The State of Public Health
Tasmania 2018

Department of Health

Tasmanian Government

Aboriginal acknowledgement

We acknowledge and respect Tasmanian Aboriginal people as the traditional owners and ongoing custodians of the land on which we work and live, and pay respect to Elders past, present and emerging.

For tens of thousands of years, Aboriginal people thrived in Tasmania in general good health. We acknowledge this experience as we strive to improve the health of contemporary and future Tasmanian populations.

We value the comprehensive approach to primary healthcare pioneered in Australia by the Aboriginal community-controlled sector and the important contributions of Aboriginal community-controlled health organisations to Tasmania's health system.

Contents

1. Introduction

This fourth *State of Public Health Report* describes the health of Tasmanians and the factors that influence our health and wellbeing.

Statistical descriptions of health in this report are complemented by stories that show community action, and provide context and meaning. These stories describe innovation and collaboration between communities, government departments, local government, business, non-government organisations and research bodies. Evaluating these activities provides evidence of what contributes to achieving our population health goals.

There are some promising signs for Tasmania's health. Life expectancy at birth has reached 83 years for females and 79 years for males. More than 80 per cent of Tasmanians rate their health as good to excellent. There have been declines in teenage pregnancy, smoking (notably among teenagers and pregnant women) and some harmful patterns of alcohol consumption. Nearly 95 per cent of Tasmanian children are fully immunised by five years old.

But by many measures, Tasmania still ranks poorly compared with other Australian states and territories. Overweight and obesity is increasing in the few sectors of the population where it is not already very high. The burden of chronic diseases such as heart and lung diseases and diabetes is high. Mental health problems affect many Tasmanian lives, particularly young to middle-aged men and women. Suicide is the single greatest contributor to years of life lost due to premature death.

Tasmania's overall health reflects our relatively older population and is influenced by the regional and rural settings where most Tasmanians live. However these factors should not dictate our health and wellbeing.

Improving our health and wellbeing requires the sustained, committed and coordinated efforts of individuals, communities and all levels of government. A healthier Tasmania will be different. Achieving change – including countering or reversing the very long-term influences of complex environmental and behavioural drivers of poor health – will not come from solitary actions.

Setting priorities for investing in a range of actions to improve Tasmanians' health requires consideration of the illnesses that cause the greatest burdens on our society, and the risk factors that contribute most to these illnesses. We must consider adverse risk factors and the extent to which these may be prevented or reduced. We must also explore the enablers of good health that are missing or are deficient in quantity or effective, sustained application.

We cannot readily change Tasmania's older population structure. However, we can see and anticipate the personal and societal consequences of this demographic trend and should continue to establish measures to mitigate them by promoting ageing that is as healthy as possible.

The environment of public health is changing. The changing climate can exert immediate, obvious effects on health. It also threatens vast and complex ecological and economic changes beyond and within our island. These too will affect our health. At the other extreme of human biology, advances in genomics are changing how we understand and may manage many common conditions. Both the threats of climate change and the promise of genomics need to be considered through a population lens to ensure that the harms of a warmer and more volatile climate, and the benefits of personalised medicine, do not widen existing health inequities.

Each of the three previous *State of Public Health Reports* demonstrated the complexity of public (or population) health. Factors that profoundly influence health and wellbeing – particularly socioeconomic, educational, housing and employment conditions – are themselves affected by the health of individuals and the population.

Health promotion and illness prevention activities, and the delivery of care within health and social systems, can each benefit from coordinated and synergistic approaches. Tasmania's relatively small geographic scale and the family, social and organisational connections within and between communities provide a good environment to support change. In doing so, we must ensure that the processes of change incorporate personal and community values including equity, choice, control and resilience, and engender trust and optimism.

I thank my colleagues within Public Health Services and across many agencies for sharing their thoughts, advice, data and stories and contributing extensively to this report.

I hope this broad overview of the recent health of the Tasmanian population provides some insights and suggests opportunities for how we may continue to collaboratively, imaginatively and vigorously pursue our shared goal of a truly healthy Tasmanian population.

Dr Mark Veitch
Director of Public Health

A new or renewed Public Health Act

The *Public Health Act 1997* provides the principal legislative basis for actions that protect Tasmanians from communicable diseases, contaminants of food, water and the environment, and tobacco-related harms; and it enables effective action around public health emergencies. Since the nineteenth century, the Act and its predecessors have focused on these familiar imperatives of heath protection.

It is now timely to review Tasmania's *Public Health Act 1997.* The review should consider the scope of contemporary health protection and how risk-based regulatory practice can best be supported by an amended or new Act.

Contemporary public health legislation elsewhere now takes a broad and inclusive view of health and wellbeing. It does this by including statements of purpose and principles, and provisions to promote collaborative health improvement activities across all state government departments, local governments, communities and other agencies.

The predominant causes of ill health have changed markedly over the past century. The review should, therefore, consider how regulation and associated actions can facilitate environments – natural, built and social – that promote as well as protect health.

What a healthier Tasmanian population will look like

- We will all understand our health and wellbeing and how to be and stay well.
- We will be more active. Communities will enjoy environments they've helped design and create to make more activity easy in their daily lives. Healthy, liveable, walkable communities will promote social connectedness and inclusion.
- We will eat better throughout life. We will eat more vegetables and fruits, much of it local and seasonal, and we will get less of our energy from sugary drinks and unhealthy foods.
- Far fewer middle-aged Tasmanians will smoke and it will be truly rare for a teenager to start.
- If we consume alcohol we will do so in ways that don't pose a risk of health and social harms.
- We will share a strong sense of personal and community agency, connectedness and wellbeing.
- All Tasmanians will benefit from the equitable distribution of resources to fairly achieve and maintain health and wellbeing.
- Tasmanians whose mental health is poorer or at risk will bear no stigma. They will easily engage with accessible services to manage and avert progression of mental illness, and to restore good mental health. There will be fewer deaths by suicide.
- Harmful and fatal misuse of prescription medications will be rare.
- We will maintain the health of people with and at risk of common chronic diseases.
- Tasmanians will participate in appropriate screening programs and in actions that preserve health and avert harm.
- Fewer Tasmanians will have the quality of their lives diminished by pain. Effective, safe management will mitigate pain due to acute and chronic conditions.

2. Our people

2.1 Population

Tasmania's population grew by more than 5 000 people in both 2008 and 2009 before slowing to near zero growth by 2012. In the years after 2012, the population once again grew steadily, including an increase of 4 600 people from 2016 to 2017.

Population growth over recent years has been largely restricted to Tasmania's larger cities while population has declined elsewhere in the state.[1]

In 2016, 23 572 people or 4.5 per cent of Tasmanians identified as Aboriginal, Torres Strait Islander or both Aboriginal and Torres Strait Islander. This was the highest proportion of all states and territories other than the Northern Territory (28 per cent) and above the national figure of 2.8 per cent.[2]

2.2 Births

Births in Tasmania have fallen in recent years. On average, 5 960 babies were born each year in Tasmania from 2012 to 2016, fewer than the annual average of 6 612 for the preceding five years.

The number of births to women under 20 years old fell from 360 in 2012 to 248 in 2016.[3]

The annual Total Fertility Rate (the average number of live births during a woman's reproductive years) averaged 1.99 from 2012 to 2016, lower than 2.16 during the preceding five years. The Total Fertility Rate declined across all of the more populous Tasmanian Local Government Areas (LGAs).

Despite the drop, in 2016 Tasmania's Total Fertility Rate of 1.92 was the second highest of all Australian states and territories and higher than Australia overall (1.79).[4]

2.3 Age

Tasmania's population is relatively old, and aging. The median age divides a population into older and younger halves. In 2016, Tasmania's median age was 42 years compared with the national median age of 38 years. Between 2006 and 2016, Tasmania's median age increased by 3.1 years, the largest increase in all states and territories.

- In 2016, the median age of Tasmanian males was 41 years and for females it was 43 years.
- Only the Brighton LGA had a median age (34 years) less than Australia overall. Three of Tasmania's most populous LGAs (Hobart, Launceston and Glenorchy) had median ages of around 39 years.
- Thirteen of 29 LGAs had a median age of more than 45 years.[5]

In 2017, 36 per cent of Tasmanians were aged 20 to 49 years, compared with 41 per cent of Australians in this age range. This means there were around 26 000 fewer Tasmanians in this age range than would be expected if our population age distribution was the same as Australia overall.

Forty per cent of Tasmanians were aged 50 years and older compared with 33 per cent of Australians in this age range. This means there were about 36 000 more people aged over 50 in Tasmania than would be expected if our population age distribution was the same as Australia overall.[6]

[1] Australian Bureau of Statistics. 3218.0 Regional Population Growth, Australia.
[2] Australian Bureau of Statistics. 2071.0 Census of Population and Housing: Reflecting Australia - Stories from the Census, 2016.
[3] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government, 2018.
[4] Australian Bureau of Statistics. 3301.0 Births, Australia, 2016.
[5] Australian Bureau of Statistics. 3235.0 Population by Age and Sex, Regions of Australia, 2016
[6] Australian Bureau of Statistics. 3101.0 Australian Demographic Statistics..

The proportion of Tasmanians aged 65 years and over is expected to grow from 19 per cent in 2017 to around 25 per cent by 2050.[7]

Tasmania's current and future population structure has widespread implications for ageing individuals and the people and systems that support their health and wellbeing.

The combination of a high and increasing proportion of older Tasmanians, and the relatively high prevalence of risk factors and chronic diseases will, unless checked, mean an ever greater burden on healthcare, social and community resources.

Case study

Connections delivering better community health

Poor access to nutritious food has health and social consequences, by increasing the risk of obesity and chronic diseases like heart disease and diabetes.

A lack of healthy food can also cause poor physical development in children and affect their learning and school attendance.

Long-term food security is essential for those on low incomes and older people, especially those isolated or living alone – and for all people in isolated places where food is difficult to access.

A number of communities have received funding from the Healthy Tasmania Community Innovations Grants program to address this problem.

The Central Highlands Food Connect Project is improving supply of healthy affordable food and increasing community participation, skill development and social connectedness.

The project delivers frozen meals made by the Waterbridge Co-op in Gagebrook – also funded by a Healthy Tasmania Community Innovations Grant – to the Central Highlands community.

Community members also hold workshops to build skills in food preparation and cooking.

The Central Highlands meal delivery program began in February 2018 and expanded quickly to supply more than 70 clients. It provides around 100 meals a week with demand growing.

The Central Highlands Council is now also funding the program.

[7] Australian Bureau of Statistics. 3222.0 Population Projections, Australia, 2017 (base) – 2066.

2.4 Migration

Tasmania is home to people who have migrated from over 150 countries,[8] speak over 100 languages and represent many religious faiths.[9]

People from culturally and linguistically diverse (CALD) backgrounds comprise a smaller proportion of the population in Tasmania than elsewhere in Australia. Around 68 000 people, or 13 per cent, of Tasmanians in 2016 were born overseas compared with about 29 per cent of people in Australia overall.

Thirty per cent of these people were born in England and another 30 per cent were born in seven other countries (New Zealand, China, Scotland, Netherlands, Germany, India and the United States). People born in over 140 other countries comprised the remaining 40 per cent of overseas-born Tasmanian residents.

Between 2006 and 2016, the number of Tasmanian residents born in England changed little while people born in China, India, Nepal, Bhutan, New Zealand, the Philippines, United States and Iran increased the most.[10]

Breaking down health barriers for people from culturally and linguistically diverse backgrounds

People from non-English speaking backgrounds may face less satisfactory experiences when using health services than do most other Australians. This may be due to communication barriers, ethnocentric cultural practices and difficulty accessing appropriate services.

Multicultural health practices aim to ensure people from diverse backgrounds are treated fairly and experience no barriers to receiving services that affect their health and wellbeing.

Public Health Services identifies the health and wellbeing needs and priorities of the various multicultural communities in Tasmania.

For example, the Department of Health funds the Red Cross Bi-Cultural Health Program to help newly arrived individuals, groups and communities of culturally and linguistically diverse backgrounds (especially those from refugee backgrounds) to better understand and independently access the health system.

The program also aims to minimise the occurrence of harmful traditional health practices and trains service providers about the needs of new arrivals. In 2018, the Department of Health and the Red Cross celebrated a 10-year partnership in delivering the program.[11]

[8] Australian Bureau of Statistics. 3412.0 Migration, Australia, 2016-17.
[9] Australian Bureau of Statistics. 2071.0 Census of Population and Housing: Reflecting Australia - Stories from the Census, 2016.
[10] Australian Bureau of Statistics. 3412.0 Migration, Australia, 2016-17.
[11] Department of Premier and Cabinet. Tasmanian Multicultural Policy Highlights Report 2017.

Case study

Engaging with migrants and refugees through sport and swimming

Many migrants and refugees have never experienced a swimming pool before arriving in Australia and often lack swimming skills.

Water sports cater to people of all ages, gender, culture and abilities and are a great way for young migrants and refugees to get involved in the local community.

The MY (multicultural youth) Swim to Sport program focuses on people from culturally and linguistically diverse backgrounds who have low English language levels.

It aims to understand and overcome barriers to participation in physical activity by creating pathways to sporting clubs and infrastructure.

It also offers advice and specialised training to swimming and sporting clubs so they can build cultural competency.

The Migrant Resource Centre (MRC) Tasmania received a Healthy Tasmania Innovations Grant to run a MY Swim to Sport program in Hobart.

MRC partnered with the From Zero to Hero swimming project and local water sport groups to teach young people from migrant and refugee backgrounds to swim.

In the first six months, 18 graduates completed two rounds of the program.

Participants have increased confidence in swimming and engaging in the wider sporting community.

Already eight graduates have expressed interest in joining underwater hockey teams and three have joined the Kingston Beach Surf Lifesaving Club and begun a mentored summer patrol.

Strong partnerships have formed with sporting organisations, with the MRC providing training in how to engage migrants.

An unexpected outcome was that some participants won jobs as guides for a Dark Mofo swimming event at the Hobart Aquatic Centre.

2.5 Socio-economic indexes

Socio-economic disadvantage is greater in Tasmania than Australia overall. The socio-economic conditions of people can be described by various measures that take into account factors such as income, educational attainment and unemployment, based on information from sources such as the five-yearly Census of Population and Housing.

Socio-Economic Indexes for Areas (SEIFA) were developed by the Australian Bureau of Statistics (ABS) to rank areas in Australia by relative socio-economic advantage and disadvantage. These measures are often used to divide populations into five equally sized groups known as quintiles, with a fifth (20 per cent) in each quintile.

One of these measures is the Index of Relative Social Disadvantage (IRSD), a score summarising attributes of the population related to disadvantage.

In 2016, of all the states and territories, Tasmania had the lowest proportion (8 per cent) of people living in the areas ranked least disadvantaged Australia-wide (IRSD quintile five) and the highest proportion (33 per cent) of people living in the most disadvantaged areas (IRSD quintile one). This is higher than the proportion of the population living in quintile one of all other Australian jurisdictions, which range from 2 per cent in the Australian Capital Territory to 25 per cent in the Northern Territory.[12]

2.6 Where we live

Tasmania's 517 588 in 2016 people lived in three geographic regions:

- South, which comprises 12 LGAs in the southern, central and lower eastern coastal parts of the state and includes Hobart. In 2016, it had a population of 265 147 (51 per cent of Tasmania)
- North, which comprises eight LGAs in the central northern and north-eastern parts of the state and includes Launceston. In 2016, it had a population of 144 107 (28 per cent of Tasmania)
- North West, which comprises nine LGAs in the north-western and western parts of the state and includes Devonport, Burnie, Ulverstone and Wynyard. In 2016, it had a population of 111 623 (21 per cent of Tasmania).[13]

The ABS uses measures of relative access to services to divide Australia into five classes of remoteness: major cities; inner regional; outer regional; remote; and very remote.

While most Australians (71 per cent) live in major cities, Tasmania has no areas classified as a major city. Around two-thirds of Tasmanians live in inner-regional locations (including Hobart, Launceston and Devonport) and around one-third live in outer regional locations (most regional towns). A small proportion lives in locations classified as remote or very remote, such as the West Coast and the Bass Strait Islands.[14]

Where we live influences our health in many ways, reflecting the different regional patterns of social, economic and environmental factors that shape overall health. These include differences in access to services such healthcare and education, employment opportunities, levels of social support and connectedness, the types of occupational risks and environmental health hazards such as air pollution.

These influences were described and explored in the previous *State of Public Health Report,* which particularly noted that the health status of Tasmanians was more similar to populations in Australia's regional areas than its mainland capital cities.[15]

[12] Australian Bureau of Statistics. 2033.0.55.001 Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2016.
[13] Australian Bureau of Statistics. 3218.0 Regional Population Growth, Australia.
[14] Australian Bureau of Statistics. 3218.0 Regional Population Growth, Australia.
[15] Taylor R. State of Public Health 2013. Population Health, Department of Health and Human Services. 2013.

Case study

Local government unites community for better wellbeing

Promoting wellbeing is at the heart of local government's role in supporting a better life for citizens and helping build resilient communities.

Most local government core functions have the potential to help improve community wellbeing.

This is especially so in planning and maintaining the physical environment, improving access to green spaces, developing programs to meet specific needs of residents and providing opportunities for physical activity.

Clarence City Council's *Community Health and Wellbeing Plan 2013-2018* identifies strategies and actions to strengthen and improve community physical, mental and social wellbeing.

Over the past five years, the plan has helped council make several short, medium and long-term approaches to improving health and wellbeing.

These include:

- setting up and maintaining a regular free Fitness in the Park program
- supporting better access to primary healthcare through the GP Access and Help to Health projects
- establishing events to tackle isolation, including a Christmas Brunch and Neighbour Day
- supporting the development of community gardens
- developing the My Wellbeing Kit for better mental health
- supporting workplace health initiatives
- developing a plan to improve community safety.

Applying a health and wellbeing lens to its work has helped council more assiduously consider residents' health and wellbeing in all matters.

Council is actively planning to break down silos across council activities to help people work together to build a healthier community.

3. Self-assessed health and disability

Self-assessed health status reflects a person's perception of his or her health at a point in time. It is a common and useful measure of a person's health and provides a broad picture of a population's overall health.

In 2014-15, 81 per cent of Tasmanians reported their health was excellent, very good or good, while 19 per cent reported their health was fair or poor.

The age-standardised proportion of Tasmanians reporting fair or poor health had changed little in the past decade and remained slightly greater (18 per cent) than for Australia overall (14 per cent).[16]

In 2015 about 132 000 Tasmanians (26 per cent) reported that they were living with disability, including 40 000 (8 per cent) who had profound or severe core activity limitation. The age-standardised prevalence of disability was 23 per cent, higher than for Australia overall (17 per cent).[17]

Case study

Wellbeing cards come up trumps

Mental ill-health is common and we can all benefit from developing strategies that help us function at our best or get us back on track when we're struggling.

Clarence City Council has developed a *My Wellbeing Kit* in partnership with mental health consumers, community and government to build resilience.

The kit is a set of 13 whimsically illustrated cards which work as prompts about simple ways to improve health and wellbeing when faced with challenging times.

The colourful illustrations by local artist Shiloh Longbottom connect with emotions and help to identify ways to restore balance and get back on track.

The cards explore themes such as sleeping well, being active, feeling safe, eating well, and enjoying the outdoors.

People can write or draw on the cards, which also include contacts for more help.

Since launching in late 2016, over 4 000 cards have been distributed through mental health services, community service providers, primary and high schools and community events.

The kit has proven very popular with a wide range of audiences.

Working group members have recently worked with UTAS students to design a *My Wellbeing Kit* app that retains the concept's simplicity while adding journaling and an ability to upload more cards.

[16] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[17] Australian Bureau of Statistics. 4430.0 Disability, Ageing and Carers, Australia: Summary of Findings, 2015.

4. What affects our health

Most Australians enjoy good health by global standards, but there is considerable variation within and between jurisdictions. While most Tasmanians enjoy good health, Tasmania ranks lower than the rest of Australia on many measures of health and wellbeing.

The causes of good and poor health and wellbeing are complex. The powerful influence of an older and ageing population is an important determinant.

Against this background, the complex interactions and effects of very many biological, psychological, social and environmental factors all affect our health. There is no single simple fix for population health problems.

"To be healthy does not mean that you are free of all disease; it means that you can function, do what you want to do and become what you want to become."[18] – Rene Dubos

The discovery and use of many life-saving and health-preserving pharmacological agents and therapeutic and surgical interventions has lengthened and improved life over the last 100 years, but we still suffer and die from preventable diseases, some of us more than others.

This section considers the need to admit and engage with health as a deeply complex domain, identifies several important practical determinants of individuals' participation in the health system, and summarises how Tasmanians are faring with some of the critical preventable contributors to poorer health.

[18] Dubos R. Mirage of Health. Allen and Unwin. 1959.

4.1 Complexity of health problems

Our health and risk of disease are affected by where we are born, grow up, live, work and age, how we live, and the systems available to promote health and deal with illness.

The interconnected factors that contribute to health include a person's background, their environment, and their capability and liberty to make healthy choices. It is not simple. Addressing this complexity requires insightful, well directed, connected and evaluated ways to promote health and prevent illness.[19]

To effectively and sustainably prevent complex chronic health problems, we need to understand how social, economic and environmental factors contribute and interact. A systems approach helps identify root, contributory and inter-related causes of a problem, and guide and evaluate interventions.[20]

Improving health and reducing the risk of disease requires the engagement and actions of sectors other than those whose primary focus is health. Success requires sustained health promotion and protection activities that coordinate all government departments, organisations, communities and individuals to tackle problems from many angles and in dynamic, flexible ways.

