differ?

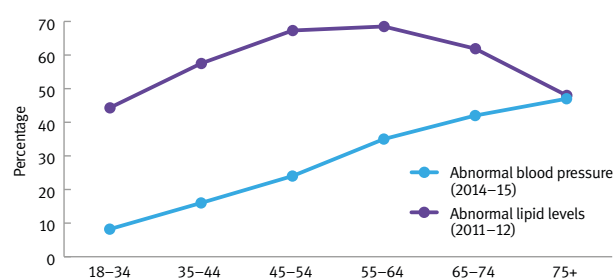
### High blood pressure—hypertension

- In 2014–15, about 1 in 4 (23%) Queensland adults had high blood pressure (Figure 42). This excludes those who were taking medication that effectively controlled the condition (Figure 43).<sup>33</sup>
- The prevalence of high blood pressure in Queensland adults in 2014–15 was:
  - similar for males and females
  - 4–5 times higher in those aged 65 years or older than younger adults aged 18–34 years
  - similar to national
  - ranked fifth highest compared to other jurisdictions.

### High cholesterol—dyslipidaemia

- In 2011–12, about 1 in 3 (31%) of Queensland adults had high total cholesterol (Figure 42).<sup>49</sup> This excludes those who were taking medication that effectively controlled the condition (Figure 43).
- The prevalence of high cholesterol in Queensland adults in 2011–12 was:
  - similar for males and females
  - steadily increasing with age from about 30 years onward
  - similar to national
  - ranked seventh highest compared to other jurisdictions.

**Figure 43: Untreated or ineffectively treated abnormal blood pressure and abnormal lipid levels, by age, Australia<sup>49</sup>**





## Causes of high blood pressure and high cholesterol

Blood pressure naturally adjusts depending on a person's activities. Persistently high blood pressure independent of activity and over a long period of time requires regular monitoring.<sup>163,164</sup> High blood pressure may be due to a number of factors, including increasing age (men more likely than women), smoking, overweight or obesity, high cholesterol, lack of exercise, high salt intake, high alcohol consumption and diabetes.<sup>163</sup> High blood pressure tends to run in families due to shared lifestyles, and common genetics with blood relatives.

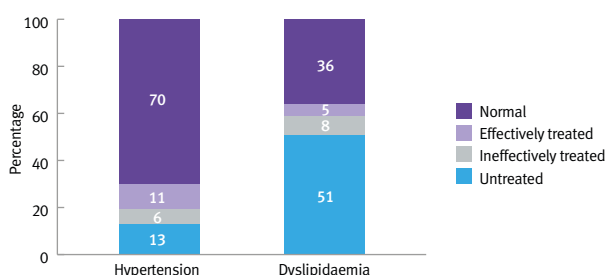
The body produces most cholesterol naturally, and it is found in some foods. When the body is unable to remove enough cholesterol from the blood, total cholesterol levels will rise.<sup>165</sup> High cholesterol is determined by blood lipid profiles including the 'good' and 'bad' cholesterol and triglycerides.<sup>163,164</sup> A family history of high cholesterol is primarily determined by a person having a first-degree relative with high cholesterol or premature coronary and/or vascular disease.<sup>163</sup>

The risk of cardiovascular disease is managed by lifestyle modification and medication.<sup>163</sup>

- Lifestyle modification to reduce blood pressure and cholesterol includes healthy diet, smoking cessation, increased physical activity, reduced salt intake, limiting alcohol, maintaining waist measurement of less than 94cm for men and less than 80cm for women, and a BMI of less than 25.
- Medication to reduce high blood pressure may be used in combination with lipid-lowering therapy to prevent or reduce high cholesterol.<sup>166</sup>

The reality is that many Australians remain untreated or ineffectively treated for high blood pressure and high cholesterol (Figure 43, Figure 44). About one-fifth of Australians aged 45–74 years in 2011–12 were estimated to be at risk of a future cardiovascular event within the next five years. However, two-thirds of those were not receiving the recommended combination therapies to reduce blood pressure and cholesterol.<sup>166</sup>

**Figure 44: Hypertension and dyslipidaemia by treatment status, Queensland, 2011–12<sup>49</sup>**



## Metabolic risk factors and cardiovascular disease

It is recommended that cardiovascular disease risk is assessed every five years from age 45 years, and for Indigenous Australians from age 35 years.<sup>163</sup> Risk is determined from a person's age, sex, smoking status, cholesterol levels, blood pressure, diabetes status, and thickening of the left wall of the heart. Adults at high risk of cardiovascular disease include those with<sup>163</sup>:

- diabetes and are aged 60 years and older
- diabetes and microalbuminuria (based on the urine albumin-to-creatinine ratio)
- moderate or severe chronic kidney disease
- previous diagnosis of family history of high cholesterol
- high blood pressure and high total cholesterol
- Indigenous Australians aged 74 years and older.

## Impacts and costs

### Burden of disease

High blood pressure accounted for 5.3% of total disease burden in 2011, and for 8.2% of early death burden (YLL) in 2011.<sup>25</sup> High cholesterol accounted for 2.5% of total disease burden in 2011, and for 3.8% of early death burden (YLL) in 2011.

### Deaths

High blood pressure accounted for an estimated 3000 deaths in Queensland in 2016 (10% of all deaths), and 51% were females.<sup>24,25,93</sup>

High cholesterol accounted for an estimated 1000 deaths in Queensland in 2016 (3.5% of all deaths), and 52% were males.<sup>24,25,93</sup>

### Disability and hospitalisation

High blood pressure accounted for 2.2% of disability burden (YLD) in 2011 (Table 2, page 10). High blood pressure accounted for about 67,300 hospitalisations and 220,400 patient days in Queensland in 2015–16.<sup>93</sup> One-third (35%) of the hospitalisations were associated with stroke and other cardiovascular diseases (35%), one-third (32%) with chronic kidney disease, and 22% with coronary heart disease.

High cholesterol accounted for 1.0% of disability burden (YLD) in 2011. High cholesterol accounted for about 13,800 hospitalisations and 47,900 patient days in Queensland in 2015–16.<sup>93</sup> Almost all (86%) hospitalisations were associated with coronary heart disease, followed by stroke (14%).

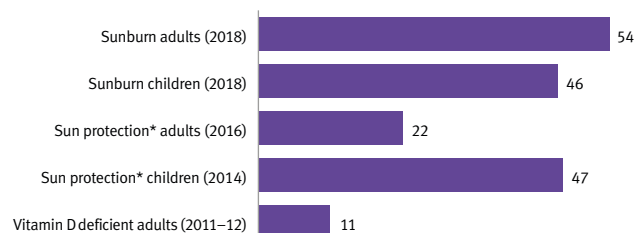
# Sun safety

Melanoma rates in Queensland are the highest of all the states and territories. Australia and New Zealand, have the highest rates in the world.

Compared to non-melanoma skin cancer (NMSC) however, melanoma incidence is low. NMSCs are not required to be registered so data on incidence is limited. However, the cost of diagnosing and treating NMSC reflects the higher burden than melanoma—an estimated seven-fold difference in health system costs in 2008–09.

Ultraviolet radiation (UVR), is carcinogenic with 6% of all cancers diagnosed in Australia due to solar radiation exposure. An estimated 7220 melanoma cases and essentially all non-melanoma skin cancer could be prevented in Australia with effective use of sunscreen. Current sunscreen use has reduced skin cancer incidence by only 10–15%, so there is substantial opportunity for improvement. Daily use of the five sun protection behaviours is required, particularly in Queensland as UVR levels are moderate to extreme all year round.

**Figure 45: Sun safety indicators, children and adults, percentage, Queensland<sup>34,167</sup>**



\* Uses broad hat, SPF30 or higher sunscreen and protective clothing in summer

## What are the numbers?

- In 2018, an estimated 2.1 million adults and 394,000 children had been sunburnt in the previous 12 months.
- An estimated 841,000 adults and 399,000 children used sun protection methods in 2018.