Thinking and working in systems

Public Health Services is using systems thinking approaches to understand social influences on health-related behaviour, such as the effects of the built environment, availability of fresh food, poverty and education.

The Department of Health has recently been involved in research projects using systems methods including *Prevention Tracker,* dynamic simulation modelling, and boosting systems thinking capacity.

In 2016, a course in systems thinking was developed by Public Health Services and UTAS staff with support from the Australian Prevention Partnership Centre, and became a core unit of the Master of Public Health at The University of Tasmania (UTAS). The course was developed to establish capability in systems approaches so as to be able to address complex problems locally.

4.2 Primary care

Primary healthcare services also shape our health. General Practice in particular is the familiar and critical point through which much of the population engages with primary care and the wider healthcare system.

The role of general practitioners is increasingly important as the population ages and the burden of chronic disease increases, resulting in greater needs for care of complex conditions and negotiation of a complex healthcare system.[21]

In 2014-15, 86 per cent of Tasmanians reported seeing a general practitioners in the preceding 12 months, similar to Australians overall. More than half of Tasmanians reported consulting a general practitioner within the previous three months, whereas 6 per cent had not seen a general practitioner for more than two years or ever.[22]

[19] Riley BL, Robinson KL, Gamble J, Finegood DT, Sheppard D, Penney TL, Best A. Knowledge to action for solving complex problems: insights from a review of nine international cases. Health Promot Chronic Dis Prev Can. 2015; 35(3): 47-53.

[20] The Australian Prevention Partnership Centre. Preventing our greatest health problem. https://preventioncentre.org.au/wp-content/uploads/2017/05/0417_FS_ChronicDisease_final-1.pdf

[21] Australian Medial Association. General practice in primary health care – 2016, 2017. https://ama.com.au/position-statement/general-practice-primary-health-care-2016.

[22] Australian Bureau of Statistics. 4364.0.55.002 National Health Survey: Health Service Usage and Health Related Actions, Australia, 2014–15.

Case study

Prevention Tracker: Tapping local wisdom to prevent chronic disease

In cities and towns all over Australia, many organisations, people and programs work to promote health and wellbeing in their communities.

This work happens in the health sector but also in education, transport, local government and community sector organisations.

However, little is known about how these people, activities and networks interconnect to shape a local system to prevent chronic disease.

Prevention Tracker is a national research project exploring how local communities work to prevent chronic disease and how to make these efforts more effective.

It aims to find local solutions to deal with chronic disease – aiming for small wins in local communities with the potential to bring change further afield.

Prevention Tracker began in the Hobart area of Glenorchy in 2014, where at least 40 programs and 30 organisations were working to improve community health.

Researchers from the Australian Prevention Partnership Centre – working with Glenorchy City Council, the Tasmanian Government and community stakeholders – mapped these programs and organisations, and how they connected and influenced one another.

The idea of *Prevention Tracker* is to better understand the parts of the prevention system and how they connect to make the whole. This then helps us choose the best actions to take to improve people's health and wellbeing.

Three group model-building workshops were held to examine collaboration among the groups and identify action points.

The Glenorchy project provided important insights into how local communities work to prevent chronic disease.

This included identifying the prevention workforce, how organisations connect with each other and how small changes can strengthen the prevention system.

The *Prevention Tracker* project has since expanded to three other communities across Australia.

A strategy for a Healthy Tasmania

The Tasmanian Government's goal is for Tasmania to become the healthiest population in Australia by 2025.

The Healthy Tasmania Five Year Strategic Plan,[23] released in 2016, includes a range of actions to provide people with information and access to ways to make healthy changes in their lives. Effective action to address risk factors will be achieved through partnerships, and working with people, communities and organisations.

The plan emphasises that community ownership is crucial – solutions need grassroots partnerships and innovation. A healthy Tasmania is everybody's business.

The plan fosters community connectedness through a combination of grants, service developments and collaborative effort, bringing people together to help each other to act to improve health.

This goal and timeline is ambitious, needing coordinated and efficient effort across our population, while also preventing and managing ill-health among those most vulnerable.

The priority areas for Healthy Tasmania are to:

- reduce smoking
- improve healthy eating and physical activity
- reduce chronic conditions
- increase community connectedness.

4.3 Health inequities

Health inequities are preventable differences in health among groups in the population that result from inequalities in society.

Our relative position on the social ladder – reflected by measures such as Socio-Economic Indexes for Areas (SEIFA) – is a strong predictor of our health. Other factors that affect equity include gender, disability and cultural and linguistic background.

Discrimination by any attribute – ethnicity, culture, religion, gender, sexual orientation or identity, physical or mental ability, age, socio-economic or health status – perpetuates social inequality and harms health.

Health inequities are evident in many measures of health risk factors and health outcomes in Tasmania. More socially disadvantaged groups in Tasmania consistently experience more adverse health risk factors and higher rates of disease and avoidable death than more advantaged groups.

An example is the association between measures of socioeconomic disadvantage and the prevalence of some chronic diseases. In 2014-15, the prevalence of reporting having heart disease, stroke or vascular disease was 9 per cent among Tasmanians in the most disadvantaged quintile, compared with 6 per cent among those in the least disadvantaged quintile.

For diabetes, the prevalence was 7 per cent in the most disadvantaged quintile and 2 per cent in the least disadvantaged.

[23] Tasmanian Government. Healthy Tasmania Five Year Strategic Plan. 2016.

Similar gradients in the prevalence of chronic diseases are evident for educational attainment, with a higher prevalence of chronic diseases among Tasmanians whose highest educational attainment was Year 10 or less compared with those with a Bachelor degree.[24]

Where avoidable health inequities are evident, targets should measure progress in reducing them, aiming to offer vulnerable Tasmanians equal opportunities for health, wellbeing and care.

Tasmanian Aboriginal people

For Aboriginal and Torres Strait Islander populations, cultural connectedness, colonisation and racism have had a powerfully detrimental effect on physical and mental health and social and emotional wellbeing.

To these harms may be added the many other adverse health and wellbeing risk factors shared (not always equally) with non-indigenous Australians.

Case study

Cultural respect is at the heart of better Aboriginal healthcare

Culturally respectful healthcare is vital to improve Aboriginal health and wellbeing, and close the gap in health outcomes between Aboriginal and non-Aboriginal people.

A Department of Health team is partnering with Tasmania's health sector and Aboriginal organisations to implement the *Cultural Respect Framework for Aboriginal and Torres Strait Islander Health 2016–2026.*

This is the first coordinated and whole-of-sector focus on improving Aboriginal cultural respect across mainstream health services in Tasmania.

The first steps were to talk with Aboriginal people through nine focus groups, and conduct an online survey.

Aboriginal people told us of their experiences using health services in Tasmania and what they saw as priorities to improve cultural respect.

The consultation found many participants had positive experiences using mainstream health services, but this was not universal, with nearly a third reporting facing discrimination or racism.

The consultation highlighted persistent failures to acknowledge the ongoing presence of Aboriginal people in Tasmania and to record Aboriginal identity, and limited visibility of Tasmanian Aboriginal culture within health services.

Aboriginal people said their top priority was cultural respect training for all healthcare staff.

Improvements are already happening through quite simple changes. These include improved access of Aboriginal Health Workers to their patients, more people providing Acknowledgement of Country at meetings, and the display of the Aboriginal flag at the Royal Hobart Hospital.

Much more remains to be done.

[24] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

4.4 Health Literacy

Health literacy is the ability of a person to find, understand and use information to make decisions about their health and healthcare. Personal and parental educational attainment, employment and job skill level, income, and language of country of birth are all related to health literacy. People with difficulty understanding health information and how to look after their health are more likely to experience poorer health.

Limited recent data are available on health literacy.

The 2006 Adult Literacy and Life Skills Survey found only 37 per cent of Tasmanians aged 15 to 74 years had adequate or higher health literacy skills, sufficient for them to understand and use information about medications, health risks, alcohol, disease prevention and health promoting activities.[25]

Overall literacy underpins health literacy. In 2006, only half of Tasmanians had sufficient literacy and numeracy skills to meet the complex demands of everyday life in a technologically rich and demanding world.[26]

By contrast, in the 2016 Tasmanian Population Health Survey more than 80 per cent of Tasmanian participants reported they usually or always could read and understand health information, complete medical forms and understand advice from healthcare providers.[27]

The discrepancy between the findings of the older objectively-assessed survey and the recent more limited self-assessment of understanding indicates the need for more comprehensive, validated information about Tasmanians' health literacy.

In the meantime it is prudent to assume a substantial proportion of our population is likely to struggle to understand and use some health information, and to consider this when planning and delivering health services.

Action on health literacy

The Department of Health has developed a Health Literacy Workplace Toolkit with information and practical tools to help health and community workers respond to health literacy needs. This means making it easier for people to access, understand, appraise and use health information and services.

The toolkit includes practical tips on spoken and written communication, ways to improve the health literacy environment of services, and workplace assessment tools.

[25] Australian Bureau of Statistics. 4233.0 Health Literacy, Australia, 2006.
[26] Australian Bureau of Statistics 4228.0 Adult Literacy and Life Skills Survey, Summary Results, Australia. 2008.
[27] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

4.5 Nutrition

In 2011, dietary risks were among the most important causes of preventable disease and death in Australia, responsible for 7 per cent of the total burden of ill-health and premature death. Poor nutrition affects growth and development in children and is a risk factor for conditions such as heart disease, type 2 diabetes and some cancers.[28]

Contemporary dietary advice[29] for optimal health includes:

- enjoying a wide variety of nutritious foods – fruit; vegetables; wholegrain and high fibre cereals and grains; lean meats, poultry, egg, tofu, nuts and seeds; milk, yoghurt and cheese
- drinking plenty of water
- limiting discretionary foods – foods containing saturated fat, added sugar and added salt; such as cakes, biscuits, savoury snacks, pies, processed meats, pizza, fried foods, confectionary, and sugar-sweetened drinks
- limiting alcohol
- maintaining a healthy weight
- encouraging and supporting breastfeeding.

Measuring dietary intake is complex, so population surveys rely on key indicator questions about fruit and vegetable intake to assess eating patterns. *The Tasmanian Population Health Survey 2016* found:[30]

- less than 10 per cent of Tasmanian adults met recommended guidelines for eating vegetables (at least 5 serves a day)
- less than half (40 per cent) of Tasmanian adults met the guideline for fruit consumption (2 serves a day)
- vegetable and fruit intake was similar across all regions of the state, across socio-economic groups and adults of all ages
- Tasmanian adults would need to eat twice as many serves of vegetables a day and eat another serve of fruit each day to meet the recommendations
- 7 per cent of Tasmanians lived in a household that in the previous 12 months had run out of food and could not afford to buy more food.

Similar results have been found in surveys of Tasmanian Aboriginal people.[31]

While vegetable intake is somewhat better among Tasmanian children, it falls far short of the recommended intake at all ages, declines from infancy through to the teenage years, and includes a disproportionately large intake of potato.[32]

The most recent comprehensive information on diet from the National Nutrition and Physical Activity Survey in 2011-12 found very few Australians met healthy eating recommendations and over one third of food energy came from discretionary foods.[33]

The Council of Australian Governments (COAG) Health Council (CHC) agreed in 2018 to develop a National Obesity Strategy 'with a strong focus on the primary and secondary prevention measures, social determinants of health, especially in relation to early childhood and rural and regional issues'.

[28] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016.

[29] National Health and Medical Research Council. Australian Dietary Guidelines. NHMRC, 2013.

[30] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

[31] Australian Bureau of Statistics 4727.0.55.001 Australian Aboriginal and Torres Strait Islander Health Survey: First Results, 2012–13.

[32] Australian Bureau of Statistics. 4364.0.55.009 Australian Health Survey: Nutrition - State and Territory results, 2011-12.

[33] Australian Bureau of Statistics. 4364.0.55.007 Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12.

The CHC had earlier expressed concern about high consumption of discretionary foods, and the need for a national suite of actions to reduce the exposure of children to unhealthy food and drinks. These actions include a focus on school, sport and recreation, and public healthcare settings.[34]

The *Healthy Tasmania Five Year Strategic Plan* identifies healthy eating as a priority.[35]

An important initiative of the strategic plan is the Student Health Initiative. This aims to improve the health and wellbeing of Tasmanian school students and includes a commitment to have all government schools working towards accreditation of canteens for best-practice management and a school-wide approach to healthy eating by 2020.

In December 2018, 75 of the 240 Tasmanian schools with a school canteen had already achieved accreditation and a further 76 were working towards accreditation.

In 2016, the International Network for Food and Obesity Research, Monitoring and Action Support (INFORMAS) analysed implementation of policies and supporting infrastructure across Australia. An analysis specific to Tasmania identified priorities for future action.

The five key INFORMAS recommendations to create healthier food environments were to establish governance of a collaborative statewide coalition to:

- address population nutrition and obesity
- provide resources to implement, monitor, and evaluate the Healthy Tasmania Strategy
- implement healthy food policy through government departments
- provide incentives and accountability for all schools to implement healthy food policies
- support ongoing, collaborative healthy eating social marketing campaigns.

Actions to progress these recommendations included:

- establishing the Tasmanian Premier's Health and Wellbeing Advisory Council to advise Government on collaborative ways to address health and wellbeing
- maintaining existing healthy eating and obesity prevention activities
- funding initiatives for healthy eating through the Health Tasmania Community Innovation Grants and Community Health Fund
- providing resources on the Healthy Kids Toolkit website to help Tasmanian families eat well
- contributions to CHC actions to limit the harms of unhealthy food and drinks on children.
- extensions through schools of the Move Well Eat Well and the Tasmanian School Canteen Accreditation programs
- the Live Lighter campaign run in Tasmania by the Heart Foundation
- social media campaigns run by Eat Well Tasmania Inc. (Veg It Up, Get Fruity and What's in Season)
- a Healthy Tasmania Community online challenge.[36]

[34] COAG Health Council Communiqués, 12 October 2018 and 2 August 2018 http://www.coaghealthcouncil.gov.au/

[35] Tasmanian Government. Healthy Tasmania Five Year Strategic Plan. 2016.

[36] INFORMAS. Policies for tackling obesity and creating healthier food environments: scorecard and priority recommendations for the Tasmanian Government. The Australian Prevention Partnership Centre, 2017.

Improving nutrition requires broad, sustained, evidence-based work including:

- influencing national food regulation and nutrition policy
- investing in community capacity to address healthy eating
- improving access to reliable, sound nutrition advice for the whole community, including health professionals, community workers and through social media, and countering nutrition misinformation
- influencing food environments, with an initial focus on schools and childcare settings
- developing strategies to address nutrition for vulnerable groups so all Tasmanians have access to affordable, healthy and acceptable food.

Tasmania is a notable primary producer of fresh food including vegetables, fruit, dairy, seafood and meat. Many Tasmanians are increasingly interested in access to local, seasonal foods; foods that benefit local economies and promote community connectedness as well as health and wellbeing. Despite this, some communities in Tasmania have limited access to affordable, nutritious foods.

Over half of Healthy Tasmania Innovations Grants applications in 2017 and 2018 addressed healthy eating. As well positioned as we are, Tasmania faces the big challenge of promoting healthy food cultures to gradually replace existing harmful eating patterns.

Case study

Garden to plate: bush foods put down healthy community roots

A new project growing and cooking with traditional bush foods is bringing families together and inspiring healthy eating habits among preschool children in Bridgewater, near Hobart.

Tasmanian Bush Food to Plate promotes community connectedness, healthy eating and active lifestyles for all families accessing the tagari lia Aboriginal Child and Family Centre.

Using the tagari lia Bridgewater Tasmanian bush food garden, participants learn how to grow and cook with traditional bush plants.

The focus on food and bush tucker has brought families together, with grandparents passing on their knowledge to their children and grandchildren, and families sharing meals together.

The program also teaches respect for the environment.

This project aims to serve as a guide to expand the program to other areas of the state, with the cookbook and resources shared widely.

Funded by a Healthy Tasmania Community Innovations Grants in 2018, the project is a partnership between the tagari lia Child and Family Centre, the Child Health Association Tasmania and Family Food Patch.

Case study

Eat local, eat seasonal, eat well!

Eat Well Tasmania has raised awareness of the local food supply and grown the commitment to a local food culture through social media focusing on three key messages: Veg it Up, Get Fruity and What's in Season.

The popularity of these messages highlights the opportunity for a long-term campaign promoting local, seasonal produce, and connecting growers, local retailers and the food service industry to nurture a healthier food culture in Tasmania.

Eat Well Tasmania, a not-for-profit organisation whose core funding is from the Department of Health, has a vision for a strong food culture supported by policies that value eating well in Tasmania by 2025.

Eat Well Tasmania discovered that focusing on seasonality rather than health was a successful way to get Tasmanians interested in eating more fruit and vegetables and other seasonal foods such as nuts and seafood.

Social media showed Tasmanians have a strong interest in knowing more about where and how their food is grown, so in March in 2018, with an additional grant, Eat Well Tasmania started researching the seasonality of Tasmanian food.

The findings of a survey of more than 80 growers was validated through interviews with wholesalers who buy from over 400 growers statewide, and used to further develop several partnerships.

The Eat Well Tasmania website now has monthly and season guides and is supporting development of an online portal to connect producers and buyers of seasonal food.

Eat Well Tasmania is also connecting trainee chefs with local growers.

Over the long term, the hope is that increased knowledge across the supply chain about seasonal Tasmanian food will help make more Tasmanian seasonal food available and affordable in retail stores, markets, cafés, restaurants and at events.

4.6 Nutrition in pregnancy and infancy

Iodine

Iodine is a nutrient essential for thyroid function, growth and development. Mild iodine deficiency was identified as widespread in Tasmania in the late 1990s, and led to voluntary fortification of bread with iodised salt in Tasmania in 2001. In 2009 this was succeeded by mandatory fortification across Australia and New Zealand.

Iodine status in Tasmania has progressively improved since the late 1990s and has remained stable since the introduction of mandatory fortification. This was affirmed by recent surveys of urinary iodine concentrations of Tasmanian primary school children, which were consistent with there being adequate iodine in much of the general population.[37]

Despite improvements in iodine status of the general population, concerns remain about pregnant and breastfeeding women. Iodine needs increase by around 50 per cent in pregnancy, and even more during breastfeeding.[38]

Mild to moderate iodine deficiency in pregnancy can affect growth and development in unborn babies, infants and young children, risking reductions in intelligence quotient and educational outcomes.[39 40]

Clinical practice guidelines recommend pregnant and breastfeeding women take a daily iodine supplement of 150 micrograms of iodine.[41 42]

In 2016, nearly 10 per cent of women who gave birth in Tasmania reported taking an iodine supplement during pregnancy. Among those women who gave birth in public hospitals, only 5 per cent reported taking an iodine supplement. The proportion was higher (20 per cent) among women who gave birth in a private hospital.

These figures may be underestimates as iodine supplementation of some women may not be identified if they take multivitamins without realising they contain iodine. The perinatal data collection form has recently been amended to better capture this source of extra iodine.

[37] Hynes KL, Seal JA, Otahal P, Reardon MA, Burgess JR. Iodine adequacy in Tasmania sustained after 7 years of mandatory bread fortification. Med J Aust. 2018; 208(3): 126.

[38] National Health and Medical Research Council. Nutrient reference values for Australian and New Zealand. Australian Government Department of Health and Ageing and Ministry of Health New Zealand, 2005.

[39] Bath SC, Steer CD, Golding J, Emmett P, Mayman MP. Effect of inadequate iodine status in UK pregnant women on cognitive outcomes in their children: results from the Avon longitudinal study of parents and children (ALSPAC) Lancet. 2013; 382(9889): 331-7.

[40] Hynes KL, Otahal P, Burgess JR, Oddy WH, Hay I. Reduced educational outcomes persist into adolescence following mild iodine deficiency in utero, despite adequacy in childhood: 15-year follow-up of the gestational iodine cohort investigating auditory processing speed and working memory. Nutrients. 2017; 9(12).

[41] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government, 2018.

[42] Australian Government Department of Health. Clinical Practice Guidelines: Pregnancy Care: 2018 Edition. 2018.

Action on iodine

Tasmania has a longstanding interest in iodine nutrition. The Tasmanian Ministerial Thyroid Advisory Committee was first established in 1968 and still meets today.

Tasmania has led work to develop standards for iodine fortification of bread in Australia and New Zealand. It has also actively supported recommendations for pregnant and breastfeeding women to take supplemental iodine.

Priorities for iodine action in Tasmania include:

- overseeing monitoring of iodine nutrition in the population through five-yearly urinary iodine surveys of Tasmanian school children
- increasing awareness among health professionals and pregnant and breastfeeding women of the importance of iodine supplementation
- regularly monitoring the iodine content of dairy milk (a major source of dietary iodine)
- investigating Tasmanian dairy farming practices in collaboration with the Tasmanian Dairy Industry Authority to determine the factors that affect iodine concentration in milk
- using and promoting research on iodine, thyroid status and health.

Folate

Neural tube defects (NTD) are serious birth defects of the brain and spinal cord (including anencephaly, encephalocele and spina bifida) which can cause infant deaths and lifelong disability. Adequate folic acid (the synthetic form of folate used in supplements) taken periconceptually (before and during early pregnancy) reduces the risk of neural tube defects.[43]

Mandatory fortification of bread with folic acid was implemented in Australia in 2009, resulting in a 14 per cent overall decrease in rates of neural tube defects, and greater reductions in NTD-affected pregnancies in Aboriginal and Torres Strait Islander (74 per cent) and teenage (55 per cent) populations.[44]

However, fortification of bread with folic acid is insufficient to ensure adequate intake by women around the time of conception, population-wide. Recommendations remain for low risk women to take a 500-microgram supplement of folic acid before, and in the early stages of, pregnancy.[45]

In 2016, 38 per cent of pregnant women in Tasmania reported taking a folic acid supplement before or after conception. Mothers who gave birth in a private facility were more likely to report taking folic acid (46 per cent) than mothers who gave birth in a public facility (34 per cent).

Only 9 per cent of mothers reported taking supplemental folic acid as recommended both before and after conception, including 22 per cent of mothers who gave birth in a private facility but only 2 per cent of mothers who gave birth in a public facility.[46]

[43] De-Regil LM, Fernández-Gaxiola AC, Dowswell T, Peña-Rosas JP. Effects and safety of periconceptional folate supplementation for preventing birth defects. Cochrane Database Syst Rev. 2010 Oct 6; (10): CD007950. doi: 10.1002/14651858.CD007950.pub2.

[44] Australian Institute of Health and Welfare. Web report: Folic acid & iodine fortification. 2016 https://www.aihw.gov.au/reports/food-nutrition/folic-acid-iodine-fortification/contents/summary

[45] Australian Government Department of Health. Clinical Practice Guidelines: Pregnancy Care: 2018 Edition. 2018.

[46] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government, 2018.

Awareness of the importance of taking periconceptual folic acid among women in Tasmania aged 19 to 50 is also low; only 8 per cent identified preventing birth defects as the reason women are advised to take periconceptual folic acid.[47]

These findings show the need to raise the awareness of health workers and women and their families of the need to achieve higher rates of periconceptual folic acid supplementation among women in Tasmania.

Breastfeeding

Breastfeeding has many health benefits. For infants, it improves developmental outcomes and protects them against conditions ranging from gastrointestinal infections to obesity in childhood and later life; for the mother, breastfeeding promotes faster recovery from childbirth, reduces risks of breast and ovarian cancers in later life, and reduces the risk of maternal depression. Breastfeeding also improves bonding between mother and infant.[48]

Exclusive breastfeeding is recommended until around 6 months of age, when complementary foods and drinks are introduced. After complementary foods and drinks are introduced, breastfeeding should continue until 12 months old and beyond, for as long as the mother and baby desire.[49]

In 2016, most women (84 per cent) in Tasmania who had recently given birth said they had started breastfeeding by the time they left hospital. This level of breastfeeding at discharge from maternity services has remained relatively stable for some years. Mothers who gave birth in private hospitals are more likely to breastfeed (90 per cent) than those who gave birth in public hospitals (80 per cent).[50]

However, in Tasmania, and Australia-wide, the substantial decline in breastfeeding through the early months of life is a concern.[51] Child health services visits in Tasmania suggest fewer than half of infants are exclusively breastfed at four months old.[52]

Increasing breastfeeding will improve health, but this requires a broad range of actions.

[47] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.
[48] World Health Organization (WHO), UNICEF. Global strategy for infant and young child feeding. WHO, 2003.
[49] National Health and Medical Research Council. Australian Dietary Guidelines. NHMRC, 2013.
[50] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government, 2018.
[51] Australian Institute of Health and Welfare. 2010 Australian National Infant Feeding Survey: indicator results. AIHW, 2011.
[52] Smith KJ. The Nutritional Status of Tasmanians. Menzies Institute for Medical research, University of Tasmania. 2018, citing Breastfeeding Coalition Tasmania. Breast feeding rates in Tasmania 2015. http://www.breastfeedingtas.org/breastfeeding_rates

Effective strategies to promote breastfeeding

A national enduring strategy for breastfeeding is being developed by the Australian Government in partnership with all states and territories and will guide action into the future.[53] Evidence indicates important ways to support breastfeeding include:

- Community education and awareness.
- Preventing inappropriate marketing of breastmilk substitutes.
- Baby friendly health services through the Baby Friendly Health Initiative.
- Health professional training to support breastfeeding.
- Supportive environments for breastfeeding in workplaces and childcare settings.
- Breastfeeding education, counselling and support during the antenatal and postnatal periods by health professionals and peer counsellors.
- Involving partners and other support people in breastfeeding education.
- More intensive or specialised support available for priority groups.[54]

[53] Department of Health. Australian National Breastfeeding Strategy: 2019 and Beyond https://consultations.health.gov.au/population-health-and-sport-division/breastfeeding/ Australian Government, 2018.

[54] Smith J, Cattaneo A, Iellamo A, Javanparast S, Atchan M et al. Review of effective strategies to promote breastfeeding: an Evidence Check rapid review brokered by the Sax Institute (www.saxinstitute.org.au) for the Department of Health, 2018.

Case study

Family Food Patch mobilises community to promote healthy eating

Parents often report problems and frustrations around feeding their children.

They want to know more about providing a healthy diet; managing fussy eaters; providing healthy, delicious snacks and lunchbox ideas; cooking nutritious food on a budget; introducing solids; and providing healthy drinks.

In later years, fun ideas to get children active become a key concern.

The Family Food Patch program, launched in 2001, helps improve the health and wellbeing of Tasmanian children and families through promoting healthy eating and physical activity.

Using peer education, the program empowers families and local communities by building and mobilising skills in children's nutrition, physical activity and community action.

Volunteer Family Food educators get free training and information to help them respond to the common food and physical activity concerns of parents.

Since 2001, training has been provided to almost 400 parents, carers and community and health workers around Tasmania.

Family Food educators promote healthy messages though activities such as workshops with parent groups; nature play groups and walking school buses; practical activities like taste testing and cooking; community newsletters; role modelling healthy behaviour; and helping sporting groups and school canteens to provide better food and drink choices.

The Family Food Patch program is delivered by the Child Health Association of Tasmania with support from Public Health Services (Department of Health).

4.7 Physical inactivity

Physical inactivity is an important cause of preventable disease and death in Australia. It was responsible for 5 per cent of the total burden of ill-health and premature death in Australia in 2011. Physical inactivity is associated with cardiovascular disease, type 2 diabetes, some types of cancer and mental health problems.[55]

Adults

National guidelines recommend adults aged 18 to 64 years do 150 to 300 minutes of moderate activity or 75 to 150 minutes of vigorous physical activity (or a combination of both) each week, as well as muscle strengthening activities at least two days a week.[56]

The *Tasmanian Population Health Survey 2016* found 81 per cent of Tasmanians aged 18 to 64 years reported doing sufficient physical activity to meet the guidelines, but only 29 per cent reported sufficient muscle strengthening activity.[57]

By contrast the Australian Health Survey of Physical Activity in 2011-12 estimated that around 40 per cent of Tasmanian adults had been sufficiently physically active in the previous week to meet the health-based target;[58] the Tasmanian estimate from the 2014-15 National Health Survey in 2014-15 was around 50 per cent.[59]

The *Tasmanian Population Health Survey 2016* also found:

- activity levels were similar among males and females, and in the three Tasmanian regions
- activity levels declined slightly with increasing age, and were slightly higher among people in the two least disadvantaged socioeconomic quintiles
- sedentary behaviour (sitting for 8 or more hours a day) was reported by 17 per cent of adults on weekdays, and by 10 per cent on weekends and was similar across regions and socioeconomic quintiles
- active transport involves walking, running or cycling for 10 or more minutes during the trip to and from work, shopping or other activities. 57 per cent of adults had used no active transport during the seven days before their response to the survey; around a quarter had used active transport on four or more of the past seven days. More of younger adults (aged 18 to 24 years) and people in the least disadvantaged socioeconomic quintile reported using active transport.

Children and teenagers

National guidelines recommend that for good health children aged three to five years should spend at least 180 minutes a day in a variety of physical activities, including 60 minutes of energetic play. Children and adolescents aged five to 17 years should do at least 60 minutes of moderate to vigorous physical activity every day.[60]

In 2011-12 only one-third of Tasmanian children aged between two and 17 years met their recommendations for daily physical activity.[61]

[55] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016.

[56] Department of Health. Australia's Physical Activity & Sedentary Behaviour Guidelines. 2014. http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines

[57] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

[58] Australian Bureau of Statistics. 4364.0.55.004 Australian Health Survey: Physical Activity, 2011-12.

[59] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

[60] Department of Health. Australia's Physical Activity & Sedentary Behaviour Guidelines. 2014. http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines

[61] Australian Bureau of Statistics. 4364.0.55.004 Australian Health Survey: Physical Activity, 2011-12.

Case study

Port Sorell gets active for health

Active travel is a proven way to help people get healthier by weaving regular physical activity into their day.

With this in mind, the community in Port Sorell, near Devonport, took an active and healthy interest in the development of its new primary school.

Latrobe Council, Department of Education, Port Sorell Primary School staff and the community came together to improve student safety and encourage active travel such as walking, cycling and scooting to and from school.

The team consulted widely and researched walking and cycling routes to the school from surrounding residential areas.

Engineering works improved connectivity, path safety and road crossings, and Latrobe Council staff planned footpaths and cycleways to connect the school with existing and new residential areas.

Bike racks were installed at the school and at selected recreational sites around town to encourage children to ride to school and to join after-school activities.

The result is most students now make their way to school independently, getting sunshine and physical activity along the way.

The integrated footpaths and cycleways have created a welcoming environment and a sustainable network of transport for active travel for the whole community.

4.8 Overweight and obesity

Overweight and obesity

Addressing the increasing prevalence of the global population who are overweight or obese is a great contemporary public health challenge.[62] Excess weight, especially obesity, is a major risk factor for cardiovascular disease, type 2 diabetes, kidney disease, some musculoskeletal conditions, and some cancers.[63]

High body mass was responsible for 5.5 per cent of the total burden of ill-health and premature death in Australia in 2011.[64] Overweight and obesity also places a significant burden on society through indirect health costs and lost productivity.[65]

The National Health Survey 2014-15 found 61 per cent of Tasmanian adults were overweight or obese, as were 28 per cent of children aged five to 17 years.[66] The age-standardised prevalence of overweight or obesity among Tasmania adults (66 per cent) was the highest of any Australian state or territory.[67]

The Tasmanian Population Health Survey[68] measures overweight and obesity from self-reported height and weight. While self-reported height and weight are likely to underestimate overweight and obesity,[69] this survey series provides information on trends over time and comparisons between sub-population groups within Tasmania.

[62] World Health Organization. Obesity and overweight key facts. 2018. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

[63] Centers for Disease Control and Prevention. The Health Effects of Overweight and Obesity. 2015 https://www.cdc.gov/healthyweight/effects/index.html

[64] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016.

[65] PricewaterhouseCoopers. Weighing the cost of obesity: A Case for action. 2015. https://www.pwc.com.au/pdf/weighing-the-cost-of-obesity-final.pdf

[66] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

[67] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

[68] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

[69] John U, Hanke M, Grothues J, Thyrian JR. Validity of overweight and obesity in a nation based on self-report versus measurement device data. Eur J Clin Nutr. 2006; 60(3): 372-7.

The Tasmanian Population Health Survey[70] shows:

- among Tasmanian adults overweight and obesity (combined) increased from 54 per cent in 2009 to 60 per cent in 2016
- among women overweight and obesity increased from 49 per cent in 2009 to 57 per cent in 2016 (obesity increased from 18 per cent to 26 per cent)
- among men overweight and obesity was 60 per cent in 2009 and 63 per cent in 2016 (obesity was 20 per cent in 2009 and 23 per cent in 2016)
- in 2016, 25 to 30 per cent of adults in the four most disadvantaged SEIFA quintiles reported that they were obese, compared with 18 per cent in the least disadvantaged SEIFA quintile
- the prevalence of adult obesity did not change from 2009 to 2016 in the most disadvantaged SEIFA quintile, but increased at lesser levels of disadvantage
- the prevalence of overweight and obesity was similar in all three regions (South, North and North West) of the Tasmania in 2016.

Overweight and obesity among Tasmanian Aboriginal people was similar to the overall Tasmanian population with 64 per cent reporting they were overweight or obese in 2012-13.[71]

Obesity during pregnancy poses additional health risks for the mother during pregnancy and childbirth, and for the growing child. Overweight or obese pregnant women are at higher risk of developing gestational diabetes, a form of diabetes that increases the risk of health problems for mother and baby. Based on self-reported weight and height, almost half of the women who gave birth in Tasmania in 2016 were overweight or obese at their first antenatal visit.[72]

Efforts to reduce overweight and obesity

With approaching two-thirds of Tasmanians overweight or obese we must focus on prevention and whole-of-population approaches. We need to enable and help people to eat well and be physically active by changing the environments in which we live, work, play and learn. A focus on weight and body image can have unintended consequences for mental health and wellbeing, so our actions should avoid stigmatising people already overweight or obese.[73]

The *Healthy Tasmania Five Year Strategic Plan* identifies the importance of healthy eating and physical activity for health. It also identifies that what we eat and drink, and how active we are, are powerfully influenced by pervasive systems beyond the health sector.[74]

[70] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.
[71] Australian Bureau of Statistics 4727.0.55.001 Australian Aboriginal and Torres Strait Islander Health Survey: First Results, 2012–13.
[72] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government, 2018.
[73] Puhl RM, Heuer CA. Obesity Stigma: Important Considerations for Public Health. Am J Public Health. 2010; 100(6): 1019–1028.
[74] Tasmanian Government. Healthy Tasmania Five Year Strategic Plan. 2016.

These understandings provide a rationale for a whole-of-government whole-of-community approach to improving healthy eating and physical activity for all Tasmanians. Such an approach is central to the objectives of the Premier's Health and Wellbeing Advisory Council in fostering a Health in All Policies (HiAP) approach to improve the health and wellbeing of all Tasmanians.

In 2018, an Australian Senate Select Committee undertook an inquiry onto the obesity epidemic in Australia and made wide-ranging recommendations for improving foods, managing obesity, and providing education about diet and physical activity.[75]

The epidemic of overweight and obesity is not an insoluble problem. Tackling it will need investment in imaginative, sustained action on many fronts, evaluation of what we do, and using and generating evidence relevant to Tasmania. The governance of actions and our expectations of outcomes need to acknowledge complexity, and that an epidemic built over decades will take some time to control.

4.9 Hypertension

Hypertension (blood pressure) caused 5 per cent of the total burden of ill-health and premature death in Australia in 2011. This burden included coronary artery disease, stroke, other heart and vascular disease, and chronic kidney disease.[76]

In 2014-15, the prevalence of self-reported hypertension in Tasmania was 16 per cent. The age-standardised prevalence of self-reported hypertension was 13 per cent, the highest of all jurisdictions and higher than for Australia overall (10 per cent).

Among Tasmanians aged 18 years and older, the age-standardised prevalence of measured high blood pressure (≥140/90 mmHg) was 25 per cent, the highest of all jurisdictions and higher than for Australia overall (22 per cent).[77]

[75] The Senate. Select committee into the obesity epidemic in Australia: final report. Commonwealth of Australia, 2018.

[76] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016.

[77] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

Case study

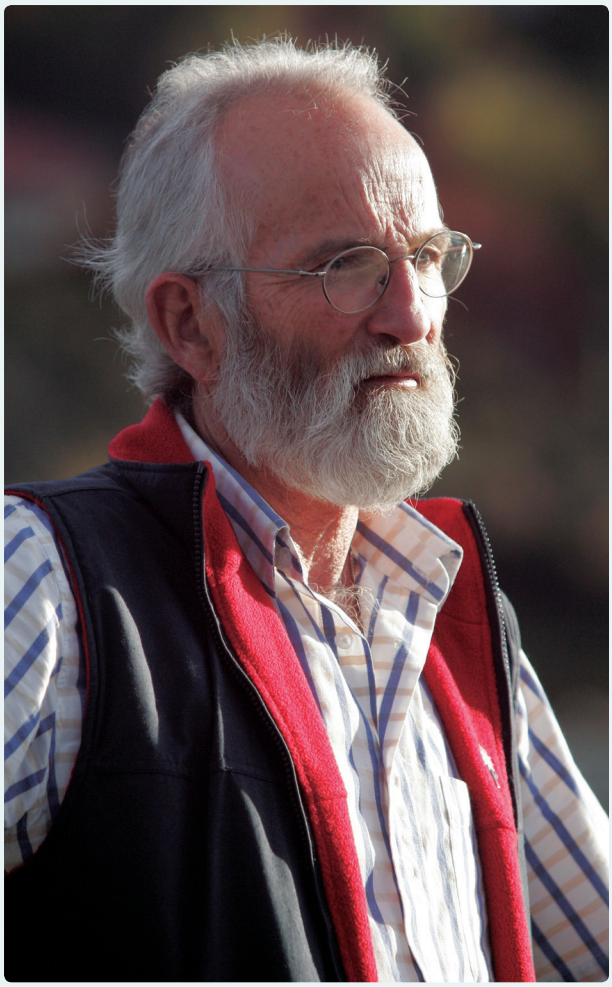
Anticipatory care: engaging Launceston men to cut heart disease risk

We know healthcare services can find it difficult to reach those at most risk of chronic illness, and men are often particularly difficult to reach.

Anticipatory care is one community-driven approach to understanding and responding to the difficulty of engaging with some people to prevent or slow deterioration of their health.

Through building relationships and by recognising the social context in which they live, anticipatory care helps people become 'co-producers' of their health.

A two-year University of Tasmania (UTAS) study of men in Rocherlea and Ravenswood in suburban Launceston aimed to improve health literacy in hard-to-reach populations to reduce the risk of heart disease.



The study combined community engagement with health literacy profiling to help improve health outcomes and reduce health inequalities.

UTAS conducted baseline measures on 35 men for health literacy, lifestyle, health service use and heart risk; 10 had in-depth interviews.

About a third of participants were considered 'hard to reach' and had not generally connected to their local primary care service.

The researchers created profiles on the study's data and developed case studies about the men's health service experiences.

These stories were fed back to service providers to help their services meet the needs of the community and participants.

Some of these men have since created a Men's Shed to connect with others who may not typically engage with primary health services.

Most recently these men and others have joined an action learning project to discuss how they can improve their health and their relationships with healthcare providers.

4.10 Tobacco and electronic cigarettes

Smoking

Tobacco smoking is the leading cause of preventable disease and death in Australia. In 2011 it was responsible for 9 per cent of the total burden of ill-health and premature death in Australia. This burden was from diseases including lung cancer, chronic obstructive pulmonary disease, heart disease, stroke, asthma and various other cancers.[78]

Smoking rates in Tasmania appear to be declining but the challenge to achieve much lower rates remains.

Data on smoking in Tasmania are available from various sources, generated at different times and with some differences in methodology and detail. While these may appear to provide slightly different accounts of smoking trends, the main messages from data sources are mostly similar.

The National Health Survey 2014-15 found the prevalence of current smoking (daily or occasional smoking) among Tasmanians aged 18 years and older was 18 per cent, and as high as 29 per cent among 35 to 44 year-olds. In this survey, the age-standardised prevalence of current smoking was 19 per cent, the second highest among Australian jurisdictions (range, 12 to 20 per cent, Australia overall 15 per cent).[79]

The slightly later Tasmanian Population Health Survey 2016 found:

- 16 per cent of Tasmanians aged 18 years and over reported they were current smokers, significantly less than 20 per cent in 2009
- 18 per cent of Tasmanians aged 18 to 24 years reported they were current smokers, compared with 23 per cent in 2009
- population groups with the highest prevalence of current smokers were men and women aged 25 to 34 years and men aged 35 to 54 years
- 26 per cent of Tasmanians who identified as Aboriginal or Torres Strait Islander reported being current smokers – a significantly greater proportion than Tasmanians overall
- smoking prevalence was related to socio-economic disadvantage. The proportion of Tasmanians living in the most disadvantaged areas who were current smokers was 25 per cent, whereas in the least disadvantaged areas it was 10 per cent. Further, the prevalence of smoking in the most disadvantaged areas of Tasmania was unchanged from 2009 to 2016, but was trending down at all lesser levels of disadvantage
- most respondents (95 per cent) reported they lived in households where residents never smoked inside, a significant increase from 91 per cent in 2009.[80]

[78] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016.

[79] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

[80] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

Case study

Social media delivers unfiltered smoke-free messages to young people

In 2017, the Menzies Institute of Medical Research and the Department of Health explored how social media could broaden the reach of smoke-free messages to young Tasmanians.

Social media channels such as Facebook and Instagram were used to deliver messages from the Smoke free generation – be a part of it! campaign using pictures, text and videos.

Peer-led interventions were also tested with social media ambassadors, increasing the reach of messages.

The project also included paid advertising, prizes and a call to action to make a smoke-free pledge on the smoke-free generation website.

Following the active social media phase, focus groups with young Tasmanians were held to get feedback.

These young people supported the use of social media to deliver messages but also strongly recommended the channels be used in addition to a physical, direct presence at schools with visual cues such as handouts, merchandise and resources.

More than 15 000 young Tasmanians saw the smoke-free generation messages, which led to a significant increase in users of the program's website.