## What is the prevalence?

- 54% of adults and 46% of children were sunburnt in the previous 12 months in 2018 (Figure 45).<sup>34</sup>
- 22% of adults (in 2016) and 47% of children (in 2014) wore a broad-brimmed hat, long sleeves and long pants or skirts and used SPF 30 or higher sunscreen for sun protection in summer.<sup>34</sup>
- 11% of Queenslanders were vitamin D deficient (mild, moderate or severe) in 2011–12, 6% in summer and 15% in winter.<sup>167</sup>

## How does it differ?

In 2018 (Table 25):

- Adult males were 14% more likely to report sunburn than females, while there was no difference between boys and girls. There were no sex differences regarding use of sun protection behaviours.<sup>34</sup>
- Young people (18–34 years old) were at least 4 times more likely to report sunburn than older people (65 years and older).<sup>34</sup>
- Older children aged 12–17 years were about 60% more likely to have been sunburnt than 5–7 year olds, while young children were 3.4 times more likely to practice sun protection than older children.<sup>34</sup>

In 2017–18, the prevalence of adult sunburn was higher than the state average in four HHSs (29% higher in Torres and Cape, 14% in West Moreton, 13% in Mackay and Central Queensland), and 16% lower in Central West. For children, the prevalence of sunburn in Mackay HHS was 16% higher than the state average in 2013–14, but did not differ in other HHSs (latest available data).<sup>34</sup>

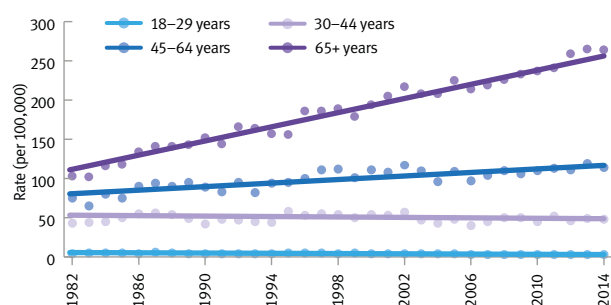
In 2011–12, the prevalence of vitamin D deficiency in Queensland was about half the national prevalence and about one-third that of southern states.<sup>167</sup>

## Skin cancer incidence and trends

There were 3685 new cases of melanoma in 2014 and 59% were male.<sup>59</sup> Over the past decade, the melanoma incidence rate for young people (15–29 years) declined by 23% (Figure 46). It was stable for 30–44 year olds, increased by 13% for those aged 45–64 years, and increased by 27% for those aged 65 years and older.

Melanoma was the most common new cancer diagnosed in young people in 2014 (25% of all cancers diagnosed in people aged 15–29 years: page 20), and was the second most common (25%) for people aged 30–44 years (page 23).<sup>59</sup>

**Figure 46: Trends in melanoma incidence by age group, Queensland, 1982–2014<sup>59</sup>**



NMSC is the most commonly diagnosed cancer in Queensland, and includes basal cell carcinoma (70% of NMSC) and squamous cell carcinoma (30%).<sup>168</sup> In 2014, the Queensland NMSC incidence rate was estimated to be almost twice the national rate<sup>169</sup> and about 16 times the Queensland melanoma rate.<sup>170</sup>

The melanoma incidence rate varied across HHSs in 2012–14 and was higher than the state average in Darling Downs, Sunshine Coast and Gold Coast HHSs, and lower in Central Queensland, Mackay, Metro South, North West and Torres and Cape HHSs.<sup>59</sup> More information on HHSs is available from the data visualisations and statistical tables online (page vii).

## Deaths

There were 310 deaths due to melanoma in 2016—two-thirds were males.<sup>68</sup> The male rate was 2.5 times the female rate. About 2 in 3 deaths occurring in those aged 65 years and older. Over the past decade the melanoma death rate was unchanged at state level, and for all HHSs with the exception of Metro North where there was a 35% decrease (Table 12, page 38).

## National and international comparisons

In 2016, the Queensland melanoma incidence rate was estimated to be 35% higher than the national rate and highest of the jurisdictions.<sup>170</sup> It was 36% higher than the next highest state (Western Australia) and two times that of the Northern Territory, which was lowest.

The Queensland melanoma death rate was 29% higher than the national rate in 2016 and highest of the jurisdictions (Table 13, page 40).<sup>68</sup>

Australia and New Zealand have the highest melanoma incidence rates globally, more than 11 times the global average in 2012.<sup>171</sup> The Australian melanoma death rate was six times the global average in 2012.

In 2012, 8% of melanoma cases globally were diagnosed in Australia, based on data from 133 countries with reported cases.<sup>172</sup>

## GP visits

In 2015–16, consultations with a GP for skin cancer were the ninth most frequent chronic disease problem with 1.1 consultations per 100 encounters nationally.<sup>173</sup> Considering all encounters, skin cancer and sunburn were among the top 40 reasons for the visit, each with 1.1 consultations per 100 encounters in 2015–16. Sunburn ranked third and skin cancer was the seventh most common problem that was managed with a procedural treatment by a GP (0.7 and 0.5 procedures per 100 encounters, respectively).

## Hospitalisations

In 2015–16, there were about 26,000 hospitalisations for NMSC (60% were males) and 3100 for melanoma (57% were males).

- 65% of NMSC hospitalisations were for people aged 65 years and older.
- 55% of melanoma hospitalisations were for people aged 65 years and older.

## Expenditure

Treatment of skin cancer was estimated to cost the national health system over \$400 million in 2008–09 (\$367 million for NMSC and \$50 million for melanoma).<sup>174</sup>

NMSC treatments almost doubled between 1997 and 2010 and based on trend it was estimated that in 2015, NMSC cost \$705 million in Australia (about \$140 million in Queensland).<sup>175</sup> This includes diagnosis, treatment and pathology.

Based on 2017 Medicare data and considering a three-year period of diagnosis and treatment, including cases that were presumed to be melanoma but were later found to be benign, the estimated annual cost for melanoma was \$272 million nationally (\$54.4 million in Queensland).<sup>176</sup>

**Table 25: Sunburn in the previous 12 months, adults and children, percentage (95% CI), Queensland, 2018<sup>34</sup>**

Adults		Children (5–17 years)	
Persons	54.3 (52.8–55.8)	Persons	46.4 (44.0–48.9)
Male	57.9 (55.6–60.1)	Males	46.9 (43.6–50.2)
Female	50.9 (48.8–52.9)	Females	45.9 (42.3–49.5)
Persons by age			
18–24 years	78.7 (72.0–84.1)	5–7 years	33.0 (28.2–38.3)
25–34 years	74.8 (71.1–78.1)	8–11 years	45.5 (41.2–49.9)
35–44 years	65.5 (62.2–68.7)	12–15 years	55.3 (51.0–59.6)
45–54 years	54.5 (51.3–57.7)	16–17 years	52.5 (46.6–58.3)
55–64 years	41.8 (39.0–44.6)		
65–74 years	23.9 (21.8–26.1)		
75+ years	10.5 (8.6–12.6)		
Socioeconomic status			
Disadvantaged	52.2 (49.5–54.9)	Most disadvantaged	44.8 (39.4–50.3)
Quintile 2	54.7 (52.2–57.3)	Quintile 2	46.8 (41.9–51.7)
Quintile 3	53.1 (49.7–56.5)	Quintile 3	44.8 (39.8–49.9)
Quintile 4	57.5 (53.9–61.0)	Quintile 4	46.9 (41.4–52.5)
Advantaged	53.7 (49.5–57.8)	Most advantaged	48.8 (42.7–54.9)
Remoteness			
Major cities	53.8 (51.6–56.1)	Major cities	44.3 (40.9–47.9)
Inner regional	53.2 (50.9–55.4)	Inner regional	46.9 (42.5–51.4)
Outer regional	56.5 (53.6–59.4)	Outer regional	52.9 (48.1–57.7)
Remote/very remote	59.7 (56.0–63.3)	Remote/very remote	52.9 (44.4–61.3)

# Cancer screening

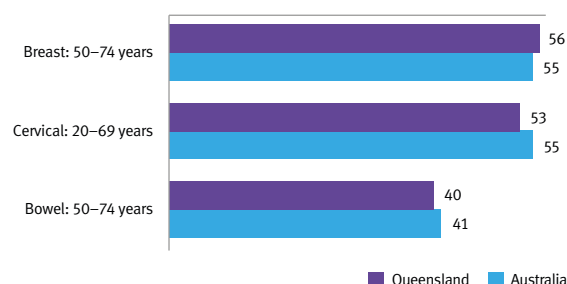
The delivery of population based cancer screening programs continues to improve the health outcomes of Queenslanders through the early detection and prevention of breast, cervical and bowel cancers.

Women over the age of 40 years are eligible to participate in the free BreastScreen Queensland program with the target age group 50–74 years invited to have a mammogram every two years.

The National Cervical Screening Program changed in December 2017 as the Pap test was replaced with a cervical screening test for the human papillomavirus (HPV). The recommended time between tests increased from two to five years, and the recommended age to start screening increased from 18 years to 25 years and extend to 74 years. The changes were a result of new evidence and better technology and is expected to protect up to 30% more women.

Progressive expansion of the National Bowel Cancer Screening Program commenced in 2015, with two-yearly screening of all Australians aged 50–74 years being available from 2020.

**Figure 47: Participation in screening programs, percentage, Queensland and Australia, 2015–2016<sup>177,180</sup>**



## What are the numbers?

In 2015–2016:

- About 365,000 women aged 50–74 years participated in the BreastScreen Queensland program.
- About 737,000 women aged 20–69 years were screened for cervical cancer (Pap test).
- About 253,000 adults aged 50–74 years participated in the bowel screening program.