The project provided useful information about what works to engage young people and enabled thousands of young Tasmanians to see smoke-free messages they may otherwise have missed.

Smoking by younger Tasmanians

Most young Tasmanians do not smoke. A survey of Tasmanian secondary school students in 2014 found the current smoking rate in 12 to 17 year-olds students continued to decline, but around 20 Tasmanian students still took up smoking every week.[81]

- In 2014, 6 per cent of Tasmanian secondary school students aged 12 to 17 years reported having smoked in the past seven days (were current smokers).
- The prevalence of being a current smoker was 1 per cent among 12 to 13 year-old students, increasing to 14 per cent of 17 year-olds.
- The age when young people most commonly take up smoking has increased over the past decade, with the highest incidence of becoming a current smoker occurring at around age 15 to 16 years for male students, and around 16 to 17 years for female students.
- From 2008 to 2014, the prevalence of current smokers among 12 to 15 year-olds declined significantly from 5 per cent to 3 per cent; among 16 to 17 year-olds the decline was from 17 per cent to 13 per cent (but was not statistically significant). The trend in decline in each age group was similar among male and female students.

[81] Centre for Behavioural Research in Cancer, Cancer Council Victoria. Australian School Students' Alcohol and Drug (ASSAD) Survey: The use of alcohol, tobacco, over-the-counter substances and illicit substances, among Tasmanian secondary school students in 2014 and trends over time. 2016. Cancer Council Tasmania.

- Most teenage smokers reported obtaining their last cigarette from a non-retail source such as a friend (44 per cent) or parent (6 per cent) or having someone else buy them for them (25 per cent)
- These findings provide detailed insights into the smoking behaviour of teenage Tasmanian school students, but may not apply to teenagers no longer at school.

Action on smoking and young people

Targeting youth smoking is crucial because people who do not starting smoking during their teens and early adulthood are unlikely to become long-term or life-long smokers.

The *Tasmanian Tobacco Control Plan 2017-2021* provides direction on ways to reduce tobacco use and its harms through actions by all sectors and levels of government over the next several years.

The plan has three working groups: addressing smoking by young people (to prevent smoking uptake, aid quitting and promote smoke-free environments); smoking in priority populations (including pregnant women, middle-aged men, Aboriginal people, and people with mental ill-health and from low socio-economic areas); and evaluation of the plan.

The *Healthy Tasmania Five Year Strategic Plan* of 2016 addresses tobacco use. Measures include a commitment to effective levels of social marketing; targeted quit campaigns; strategies to help pregnant women to quit; increased licence fees; increased penalties for supplying a tobacco product to a minor; regulation of the sale, use and promotion of electronic cigarettes; and support for activities that address the illicit tobacco trade.

For people under 25 years, these strategies aim to halve the gap between the Tasmanian and national smoking rates by 2020, and reduce their smoking rates to less than the national average by 2025. For all Tasmanians they aim to reduce the overall smoking rate to 10 per cent by 2020, and to 5 per cent by 2025.

Smoking during pregnancy

Smoking during pregnancy harms both mother and baby. Smoking increases the risk of miscarriage, stillbirth, ectopic pregnancy and premature birth. Smoking increases the risk of low birthweight and may harm foetal heart and lung development.[82]

Smoking in pregnancy remains a significant health problem in Tasmania.[83]

- In 2016, 13 per cent of Tasmanian women reported continuing to smoke tobacco during pregnancy. This is a decline from 28 per cent in 2005 but the rate of decline appears to be slowing.
- The prevalence of smoking remains much higher among teenage mothers (35 per cent) and in women aged 20 to 24 years (23 per cent) than women aged 26 years and older (12 per cent).
- The prevalence of maternal smoking in Tasmania in 2016 was much higher among public patients (17 per cent) than private patients (2 per cent), although prevalence has declined significantly among both since 2005.
- A low birthweight (LBW) baby (weighing less than 2 500g) was much more common in 2016 among women who reported smoking during pregnancy (15 per cent) than among women who reported not smoking during pregnancy (6 per cent). Other confounding factors that also increase the risk of LBW babies may also be present among maternal smokers and contribute to LBW babies in this population.

Case study

Breath tests in pregnancy helps in quitting smoking

Many pregnant women who smoke may not admit they are smokers at medical appointments, which makes referral for smoking cessation less likely.

However, the routine use of exhaled carbon monoxide (CO) monitoring helps identify pregnant women who may be smoking.

A high CO reading – commonly linked to smoking – can lead to better engagement about smoking and a referral to quitting support.

In 2017, a six-week project at the Royal Hobart Hospital tested the effect of CO monitoring on referrals to smoking cessation support. Pregnant women with high readings could choose to receive help to quit smoking. The project showed Tasmanian women responded well to a CO test and are more open to a referral to quit smoking if they have a high CO reading.

A 12-month evaluation of the intervention began in 2018 with a view to implementing CO monitoring statewide. Early indications are that screening, referral and counselling led to better uptake of smoking cessation support.

Should these findings be substantiated, wider implementation is likely to help reduce both smoking during pregnancy and the resulting harms to Tasmanian women and their babies.

[82] Ford, C, Greenhalgh, EM & Winstanley, MH. 3.7 Pregnancy and smoking. In Scollo, MM and Winstanley, MH [editors]. Tobacco in Australia: Facts and issues. Melbourne: Cancer Council Victoria; 2015. http://www.tobaccoinaustralia.org.au/3-7-pregnancy-and-smoking

[83] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government. 2018.

Electronic cigarettes

Electronic cigarettes (e-cigarettes) are devices that produce a vapour the user inhales (vaping), replicating smoking behaviour. Most e-cigarettes contain a battery, a vaporisation system and a cartridge containing liquid with various flavouring agents, preservatives and sometimes nicotine.

E-cigarette use appears to be increasing nationally and in Tasmania.

- In Australia in 2016, 7 per cent of 12 to 17 year-olds had ever used an e-cigarette. 9 per cent of people aged 18 years and over had ever used an e-cigarette. The highest prevalence of ever use was among 18 to 24 year-olds (19 per cent). In all age groups the prevalence of ever use roughly doubled from 2013 to 2016 with increases among smokers and non-smokers, including young adult non-smokers.[84]
- In 2015, a Cancer Council Tasmania survey found 82 per cent of Tasmanians aged 18 years and older had heard of e-cigarettes, including nearly all adults aged under 30 years. Of those adults aware of e-cigarettes, 15 per cent had ever tried one, including 31 per cent of 18 to 29 year-olds, and 58 per cent of current smokers, 9 per cent of former smokers and 4 per cent of people who had never smoked. Progression to regular e-cigarette use appeared to be relatively uncommon, with about 3 per cent of those who had tried e-cigarettes reporting regular use.
- In Tasmania in 2014, 12 per cent of Tasmanian students aged 12 to 17 years reported ever having used e-cigarettes, ranging from 4 per cent of 12 to 13 year-olds to 22 per cent of 17 year-olds, including 31 per cent of male 17 year-olds and 14 per cent of female 17 year-olds.
- Around one in five students in Tasmania reported have seen e-cigarette advertising on one or more of television, the internet or Facebook, convenience stores, printed media or in public places.[85]

The role of e-cigarettes in potentially reducing tobacco-related harms at the population level remains unclear. A key question is the extent to which e-cigarettes help tobacco smokers quit and whether they are more effective than existing cessation strategies. It is plausible any cessation benefits of e-cigarettes may depend on nicotine content.

Against this potential benefit, we must balance the risk of harms such as renormalisation of smoking behaviour, e-cigarette users taking up tobacco smoking, and e-cigarettes contributing to maintenance of tobacco smoking among users of e-cigarettes and tobacco.

Also, there is still limited understanding of the toxicology of the chemicals in e-cigarette liquids.

Nicotine is a scheduled poison in Australia and may only be legally possessed in e-cigarette liquid obtained with a prescription. Illegal acquisition of nicotine-containing e-cigarette liquid through buying online and covert supply are likely to be quite common.

Precipitously providing to the public a minimally controlled new way to establish and maintain nicotine addiction would be a grave risk given the contribution of nicotine to the greatest public health disaster of the twentieth century.

[84] Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. AIHW, 2017.

[85] Centre for Behavioural Research in Cancer, Cancer Council Victoria. Australian School Students' Alcohol and Drug (ASSAD) Survey: The use of alcohol, tobacco, over-the-counter substances and illicit substances, among Tasmanian secondary school students in 2014 and trends over time. 2016. Cancer Council Tasmania.

Achievements in tobacco policy 2013 to 2018

Although smoking prevalence in Tasmania is still higher than the Australian average, fewer adults smoke and fewer young people are taking it up.

National achievements in tobacco control in recent years include regular increases in tobacco excise and plain packaging of tobacco.

Within Tasmania, the licence fee to sell tobacco has tripled and new laws regulate the display, sale and use of e-cigarettes. Smoke free public events or those with designated smoking areas have increased and prisons are smoke free. Compliance with tobacco control laws is high. Increased funding has enabled the airing of anti-tobacco campaigns at levels known to affect smoking behaviours.

Actions focusing on population groups with high smoking prevalence include the national *Tackling Indigenous Smoking* program (Aboriginal people), *A Smoke Free Start for Every Tasmanian Baby 2014-2017* (pregnant women) and *Smoke Free Young People Strategy 2013-2017* (young people).

Ongoing challenges in tobacco

The smoking goals of the *Healthy Tasmania Five Year Strategic Plan* are ambitious but appropriate mileposts for a determined effort to extinguish smoking. For us to achieve this we will need to address both foreseeable and new challenges, including:

- continuing to change social norms and community attitudes about smoking, for example around secondary supply to young people
- supporting local councils to expand smoke-free areas
- negotiating the changing media environments to communicate smoke-free messages
- generating good evidence about smoking prevalence and determinants among population groups including Tasmanian Aboriginal people and people with mental illness
- understanding the vast and ever-increasing body of evidence about smoking
- assessing the risks of new smoking products such as e-cigarettes and heat-not-burn tobacco products
- exploring new domains for regulatory control such as the contents and engineering of smoking products, the socio-geography of the sale of smoking products and age-based restriction of access to smoking products.

4.11 Alcohol

Alcohol use was responsible for 5 per cent of the total burden of ill-health and premature death in Australia in 2011. This burden was directly from alcohol use disorders, and from contributions to suicide and self-inflicted injuries, road traffic and other injuries, heart disease, stroke, liver disease, homicide and violence, various cancers and other health harms.[86]

The 2016 *National Drug Strategy Household Survey* found 48 per cent of Tasmanian men and 38 per cent of women drank alcohol daily or weekly.[87]

Long-term risk of harm from alcohol

The NHMRC recommends healthy men and women should drink no more than two standard drinks a day to reduce their risk of harm from alcohol-related disease or injury over a lifetime.[88]

The 2016 National Drug Strategy Household Survey found 18 per cent of Tasmanians aged 14 years or older exceeded this guideline (25 per cent of males and 10 per cent of females). This slight decline from 20 per cent in 2010 was largely because fewer males exceeded the guideline.

Almost one in four Tasmanians aged 20 to 49 years drank at levels associated with lifetime risk.

The age-standardised proportion of people at lifetime risk was 19 per cent in Tasmania, compared with 17 per cent in Australia overall.[89]

In a 2014-15 survey, 15 per cent of Tasmanian Aboriginal people aged 15 years or older reported they exceeded the lifetime risk guideline level.[90]

Single-occasion risky drinking

Drinking more than four standard alcoholic drinks on a single-occasion is associated with risk of alcohol-related injury.[91]

In 2016, the *National Drug Strategy Household Survey* found 41 per cent of Tasmanians aged 14 years or older exceeded this guideline (53 per cent of males and 29 per cent of females).

The age-standardised proportion of people reporting single-occasion risky drinking was 45 per cent in Tasmania compared with 38 per cent in Australia overall.

The 41 per cent of Tasmanians aged 14 years or older who reported single occasion risky drinking at least once a year included 14 per cent who did so weekly and another 12 per cent who did so at least monthly. A greater proportion of males (22 per cent) than females (7 per cent) reported weekly single-occasion risky drinking.

The prevalence and frequency of single-occasion risky alcohol drinking changed little in Tasmania between 2010 and 2016.[92]

In a 2014-15 survey, 36 per cent of Tasmanian Aboriginal people aged 15 years or older reported they exceeded the single-occasion risk guideline level.[93]

[86] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016.

[87] Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. AIHW, 2017.

[88] National Health and Medical Research Council. Australian Guidelines to Reduce Health Risks from Drinking Alcohol. Commonwealth of Australia 2009.

[89] Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. AIHW, 2017.

[90] Australian Bureau of Statistics. 4714.0 National Aboriginal and Torres Strait Islander Social Survey, Australia, 2014-15.

[91] National Health and Medical Research Council. Australian Guidelines to Reduce Health Risks from Drinking Alcohol. Commonwealth of Australia 2009.

[92] Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. AIHW, 2017.

[93] Australian Bureau of Statistics. 4714.0 National Aboriginal and Torres Strait Islander Social Survey, Australia, 2014-15.

Case study

Simulation sways new Tasmanian alcohol harm reduction plan

Alcohol-related harm has many interrelated causes and it can be difficult to know which interventions are likely to have most community benefit.

Dynamic simulation modelling is a 'what if' tool that helps policy makers test the likely effect of possible policy solutions before implementing them in the real world.

The Department of Health worked with the Australian Prevention Partnership Centre to use dynamic simulation modelling to test approaches to alcohol-related harms in Tasmania.

The process – also involving Alcohol and Drug Services, Children and Youth Services, Treasury's Liquor and Gaming licensing branch, Tasmania Police and the Education Department – will help in developing the Tasmanian Alcohol Action Framework.

It also united diverse stakeholders to tackle alcohol-related harms in the state. This is vital because the model found broad policy responses to alcohol harms, such as reducing availability of alcohol, can have a larger effect than a health response alone.

Alcohol and pregnancy

Alcohol can harm the foetus and baby by affecting the developing brain and body, with effects including a range of physical, mental, behavioural and learning disabilities collectively called Foetal Alcohol Spectrum Disorders. Higher levels of alcohol intake in pregnancy have been linked to premature birth, miscarriage and stillbirth.

For these reasons, the National Health and Medical Research Council recommends pregnant women or those planning pregnancy or breastfeeding should not drink alcohol.[94]

Alcohol consumption during pregnancy appears to be declining. In Tasmania, alcohol consumption during pregnancy declined steadily from 15 per cent in 2007 to 6 per cent in 2013. In subsequent years the prevalence varied, from 8 per cent in 2015 to 4 per cent in 2016.[95 96]

The prevalence of alcohol consumption during pregnancy appears related to maternal age. In 2016, 4 per cent or less of mothers aged under 35 years reported consuming alcohol during pregnancy, compared with 5 per cent or more of mothers aged 35 years and older. In recent years, the overall trend has been towards less drinking at all maternal ages.

Among pregnant women in 2016, less than 1 per cent reported drinking more than one alcoholic drink a day.

[94] National Health and Medical Research Council. Australian Guidelines to Reduce Health Risks from Drinking Alcohol. Commonwealth of Australia, 2009.
[95] Council of Obstetric and Paediatric Mortality and Morbidity Annual Report 2007. Department of Health and Human Services, 2009.
[96] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government, 2018.

Teenagers and alcohol

Data from a 2014 survey of Tasmanian secondary school students suggest that the proportion of Tasmanian teenage students who drink alcohol is falling.

Among 12 to 15 year-olds, the proportion of current drinkers (drank in the past 7 days) declined significantly from 21 per cent in 2008 to 10 per cent in 2014.

There were also declines in reported consumption of alcohol in the past month (from 28 per cent to 19 per cent) and in the past year (from 67 per cent to 43 per cent). These consumption patterns were broadly similar among young male and female students.

Among 16 and 17 year-olds, the proportion of current drinkers also declined significantly from 48 per cent in 2008 to 34 per cent in 2014. There were also significant declines in reported alcohol consumption in the past month (from 71 per cent to 54 per cent) and in the past year (from 93 per cent to 85 per cent). These trends in consumption patterns were similar among male and female students.

However, in 2014, around a third of 12 to 17 year-old current drinkers reported drinking more than four standard drinks on a single occasion in the past week.

The most common non-retail source of alcohol for 12 to 17 year-old current drinkers was parents (around 50 per cent).[97]

4.12 Illicit drug use and prescription drug misuse

Drug use was responsible for 2 per cent of the total burden of ill-health and premature death in Australia in 2011, directly from drug use disorders, and from contributions to chronic liver disease, liver cancer, and suicide and self-inflicted injuries.[98]

Illicit drug use contributes to a substantial burden of harm due to death, illness, injury, social and family disruption, lost opportunities for education and employment, and increases in crime.[99]

In 2016, 17 per cent of Tasmanians aged 14 years or older reported having used an illicit drug in previous 12 months, an increase from 12 per cent in 2010. The age-standardised rate in 2016 was 19 per cent, higher than for Australia overall (16 per cent) and the second highest of all jurisdictions.[100]

33 per cent of Tasmanians aged in their twenties reported using an illicit drug in the previous 12 months compared with 10 per cent of those aged 60 years and older.

Cannabis was the most commonly reported illicit non-pharmaceutical drug (12 per cent) while ecstasy, methamphetamine or amphetamine, cocaine and hallucinogens were each reported by around 2 per cent or less, and injected illicit drugs by less than 1 per cent.

The prevalence of cannabis and meth/amphetamine use in the past year was higher in Tasmania than for Australia overall, while reported use of ecstasy, and pain-killers and opioids was similar, and use of cocaine lower.[101]

[97] Centre for Behavioural Research in Cancer, Cancer Council Victoria. Australian School Students' Alcohol and Drug (ASSAD) Survey: The use of alcohol, tobacco, over-the-counter substances and illicit substances, among Tasmanian secondary school students in 2014 and trends over time. 2016. Cancer Council Tasmania.

[98] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016

[99] Ministerial Council on Drug Strategy. The National Drug Strategy 2010–2015. Commonwealth of Australia, 2011.

[100] Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. AIHW, 2017.

[101] Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. AIHW, 2017.

In 2015, Tasmania had the highest rate of prescribing of opioid medicines per capita in the country, and four of the 10 local areas (at Statistical Area Level 3) with the highest rate of opioid prescribing nationally.[102]

In 2016, Tasmania had 66 directly drug-related deaths (accidental, suicidal and other); due to illicit drugs, pharmaceutical pain medicines and sedatives, alcohol and other psychoactive substances. This corresponded to a rate of 12.1 per 100 000 people, the highest of reported jurisdictions and higher than the rate for Australia overall (8.9 per 100 000).

Deaths from pharmaceutical opioids have increased greatly in Australia – from an average of around 250 a year from 2002 to 2006, to over 500 in 2012 and over 700 a year from 2014 to 2016.

A marked increase in accidental pharmaceutical opioid deaths since 2011 in the more populous mainland jurisdictions has contributed substantially to the overall national increase in all deaths from pharmaceutical opioids.

The national per capita death rate from accidental pharmaceutical opioid overdose increased 2.4-fold from 2002-06 to 2012-16, with most jurisdictional rates at least doubling. In contrast, the rate increase between these periods was the lowest in Tasmania and the Northern Territory (each increasing 1.3-fold or 30 per cent).

From 2012 to 2016 there was an average of 14 pharmaceutical opioid related deaths a year in Tasmania (range 10 to 19), just over half (39 deaths in the 5 years) deemed accidental.[103]

Case study

Working together on over-the-counter codeine rescheduling

Strong evidence exists of increasing health risks from codeine use without supervision by a doctor; it can lead in some cases to death.

Safer and more effective treatments for many types of pain are available from pharmacists and general practitioners.

In 2016, the Therapeutic Goods Administration announced over-the-counter codeine-containing medicines for pain relief, cough and colds would be available by prescription only from 1 February 2018.

This decision presented significant implementation challenges, but also opportunities for Tasmania.

A diverse group was set up to ensure pharmacists, general practitioners and the hospital system were prepared for codeine rescheduling, and aware of the latest evidence for effective, safe pain treatments.

The group aimed to maximise the public health benefit of codeine rescheduling and minimise any unintended negative effects in Tasmania through joint general practitioner and pharmacist education sessions, a website and resources.

Successful outcomes included building better relationships across the health system; adding all prescription opioids to Tasmania's real-time prescription monitoring system; and getting all Tasmanian pharmacies to use this system when dispensing these substances.

[102] Australian Commission on Safety and Quality in Health Care and National Health Performance. Authority. Australian Atlas of Healthcare Variation. Sydney: ACSQHC, 2015.

[103] Penington Institute. Australia's Annual Overdose Report 2018. Penington Institute, 2018.

5. What we are dying from

5.1 Life expectancy at birth

A girl born in Tasmania in 2018 can expect to see the dawn of the next century; her male cousin born the same year can expect to live until late in the last decade of this century.

In 2015-2017, life expectancy at birth in Tasmania was 83 years for females and 79 years for males.[104]

Since 1985, the life expectancy of female Tasmanians has increased by five years and males by eight years. However, life expectancy at birth of Tasmanians remains between one and two years less than for Australians overall.[105]

5.2 Mortality rate

From 2007 to 2016, there was an average of 4 347 deaths per year in Tasmania, with numbers increasing steadily from around 4 000 to around 4 500, in line with an increasing and ageing population.

Calculating an age-standardised mortality rate (SMR) – the death rate of a population adjusted to a standard age distribution – enables comparisons of death rates between populations with different age structures. While the Tasmanian SMR has been decreasing, it remains the second highest in the nation (after the Northern Territory), and higher than for Australia overall.

The SMR in Tasmania in 2016 was 6.5 deaths per 1 000 population. The Australian SMR was lower, 5.5 deaths per 1 000 people. The SMR in Australia overall is influenced by the SMR in the populous mainland major cities, which has the lowest SMR for any category of remoteness.[106]

Almost all Tasmanians live in either inner regional or outer regional locations, where the SMR has continued to decline, but remains higher than the SMR in similar settings in Australia overall.

Table 1. Standardised mortality rate per 1 000 population by remoteness, Tasmania and Australia, 2006, 2011 and 2016[107]

	2006		2011		2016	
Remoteness	**Tasmania**	**Australia**	**Tasmania**	**Australia**	**Tasmania**	**Australia**
Major Cities	-	6.1	-	5.6	-	5.3
Inner Regional	7.0	6.6	6.6	6.2	6.4	5.9
Outer Regional	7.0	6.9	6.8	6.5	6.5	6.1
Remote and Very Remote	8.3	8.1	6.7	7.3	6.4	6.8
Total	7.1	6.3	6.7	5.9	6.5	5.5

[104] Australian Bureau of Statistics. 3302.0.55.001 Life Tables, States, Territories and Australia, 2015-2017.
[105] Australian Bureau of Statistics. 3105.0.65.001 Australian Historical Population Statistics, 2008.
[106] Australian Bureau of Statistics. 3302.0 Deaths, Australia, 2016.
[107] Australian Bureau of Statistics. 3302.0 Deaths, Australia, 2016.

5.3 Infant, perinatal and paediatric mortality rates

Infant mortality

Infant mortality is a measure of deaths of live-born infants during the first year of life. The infant mortality rate is the number of infant deaths for every 1 000 live births. Infant mortality provides important information about the health of mothers and babies, and is an indicator of the overall health of a population.

In Tasmania, there was an average of 25 infant deaths a year from 2012 to 2016 (range 21 to 31). Deaths in the neonatal period (the first 4 weeks of life) averaged 19 a year and comprised three-quarters of all infant deaths.

The infant mortality rate averaged 4.1 deaths per 1 000 live births from 2012 to 2016, similar to the preceding five years (4.0), but slightly higher than the Australian rate (3.3). Infant mortality rates in Tasmania are based on a relatively small number of deaths, and fluctuate from year to year.[108]

Perinatal mortality

Perinatal mortality is a measure of the loss of babies who were stillborn or died during the neonatal period. In Tasmania, there was an average of 63 perinatal deaths a year from 2012 to 2016 (range 59 to 73). Two-thirds of perinatal deaths were stillbirths.

Of the 62 deaths perinatal deaths in 2016, 43 were stillbirths and 19 were neonatal deaths. The overall perinatal mortality rate in Tasmania in 2016 was 10.5 per 1 000 births, similar to the overall Australian rate (9 per 1 000 births).[109]

Paediatric mortality

Paediatric mortality is a measure of deaths in the 29 days to 17 years age group (inclusive).

From 2012 to 2016, there were 103 paediatric deaths (average 21 a year, range 12 to 26), of which about a third were due to injury, another third due to acquired conditions (such as severe infections and childhood cancers) and the remainder due to conditions determined at birth and sudden unexpected death in infancy.

In 2016, there were 20 paediatric deaths in Tasmania, a paediatric mortality rate of 0.18 per 1 000 people aged up to 17 years, significantly lower than the overall Australian rate of 0.29 per 1 000. Nine of the 20 paediatric deaths in 2016 were due to injury, including six due to motor vehicle accidents and in two instances, suspected suicide; two sudden unexpected infant deaths in 2016 were associated with an unsafe sleeping environment.[110]

5.4 Principal causes of death

In 2016, two-thirds of all deaths in Tasmania (3 054 of 4 595 deaths) were due to various cancers, heart and vascular disease and respiratory disease.

Among males, ischaemic heart disease (359 deaths) was by far the most common cause of death, followed by lung cancer (148), chronic lower respiratory tract diseases (142), dementia (139), and cerebrovascular diseases (105). Among females, ischaemic heart disease (219 deaths) and dementia (219) were the most common causes of death, followed by cerebrovascular diseases (177), chronic lower respiratory tract diseases (137) and lung cancer (103).

[108] Australian Bureau of Statistics. 3302.0 Deaths, Australia, 2016.
[109] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government. 2018.
[110] Council of Obstetric and Paediatric Mortality and Morbidity. Annual Report 2016. Department of Health, Tasmanian Government. 2018.

Tasmania's age-standardised mortality rates were higher than for Australia overall for conditions including ischaemic heart disease; dementia, cancers of the colon, oesophagus and lung; diabetes mellitus; hypertensive diseases; chronic obstructive pulmonary disease; and intentional self-harm.[111]

5.5 Years of life lost

Years of potential life lost is a measure of premature or untimely death. It is based on the number of 'lost' years between age at death and the median life expectancy. In Australia, deaths between the ages of one and 78 years are included in these calculations. A cause of death will contribute relatively more years of life lost if it typically affects younger people.

Intentional self-harm (suicide) caused 2 per cent of deaths of Tasmanians in 2016, but resulted in the greatest loss of potential years of life (11 per cent or 2 771 years) due to the younger age of people dying by suicide.

The next largest contributors to potential years of lost life were ischaemic heart disease, which caused 13 per cent of deaths and 8 per cent of potential years of life lost; and lung cancer, which caused 6 per cent of deaths and 5 per cent of potential years of life lost. Dementia accounted for 8 per cent of deaths but only 1 per cent of potential years of life lost.[112]

5.6 Potentially avoidable deaths

Potentially avoidable deaths are those of people under 75 years due to selected conditions where deaths are potentially preventable (such as by screening or primary prevention such as immunisation), or potentially treatable by safe and high quality care to increase survival. The ability of the health sector to prevent and treat life-threatening conditions changes over time and so does the categorisation of potentially avoidable deaths.

Potentially avoidable deaths in Tasmania, measured by age-standardised mortality rates (SMR) fell by 30 per cent over the 22 years from 1990 to 2012. This decrease has slowed in Tasmania and Australia wide. However, Tasmania continues to have a higher burden of potentially avoidable mortality than Australia overall. Data from 2014 show:

- the Tasmanian SMR for potentially avoidable deaths was 132 per 100 000 (and comprised 18 per cent of all deaths) compared with the overall Australian SMR of 108 per 100 000
- the Tasmanian SMR for potentially avoidable deaths was similar to that of the population living outside greater capital cities across Australia (129 per 100 000)
- the SMR for potentially avoidable deaths was 105 per 100 000 for Tasmanian women and 159 per 100 000 for men
- a quarter of potentially avoidable deaths in Tasmania were due to ischaemic heart disease, while a further third were due to chronic obstructive pulmonary disease, suicide and colorectal cancer.[113]

[111] Australian Bureau of Statistics. 3303.0 Causes of Death, Australia, 2016.
[112] Australian Bureau of Statistics. 3303.0 Causes of Death, Australia, 2016.
[113] Australian Bureau of Statistics. 3303.0 Causes of Death, Australia, 2014.

6. Chronic conditions in Tasmania

Chronic conditions are persistent (greater than six months) or long-term illnesses that affect people of all ages, and include conditions that affect mental health and psychosocial wellbeing as well as physical health. Chronic conditions can reduce quality of life, diminish participation in everyday activities, work and education. They generate both direct personal costs for medicines and healthcare, and various indirect costs. Chronic conditions contribute substantially to the cost of all levels of healthcare.

6.1 Self-reported chronic conditions

In 2014-15 56 per cent of Tasmanians aged 15 years and over reported having three or more chronic health conditions, while 15 per cent reported none. The age-standardised prevalence of three or more chronic condition in Tasmania (50 per cent) was the highest of any Australian jurisdiction, while the age-standardised prevalence of none (17 per cent) was the lowest. For Australians overall, the age-standardised prevalence of three or more chronic conditions was 42 per cent and of none 21 per cent.

In 2014-15, the age-standardised prevalence of self-reporting of some important chronic conditions in Tasmania was significantly greater than for Australia overall. These included mental health and behavioural problems; arthritis; hypertension; and heart disease, stroke and vascular disease (Table 2).

The age-standardised prevalence of self-reported asthma and chronic obstructive pulmonary disease were slightly greater in Tasmania than Australia as a whole (but the difference was not statistically significant).

Other very common chronic conditions in Tasmania included hay fever or allergic rhinitis (crude prevalence 22 per cent), back problems (18 per cent), long sightedness (33 per cent), short sightedness (22 per cent) and hearing loss (14 per cent).

The prevalence of most of the reported chronic conditions has remained relatively stable in Tasmania over the past 10 years, with the notable exception of conditions relating to mental health, which have increased substantially. (Table 2).

Table 2. Age-standardised prevalence (per cent) of self-reported chronic conditions in Tasmania 2001-15 and Australia-wide (2014-15)[114]

	Tasmania					Aust.
	2001	2004-05	2007-08	2011-12	2014-15	2014-15
Mental health and related conditions	10.1	11.7	11.1	14.8	21.0	17.4
Arthritis	19.0	18.9	17.9	16.3	19.3	13.9
Hypertension	12.2	11.8	11.7	11.4	12.9	10.2
Heart, stroke and vascular disease	5.4	5.1	7.0	5.6	6.3	4.7
Asthma	11.7	13.4	11.9	11.9	12.8	10.8
Diabetes mellitus	3.2	2.8	3.5	4.2	4.2	4.7
Chronic obstructive pulmonary disease	3.2	2.7	2.9	2.9	3.0	2.4

6.2 Common chronic conditions

Cancer comprises a vast range of conditions, some common and many rare. Cancer is more common in older people and as Tasmania's population is ageing we expect cancer incidence to increase along with need for clinical care and the costs to society. However, the way we diagnose and treat cancer continues to advance, and the likelihood of prolonged healthy survival for many Tasmanians after a cancer diagnosis will continue to increase.

In 2015, 3 348 new cases of cancer were diagnosed in Tasmanians (1 838 males and 1 510 females), excluding non-melanoma skin cancer. This was a small increase over the previous year. New cancer diagnoses in Tasmania were relatively stable from 2011 to 2015.

In 2015, the overall age-standardised incidence of cancers (other than non-melanoma skin cancers) in Tasmania was 554 per 100 000 for males and 441 per 100 000 for females.[115]

From 2009 to 2013, the age-standardised incidence of all cancers combined in Tasmania was 509 per 100 000 (about one in 200 people per year). This was statistically significantly greater than the national incidence of 497 per 100 000 during the same period.[116]

New cancer diagnoses are uncommon among young to middle-aged adults. The incidence of cancer increases markedly among people aged over 60 years, among whom the incidence of cancer is greater among men (particularly due to prostate cancer) than women. Around one in 50 people aged in their seventies in Tasmania are diagnosed with cancer each year.

[114] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[115] Stokes B, Albion T, Otahal P, Venn A. Cancer in Tasmania: Incidence and Mortality 2015. Menzies Institute for Medical Research Tasmania, 2017.
[116] Australian Institute of Health and Welfare. Australian Cancer Database. 2014.

By age 75 years, around one in three men and one in four women have been diagnosed with cancer. By age 85 years, half of men and women in Tasmania have been diagnosed with cancer.

In 2015, the most common cancer diagnoses among men in Tasmania were prostate, colorectal, lung, skin melanoma and lymphomas. The most common cancers diagnosed in women were breast, colorectal, lung, skin melanoma and uterus. These cancers accounted for around two-thirds of new cancers among men and women and were also among the most common from 2011 to 2015.

There were 1 324 (735 male and 589 female) cancer-related deaths among Tasmanian residents in 2015, around 30 per cent of all deaths.

The proportions of all new cases of cancer in the South, North and North West regions of Tasmania are in keeping with the size of the population in these regions.[117]

The incidence of most common cancers was similar across the three Tasmanian regions, with the exception of prostate cancer, which had a slightly lower than expected incidence in Launceston and North-East Tasmania and a slightly higher incidence in the Hobart area. This is likely to represent differences in screening and diagnostic practice for a common disease.

Variation in the incidence of cancer in smaller Tasmanian geographic areas and populations can be difficult to interpret because of the relatively small numbers of cases.

Diabetes mellitus

Diabetes mellitus (diabetes) is a metabolic condition where the body cannot maintain healthy levels of glucose (a form of sugar) in the blood. High blood glucose levels can cause short- and long-term harms to health, including vascular disease with heart attack, stroke, limb amputations, kidney diseases and blindness.

The main forms of diabetes are type 1, type 2 and gestational diabetes (diabetes in pregnancy). Type 2 diabetes is by far the most common and is strongly linked to overweight and obesity.

In 2014-15, 5.3 per cent of Tasmanians (around 26 600 people) reported they had diabetes. The age-standardised prevalence of diabetes in Tasmania was 4.2 per cent, compared with the national prevalence of 4.7 per cent.[118]

A similarly quite low prevalence of 'diabetes/ high blood sugar' (3.6 per cent) was reported among Tasmanian Aboriginal people in the slightly earlier Australian Aboriginal and Torres Strait Islander Health Survey.[119]

The prevalence of self-reported diabetes in Tasmania will in part reflect a proportion of undiagnosed cases. As many as 30 per cent of people with diabetes in Tasmania may not yet have had their condition diagnosed.

It is unlikely the prevalence of diabetes in Tasmania is truly lower than elsewhere in Australia given the higher prevalence of overweight and obesity in Tasmania, and significantly higher hospital admission rates for diabetes complications. In 2015-16, the age-standardised admission rates for potentially preventable diabetes complications in Tasmania was 216 per 100 000, higher than the national rate of 183 per 100 000.

[117] Stokes B, Albion T, Otahal P, Venn A. Cancer in Tasmania: Incidence and Mortality 2015. Menzies Institute for Medical Research Tasmania, 2017.
[118] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[119] Australian Bureau of Statistics 4727.0.55.001 Australian Aboriginal and Torres Strait Islander Health Survey: First Results, 2012–13.

The prevalence of diabetes in the larger cities of Tasmania was 6 per cent, similar to that in smaller towns and more remote locations (5 per cent). However, 7 per cent of Tasmanians in the most disadvantaged population quintile reported having diabetes, compared with only 2 per cent in the least disadvantaged quintile.[120]

The age-standardised prevalence of self-reported current diabetes in the Tasmanian Population Health Survey of 2016 (8.1 per cent) was slightly higher than in the 2014-15 National Health Survey, and had increased since 2013 and 2009. This estimate may be closer to the true prevalence, albeit affected by restriction of the 2016 survey to Tasmanians aged 18 years and older.[121]

Heart and vascular disease

In 2014-15, the prevalence of self-reported heart disease, stroke or vascular disease in Tasmania was 7.7 per cent. The age-standardised prevalence of heart disease, stroke and vascular disease in Tasmania was 6.3 per cent, the highest of all jurisdictions and higher than for Australia overall (4.7 per cent).[122]

The prevalence of heart disease, stroke or vascular disease in inner-regional locations in Tasmania (our larger cities) was 7.2 per cent, similar to that in smaller towns and more remote locations (8.3 per cent).

Around 9 per cent of Tasmanians in the most disadvantaged quintile reported having heart disease, stroke or vascular disease compared with around 6 per cent in the least disadvantaged quintile. The relationship was not clear-cut because the lowest reported prevalence (5 per cent) was in the second most disadvantaged quintile.[123]

In 2012-13, the prevalence of reported heart and circulatory disease among Tasmanian Aboriginal people was 14 per cent.[124]

This is consistent with the higher prevalence of cardiovascular diseases experienced by Aboriginal and Torres Strait Islander people throughout Australia, and underlies the importance of prevention, treatment and rehabilitation for heart disease to Tasmanian Aboriginal people.

Chronic obstructive pulmonary disease

In 2014-15, the prevalence of self-reported chronic obstructive pulmonary disease (COPD) in Tasmania was 3.5 per cent. The age-standardised prevalence of COPD was 3.0 per cent, the highest of all jurisdictions and higher than for Australia overall (2.4 per cent).[125]

The prevalence of COPD in inner regional locations (our larger cities) was 3.9 per cent, and in smaller towns and more remote locations was 2.5 per cent.

In the most disadvantaged quintile of the Tasmanians population 4.9 per cent reported having COPD, compared with 1.5 per cent in the least disadvantaged quintile.[126]

[120] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[121] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.
[122] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[123] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[124] Australian Bureau of Statistics 4727.0.55.001 Australian Aboriginal and Torres Strait Islander Health Survey: First Results, 2012–13.
[125] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[126] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

Asthma

In 2014-15, the prevalence of self-reported asthma in Tasmania was 13 per cent. The age-standardised prevalence of asthma was 13 per cent, the highest of all jurisdictions and higher than for Australia overall (11 per cent).[127]

The prevalence of asthma in inner-regional locations (our larger cities) was 12 per cent, similar to that in smaller towns and more remote locations (14 per cent).

There was no consistent trend in the prevalence of asthma among people at different levels of socio-economic disadvantage or educational attainment.[128]

Hay fever and allergic rhinitis

People with hay fever or allergic rhinitis are burdened with a common but seasonally disruptive condition. They are also at some risk of having undiagnosed asthma which may cause coughing and wheezing triggered by the same allergens that cause their hay fever.

In 2014-15, the prevalence of self-reported hay fever or allergic rhinitis in Tasmania was 28 per cent. The age-standardised prevalence of hay fever or allergic rhinitis was 23 per cent, the second highest of all jurisdictions and slightly higher than for Australia overall (20 per cent).[129]

Mental illness

Mental illnesses contribute greatly to the burden of disease in Tasmania and elsewhere in Australia. Mental health and substance abuse disorders were among the greatest single contributors to overall disease burden Australia-wide among males aged five to 44 years in 2011. The contribution to disease burden was even greater among females in this age range and remained important among women aged 45 to 64 years.[130]

In 2015-16, the age-standardised hospital admission rate for a mental health condition in Tasmania was 110 per 10 000 people, an age-standardised rate slightly higher than for Australia overall (102 per 10 000), but similar to the rate for regional Australia (106 per 10 000).

The most common reasons for admission were drug and alcohol episodes, depressive episodes, schizophrenia and delusional disorders, and intentional self-harm. There was an average of two to three admissions a day for each of these categories.

Schizophrenia and delusional disorders, depressive episodes, bipolar and mood disorders, and drug and alcohol episodes contributed 65 per cent of admitted bed days.[131]

[127] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

[128] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

[129] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.

[130] Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. AIHW, 2016.

[131] Australian Institute of Health and Welfare. Hospitalisations for mental health conditions and intentional self-harm. Reporting years: 2013-14, 2014-15 and 2015-16. AIHW, 2017.

Less severe mental illness is much more common. In 2014-15, 21 per cent of Tasmanians reported having a long-term mental or behavioural problem. The age-standardised prevalence of self-reported long-term mental behavioural problems among Tasmanians was 21 per cent, the highest of all jurisdictions and slightly higher than for Australia overall (17 per cent).

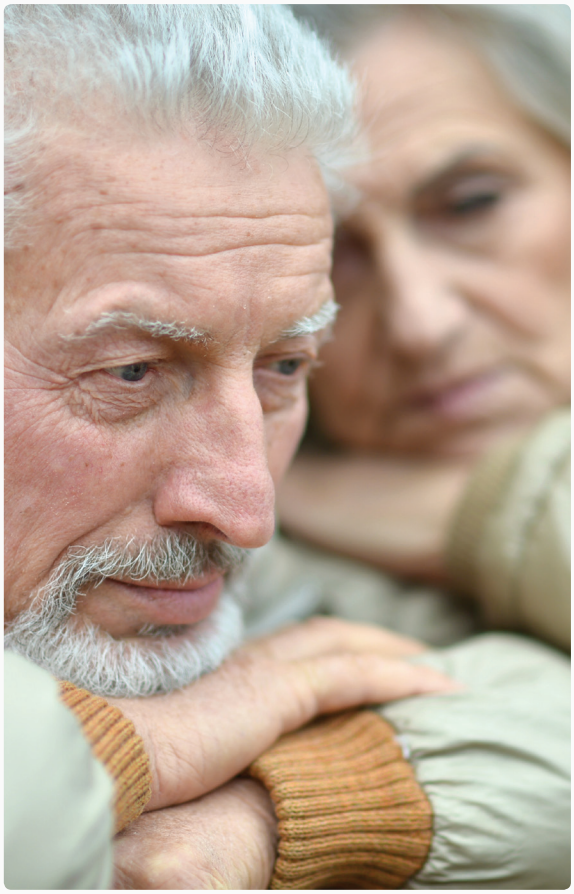
Fourteen per cent of Tasmanians aged 18 years and older reported experiencing high or very high psychological distress, and the age-standardised prevalence of high or very high psychological distress was 14 per cent, the highest of all jurisdictions and slightly higher than for Australia overall (12 per cent).[132]

In 2012-13, 27 per cent of Tasmanian Aboriginal people reported high or very high levels of psychological stress.[133]

There has been a steady, statistically significant increase in the proportion of Tasmanians who report seeking help for a mental health problem (within the year before the survey), from 10 per cent in 2009 to 18 per cent in 2016. In 2016, more women (22 per cent) than men (13 per cent) sought such help.[134]

The prevalence of mental and behavioural problems was similar in inner-regional locations (our larger cities) and in smaller towns and more remote locations.