## Breast cancer screening

In 2015–2016, 56% of women aged 50–74 years participated in the BreastScreen Queensland program (Figure 47).<sup>177</sup> Participation in the program was lower in 2015–2016 than in 2001–2002 (56% compared with 59% for 50–69 year olds).<sup>178</sup> Participation was 5% higher in areas of socioeconomic advantage (58%) than disadvantage (55%), higher in regional areas (59%) and major cities (55%) than in remote areas (52%), lower for Indigenous Queensland women (49%), lower among culturally and linguistically diverse women (53%), and higher in Queensland than nationally (55%).

## Cervical screening

In 2015–2016, 53% of Queensland women aged 20–69 participated in the program.<sup>177</sup> There has been a decline in participation from the peak of 59% in 2007–2008.<sup>179</sup>

## Bowel cancer screening

In 2015–2016, participation in the program in Queensland was 40%, slightly lower than the national average (41%).<sup>180</sup> Participation in the program was 38% in 2014–2015.<sup>181</sup> In 2016, 11,436 Queenslanders aged 50–74 years returned a positive Faecal Occult Blood Test (FOBT) result (8.0% of participants), and of these, 9146 (80%) participants underwent an assessment colonoscopy.<sup>180</sup>

## Breast, cervical and bowel cancers

### Incidence

- In 2014, there were 3367 new cases of female breast cancer in Queensland, 208 new cases of cervical cancer and 3083 new cases of colorectal cancer.
- Over a decade (between 2004 and 2014) incidence rates for female breast cancer increased by 11%, cervical cancer rates did not change, and colorectal cancer rates decreased by 13%.
- Incidence rates varied very little among the HHSs, with the following differences in 2011–2014:
  - Female breast cancer incidence was lower in Central Queensland, Central West, Darling Downs, North West and Torres and Cape
  - Cervical cancer was lower in Sunshine Coast
  - Colorectal cancer was higher in Cairns and Hinterland and Wide Bay.

### Deaths

- In 2016, there were 560 female breast cancer deaths in Queensland, 59 cervical cancer deaths and 882 colorectal cancer deaths (Table 9, page 34).<sup>68</sup>
- Over a decade (2005 to 2015) death rates for female breast cancer decreased by 14%, cervical cancer rates did not change, and colorectal cancer rates decreased by 17% (Figure 4, page 36).
- The HHSs did not differ from the state average for death rates for any of the three cancers in 2013–2015.



## Challenges and opportunities

### Breast cancer screening

Participation in the breast screening program has trended downwards in recent years but this trend has not been consistent across age groups. Participation is declining in 50–59 year olds, stable in 60–64 year olds and increasing for 65–74 year olds. In older women, participation was higher in 2015–2016 than at any time since 1999–2000.

The Department of Health and HHSs have initiated strategies to enhance participation including:

- provision of a range of financial incentives to BreastScreen Queensland services including increased access through out-of-hours appointments
- establishment of a new BreastScreen Queensland online portal to assist new and existing clients to make or update screening appointments at a time convenient to them
- implementation of the ‘One more thing’ social marketing campaign.

Encouraging women to return for their first re-screen is a challenge. Among women aged 50–67 years who were screened in 2013, 62% of first-time screeners returned for a re-screen within 27 months, and re-screening increased to 86% for those who had attended their third or subsequent screens.<sup>182</sup>

### Cervical cancer screening

On 1 December 2017, changes were introduced to the National Cervical Screening Program to provide better protection against cervical cancer. Increasing participation rates in cervical screening has been a challenge in advance of the new test and testing regime with screening activity in 2017 lower than in previous years.

To assist in the transition, the Department of Health has been providing education to primary healthcare professionals to support timely reminders and follow-up of eligible women, as well as communication and promotional activities occurring at a national level. The Department of Health is currently partnering with pathology laboratories and gynaecologists to closely monitor the effect of the new program guidelines upon referrals for follow-up colposcopy tests to ensure that service supply can meet increased demand resulting from the more sensitive test.

### Bowel cancer screening

Participation in the National Bowel Cancer Screening Program continues to be considerably lower than in the breast and cervical screening programs. Between 2014–2015 and 2015–2016 a greater number of older people were invited into the program but age specific participation was unchanged.

The expansion of the National Bowel Cancer Screening Program will provide further opportunities to increase awareness and participation in the program. Program expansion has impacted the number of colonoscopies performed in Queensland public hospitals. It is estimated that 13,800 colonoscopies will be performed in 2018 for National Bowel Cancer Screening participants with a positive FOBT result and this is expected to increase to 16,800 in 2020. It will be important that patients do not wait longer than clinically recommended. The Department of Health has undertaken the ‘Make No.2 your No.1 priority’ mass media campaign to increase awareness of bowel cancer screening and encourage greater participation.

### Opportunities

Research into new technologies and methodologies continues and developments that could impact screening programs are monitored. Examples include the potential for tailored screening at the population level based on different levels of risk, including genomics, and the impact of mammographic density on the quality of breast screening.

The impact of the HPV vaccination program on the cervical screening program is yet to be fully evident and the introduction of the new ‘Gardasil 9’ vaccination may require further adjustments to the program.

Diet and lifestyle factors can influence an individual’s risk of developing bowel cancer and further work in this area in combination with greater participation in screening could lead to reduced mortality.

The Department of Health is implementing a primary healthcare engagement strategy which aims to enhance effective partnerships with primary healthcare providers, including the seven Primary Health Networks (PHNs) in Queensland, and build the knowledge and capacity of these providers to support participation in the national cancer screening programs.

# Illicit drug use

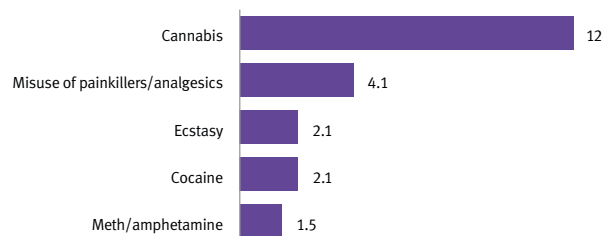
Illicit drug use describes the use of illegal drugs (such as methamphetamine), the non-medical use of prescribed or over-the-counter medications (such as analgesics), and the misuse of commonly available substances (such as the inhalation of deodorants or petrol).

The *National Drug Strategy 2017–2026* and sub-strategy the *National Ice Action Strategy 2015* provide national policy guidance and identify priority actions to reduce illicit drug use and associated harms.<sup>130,183</sup> Key strategies include prevention, treatment and harm reduction, supporting families and communities and improving collection and use of research and data.

Poly-drug use is common—the use of two or more drugs at the same time, or within a short period of time. It can include alcohol, illegal drugs, legal medications and other substances in any combination. Cannabis was the drug most often used with other illegal drugs, particularly in combination with hallucinogens, ecstasy, synthetic cannabinoids and amphetamines.<sup>52</sup>

In recent years, harms associated with the use of methamphetamine (most commonly called ‘ice’) have increased. Queensland Health has recorded increases in emergency department presentations, hospital admissions and alcohol and other drug treatment service episodes in Queensland associated with this drug.<sup>184,185</sup> Increased harms were predominantly associated with increased methamphetamine purity, as well as increased availability and frequency of use (that is, more regular and dependent use).

**Figure 48: Prevalence of recent illicit drug use and misuse, persons 14 years or older, percentage, Queensland, 2016<sup>52</sup>**



## What are the numbers?

Based on prevalence estimates from 2016, in 2018:

- an estimated 558,000 Queenslanders aged 14 years or older had used illicit drugs in the previous 12 months, and the majority (485,000) had used cannabis.
- an estimated 204,000 Queenslanders aged 14 years or older misused painkillers, analgesics and opioids in the previous 12 months.
- among users, 4 in 10 had used an illicit drug, consumed alcohol or smoked tobacco daily in ways that put them at risk of harm in the previous 12 months, and 3 in 100 had engaged in all three on the same occasion.

## Prevalence and differentials

For Queenslanders aged 14 years and older in 2016<sup>52</sup>:

- 17% reported any drug use in the previous 12 months (defined as recent use) where 14% reported illicit drug use and 5.0% reported misuse of pharmaceuticals, noting many had used both.
- The most commonly used illicit drugs were cannabis (12%), ecstasy (2.1%), cocaine (2.1%), amphetamines (1.5%), and inhalants (1.0%).
- The average age for recent illicit drug use was 34 years for cannabis users, 26 years for ecstasy users, 31 years for cocaine users, and 34 years for amphetamine users.<sup>51,52</sup>
- The most commonly used form of amphetamine was methamphetamine (known as ‘ice’ or ‘crystal’), and the prevalence appeared to have peaked at 2.3% in 2013 (compared with 1.5% in 2016).
- The most commonly misused pharmaceuticals were painkillers/analgesics/opioids (4.1%) and tranquilisers/sleeping pills (1.3%), excluding over the counter medications.

- Recent drug use was 52% higher in males than females (20% compared with 13%).
- Males were twice as likely as females to be recent users of cannabis (16% compared with 8.3%), ecstasy or cocaine (2.8% compared with 1.5% for both drugs).
- Recent drug use was higher in younger adults aged 18–24 years (32%) and 25–34 years (25%) than older adults.
- Prevalence of recent illicit drug use was similar to national, ranked equal third highest compared to other jurisdictions and also third highest for recent misuse of painkillers/analgesics and opioids.

## Impacts and costs

### Burden of disease

In 2011, illicit drug use was the tenth largest cause of disease and injury burden (1.4% of total DALYs) in Queensland.<sup>25</sup> Males experienced 75% of the burden, and the burden peaked between the ages of 25 and 54 years. Total burden was 10% lower in Queensland than nationally in 2011.<sup>135</sup>

## Deaths

In 2016, it was estimated there were 360 deaths due to illicit drug use in Queensland (1.2% of all deaths), and 73% were males (Table 2, page 10)<sup>25,93</sup>, and in 2011, 2.0% of premature death burden (YLL).

## Disability and hospitalisation

Illicit drug use caused 0.7% of disability burden (YLD) in 2011 (Table 2, page 10).<sup>24,25</sup> Queensland had the lowest total disability burden from dependence on amphetamines, cocaine and cannabis (compared with four states with reported estimates), and second lowest for opioid dependence (Tasmania was lowest) compared to other states and territories in 2011.<sup>135</sup>

Illicit drug use caused 40,700 patient days and 9500 hospitalisations in Queensland in 2015–16: 61% was associated with drug use disorders (excluding alcohol), 30% with chronic liver disease and 8.8% with liver cancer.<sup>25,93</sup> Methamphetamine-related hospitalisations increased 20-fold between 2009–10 and 2015–16 and males accounted for about two-thirds of cases.<sup>184</sup> In 2015–16 for Indigenous Queenslanders, the methamphetamine-related hospitalisation rate was almost 5 times the non-Indigenous rate.<sup>184</sup>

Methamphetamine-related public hospital emergency department presentations increased four-fold between 2009–10 and 2014–15, and admissions to mental health units increased 15-fold for illicit drug use or drug dependence, and 16-fold for psychoses.<sup>184</sup>

## Expenditure

The most recent national assessment of the cost of illicit drug use was in 2004–05.<sup>95</sup> Based on Queensland's share of the Australian population, in 2004–05, the financial cost of illicit drugs to the Queensland economy was \$1.4 billion, with \$0.04 billion spent on healthcare, \$0.4 billion on lost production (workplace and home), and \$0.89 billion on crime and road transport injury. Health system costs were 3% of the tangible and financial costs. Intangible losses associated with early deaths and wellbeing were assessed at \$0.26 billion, taking the total cost of illicit drug use to Queensland society in 2004–05 to \$1.64 billion.

## Community harms and concerns

In 2016, 9.3% of Australians reported being a victim of an illicit-drug incident and 2.6% reported being physically abused.<sup>52</sup> The community has focussed on methamphetamine ('ice') as the most likely cause of illicit drug problems and public concerns. Users of methamphetamine may experience mental health issues, increased aggression, poor physical health, sexual risk taking and pregnancy complications.<sup>184</sup> The harms from 'ice' on the community are being addressed by reducing supply, reducing demand, providing early interventions

and treatment, and minimising harms.<sup>185</sup> Random roadside saliva-based illicit drug testing commenced in December 2007. In 2016–17, more than 56,000 roadside saliva tests were undertaken with about 11,000 drivers testing positive for one or more of these drugs.<sup>186</sup>

## Medicines containing codeine

The misuse of painkillers includes codeine-containing medicines previously available over-the-counter from pharmacies. In February 2018 all codeine-containing products became prescription-only to help address increasing harms associated with the misuse of these products.<sup>187</sup> In 2016, codeine products were the most commonly misused opiate painkillers, largely by people in their twenties and thirties.<sup>52</sup> Codeine is converted to morphine in the body and can cause tolerance, dependence, addiction, poisoning and, in high doses, death, in the same way as other opioids.<sup>188</sup> In addition the medicines combined with the codeine (ibuprofen, paracetamol) can also cause considerable harms including gastrointestinal bleeding, kidney or liver damage. All patients who have been using over-the-counter codeine products have been advised to see their pharmacist or GP to determine their pain management requirements.<sup>187</sup>

## Cannabis and mental illness

Cannabis was the most common illicit drug used (in the previous 12 months) by people living with mental illness, especially psychotic disorders.<sup>135,189</sup> Among recent cannabis users in 2016, about 1 in 3 was diagnosed or treated for mental illness.<sup>52</sup> Heavy cannabis users have about four times the risk of schizophrenia and other psychoses.<sup>190</sup> A prospective cohort study of 3800 Queenslanders born between 1981 and 1984 found those who started using cannabis from about 15 years of age were more than twice as likely to develop psychosis, delusions and hallucinations by age 21 years.<sup>191</sup>

## Medical use of cannabis

In 2016, Queenslanders significantly increased their support for clinical trials for people to use cannabis to treat medical conditions (89% supported compared with 74% in 2013), and for relevant changes in legislation (86% compared with 69%).<sup>52</sup> Such support is in line with the rest of Australia. In 2017, the Queensland State Parliament enacted the *Public Health (Medicinal Cannabis) Act 2016* to legislate the provision of medicinal cannabis as prescribed by an approved doctor.<sup>192</sup> The subordinate *Public Health (Medicinal Cannabis) Regulations 2017* became law on 1 March 2017. National guidance documents have been developed by the Therapeutic Goods Administration to assist doctors and their patients in understanding the evidence base for the use of cannabis as a medicine.

# Immunisation

Immunisation is a successful and cost-effective health intervention, as the benefits of personal immunity extend to the whole community. This benefit is known as herd immunity.

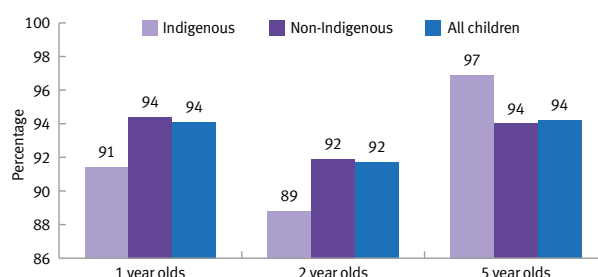
Vaccines funded under the National Immunisation Program for children, adolescents and adults prevent measles, polio, diphtheria, tetanus, pertussis (whooping cough), varicella (chickenpox), herpes-zoster (shingles), hepatitis B, *Haemophilus influenzae* type b (Hib), meningococcal ACWY (from 1 July 2018), influenza, human papillomavirus (HPV) and pneumococcal and rotaviral diseases.

From 1 July 2018, the National Immunisation Program includes whooping cough vaccine for pregnant women. This was previously funded by the Queensland Government.

In addition, the Queensland Government funds meningococcal ACWY vaccine for 15–19 year olds, and influenza vaccine for all children aged from six months to less than five years.

Queensland has achieved high childhood immunisation rates (Figure 49). The overall success of Queensland's immunisation program is reflected in the low numbers of vaccine preventable diseases that in the past have caused significant illness and death. The ongoing success of the program relies on maintaining high immunisation coverage rates in current and future generations.

**Figure 49: Immunisation coverage rates, children aged one, two and five years by Indigenous status, percentage, Queensland, 2017<sup>55</sup>**



## What are the numbers?

In 2017:

- For one-year olds, 58,600 were fully immunised and 3675 were not.
- For two-year olds, 57,100 were fully immunised and 5170 were not.
- For five-year olds, 62,400 were fully immunised and 3840 were not.
- 594 young children aged 1–4 years admitted to hospital tested positive for influenza.
- About 40,500 pregnant women were immunised for whooping cough, based on self report.

## Immunisation coverage

In 2017, coverage rates for fully immunised Queensland children were (Figure 49)<sup>55</sup>:

- 94% for one-year olds.
- 92% for two-year olds.
- 94% for five-year olds.

In 2017, childhood immunisation coverage rates differed between the HHSs:

- For one-year olds, Mackay was highest (96%) and Sunshine Coast lowest (91%).
- For two-year olds, Central West was highest (96%) and North West lowest (89%).
- For five-year olds, South West was highest (97%) and Sunshine Coast lowest (91%).

More information on HHS coverage is available from the HHS booklet.

## Indigenous Queenslanders

In 2017, immunisation coverage rates for Indigenous Queensland children were<sup>55</sup>:

- 91% for one-year olds, 3.0 percentage points lower than for non-Indigenous children
- 89% for two-year olds, 3.1 percentage points lower than for non-Indigenous children
- 97% for five-year olds, 2.9 percentage points higher than for non-Indigenous children.