Nearly one in four Tasmanians in the two most disadvantaged quintiles of the population reported having mental and behavioural problems, considerably more than in the least disadvantaged quintile (13 per cent).[135]



Dementia

Nearly 9 000 people (3 400 men, 5 500 women) in Tasmania were projected to have dementia in 2016.[136]

Dementia (vascular or unspecified dementia and Alzheimer's disease) has been an increasingly common cause of death of Tasmanians, from an average of 264 deaths a year in 2007-11 to an average of 356 deaths a year in 2012-16. Women comprise about two-thirds of dementia deaths.[137]

[132] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[133] Australian Bureau of Statistics 4727.0.55.001 Australian Aboriginal and Torres Strait Islander Health Survey: First Results, 2012–13.
[134] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.
[135] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[136] Australian Institute of Health and Welfare. Dementia in Australia. Cat. no. AGE 70. AIHW, 2012.
[137] Australian Bureau of Statistics. 3303.0 Causes of Death, Australia, 2016.

Case study

Building dementia-friendly communities

With dementia rates increasing internationally there is a growing awareness of the need for communities to become dementia-friendly so people can live well with the illness.

The voices of those living with dementia and their carers must be included in planning solutions that suit local needs and conditions. Building dementia-friendly communities also involves challenging stigma by encouraging people to talk about dementia.

In 2018 the UTAS Wicking Dementia Research and Education Centre received Dementia Australia funding to develop dementia-friendly initiatives.

One of those initiatives is working with Dementia Australia in Tasmania to co-design Living with Dementia conversation cards. These cards aim to meaningfully involve people living with dementia in establishing dementia-friendly communities. The cards feature short statements that reflect the personal experiences of living with dementia complemented by an image chosen by that person. The cards help stimulate conversation about dementia, pose questions, and share knowledge to reduce stigma by promoting discussion.

Many communities are already supporting people living with the impact of dementia to remain locally connected. One example is the Connect Café in Ulverstone where the Central Coast Council set up a 10-week program in 2017. The council recognised meeting the challenges of dementia needed a collaborative whole-of-community approach.

The café provided a venue for people with dementia, their carers and the community to gather, laugh and talk together – to feel a sense of connection and belonging in the community.

Arthritis and back problems

In 2014-15 the prevalence of self-reported arthritis in Tasmania was 23 per cent. The age-standardised prevalence of arthritis was 19 per cent, the highest of all jurisdictions and higher than for Australia overall (14 per cent).[138]

The prevalence of arthritis in inner-regional locations (our larger cities) was slightly less (22 per cent) than in smaller towns and more remote locations (26 per cent).

The prevalence of arthritis was highest (28 per cent) among the most disadvantaged population quintile and lowest (16 per cent) in the least disadvantaged quintile.[139]

In 2014-15 the prevalence of self-reported back problems in Tasmania was 18 per cent. The age-standardised prevalence of back problems was 17 per cent, at the top of the narrow range (from 14 to 17 per cent) across all jurisdictions and similar to the overall Australian rate of 16 per cent.[140]

[138] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[139] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[140] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[141] Australian Bureau of Statistics 4727.0.55.001 Australian Aboriginal and Torres Strait Islander Health Survey: First Results, 2012–13.

In 2012-13 15 per cent of Tasmanian Aboriginal people reported arthritis and 13 per cent reported back pain or back problem or a disc disorder.[141]

Pain

Acute or chronic pain can diminish quality of life and lead to adverse outcomes for physical, psychological and social wellbeing, education and employment.

Treatment of pain can itself create problems such as dependency resulting from misuse and prolonged use of opioid painkillers. Evidence-based pain management can alleviate pain effectively and safely. Best clinical practice in managing pain involves having sufficient accessible trained clinical providers, usually in a primary care setting and well connected to other services.[142]

The underlying causes of pain vary according to age. Pain may arise from diverse conditions, including traumatic injury, surgery, arthritis and other musculoskeletal disorders, cancer, and various vascular and neurological conditions. Pain is often associated with one or more chronic condition.

In 2014-15, the prevalence of self-reported severe or very severe pain in Tasmania was 11 per cent. The age-standardised prevalence of severe or very severe pain was 10 per cent, the highest of all jurisdictions and slightly higher than for Australia overall (8 per cent).[143]

Older people and those living with a disability have the highest rates of chronic pain.

6.3 Oral health

Oral health is fundamental to overall health, wellbeing and quality of life. Oral conditions are the third highest reason for acute preventable hospital admissions in Australia.[144]

Dental consultations

In 2014-15, 44 per cent of Tasmanians reported having consulted a dentist or dental professional in the previous 12 months, similar to Australians as a whole (47 per cent). However, a third of Tasmanians reported their last dental consultation was more than two years ago, and 4 per cent had never had a dental consultation.[145]

Tasmanian males are more likely than females not to have used dental services for two years or more.

Socio-economic disadvantage appears to affect use of dental services. 61 per cent of people in the least disadvantaged socio-economic quintile reported seeing a dentist in the previous year, compared with 47 per cent of those in the most disadvantaged quintile.

28 per cent cited the cost of dental care as a reason for delaying a visit to the dentist. Cost was a barrier across the regions and socio-economic quintiles but higher among people aged 25 to 54 years and for those with children.[146]

[142] National Pain Summit Initiative. National Pain Strategy. Pain Australia, 2011.
[143] Australian Bureau of Statistics. 4364.0.55.001 National Health Survey: First Results, 2014-15.
[144] Oral Health Monitoring Group. Healthy Mouths, Healthy Lives: Australia's National Oral Health Plan 2015–2024. COAG Health Council, 2015.
[145] Australian Bureau of Statistics. 4364.0.55.002 Health Service Usage and Health Related Actions, Australia, 2014-15.
[146] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

Case study

Lifting the lip on early childhood tooth decay

Early childhood tooth decay is the most common chronic disease of children and can result in pain, infection, hospitalisation and low self-esteem.

More than 50 per cent of five year-olds in Tasmania have a history of dental disease in their baby teeth caused by too many sweet foods and sugary drinks.

Early childhood dental decay often leads to decay in permanent teeth and remains the most common reason for hospital admissions of young children.

This is why Oral Health Services Tasmania and Child Health and Parenting Services (CHaPS) have combined to address this problem by integrating oral health into general child health assessments.

The *Lift the Lip* early intervention and prevention program builds the oral health skills of child health professionals to help them recognise and refer dental disease.

Lift the Lip provides a referral pathway for children assessed as having or being at risk of dental disease.

Integrating oral health assessments into the Personal Health Record Book (Blue Book) means all children who see CHaPS nurses get an oral health check as part of their general health assessments.

If needed, they get a priority referral to Oral Health Services.

These assessments also give nurses a chance to provide information about oral health and help families develop good oral health practices.

Other child health professionals, such as practice nurses, are now also part of the program that may expand to early childhood educators in more poorly resourced areas.

Lift the Lip is an excellent example of how 'early years' professionals are working together to improve oral and general health for children and their families.

Self-reported oral health

In 2016, 39 per cent of Tasmanians aged 18 years and over reported that their oral health was excellent or very good (females 44 per cent, males 34 per cent).

Self-reported fair or poor oral health was more common among males (29 per cent) than females (22 per cent) and among Tasmanians in the most disadvantaged socio-economic quintile (30 per cent) compared with those in the least disadvantaged quintile (20 per cent).

More females (8 per cent) than males (4 per cent) reported complete tooth loss, and there was a significantly higher prevalence of complete tooth loss in the North West of the state (10 per cent) than in the North (6 per cent) or South (5 per cent).[147]

Oral hygiene

Eighty per cent of female Tasmanians reported brushing their teeth twice or more daily, compared with 64 per cent of males.

Frequency of brushing appeared related to socio-economic disadvantage, with brushing twice or more daily reported by 61 per cent of Tasmanians in the most disadvantaged socio-economic quintile, compared with 82 per cent in the least disadvantaged quintile.[148]

6.4 Potentially preventable hospitalisations

Potentially preventable hospitalisations are hospitalisations for conditions that may have been prevented by providing appropriate preventive health interventions and early disease management, which are typically delivered in primary care and community-based settings.

The determinants of potentially preventable hospitalisations are complex at individual, community and health system levels.

- In 2016-17, close to 14 000 (6 per cent) of hospitalisations in Tasmanian hospitals could be categorised as potentially preventable. This was a rate of 23 per 1 000 population, less than the Australian rate of 27 per 1 000.
- There was considerable variation in the age standardised rate of potentially preventable hospitalisations by geographic area (Statistical Area Level 3). These ranged from 31 per 1 000 in Brighton and Devonport, to between 17 and 19 per 1 000 in inner Hobart, Meander Valley-West Tamar, South East Coast and South and West Hobart.
- Just over half of the potentially preventable hospitalisations in 2016-17 were for chronic conditions. The most common of these were chronic obstructive pulmonary disease (12 per cent of all potentially preventable hospitalisations), congestive cardiac failure (9 per cent), diabetes complications (8 per cent), iron deficiency anaemia (8 per cent), asthma (6 per cent) and angina (5 per cent).
- Almost half of potentially preventable hospitalisations were for acute conditions, including some vaccine-preventable conditions. The most common of these were dental conditions (12 per cent of all potentially preventable hospitalisations), cellulitis (9 per cent), urinary tract infections including pyelonephritis (9 per cent), convulsions and epilepsy (5 per cent) and ear, nose and throat infections (5 per cent).[149]

[147] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

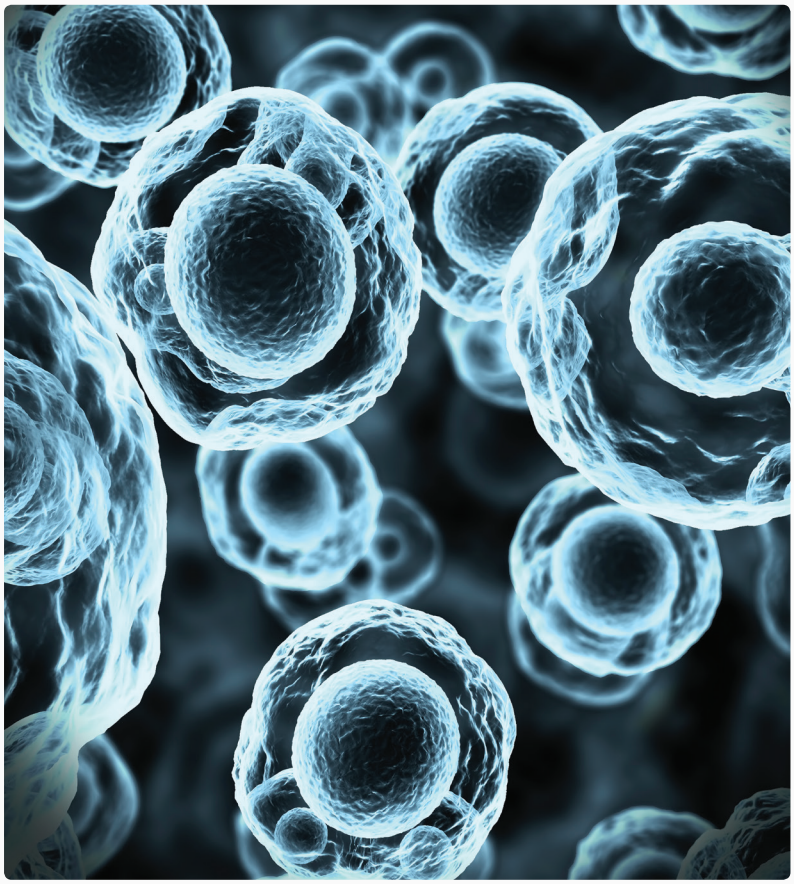
[148] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

[149] Australian Institute of Health and Welfare. Potentially preventable hospitalisations in Australia by small geographic areas. Reporting years: 2013-14, 2014-15, 2015-16 and 2016–17. AIHW, 2018.

6.5 Screening

Preventive health screening aims to achieve early diagnosis and treatment of various important conditions, and of several cancers. The decision to screen for a particular disease is based on the availability of a valid and reliable test, the feasibility and acceptability of early diagnosis, the availability of safe and effective early intervention, and the benefit to individuals and the community.

Screening for hypertension (high blood pressure), high cholesterol and diabetes aims to diagnose these conditions before their persistence or severity can cause complications such as such as heart, vascular, kidney or eye disease. Such screening should be done in the context of an absolute cardiovascular disease risk assessment appropriate for age.



Effective treatment of hypertension, high cholesterol and diabetes has improved the outlook for people living with these conditions, but they continue to contribute significantly to the burden of disease in Tasmania.

In 2016, among all people aged 18 years and older, 82 per cent reported participating in screening for blood pressure, 55 per cent for cholesterol and 50 per cent for diabetes. Participation in screening increases with age.

Around two-thirds of Tasmanian adults aged under 35 years reported participating in blood pressure screening; this increases to nearly everyone aged 65 years and older.

Less than one third of Tasmanian adults aged under 35 years reported participating in cholesterol or diabetes screening; this increases to around half of people aged 50 years. Among people aged 65 years and older, 84 per cent reported participating in cholesterol screening and 73 per cent in diabetes screening.

Participation in screening for these three conditions was similar in all three Tasmanian regions in 2016, and was relatively stable from 2009 to 2016.[150]

Screening for cancers is not as widely taken up by people in the target populations in Tasmania as is screening for some risk factors for non-cancer conditions. However, the rates of cancer screening are very similar to those in most other Australian jurisdictions.

[150] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

Bowel screening

Bowel cancer remains an important disease in Tasmania. Bowel cancer often develops slowly and without early warning signs. Early detection means cure is possible.

For many years Tasmania has had the highest age-standardised rate of bowel cancer diagnosis of all states and territories (72 per 100 000 people in 2015), and has usually had the highest or second highest age-standardised bowel cancer mortality rate (24 per 100 000 people in 2015).[151 152 153]

The participation of 46 per cent Tasmanians aged 50 to 74 years in the National Bowel Cancer Screening Program in 2015-16 was the second highest of any state and territory, and slightly higher than Australia overall (41 per cent).

Of the 19 488 Tasmanians who submitted a valid bowel cancer screening test in 2016, 1 680 (8.6 per cent) had positive tests. Of those with positive screening tests, at least 1 216 (73 per cent) completed follow-up by colonoscopy.[154]

Breast screening

The annual age-standardised incidence of invasive breast cancer in women aged 50 to 74 years in Tasmania from 2008 to 2012 (298 per 100 000) was the same as Australia overall (300 per 100 000).

In 2015-16, 58 per cent of Tasmanian women aged 50 to 74 years participated in breast cancer screening. The Tasmanian age-standardised participation rate for this age group (57 per cent) was the same as for Australia overall.[155]

Cervical screening

The annual age-standardised incidence of cervical cancer in women aged 20 to 69 years in Tasmania from 2009 to 2013 (11 per 100 000) was similar to Australia overall (10 per 100 000).

In 2015-16, 56 per cent of Tasmanian women aged 20 to 69 years participated in cervical cancer screening; the age-standardised rate of participation for this age group was the same as for Australia overall.

Tasmanian rates of participation during the three years 2014-16 (69 per cent) and the five years 2012-16 (81 per cent) were higher; the age-standardised rates of participating at least once during these longer periods were the same as for Australia overall.[156]

Cervical cancer screening changed in late 2017. The Pap test is no longer used to screen for abnormalities in cervical cells. It has been replaced by a test that detects the human papillomavirus (HPV), an infection of cervical cells that may lead to cervical cancer.

This new approach is more effective than the Pap test at preventing cervical cancers and can be done every five years instead of every two years.[157]

[151] Australian Institute of Health and Welfare. Cancer in Australia 2017. Cancer series no.101. Cat. no. CAN 100. AIHW, 2017.
[152] Australian Institute of Health and Welfare. National Bowel Cancer Screening Program: monitoring report 2018. Cat. no. CAN 112. AIHW. 2018.
[153] Stokes B, Albion T, Otahal P, Venn A. Cancer in Tasmania: Incidence and Mortality 2015. Menzies Institute for Medical Research Tasmania, 2017.
[154] Australian Institute of Health and Welfare. National Bowel Cancer Screening Program: monitoring report 2018. Cat. no. CAN 112. AIHW. 2018.
[155] Australian Institute of Health and Welfare. BreastScreen Australia monitoring report 2014-15. Cancer series no. 106. Cat. no. CAN 105. AIHW, 2017.
[156] Australian Institute of Health and Welfare. Cervical screening in Australia 2018. Cat. no. CAN 111. AIHW, 2018.
[157] Australian Government Department of Health. The National Cervical Screening Program. Commonwealth of Australia www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/cervical-screening-1

7. Injury and suicide

7.1 Injury

Injury is a major cause of preventable hospitalisation, disability and death in Australia. Nationally, and in Tasmania, the two major preventable causes of injury needing hospitalisation are accidental falls and transport injuries.

Nationally, falls comprised 41 per cent of all injury hospitalisations in 2014-15.[158]

In Tasmania from 2013 to 2017, there were 19 396 fall-related hospitalisations, with falls causing 31 per cent (the largest proportion) of all injuries requiring hospitalisations. Fall-related hospitalisations were common throughout Tasmania. The age-standardised average annual rate of hospitalisation was 6.4 per 1 000 population overall; higher in the southern region (7.0) than in the north (5.7) or north-west (5.9).[159]

Falls affected people of all ages, but the highest and increasing incidence, and the greatest burden, was among people aged 65 years and older. In particular, women aged 65 years and older contributed around 40 per cent of all fall hospitalisations.

Nationally, transport injuries comprised 12 per cent of all injury hospitalisations in 2014-15.

In Tasmania from 2013 to 2017 hospitalisations due to transport injuries increased from 965 to 1 315 and the annual rate per 1 000 population increased from 1.9 to 2.6. The age-standardised average annual rate of hospitalisation for transport injuries was 2.4 per 1 000 population overall, similar to Australia overall.[160] The rate of hospitalisation for transport injuries was much higher for Tasmanian males (3.3) than females (1.4); both rates increased over the five years.

7.2 Suicide

From 2013 to 2017, there were 398 deaths by suicide in Tasmania, an average of 80 a year. Throughout this period, the age-standardised death rate for suicide in Tasmania was higher than for Australia overall, averaging around 15 per 100 000 people a year in Tasmania, compared with around 12 per 100 000 people a year in Australia overall.

From 2013 to 2017, an average of 61 males and 19 females died by suicide each year. Suicide was a prominent cause of death among people aged 15 to 44 years, a period of life when deaths from most other causes are uncommon. Deaths from suicide among these relatively young people contribute to the large number of potential years of life lost in Tasmania due to suicide.[161]

However, deaths occur at all ages, with half of all deaths by suicide in Tasmania occurring among men and women aged 45 years and older.[162]

The relatively modest absolute numbers of deaths by suicide each year limit the power of statistical analyses to confirm short-term trends. Despite this, it is evident the numbers of deaths of Tasmanian men and women from suicide are not declining, the burden of lost lives and wider societal consequences remains high, and the age-standardised death rate has been greater than Australia overall since at least 2008.

[158] AIHW: Pointer SC 2018. Trends in hospitalised injury, Australia 1999-00 to 2014-15. Injury research and statistics series no. 110. Cat. no. INJCAT 190. Canberra: AIHW.

[159] Department of Health Tasmania, unpublished data.

[160] Australian Institute of Health and Welfare: Pointer S. Trends in hospitalised injury, Australia 1999-00 to 2014-15. Injury research and statistics series no. 110. Cat. no. INJCAT 190. AIHW, 2018.

Taking action on suicide

The *Tasmanian Suicide Prevention Strategy (2016-2020)* aims to reduce suicide, suicidal behaviour and the impact on Tasmanians with a coordinated and combined effort from all levels of government, services and the community.

The plan has five priorities:

- create a responsive, coordinated health service system for people experiencing suicidal thoughts and behaviours, with widely-known pathways to support
- empower and support young people, families and communities to respond to suicidal behaviours
- implement public health approaches to reduce suicidal behaviour and increase community literacy about suicide and suicide prevention
- ensure effective implementation, monitoring and evaluation of the strategy
- train and support health workers and other gatekeepers to provide care and support for people experiencing suicidal thoughts and behaviours.[163]

[161] Australian Bureau of Statistics. 3303.0 Causes of Death, Australia, 2017.
[162] Department of Health Tasmania, unpublished data.
[163] Department of Health and Human Services. Tasmanian Suicide Prevention Strategy (2016-2020) Working Together to Prevent Suicide. Tasmania, 2016.

8. Disease due to microbial and environmental hazards

8.1 Communicable diseases

Public Health Services has a statutory role in the surveillance and management of many communicable diseases in community and healthcare settings. Many communicable diseases are preventable.