The immunisation coverage rate for Indigenous Queensland one-year olds increased from 87% in 2015 to 90% in 2016 and 91% in 2017.<sup>55</sup>



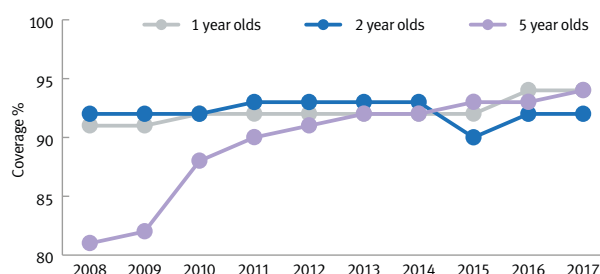
## Trends

Over the past decade, the proportion of fully immunised children increased (Figure 50).<sup>55</sup> In 2008, 91% of one-year olds were fully immunised. This increased to 94% in 2017. Coverage for two-year olds remained steady at about 92% between 2008 and 2017. In 2008, 81% of five-year olds were fully immunised. This increased to 94% in 2017. Coverage rates for two-year olds are lower than the other age milestones due to recent changes in the immunisation schedule.

## Influenza

In 2017, Queensland experienced one of the worst influenza seasons on record, with more than 56,000 laboratory-confirmed cases reported. The highest notification rates were in those aged 80 years or older, and in the youngest aged 1–4 years although affecting all age groups (pages 18, 20, 22, 24, 26, 28). Influenza caused significant illness and was the cause of most hospital admissions of young children aged 1–4 years. In 2017, 594 young children admitted to public hospitals tested positive to influenza, and of these, 62 were admitted to intensive care. In response, from 2018 free influenza vaccine will be provided to all children aged from six months to less than five years.

**Figure 50: Trends in immunisation coverage, by age cohort, Queensland, 2008–2017**



## School Immunisation Program

The School Immunisation Program (SIP) offers Year 7 and Year 10 students in more than 570 state and non-state Queensland schools the opportunity to be vaccinated within the school setting. In 2017:

- 79% of Year 7 students received a dose of diphtheria-tetanus-pertussis (dTpa) vaccine
- 67% of Year 7 students completed the three-dose course of human papillomavirus (HPV) vaccine
- 64% of Year 10 students received a dose of meningococcal ACWY vaccine.

The SIP uptake rates underestimate the actual adolescent vaccination coverage as they only represent vaccinations administered in the school setting. Some students elected to be vaccinated by GPs or other immunisation providers in subsequent years. The National HPV Register reported 77% of females and 70% of males aged 15 years at 30 June 2016 were fully immunised against HPV.

## Challenges and opportunities

Some of the biggest challenges facing Queensland's immunisation program include:

- the gap in coverage rates for Indigenous Queensland children aged one to two years, placing them at a higher risk of contracting vaccine preventable disease
- sub-optimal uptake of adolescent vaccination in the SIP, placing many adolescents at risk of contracting vaccine preventable disease
- misinformation about immunisation circulating in the community, creating unnecessary confusion and concern about a proven, effective and safe public health intervention.

To address these challenges, the *Immunisation Strategy 2017–2022* has set the target that 95% of children aged one to five years be fully immunised. The 95% coverage will need to be maintained to best protect the Queensland population against most vaccine preventable diseases.

To achieve the 95% target, Queensland Health has:

- implemented the 'Immunise to 95' initiative and followed up 84,000 children who were overdue for immunisation, by contacting providers and parents to help resolve each child's immunisation status
- implemented the 'Bubba Jabs on Time' initiative to follow-up all Indigenous Queensland children who were overdue for vaccinations at two, four and six months of age—to date, 2500 children have been followed up
- amended the *Public Health Act 2005* to provide early childhood education and care services a discretionary power to refuse enrolment and/or exclude a child whose immunisation is not up to date
- undertaken state wide marketing campaigns to reinforce the importance of on-time vaccination
- funded a specialist immunisation service at the Queensland Children's Hospital to provide services for children with complex vaccination needs.

# Domestic and family violence

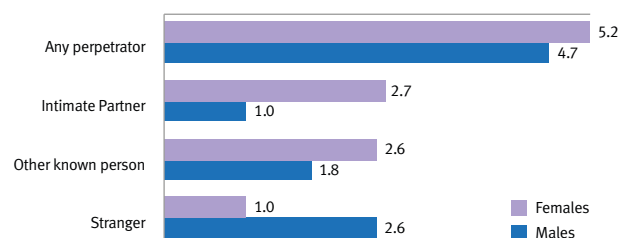
Domestic and family violence is defined as one person exerting power or control over another within family and intimate relationships. It can occur in many forms including physical, sexual, emotional and psychological and coercive control.

Children, adults and the elderly can all be victims of domestic and family violence, although most frequently victims are adult women who experience violence from a current or former intimate partner.

The complex and sensitive nature of domestic and family violence means that surveys, service use and other administrative data are unlikely to capture the true extent of the problem. Much of the data pertains to women only, and their experience of intimate partner violence. The impact for children, men and the elderly is less well known as is the prevalence of the wider notion of family violence.

The most direct estimates of the impact of domestic violence on the hospital system comes from data on hospitalisations for assault where there is relationship to the perpetrator included in the record. This invariably will underestimate the total impact on the hospital system.

**Figure 51: Experience of violence in the previous 12 months by relationship to perpetrator, Queensland, 2016<sup>193</sup>**



## What are the numbers?

- In Queensland, 1 in 5 women and 1 in 13 men experienced intimate partner violence from the age of 15 years.
- For 4 in 5 (79%) Australian girls and women hospitalised for assault, the perpetrator was a domestic partner, spouse, parent or other family member.
- More than one Queensland death a week was associated with family and domestic violence—22 homicides and at least 41 apparent suicide deaths in 2016–17.

## What is the prevalence and how has it changed?

In 2016, 1 in 20 adult women in Queensland experienced violence in the previous 12 months (5.2%) where the perpetrator was known to them (Figure 51).<sup>193</sup> Further, 2.7% of women reported intimate partner violence in the previous 12 months, and 2.6% reported violence where the perpetrator was known to the victim. While the rate of violence in the previous 12 months has not changed since 2005, the rate of emotional abuse by a previous partner was lower in 2016 (1.7%) than 2012 (2.9%). In 2016, 23% of adult Australian women reported they had experienced intimate partner violence from the age of 15—around three times the rate reported by men (7.8%).<sup>193</sup>

For Queensland males, there was an equal risk of violence from a stranger or a known person (both 2.6%).<sup>193</sup> One in 100 men reported being the victim of intimate partner violence in the previous 12 months, and 1.8% experienced violence perpetrated by another known

person. While there has been no significant change in the rate of men experiencing partner violence between 2005 and 2012, the rate of any violence in the last 12 months halved between 2012 and 2016 (declined from 11% to 4.7%). Among Australian men, 7.8% reported they had experienced intimate partner violence from the age of 15.

## Is it the same for everyone?

There are groups within the Queensland community that are at higher risk of domestic and family violence. Children, pregnant women, people with disability and elderly people are particularly vulnerable. Young women and Indigenous Queensland women experienced higher rates of violence. Domestic and family violence occurred at higher rates for Indigenous Queenslanders than non-Indigenous. In 2014–15, 17% of Indigenous Queensland women and 9% of Indigenous Queensland men aged over 15 years experienced physical violence in the previous 12 months.<sup>12</sup> In comparison, for the total Queensland population the rate was 4.4% for women and 4.6% for men.<sup>193</sup>

## Impacts and costs

Beyond the injuries of physical abuse, exposure to domestic and family violence has long lasting consequences. Children who experienced or were exposed to violence can have emotional, cognitive, and behavioural problems and were more likely to go on to experience violence in their adult relationships. Adults who, as children, had witnessed violence against a parent by the parent's partner were more than twice as likely to experience partner violence after the age of 15 years. While those who experienced abuse as a child were three times more likely to have experienced partner violence after the age of 15.<sup>193</sup>

Domestic and family violence for adults impacts physical, mental and reproductive health including increased prevalence of risky health behaviours such as smoking, alcohol and illicit drug use, and the increased risk of miscarriage for women. Homelessness was associated with having experienced domestic and family violence.

### Burden of injury and disease

The most recent estimates of the burden of disease and injury for Queensland include the impact of intimate partner violence on the health loss of women, specifically for the causal relationship with depressive disorders, suicide and self-inflicted injury, homicide and violence, and early pregnancy loss.<sup>24</sup> Limited data on the prevalence and relationship between the wider concept of domestic violence and family violence (where children and men are also exposed to violence) meant that current analysis of health outcomes was restricted to women who had experienced intimate partner violence only.

For young Queensland women aged 15–44 years, intimate partner violence followed alcohol use as the second leading cause of avoidable risk.<sup>24</sup> Around 3.5% of total health loss (DALYs), and 9.4% of years of life lost to premature death (YLL) for women in this age group, were attributed to intimate partner violence. For Queensland women aged over 15 years, 43% of the burden of suicide and injury was attributed to domestic violence, also 15% of the burden of depressive disorders and 50% of the burden of homicide and violence. One in five years of healthy life lost to early pregnancy loss was due to the burden of intimate partner violence. However, this represents less than 1% of the total burden attributed to intimate partner violence.