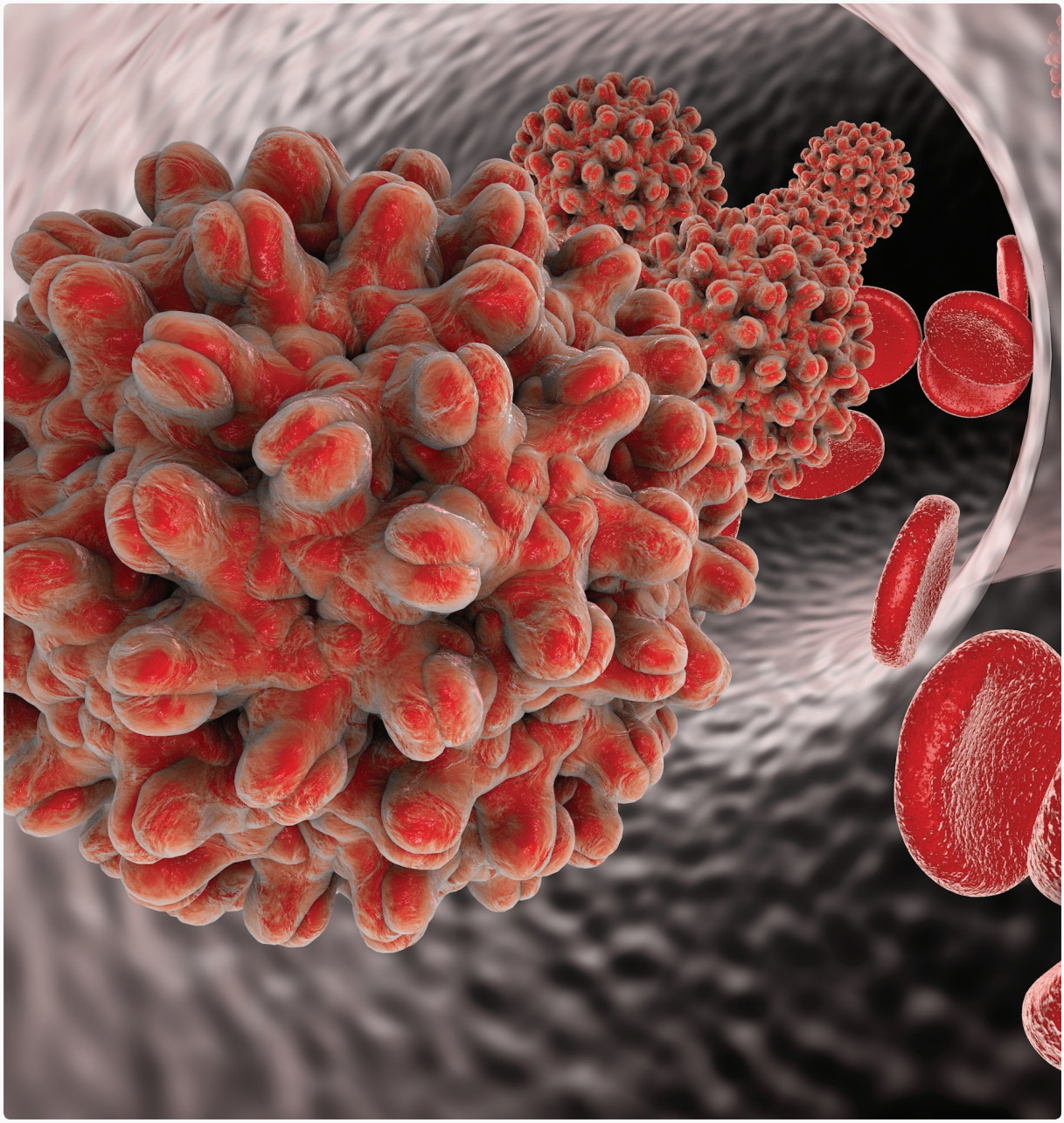
Some are serious or can have widespread effects on population health, such as annual influenza epidemics, periodic whooping cough (pertussis) epidemics or outbreaks of invasive meningococcal disease. Others, such as hepatitis B, can drive chronic disease epidemics.

Many can be prevented or controlled by immunisation, treatment and infection control practices.

The epidemiology of most communicable diseases in Tasmania is similar to mainland Australia, but there are some differences. The rates of tuberculosis and chronic hepatitis B infection are much lower in Tasmania; both reflect historical migration patterns and the higher proportion of Australian-born people in Tasmania.

Table 3. Notifications of selected notifiable diseases in Tasmanian residents, 2013 to 2017.

	2013	2014	2015	2016	2017
Blood-borne infections					
Hepatitis C	235	225	263	255	233
Hepatitis B	58	60	41	40	44
Human Immunodeficiency Virus	12	17	17	19	15
Sexually transmissible infections					
Chlamydia	1538	1776	1666	1688	1582
Gonorrhoea	69	65	56	82	117
Syphilis	33	32	32	22	20
Gastrointestinal infections					
Campylobacter infection	699	937	1035	1062	731
Salmonella infection	246	250	255	283	309
Hepatitis A	0	1	1	0	0
Listeriosis	2	4	0	1	1
Shigella infection	3	2	6	12	24
Vibrio infection	1	2	1	4	2
Vaccine-preventable diseases					
Measles	0	5	0	3	0
Mumps	5	5	8	4	3
Rubella	0	0	1	1	0
Meningococcal disease	3	2	2	5	16
Pertussis (whooping cough)	522	68	31	30	40
Invasive pneumococcal disease	37	39	43	50	48
Influenza	297	673	1434	1055	3506
Vector-borne diseases					
Ross River virus	8	18	5	8	49
Rickettsial infection	2	4	2	3	5
Zika virus	0	0	0	1	0
Other notifiable conditions					
Tuberculosis	10	9	13	8	10



Blood-borne infections

Hepatitis C was one of the more commonly notified diseases in Tasmania from 2013 to 2017. The Tasmanian rate (number of new notifications per capita) was similar to Australia overall. Hepatitis B notifications were less common and the Tasmanian rate was much lower than for Australia overall.

Human Immunodeficiency Virus (HIV) infection notifications averaged 16 a year from 2013 to 2017, slightly more than the preceding five years; the rate was consistently lower than for Australia overall.

In recent years, there has been progress towards reducing the burden of blood-borne viruses on individuals and the community through much improved treatment of hepatitis C, continuing and targeted immunisation programs for hepatitis B, and testing, treatment and preventive strategies for HIV.

Action on hepatitis C and HIV

Hepatitis C

In 2016, new and highly effective treatments for chronic hepatitis C infection became available on the Pharmaceutical Benefits Scheme.

Public Health Services gathered a diverse stakeholder group encompassing gastroenterology and sexual health services, correctional health facilities, Aboriginal health services, Primary Health Tasmania, general practice, alcohol and drug services, and community services including Anglicare and the Tasmanian Council for AIDS, Hepatitis and Related Diseases (TasCAHRD).

This group developed streamlined healthcare pathways for hepatitis C treatment in a wide range of health settings and with access to specialist services.

Between March 2016 and March 2018, 1500 people (about one-third of all Tasmanians living with chronic hepatitis C infection) started treatment, which was provided almost equally by general practitioners and gastroenterologists.

All Tasmanians known by Sexual Health Services to be co-infected with both HIV and hepatitis C were offered treatment.

While the initial uptake of new hepatitis C treatment has been good, we still need to increase access to and uptake of testing and treatment among those yet to be reached, and maintain access to prevention strategies such as needle and syringe outlets.

HIV testing and treatment

In 2014, Public Health Services collaborated with Tasmania's Sexual Health Services and TasCAHRD to evaluate a screening test for HIV that could be done at a health service and provide a preliminary result at the same consultation. This aimed to increase participation in testing and care for HIV and sexually transmissible infections, and to detect undiagnosed infections.

Many participants had not been tested for HIV before. Several participants were diagnosed with HIV infection and around half of participants engaged further with healthcare services.

In 2017 a study of pre-exposure prophylaxis (PrEP) for HIV infection, coordinated by Alfred Health in Victoria, was expanded to include Tasmania. PrEP is a daily pill taken by people to reduce their risk of becoming infected with HIV.

The aims of the study included evaluating the feasibility, effectiveness and any adverse consequences of PrEP use among people at higher risk of acquiring HIV, and whether wider access to PrEP may reduce new HIV infections in higher risk populations.

One hundred Tasmanians participated in the study. The Pharmaceutical Benefits Scheme has since subsidised the cost of PrEP medication for people at medium-to-high risk of HIV.

Sexually transmissible infections

Chlamydia infection is by far the most commonly notified sexually transmissible infection with an average of 1 650 notifications a year from 2013 to 2016. *Chlamydia* rates in Tasmania were slightly lower than for Australia overall; rates are strongly influenced by the participation in testing by teenagers and young adults.

Gonorrhoea notifications increased steadily from 2013 to 2017, and there was an increase in syphilis between 2013 and 2015. The rates of notifications of gonorrhoea and syphilis in Tasmania remained lower than for Australia overall.

Clusters or increases of sexually transmissible infection are managed with contact tracing, promotion of awareness and testing, and by providing support and education to clinical providers.

Gastrointestinal illnesses

Campylobacter and *Salmonella* are the most common notified bacterial gastrointestinal infections in Tasmania. From 2013 to 2017, Tasmanian rates of *Campylobacter* infection were substantially higher than for Australia overall, while *Salmonella* rates were lower than for Australia overall.

Both these bacteria infect humans through various routes, including food, the environment and infected people and animals. Tasmania is participating in initiatives under the Australia's Foodborne Disease Reduction Strategy 2018-2021+ that aim to reduce *Campylobacter* and *Salmonella* infections.[164]

There were small numbers of notifications of other infectious gastrointestinal infections during this period. The number of notifications of *Shigella* increased from 2016 onwards, largely due to changes in diagnostic testing.

Public Health Services responded to several outbreaks of illnesses associated with shellfish, including a large multi-jurisdictional outbreak due to contamination of Tasmanian oysters with norovirus.[165]

The emergence of naturally-occurring shellfish toxins affecting wild and commercially grown shellfish resulted in several recalls of potentially contaminated mussels and oysters when surveillance programs detected elevated concentrations of toxins.

A small cluster of cases of paralytic shellfish poisoning from recreationally harvested shellfish in 2015 demonstrated this risk and prompted new public signage and communication strategies.[166]

Vaccine-preventable diseases

From 2013 to 2017, there were no notifications of the historically important but now rare vaccine-preventable diseases diphtheria, *Haemophilus influenzae* type B, poliovirus infection, tetanus and congenital rubella.

Eight measles notifications occurred in four distinct clusters. All clusters began with an infection that was acquired overseas, but all were effectively contained. Preventing spread of measles involves maintaining high population-wide vaccination coverage, vigilant clinical and laboratory surveillance, and rapid responses to cases.

[164] Australia's Foodborne Illness Reduction Strategy 2018-2021+ http://foodregulation.gov.au/internet/fr/publishing.nsf/Content/aus-foodborne-illness-reduction-strategy-2018-2021-Jun-2018.

[165] Lodo KL, Veitch MG, Green ML. An outbreak of norovirus linked to oysters in Tasmania. Commun Dis Intell Q Rep. 2014; 38(1): E16-19.

[166] Edwards LJ, Wilson K, Veitch MGK. An Outbreak of Paralytic Shellfish Poisoning in Tasmania. Commun Dis Intell 2018; 42 (PII: S2209-6051(18)00004-0) Epub 12/09/2018.

Action on immunisation

Childhood immunisation coverage is the percentage of children who have had all the specified vaccines recommended for their age in the National Immunisation Program Schedule.

In Tasmania, immunisation coverage in infancy and early childhood increased steadily during 2013 to 2017 and mostly exceeded the coverage for Australia overall. By 2017 more than 94 per cent of Tasmanian children were fully immunised at one year and five years, approaching the national aspirational benchmark of 95 per cent.

In common with Australia overall, coverage was lower for two year-olds. This likely reflects lower or delayed uptake, or delayed reporting of vaccines provided during the second year of life, in conjunction with several recent changes to vaccines provided to children at this age.

By September 2018, 95.6 per cent of Tasmanian five year-olds were fully immunised, the highest coverage at this age in Australia.[167]

Funded immunisation against infection with the human papilloma virus (HPV) was introduced for girls in 2007 and boys in 2013. The proportion of Tasmanian teenagers completing a three-dose course of HPV has been lower than for Australia overall but has been improving.

In 2017, only 75 per cent of Tasmanian girls and 64 per cent of boys had completed the course by 15 years. A further 14 per cent of girls and boys had started but not completed the course.

Tasmania is participating in a National Health and Medical Research Council-funded project, *Identifying and addressing gaps in Australia's adolescent HPV vaccination program.* This five-year partnership between researchers and health departments in Tasmania, Western Australia and New South Wales is researching the barriers to vaccination and will evaluate strategies to increase HPV vaccination coverage.

A new *Tasmanian Immunisation Strategy 2019-2024* will provide direction for publicly-funded immunisation in Tasmania within the context of the *National Immunisation Strategy for Australia 2019-2024* and national policy such as the National Partnership Agreement on Essential Vaccines.

[167] Australian Government Department of Health. Childhood immunisation coverage. https://beta.health.gov.au/health-topics/immunisation/childhood-immunisation-coverage, 19 October 2018.

Invasive meningococcal disease

There were between two and five notifications of invasive meningococcal disease a year in Tasmania from 2013 to 2016, then 16 notifications 2017. In response to the high rate of invasive meningococcal disease due to the serogroup W strain in Tasmania in 2017, a Tasmanian Government funded immunisation program for teenagers aged 15 to 19 years was implemented through schools and general practitioners from August 2017.

A cluster of cases of serogroup W strain in suburban Hobart in mid-2018 resulted in expansion of this program to include all Tasmanians born since August 1997, and the involvement of Authorised Pharmacist Immunisers in providing part of the program.

Pertussis

There were 522 notifications of pertussis (whooping cough) in 2013, the last year of the most recent whooping cough epidemic. From 2014 to 2017, whooping cough notifications averaged 42 cases a year, the lowest rate in Australia.

Tasmania initiated a state-funded program providing pertussis-containing vaccine to pregnant women from 2015, based on evidence that immunising women late in pregnancy protected their newborn child from whooping cough complications in the first months of life.

Invasive pneumococcal disease

Invasive pneumococcal disease notifications averaged 43 a year from 2013 to 2017, the rate slightly higher than Australia overall, but stable.

Influenza

Ten to 20 per cent of the Tasmanian population is infected with influenza each year. The size and impacts of the seasonal epidemic vary unpredictably from year to year, but usually those most severely affected are elderly people, infants and young children, and people with chronic illness.

Annual immunisation usually provides worthwhile but incomplete protection against influenza complications, but has relatively little effect on the spread of infection in the community.

From 2013 to 2017 the predominant circulating influenza strains in Tasmania were the same as those in most of Australia. The rate of influenza notifications was less than Australia overall, but was usually similar to the Victorian rate.

In 2017, Tasmania, like most of Australia, had a severe flu season, with far more notified influenza cases, high levels of absenteeism, high demands for primary care and hospital services, and 47 outbreaks in institutional settings.

Vector-borne diseases

Ross River virus infection is the only regularly notified locally-acquired mosquito-borne viral infection, with most Tasmanian infections acquired in coastal areas. Tick-borne rickettsial infections, notably Flinders Island spotted fever, occur in small numbers each year, acquired in the Furneaux Group Islands and eastern mainland Tasmania.

Outbreaks of international concern

The activities of Tasmania's Public Health Services are part of Australia's surveillance and response system for international communicable diseases threats.

Zika virus infection causes a mild illness in most infected persons, but can cause birth defects including brain abnormalities in the child of an infected pregnant woman. It is mostly spread by species of *Aedes* mosquitoes that are not present in Tasmania. From 2013 to 2015, there were large outbreaks of the Zika virus infection in the Pacific region then in the Americas; the outbreak was declared a Public Health Emergency of International Concern by the World Health Organization in early 2016. Tasmania had one case of Zika virus infection notified, acquired in the Pacific region.

Ebola virus disease belongs to a family of viruses that cause haemorrhagic fevers. A large epidemic in West Africa from 2013 to 2015 was declared a Public Health Emergency of International Concern by the World Health Organization in 2014. Tasmania managed the post-deployment health surveillance of a number of healthcare workers who participated in the international response to this epidemic.

8.2 Infections in healthcare settings

Public Health Services provides expert advice on infection prevention and control in healthcare and community settings, conducts surveillance of healthcare-associated infections, antibiotic use and antibiotic resistance, and provides education and training.

Many healthcare-associated infections are preventable and all healthcare providers use infection-control measures to reduce the risk to patients.

Staphylococcus aureus bacteraemia and isolates of vancomycin-resistant enterococci and carbapenemase-producing enterobacteriaceae are notifiable conditions in Tasmania.

Staphylococcus aureus bacteraemia

The rate of *Staphylococcus aureus* bacteraemia (SAB) acquired in Tasmanian public hospitals remained stable between 2013 and 2017 and below the national threshold of two per 10 000 patient days. Overall from 2013 to 2017, 12 per cent of SAB cases were due to methicillin-resistant bacteria.

Community-acquired SAB was more common, with about three times more cases reported each year from community settings than from hospital settings. The proportion of these resistant to methicillin was around 6 per cent.

Vancomycin-resistant enterococci

The number of Vancomycin-resistant enterococci (VRE) notifications increased substantially from 61 in 2013 to 748 in 2017. Most notifications reflected colonisation of a body site (such as skin or bowel) with VRE that were detected by active hospital-based surveillance, but were not causing illness.

The number and proportion of notifications of VRE that caused a clinically significant infection varied from year to year, averaging 12 a year (4 per cent of all VRE notifications).

Carbapenemase-producing enterobacteriaceae

Carbapenemase-producing enterobacteriaceae became notifiable in Tasmania in 2016. There were two notifications in 2016, one in 2017 and four in 2018. Two cases were probably acquired in Tasmania, one in mainland Australia and four overseas. There was no local transmission to other patients from these cases.

Additional information on notifiable communicable diseases in Tasmania

Reports on selected Tasmanian notifiable communicable diseases:
www.dhhs.tas.gov.au/publichealth/communicable_diseases_prevention_unit

Almost all the communicable diseases that are notifiable in Tasmania are nationally notifiable communicable diseases. Data are updated daily, and current reports of national and state data can be generated:
www9.health.gov.au/cda/source/cda-index.cfm

Reports on healthcare associated infection surveillance in Tasmania:
www.dhhs.tas.gov.au/publichealth/tasmanian_infection_prevention_and_control_unit

Hand hygiene

The National Hand Hygiene Initiative was introduced in Tasmania in 2009 to increase healthcare workers' compliance with correct hand hygiene practices. Public Health Services monitors this initiative in Tasmania by collating data from regular observational surveys.
The Tasmanian public hospital rate compliance rate for correct hand hygiene has improved gradually and reached or exceeded the national benchmark of 80 per cent in 2016 and 2017.

8.3 Environmental hazards

Environmental conditions affect the overall health of people in the community. The quality of the air, the concentration of airborne allergens, and the ambient environmental temperature will generally be similar for most people in the same geographic area.

However, some people are at greater risk from these hazards than others. Tasmania has a larger proportion of people who are at higher risk from such hazards – our older people and those with chronic conditions including cardiovascular disease, asthma and other respiratory diseases.

Strategies that support overall health, reduce health inequalities and systematically address chronic diseases will increase our resilience and ability to cope with environmental hazards.

Reducing environmental hazards, for example by improving air quality, or limiting climate change, may entail actions at levels from local to global.

Some threats, such as bushfire smoke and heatwaves, are largely beyond immediate control. However, their harm to the health of Tasmanians may be reduced by ensuring timely awareness of the presence of such risks, and how to mitigate the threats they pose, particularly to vulnerable persons.

Air quality

The Environment Protection Authority (EPA) Tasmania is responsible for air quality monitoring and regulation, and thereby helps protect Tasmanians' health. The most important sources of air pollution in Tasmania are domestic wood heaters and occasional episodes of smoke from landscape fires.

Wood heaters

Poor air quality during the cooler months remains a serious public health concern in Tasmania. More than a quarter of all Tasmanian households use wood heaters, including around half in some regional areas.[168]

Individual heaters vary in the amount of pollution they release into the air. Extreme local air pollution can arise from a single heater, even in towns and suburbs that otherwise have relatively clean air.

Recent Tasmanian research has demonstrated links between local air pollution and hospital admissions for heart failure, and ambulance callouts for respiratory, cardiovascular and diabetic problems. This shows the disproportionate impact of air pollution on people with chronic conditions.[169 170]

Improving air quality can improve the overall health of a community. The improved air quality in Launceston associated with a wood heater buy-back and other interventions from 2000 saw reduced deaths from heart and lung disease, especially in men.[171]

Air quality can change very quickly. Timely local information for people at risk of health harm from smoke is essential to enable action to mitigate the risk, such as by staying indoors or using preventive medication.

The EPA provides real-time air quality data from over 30 sites throughout Tasmania.[172]

The AirRater project was launched in 2015 and comprises a smartphone or tablet app that provides personally and locally relevant data on air quality, pollen counts and ambient temperature, and a means to monitor symptoms for links with environmental precipitants.[173]

[168] Department of Health and Human Services Tasmania. Report on the Tasmanian Population Health Survey 2016. 2016.

[169] Huynh QL, Blizzard CL, Marwick TH, Negishi K. Association of ambient particulate matter with heart failure incidence and all-cause readmissions in Tasmania: an observational study BMJ Open 2018; 8(5): e021798. doi: 10.1136/bmjopen-2018-021798.

[170] Johnston FH, Salimi F, Williamson GJ, Henderson SB, Yao J, Dennekamp M, Smith K, Abramson MJ, Morgan GG. Ambient Particulate Matter and Paramedic Assessments of Acute Diabetic, Cardiovascular, and Respiratory Conditions. Epidemiology. 2019 Jan;30(1):11-19. doi: 10.1097/EDE.0000000000000929.