### Hospitalisations

Analysis of Australian hospital data found that of the women and girls who were hospitalised for injuries from assault, 76% of records included information on the relationship between the victim and the perpetrator (4788 of 6293 hospitalisations).<sup>194</sup> Of these cases, the most commonly reported perpetrator was spouse or domestic partner (59%), parents were the perpetrator

in 4% of cases, and other family members in 15% of hospitalisations. Of the victims of domestic partner assault who were aged over 15 years, 8% were pregnant.

### Deaths and homicide

The Domestic and Family Violence Death Review and Advisory Board reviewed domestic and family violence deaths in Queensland resulting from intimate partner or family violence, including deaths of those outside of the relationship (for example, new partners, or bystanders intervening in a domestic dispute), and suicide deaths with a significant prior history of domestic violence (as a victim or perpetrator). The board identified 63 Queensland deaths in 2016–17 that were associated with a history of domestic or family violence—22 homicides and 41 apparent suicide deaths.<sup>195</sup>

Between 2006–07 and 2016–17 there was little change in the prevalence of domestic and family violence homicides.<sup>196</sup> Over this period there were 270 domestic and family homicides—141 intimate partner homicides, 111 family homicides, and 18 collateral homicides involving new partners and bystanders.

Females were most likely to be killed by an intimate partner and represented 82% of intimate partner homicide, while new partners and bystanders who lost their life to homicide were more likely to be male (95%).<sup>195</sup> Victims of intimate partner homicide were mostly aged 25–44 years (57%), while 38% of family deaths were children aged under five years.

Indigenous Queenslanders were over represented as victims in domestic and family homicide deaths. Almost 1 in 5 deaths was identified as an Aboriginal or Torres Strait Islander person—17% of intimate partner homicides, 19% of family homicides, and 16% of new partner and bystander homicides.<sup>195</sup>

### Suicide

In 2016–17, 41 apparent suicide deaths had a clear history of domestic violence.<sup>195</sup> Of the 66 apparent suicide deaths identified by the Board between 2015–16 and 2016–17, 85% were a perpetrator of domestic and family violence, 8% were a perpetrator and victim, 5% were a victim and 3% were a child victim. Most (94%) apparent suicide deaths were males. Indigenous Queenslanders were over represented, with 14% of victims identified as Aboriginal or Torres Strait Islander.

### Expenditure

Violence against Queensland women and their children was estimated to cost Queensland between \$4.77 and \$5.65 billion in 2015–16.<sup>197</sup> Pain, suffering and premature death caused 48% of the cost, while the impact on the health system was 6.4% of this cost.

# Environmental risks

Environmental risks to health arise from a broad range of sources and are due to physical, chemical and biological factors.

Unhealthy environments have an additional impact on health loss through their interaction with metabolic and behavioural risk factors, generally based on the influence of the built environment, that is, the places where people live, learn, work and play. In 2011 it was estimated that 2% of the total burden of disease and injury in Queensland was due to occupational exposures and hazards.<sup>25</sup>

This section focuses on selected natural environmental risks that showcase the importance of a strong protection response to safeguard and improve the health of Queenslanders.

## Foodborne illness

Salmonella notifications are continuing to decline particularly in relation to *Salmonella typhimurium* (Figure 52), demonstrating the outcomes from the whole-of-government strategy to reduce foodborne illness in Queensland with a particular focus on poultry meat, egg and egg products.<sup>47</sup> Campylobacter rates have also reduced slightly (Figure 53), although not to the same extent as Salmonella.

As part of the Queensland strategy to reduce foodborne illness, a two-year chicken meat survey was finalised in February 2018. The aim of the study was to determine the prevalence of salmonella and campylobacter on raw chicken meat purchased at retail supermarkets in different regions across the state of Queensland. The data showed:

- no significant difference in prevalence between abattoir, region or portion type.
- a slight seasonal variation in campylobacter.
- no significant difference between campylobacter prevalence in delicatessen versus pre-packaged chicken products.
- no correlation between campylobacter counts and shelf life days.

- no significant correlation between chicken weight and campylobacter counts.
- significant difference in the level of campylobacter on chicken meat with or without skin. Chicken without skin had significantly higher loads than chicken with skin on.

Queensland Health is currently evaluating a 12-month retail offal survey to identify contamination rates. The survey identified that 71% of chicken offal was contaminated with campylobacter, highlighting that Queenslanders should take particular care with pâté which does not undergo a further processing step.

The 2017 national strategy for food regulation outlined requirements to reduce the incidence of foodborne salmonellosis and campylobacteriosis through targeting key food supply areas, such as poultry, eggs, horticulture (fresh produce), food service/retail, and consumer behaviours. A long-term objective is the integration of public health surveillance and investigation of food supplies to monitor progress and inform priorities and interventions.

Figure 52: Salmonella notifications, Queensland, 2014–2017<sup>47</sup>

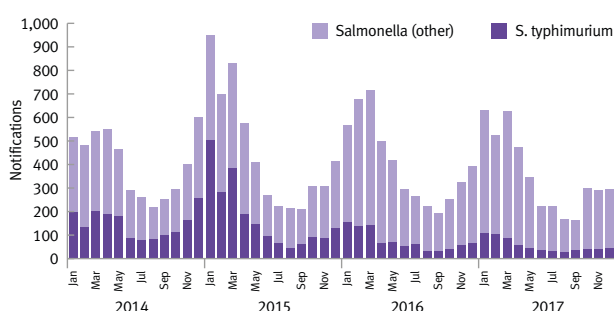
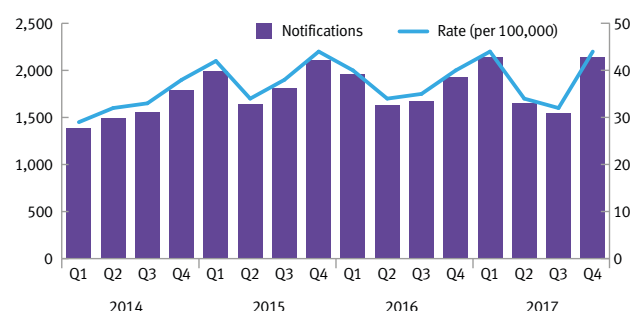


Figure 53: Campylobacter notifications, Queensland, 2014–2017<sup>47</sup>





The Queensland strategy (2018–2021) aligns with the national strategy and key components include:

- undertaking research to better understand the organisms, epidemiology and impact on food safety.
- developing supply chain control strategies to control foodborne illness.
- engagement with industry to identify appropriate interventions.
- a communication and engagement campaign targeting relevant stakeholders including retailers, food services and consumers.

## Lead exposure

Childhood lead exposure, particularly in mining and smelting communities, has been an ongoing public health concern worldwide, with health organisations lowering the health intervention level from 10µg/dL to 5µg/dL. In mining and smelting communities, such as Mount Isa, close attention needs to be paid to lead exposure of children under five years of age, due to their higher hand to mouth actions which increase the risk of exposure. To improve availability and accessibility of blood lead testing, the North West HHS introduced a point of care blood lead testing (POCT) screening program to supplement the venous blood lead testing programs.

During 2017 there were 820 POCT tests undertaken (on average, 68 tests per month), highlighting community acceptance of the program. An individual child may have presented more than once for a POCT. In 2017, 588 individual children (under five years of age) participated in the screening program. The POCT revealed 163 children with a blood lead level exceeding 5µg/dL. By comparison in 2016, 170 children had undertaken venous blood lead testing and 51 children were identified with elevated blood lead levels. The parents of children with elevated levels were provided with appropriate intervention measures to minimise the harmful health effects of lead exposure. The introduction of POCT has provided a significant benefit to the residents of the North West HHS through managing health risks from lead in the environment.

## Clandestine laboratories

Un-remediated former clandestine laboratories (that is, illegal drug laboratories commonly known as ‘clan labs’) have the potential to pose a significant risk to human health. Heavily contaminated areas occur where chemicals were used or cooked, or where chemicals were spilled. Residual contamination can be deposited on the walls, floors, ceilings, ventilation, appliances and other surfaces. Remediated sites have had the residual contamination cleaned and contained to eliminate the risk and to ensure the property is fit for residential occupation.

Health risks from exposure to un-remediated sites include mental health problems, skin conditions, respiratory problems and cardiovascular effects. Young children are most vulnerable. Although the number of clan labs being discovered by the Queensland Police Service has decreased since 2013 (Figure 54), new dangerous manufacturing methods have been identified, posing new risks to health. Controls under the *Public Health Act 2005* are being strengthened to enable the public health risks from clan labs to be addressed through effective enforcement.

Figure 54: Police detection of clandestine illegal drug laboratories, Queensland, 2012–2018

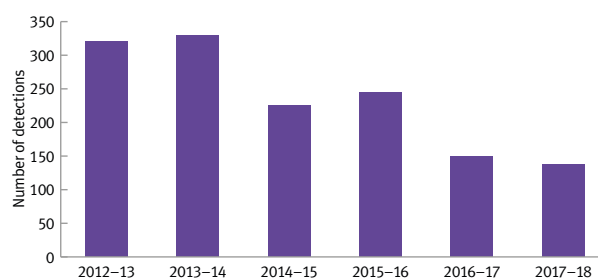
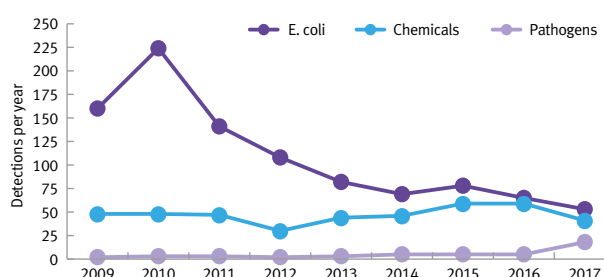


Figure 55: Detection of *E.coli*, chemicals and pathogens in drinking water supplies, Queensland, 2009–2017



## Drinking water quality

Queensland maintains a whole-of-government approach to addressing water quality issues. This includes a joint regulatory framework involving Queensland Health and the Department of Natural Resources, Mines and Energy to manage the quality of drinking water. Fluoridated drinking water is accessible by 72% of Queenslanders (further information on page 98).

All drinking water supplies in Queensland must be monitored for the presence for *Escherichia coli* (*E.coli*) at a frequency specified in public health legislation. *E.coli* is used as an indicator for organisms that live in animal intestines and are typically transmitted via the faecal-oral route. If water treatment processes are appropriately managed, all *E.coli* should be removed.

If *E.coli* is detected in a drinking water supply, the incident must be reported to the Department of Natural Resources, Mines and Energy. There has been a steady decrease in *E.coli* detections in drinking water since 2011 (Figure 55). The detection of chemicals and pathogens in drinking water remained lower than *E.coli* detections. This is an encouraging trend suggesting improved management of Queensland drinking water supplies.

## Safe and healthy drinking water in Indigenous local government areas project

Remoteness, inappropriate infrastructure and limited operator competency can impede provision of safe drinking water supplies in some Indigenous Queensland local governments.

Tropical Public Health Services (Cairns) is pioneering a new approach to building the capacity of Indigenous water operators to ensure the ongoing safety and quality of water supplied by Indigenous local governments, and to improve regulatory compliance.

The project is a key strategy for promoting the well-being of the Indigenous population in the far north and is an essential step towards 'Closing the Gap'.

## Data sources and methods: risk and protective factors

This chapter includes a selection of key risk and protective factors for Queensland. The ordering of risk factors follows the ranking of risks based on burden of disease analysis for Australia as described on page 10.

Many data sources are used in this chapter and each are cited. Prevalence data are largely derived from the Queensland preventive health surveillance system <https://www.health.qld.gov.au/research-reports/population-health/preventive-health-surveys> and from national surveys conducted either by ABS or AIHW.

Additional data on risk factor prevalence and attributable hospitalisation for HHSs and sociodemographic groups are available in the statistical tables published online (page vii for details).

Within this chapter, prevalence estimates are reported as both a percentage and the number of persons at risk. The number at risk is generated from percentage prevalence (derived from survey sample estimates), and estimated resident population. The projected population at risk is generated from prevalence trends and projected population estimates.

Assessment of risk factor trends is based on log linear models which are described in the companion methods report.<sup>1</sup> Trend assessment should not be based on individual year comparisons.

The methodology for estimating hospitalisations due to risk factors is described in the companion methods report.<sup>1</sup>

For further information:

- Preventive health surveys including the self report survey series undertaken by Queensland Health<sup>34</sup>
- Risk factor trends for Queensland<sup>91</sup>
- Previous reports from the Queensland Chief Health Officer<sup>73</sup>
- Australian Bureau of Statistics: National Health Survey series including Australian Health Survey<sup>49,110</sup>
- AIHW: National Drug Strategy Household Survey,<sup>51,52</sup> Australian Burden of Disease Study 2011<sup>24</sup>

# Terminology and definitions

## **Aboriginal and Torres Strait Islander people:**

Referred to as ‘Indigenous Queenslanders’ or ‘Indigenous Australians’.

## **Accessibility/Remoteness Index of Australia (ARIA):**

Remoteness was determined using the six categories of *Remoteness areas* classification: major cities, inner regional, outer regional, remote, very remote, and migratory.<sup>198</sup> ARIA scores are based on how far the population must travel to access services.

**Adults:** Usually defined as those aged 18 years and older.

**Age standardisation:** To facilitate comparisons between various populations with different age structures, rates may be adjusted for the age structures by relating them to a reference population<sup>199</sup> (in this report the 2001 Australian population). Age standardised prevalence rates are used to compare Queensland with other jurisdictions and nationally, where they are available. Crude prevalence is more often also used to compare hospitalisation rates within Queensland.

**Amphetamines:** refers to both amphetamine and methamphetamine (most commonly known as ‘ice’ or ‘crystal’). The broad category of amphetamines in the Australian Standard Classification of Drugs of Concern includes methamphetamine as a sub-category.<sup>200</sup> Illicit drug use includes the pharmaceutical misuse of amphetamine for non-medical purposes. It is noted that the vast majority of amphetamine used in Australia is methamphetamine.<sup>135</sup>

**Australian Bureau of Statistics (ABS):** Australia’s official statistical organisation and a statutory authority.<sup>201</sup>

**Australian Dietary Guidelines:** The *Australian dietary guidelines* recommend the consumption of five food groups<sup>99</sup>: 1) fruit 2) vegetables and legumes/beans 3) milk, yoghurt, cheese and/or alternatives 4) lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes and beans and 5) grains (includes cereal foods, mostly wholegrain and/or high cereal fibre varieties). Consumption is recommended in quantities that are appropriate to life stage, sex, and energy needs.

**Australian Institute of Health and Welfare (AIHW):** Major agency for health and welfare statistics and information.<sup>202</sup>

**Body mass index (BMI):** Refers to a simple index of weight-for-height, calculated as  $BMI = [\text{weight (kg)}/\text{height (m)}^2]$ , that is commonly used to classify underweight, healthy weight, overweight and obese (refer to separate entries for each BMI category).<sup>49</sup> BMI for children takes into account the age and sex of the child and has different cut-offs for BMI categories than those used for adults.<sup>203</sup>

**Children:** Usually defined as those aged 5–17 years.

**Chronic conditions of ageing and disability:** Includes the ICD chapters for musculoskeletal conditions, nervous system diseases, mental disorders (including dementia and substance use disorders), endocrine, nutritional and metabolic disorders including diabetes, and diseases of eyes and ears.

**Chronic obstructive pulmonary disease (COPD):** Term to describe chronic lung diseases that limit lung airflow, and includes emphysema and chronic bronchitis.<sup>204</sup>

**Clandestine laboratories:** Refers to an illicit operation that has occurred in properties and areas identified as being subject to drug manufacture, chemicals use, waste storage or any other activity carried out either completely or in part, to manufacture illicit drugs or substances.<sup>205</sup>

**Condition (health condition):** A broad term that can be applied to any health problem, including symptoms, diseases and certain risk factors, such as high blood cholesterol and obesity. Often used synonymously with disorder or problem.

**Confidence interval (CI):** In general, a range of values expected to contain the true value 95% of the time (95% CI).<sup>199</sup>

**Crude rates:** The number of cases in a given time period in a geographic area divided by the total number of persons in the population.<sup>199</sup> Crude rates more accurately reflect the health burden in the community.

**Dietary factors combined:** Estimated burden of disease due to joint effects of all diet-related risk factors included in the analysis.<sup>24</sup> More detailed information on page 70.

**Disability:** Temporary or long-term reduction of a person’s capacity or function, including illness.<sup>199</sup>

**Disability adjusted life year (DALY):** Measure of overall burden of disease and injury, where the DALY for a disease or condition is the sum of the YLL and YLD.<sup>24</sup>

**Discretionary or unhealthy foods:** The *Australian dietary guidelines* describe discretionary foods as those that are not essential or a necessary part of a healthy dietary pattern.<sup>99</sup> These foods are high in kilojoules, saturated fat, added sugars and/or salt or alcohol. The ABS has identified a group of foods consistent with the guidelines based on the national food recall survey in 2011–12.

**e-cigarettes:** Refers to electronic cigarettes, otherwise known as electronic nicotine delivery systems or personal vapourisers containing nicotine, and are used in a manner than simulates smoking.<sup>52</sup>

**Financial years:** Reported using the convention, 2015–16.<sup>206</sup> Periods covering two full years are reported using the convention, 2015–2016.

**Food security:** Refers to the constant access to sufficient, safe, nutritious food to maintain a healthy and active life, including the financial resources to purchase food.<sup>100</sup>

**Gross domestic product (GDP):** Equivalent to total national expenditure plus exports of goods and services minus imports of goods and services.<sup>206</sup>

**Health adjusted life year (HALE):** Refers to the average number of years at birth that a person can expect to live in full health if the current patterns of mortality and disability continue throughout their life.<sup>199</sup>

**Health gap:** The health gap between Indigenous and non-Indigenous Australians is illustrated by relative rate differences in DALYs between the two populations, for individual risk factors that contribute to disease burden.<sup>24</sup>

**Healthy weight:** Refers to the category classified as a body mass index in the range of 18.50–24.99.

**Homeless:** A person is considered to be homeless if they do not have suitable accommodation and their current living arrangement is in a dwelling that is inadequate or has no tenure (or initial tenure is short and not extendable) or does not allow them to have control of, and access to, space for social relations.<sup>21</sup>

**Hospital and Health Services (HHSs):** Queensland has 16 HHSs, of these 15 HHSs are geographically based. Children's Health Queensland HHS is related to services provided to children and is not geographically based.

**Hospitalisations:** The term used for the total number of separations in all hospitals (public and private) that provide acute care services. A separation is an admitted episode of care which can be a total hospital stay or a portion of a hospital stay ending in a change of status.

**Hypertension:** Prolonged elevation of the blood pressure also referred to as high blood pressure.

**Illicit drug use:** Includes the use of illegal drugs, non-medical use of pharmaceutical drugs and misuse of substances.<sup>52</sup>

**Incidence:** Number of new health-related events (for example, illness or disease) in a defined population in a defined period of time.<sup>199</sup>

**Indigenous Queenslanders:** Refers to Aboriginal and Torres Strait Islander people who are usual residents of Queensland.

**Infant mortality rate:** Number of deaths of children under one year of age in one calendar year per 1000 live births in the same calendar year.<sup>68</sup>

**International Classification of Diseases (ICD):** Standard classification of specific conditions and groups of conditions determined by an internationally representative group of experts and used for health records.

**Joint effects (burden of disease):** The impact of multiple risk factors on disease burden that takes into account the complex interaction and overlap of risk factors on disease outcome.<sup>24</sup>

**LGBTQI:** Refers to people and families who identify as lesbian, gay, bisexual, transgender, queer and intersex.<sup>18</sup>

**Life expectancy:** Average number of additional years a person of a given age and sex might expect to live if the age-specific death rates of the given period continued throughout their lifetime.<sup>199</sup>

**Lifestyle related chronic conditions:** Defined in this report as a group of seven chronic conditions that are major causes of disease burden and have the highest attributable risk factor burden (excluding alcohol related effects). They include coronary heart disease, stroke, lung cancer, colorectal cancer, breast cancer, COPD and diabetes. Diabetes is excluded from hospitalisations.

**Low birth weight:** In this report low birth weight includes all births (still born and live births of at least 20 weeks gestation or greater than 400g) with a birthweight less than 2500g, excluding only those for whom no weight was recorded. This is consistent with Queensland Government priorities reporting.<sup>207</sup> Nationally, low birthweight is defined as less than 2,500 grams and excludes multiple births, stillbirths and births of less than 20 weeks gestation.<sup>208</sup> The National Core Maternity Indicator definition differs again.<sup>209</sup>

**Maternal smoking:** Refers to women who smoke tobacco during pregnancy.<sup>38</sup>

**National Health and Medical Research Council (NHMRC):** Australia's leading body promoting development and maintenance of public and individual health standards.<sup>210</sup>

**Neonatal death:** Refers to the death of a live-born baby up to 28 days of age.<sup>38</sup> Perinatal deaths include neonatal deaths and stillbirths (that is, fetal deaths).

**Non-discretionary or healthy foods:** The *Australian dietary guidelines* describe non-discretionary foods as those that are an essential part of a healthy dietary pattern.<sup>99</sup>

**Non-melanoma skin cancer (NMSC):** Includes basal cell carcinoma and squamous cell carcinoma.

**Notifications:** Reports of specified health conditions to government by medical practitioners, pathology laboratories and hospitals.<sup>47</sup> In Queensland, this is legislated by the *Public Health Act 2005*.

**Obese:** Refers to the weight category classified as a body mass index (BMI) in the range of 30.00 or more.<sup>49</sup> The obese category is classified as: class I where BMI is 30.00–34.99, class II where BMI is 35.00–39.99, and class III where BMI is 40.00 or more.<sup>49</sup> Severely obese is the combined prevalence of class II and class III obesity.

**Organisation for Economic Co-operation and Development (OECD):** Group of 34 member countries using information to help governments foster prosperity and fight poverty through economic growth and stability.<sup>71</sup> Australia became a member in 1971.



**Overweight:** Refers to the category classified as a body mass index in the range of 25.00–29.99.

**Patient days:** Refers to occupied bed days for patients in hospitals and day surgery units.<sup>75</sup>

**Perinatal deaths:** Includes all stillbirths (fetal deaths) of at least 400g birth weight or at least 20 weeks gestation, and neonatal deaths of live-born babies up to 28 days of age.<sup>38</sup> The recording of stillbirths varies by jurisdiction.<sup>2</sup> In Queensland, in addition to a doctor or coroner and one or both parents, other informants may provide the second part of the notification to fully register a perinatal death. In Queensland, stillbirths are registered as a birth and a death, whereas in most other jurisdictions they are only entered as a stillbirth as part of the birth registration process. These differences result in different reporting outcomes, where the National Perinatal Data Collection is the preferred source for Queensland Health (Table 1, page viii).

**Potentially preventable hospitalisations (PPHs):**

Admissions to hospital that potentially could have been prevented through the provision of appropriate non-hospital health services.<sup>211</sup> These are defined nationally, while Queensland Health reports a modified suite of conditions.<sup>1</sup> The national indicator only includes diabetes where it was coded as the primary or principal diagnosis. The Queensland Health definition also includes admissions for diabetes as an ‘other’ diagnosis where the primary diagnosis was defined (including selected cardiovascular, renal and eye conditions).

**Premature death:** Generally refers to a death that occurs before the age of 75 years.<sup>1</sup>

**Prevalence:** Measure of disease occurrence or frequency, often used to refer to the proportion of individuals in a population who have a disease or condition at a particular point of time.<sup>199</sup>

**Primary Health Networks (PHNs):** Queensland has seven PHNs that work directly with all levels of the health care system to facilitate efficient and effective outcomes for patients.

**Proxy-report:** Method of collecting information about health status, usually during a survey where a parent or guardian reports a status measure on behalf of a child or dependent, such as their height, weight or physical activity.<sup>34</sup>

**Psychological distress:** Assessed using the Kessler Psychological Distress Scale (K10) which is a scale of non-specific psychological distress based on 10 questions about the frequency of negative emotional states in the four weeks prior to interview.<sup>212</sup>

**Rates:** A measure of the frequency of the occurrence of an event or phenomenon in a defined population in a specified period of time.<sup>199</sup>

**Self-report:** Method of collecting information about health status, usually during a survey where a person self-reports a status measure such as their height, weight or physical activity.<sup>34</sup>

**Significant:** Term used in this report to reflect a level of importance as well as statistical difference. Statistical significance is based on non-overlap of 95% CIs and where these criteria are not met, non-significant results are described with terms such as ‘similar’, ‘stable’ or ‘no difference’.<sup>1</sup>

**Stillbirth (fetal death):** A stillbirth or fetal death is the death of a fetus prior to the complete expulsion or extraction from its mother as a product of conception of at least 20 completed weeks of gestation or with a birth weight of at least 400g.<sup>38</sup> The death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Perinatal deaths include stillbirths (that is, fetal deaths) and neonatal deaths.

**Sufficient physical activity for health benefit:** Defined as 150 minutes of moderate activity over five or more sessions in a week, for adults and is usually limited to those aged 18–75 years.<sup>146</sup>

**Sugar sweetened drinks:** ABS definition for drinks that have added sugar (cordials, soft drinks, flavoured mineral waters, energy and electrolyte drinks, fortified waters, and fruit and vegetable drinks) where data was collected from the 2011–12 national food recall survey.<sup>104</sup>

**Suicide and self-inflicted injuries:** the intentional taking of one’s own life or deliberately causing one’s own death, with intent verified by coronial assessment.<sup>68</sup> Also referred to as intentional self-harm.

**Underweight:** Refers to the category classified as a body mass index in the range of less than 18.50.

**World Health Organization:** Directing and coordinating authority for health in the United Nations.<sup>213</sup>

**Years of life lost due to disability (YLD):** Measure of burden of disease and injury, capturing health loss due to any short-term or long-term condition.<sup>24</sup>

**Years of life lost due to premature death (YLL):** Measure of burden of disease and injury, capturing health loss due to premature death.<sup>24</sup>

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# Notes

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