[171] Johnston FH, Hanigan IC, Henderson SB, Morgan G. Evaluation of interventions to reduce biomass smoke air pollution on mortality in Launceston, Australia: a retrospective analysis of daily mortality from 1994-2007. BMJ 2013; 346:e8446. doi: 10.1136/bmj.e8446345(e8446).

[172] Environment Protection Authority. Real Time Air Quality Data for Tasmania. https://epa.tas.gov.au/epa/air/monitoring-air-pollution/real-time-air-quality-data-for-tasmania

[173] Johnston FH, Wheeler AJ, Williamson GJ, Campbell SL, Jones PJ, Koolhof LS, Lucani C, Cooling NB, Bowman DMJS. Using smartphone technology to reduce health impacts from atmospheric environmental hazards. Environ. Res. Lett. 2018, 13, 044019.

Case study

AirRater helps vulnerable Tasmanians breathe easier

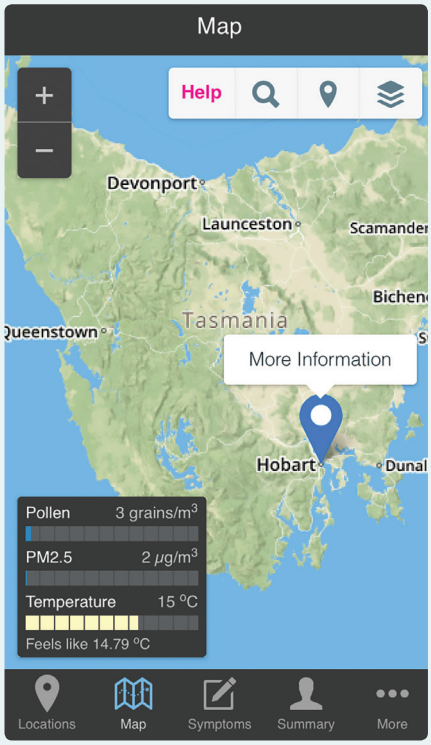
The health of some people can be harmed by environmental conditions such as air quality and weather.

People with asthma, hay fever or other lung conditions need to know what's happening in the air around them so they can manage their activities and maintain their health.

Public health physician and general practitioner Dr Fay Johnston saw how environmental conditions affected the health of her patients and the wider community.

Dr Johnston teamed up with UTAS, Environment Protection Authority, CSIRO and Australian National University researchers to create AirRater, a free smartphone app to help people understand the air they breathe and improve their quality of life.

Using real-time data from air quality, meteorological and pollen monitoring networks across Tasmania, AirRater makes information available so users can quickly assess environmental conditions.



AirRater also encourages users to report daily symptoms of asthma, allergies and hay fever so it can develop a personalised report on how environmental conditions may affect their symptoms.

It can also provide an alert when those environmental conditions are changing so users can plan their activities according to the conditions.

Since launching in Tasmania in October 2015, there has been a rapid uptake with 8 400 individuals now using AirRater an average of 9 000 times a week. AirRater is now operating in the ACT and will begin in the NT from 2019.

Users have found they are more aware of environmental conditions, are more likely to take preventive medications, change their planned activities or take other action to protect their health based on information in the app.

AirRater has also benefited community health agencies and is now integrated into public health response strategies for threats such as airborne allergens and smoke.

It also provides an early warning system to alert Tasmanians to heat and cold waves, and episodes of increased air pollution from bushfires, planned burns and wood heaters.

www.airrater.org

Landscape fires

Since 2013, severe bushfires and other types of landscape fires including burn-offs and peat fires have caused severe episodes of air pollution, including:

- January 2013: bushfires in south-eastern Tasmania caused substantial air pollution in Hobart and several smaller towns
- September 2015 to March 2016: a peat fire near Musselroe Bay seriously affected the air quality of a small community for months
- January 2016: multiple vegetation and peat fires in the North West, Central Highlands and south-west of Tasmania caused severe, prolonged and widespread air pollution all over Tasmania and even affected the air quality of Melbourne.

An analysis of emergency ambulance dispatches showed that air pollution from bushfires in early 2016 was associated with a modest increase in ambulance callouts for several conditions, notably stroke and diabetes.[174]

In recent years, forestry regeneration burning has decreased but planned near-urban fuel reduction burning has increased.

The Forest Practices Authority coordinates the management of smoke from such burning via the multi-agency Coordinated Smoke Management Strategy. This aims to mitigate the health risks of planned burns and has resulted in fewer air quality exceedances since the start of the strategy in 2008.

Tasmanian Fire Service alerts now routinely include links to advice on managing the health risks of smoke, and from there to sources of real-time air quality data for Tasmania.

New airborne health threats

New challenges emerge, such as the rapid deployment of diesel generators in early 2016 when disruption of the BassLink power cable to Victoria coincided with low water in reservoirs used for local power generation.

Public Health Services helped Hydro Tasmania, with Environment Protection Authority support, to evaluate the potential public health impacts of air pollution from diesel generators so their placement and operation minimised public health risk.

Epidemic Thunderstorm Asthma (ETA) is triggered by a particular combination of high amounts of grass pollen in the air and a certain type of thunderstorm. This can cause severe asthma symptoms in a people who have asthma or hay fever.

An ETA event in Melbourne in November 2016 caused deaths and overwhelmed emergency services. To date, an ETA event has not occurred in Tasmania. A study of meteorological and allergen dispersal patterns in Tasmania has shown the risk of this event in Tasmania is much lower than in mainland Australia.[175]

Public Health Services continues to assess the risk of ETA events in Tasmania, especially during the peak pollen season, and promote optimal self-management of asthma and hay fever.

[174] Edwards L, Williamson G, Williams S, Veitch M, Salimi F, Johnston FH. Did fine particulate matter from the summer 2016 bushfires in Tasmania increase emergency ambulance dispatches? A case crossover analysis. Fire 2018, 1, 26.

[175] Campbell SL, Fox-Hughes PD, Jones PJ, Remenyi TA, Chappell K, White CJ, Johnston FH. Evaluating the risk of Epidemic Thunderstorm Asthma: Lessons from Australia. International Journal of Environment. RES Public Health 2019; 16(5) pii E837 …

Heatwaves

Extreme heat can cause heat illness even among healthy people. Population-wide health effects are more likely in heatwave conditions, when hot days persist for several days and are unrelieved by intervening cooler nights. People at higher risk from heatwaves include older people and those with chronic conditions, especially cardiovascular and renal disease, diabetes and mental health problems.

Following a 42 degree day in southern Tasmania in January 2013, a heatwave alert system was developed and implemented. This involves automated assessment of increased heat-related risk throughout Tasmania and notification to Public Health Services and other agencies who conduct a risk assessment to determine the need for any further action.

Public Health Services developed extensive material to support preparedness and responses to heat waves, including web pages with information and brochures, posters and fact sheets, and resources for aged care facilities. **www.dhhs.tas.gov.au/publichealth/alerts/standing_health_alerts/extreme_heat**

A whole-of-government heatwave discussion exercise was conducted in 2018 to review the response arrangements of the Heatwave Incident Associate Plan 2018 and arrangements for a concurrent bushfire.

9. Our statutory functions

The Director of Public Health is appointed under the *Public Health Act 1997*. The director must be a medical practitioner with qualifications in public health.

The functions and powers of the Director of Public Health are primarily set out in the following Acts:

- *Public Health Act 1997*
- *Radiation Protection Act 2005*
- *Food Act 2003*
- *Fluoridation Act 1968*

The director also has various powers and functions under other Acts and regulations. including:

- *Poisons Regulations 2008* – under a delegation from the Secretary and specific powers in the regulations, the director may approve vaccination programs, people to administer vaccines, and educational programs on the administration of vaccines.
- *Burial and Cremation Act 2002*– the director has certain powers and functions relating to burials, cremations, exhumations and other matters relating to human remains.
- *Environmental Management and Pollution Control Act 1994* – the director may require an assessment of the impact on public health be included in an environmental impact assessment.

9.1 Food safety

Public Health Services is responsible for administering the *Food Act 2003* and associated regulations. Public Health Services provides food safety advice to government, industry and the general public, manages food regulatory aspects of outbreak investigations, oversees food recalls and responds to notifications of contaminants in food.

Activities have included:

- enabling statewide registration of mobile food businesses in Tasmania by amending section 88 of the *Food Act 2003* and publishing *Guidelines for Mobile Food Businesses*
- revising requirements for notifying food contaminants in the *Guidelines for Notifying Diseases and Food Contaminants 2016*
- reducing the regulatory burden in the educational and care sector by amending the *Food Regulations 2012*
- developing a Food Business Risk Classification System for Tasmania, based on the nationally endorsed Risk Priority Classification System
- developing environmental health resources for tourism facilities, particularly those in remote locations, in conjunction with environmental health officers
- coordinating a Food Surveillance Program, run in partnership with local government
- coordinating a *Salmonella* and *Campylobacter* strategy, including investigation of outbreak strains of *Salmonella* in various products
- leading investigations into suspected, probable or confirmed outbreaks of food-borne illness due to agents including *Salmonella, Campylobacter, Vibrio, Listeria,* norovirus and paralytic shellfish toxins
- using monitored shellfish toxin levels in industry samples to guide advice to the public about the risk of paralytic shellfish poisoning from recreationally harvested shellfish
- installing warning signs at sites on the eastern and southern coast that can be quickly adjusted to advise when harmful algal blooms are present.

9.2 Drinking water

Public Health Services regulates the quality of reticulated (piped) drinking water to ensure it is safe.

The public water supply provider TasWater, was formed through the amalgamation of the three Tasmanian Water and Sewerage Corporations and began operations on 1 July 2013.

TasWater is responsible for providing safe drinking water to consumers in a serviced water supply zone. TasWater monitors and regularly tests the quality of drinking water, to ensure it complies with the *Australian Drinking Water Guidelines*[176] and the *Tasmanian Drinking Water Quality Guidelines 2015*.[177]

Evidence that drinking water may pose a threat to public health, or the detection of microorganisms or contaminants in excess of health guideline values, must be notified to the Director of Public Health, and immediate actions taken to manage any such risk.

The director publishes an annual summary of the compliance of the regulated drinking water with microbiological, non-microbiological and fluoridation criteria.[178]

TasWater also publishes a detailed Annual Drinking Water Quality Report on the performance of each drinking water supply.[179]

In 2015, the *Public Health Act 1997* was amended and the associated *Tasmanian Drinking Water Quality Guidelines* were revised to clarify the roles of the regulated entity (TasWater) and councils.

A key change was to introduce external auditing of TasWater's drinking water quality management system to ensure it complies with the requirements of the *Australian Drinking Water Guidelines*.

In 2013-14, about 78 per cent of the then existing public water supplies provided safe drinking water. TasWater undertook work to improve drinking water quality, and compliance with microbiological standards improved.

However, some supplies to small communities still lacked treatment, and some supplies had persistent or recurrent contamination with metals and were subject to 'Do not consume' alerts.

From 2016 to mid-2018, TasWater undertook work to remove alerts from 24 regional towns across Tasmania by installing new water treatment plants, new and upgraded infrastructure and pipelines, and in several instances replaced their service with self-managed rainwater tank supplies.

By late 2018, all TasWater customers on serviced land received safe, drinkable water. These recipients of a potable reticulated public drinking water supply comprised around 94 per cent of all Tasmanians.

About 6 per cent of the Tasmanian population who do not receive a reticulated public supply rely on self-managed arrangements for their drinking water such as rainwater tanks. Water from an untreated supply should be boiled before drinking to eliminate any risk from microbial contaminants.

[176] NHMRC. Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council. Commonwealth of Australia, 2011. https://nhmrc.gov.au/about-us/publications/australian-drinking-water-guidelines

[177] Public Health Services. Tasmanian Drinking Water Quality Guidelines 2015 www.dhhs.tas.gov.au/__data/assets/pdf_file/0013/205006/1._drinking_water_guidelines_FINAL_2Nov2015_publish.pdf

[178] Public Health Services. Water Quality Guidelines and Reports, Australian Drinking Water Guidelines. www.dhhs.tas.gov.au/publichealth/water/drinking/guidelines

[179] TasWater. Publications. www.taswater.com.au/About-Us/Publications

Fluoridation of drinking water

Fluoridation of water supplies is a public health measure to help prevent dental decay. Under the *Fluoridation Act 1968,* the Minister for Health directs the water provider to fluoridate specific public water supplies. Beaconsfield in Tasmania was where water fluoridation was first introduced in Australia in 1953.

In 2017, after an extensive review of the latest evidence, the National Health and Medical Research Council affirmed their previous advice that community water fluoridation was a safe, effective and ethical way to help prevent tooth decay, and that states and territories should fluoridate their drinking water supplies within the range of 0.6 to 1.1 mg/L.[180]

Healthy Mouths Healthy Lives: Australia's National Oral Health Plan 2015-2024 set a target for jurisdictions to provide fluoridated water to all communities with populations greater than 1 000.

By August 2018, 98 per cent of recipients of drinking water from TasWater received fluoridated water, and all serviced Tasmanian communities with populations of greater than 1 000 were receiving fluoridated drinking water.

9.3 Recreational water

Councils are responsible for protecting human health by managing recreational water in accordance with the *Tasmanian Recreational Water Quality Guidelines 2007.* These apply to natural recreational water bodies such as beaches, rivers and lakes monitored during the swimming season from December to March; and public swimming pools and spa pools monitored throughout the year.

Recreational Water Quality Annual Reports, based on data from councils, show most monitored swimming sites comply with guideline levels.[181]

Where water quality is temporarily poor at swimming sites (for example due to run-off after heavy rain), or more frequently, signs are erected to warn the public of the risks.

9.4 Emergency management

The emergency management responsibilities of Public Health Services are governed by the *Emergency Management Act 2006,* the *Public Health Act 1997* and the *Tasmanian Emergency Management Plan.*

These are supported by many other plans, guidelines and policies, including the *Tasmanian Public Health Emergencies Management Plan* (reviewed and reissued in 2014) and a suite of plans that address public health emergencies.

The key emergency management responsibilities for Public Health Services are the strategic management of public health incidents (involving prevention and mitigation, preparedness, response and recovery); and the management of the public health consequences of other emergencies, whether due to natural hazards or intentional acts.

In 2016, pandemic influenza and heatwave hazards were included in the *Tasmanian State Natural Disaster Risk Assessment,* alongside hazards such as bushfire, flood and severe storm.[182]

[180] NHMRC. Public Statement – Water fluoridation and human health. NHMRC, 2017. https://nhmrc.gov.au/about-us/publications/2017-public-statement-water-fluoridation-and-human-health

[181] Recreational Water Quality Guidelines and Reports: www.dhhs.tas.gov.au/publichealth/water/recreational/guidelines

[182] White CJ, Remenyi T, McEvoy D, Trundle A and Corney SP. 2016 Tasmanian State Natural Disaster Risk Assessment: All Hazard Summary, University of Tasmania, 2016.

The *Tasmanian Health Action Plan for Pandemic Influenza* was revised and reissued in 2016. It defines scalable and proportionate responses from the health sector, and coordination with other response agencies and stakeholders. A multi-agency discussion exercise on Tasmania's planned response to pandemic influenza was conducted in 2016.

Further planning for pandemic influenza continues, using evolving national and international evidence on clinical, public health and emergency management to guide strategies to deal with the complexities and uncertainties of such a large but inevitable event.

Whole-of-government emergency tools such as telephone-based emergency alert and web-based TasALERT now provide rapid, appropriately targeted and authoritative ways to communicate critical public health emergency messages.

Notable responses included activation of incident management teams for the Dunalley and East Coast bushfires in 2014, heatwaves in January 2014 and January 2018, and support, response and recovery roles in the January 2016 bushfires, the June 2016 floods and the southern Tasmanian extreme weather event in May 2018.

9.5 Pharmaceutical services

Medicines and poisons save lives and control and prevent disease. They can also cause harm and death if used incorrectly. We regulate medicines and poisons are to ensure they meet quality, safety and efficacy standards.

Public Health Services ensures the risks of using medicines and poisons are managed to protect and improve the health of Tasmanians.

Public Health Services administers the statutory responsibilities of the Secretary and Minister under the *Poisons Act 1971, Poisons Regulations 2008* and *Therapeutic Goods Act 2001.*

Various amendments of the *Poisons Regulations 2008* and *Poisons Act 1971* between 2013 and 2017 expanded the scope of practice of some health practitioners to prescribe and administer certain medications.

These included pharmacists (influenza vaccines), speech pathologists (local anaesthetics) and podiatrists (certain scheduled substances). Aboriginal health workers were enabled to administer certain medications.

Amendments also facilitated activities that support safe and effective use of medications in diverse clinical and other settings.

These included the use of Pharmaceutical Benefit Scheme hospital and residential medication charts; organisationally approved standing orders in Tasmanian Health Service hospitals, day-treatment centres and community health centres; first aid organisations possessing and using key scheduled emergency medications; childcare services using adrenaline and salbutamol in emergencies; carers administering legal medications to patients; and pharmacists continuing to dispense prescription-only oral contraceptives and statins in certain circumstances.

Major new policy projects undertaken included the design, implementation and administration of the Controlled Access Scheme for unproven cannabis products; and convening a Codeine Rescheduling Implementation Group to support the rescheduling of codeine-containing analgesics from pharmacist-only (Schedule 3) to prescription-only (Schedule 4).

Public Health Services also expanded the list of substances monitored and reported in real time though the Drugs and Poisons Information System Online Remote Access to include the Schedule 4 opioids tramadol, codeine and dextropropoxyphene.

9.6 Radiation protection

The *Radiation Protection Act 2005* and *Radiation Protection Regulations 2016* provide a legislative framework for the safe and effective use of radiation in Tasmania.

Public Health Services protects Tasmanians and the environment from the risks of exposure to sources of radiation, while enabling access to its beneficial uses. We regulate the safe use, transport, storage and disposal of x-ray units and radioactive material used in medicine, research, industry and mining.

We also regulate high power lasers and intense pulse lights (a cosmetic skin treatment), and advise on non-ionising radiation sources including microwaves, power-lines, mobile phones and communication towers.

New and changing radiation practices and technology need adaptable regulatory practice based on science. For example, we evaluate exposure and patient dose for selected imaging techniques used in dentistry.

Public Health Services works with licence holders to improve reporting of incidents such as radiography of the wrong patient or performing the wrong investigation. These are notified to the Director of Public Health and then de-identified and added to the Australian Radiation Protection and Nuclear Safety Agency Australian Radiation Incident Register and reported annually.

We respond to enquiries about the possible health effects of electromagnetic fields from sources such as power lines and mobile phone base stations.

9.7 Changes to Acts and Regulations 2013 to 2017

Public Health Act

In 2015, Parliament passed the *Public Health (Miscellaneous Amendments) Act 2015*. The changes, which began 1 July 2015, addressed emergency management, disease management, tobacco control, drinking water, the Cervical Screening Register and the disclosure of information.

In 2017, Parliament passed the *Public Health Amendment (Healthy Tasmania) Act 2017,* to enable certain commitments in the Government's Healthy Tasmania Five Year Strategic Plan.

The changes introduced the regulation of personal vaporiser products (including electronic cigarettes); increased penalties for selling or supplying smoking products to a child; and made other changes to smoking product licensing, reporting and point-of-sale practices.

Public Health Regulations

- *Public Health (Infringement Notices) Amendment Regulations 2017* started 1 January 2018.
- *Public Health (Tobacco Seller's Licence) Amendment Regulations 2017* introduced fees for personal vaporiser products, starting 29 November 2017.
- *Public Health (Tobacco Seller's Licence) Amendment Regulations 2016* increased the prescribed fee for a tobacco seller's licence in two stages, on 1 January 2017 and 1 January 2018.
- *Public Health (Smoke-free Areas) Regulations 2014* declared certain pedestrian and bus malls as smoke-free areas for the purposes of the Act, starting 12 February 2014.

Food Act

In 2015, Parliament passed the *Food Amendment Act 2015,* which made a small but important change to the *Food Act 2003.* This enabled a greater range of mobile food businesses to apply for single, statewide registration rather than registering in every local government area in which they operated, starting 9 December 2015.

Food Regulations

- *Food Amendment Regulations 2016* made changes to reinstate egg stamping and related requirements, starting 2 November 2016.
- *Food Amendment Regulations 2014* made changes relating to seafood standards, starting 1 April 2014, to coincide with the start of the *Primary Produce Safety (Seafood) Regulations 2014.*

Radiation Protection Act

In 2013, Parliament passed the *Radiation Protection Amendment Act 2013* to provide greater clarity and certainty in the administration of the *Radiation Protection Act 2005,* starting 20 June 2013.

Radiation Protection Regulations

- *Radiation Protection Amendment Regulations 2014* made several changes to update safety standards and definitions, reduce regulatory burden, and maintain a reliable framework, starting 9 July 2014.
- *Radiation Protection Regulations 2016* remade the *Radiation Protection Regulations 2006,* which were due to expire. The new regulations started 24 May 2016.
- The *Radiation Protection Regulations 2016* were made to enact the requirement for fees to recover the full cost of licencing activities. These started 28 December 2016.

HIV/AIDS Preventive Measures Act 1993

In 2015, Parliament repealed the *HIV/AIDS Preventive Measures Act 1993* and transferred the needle and syringe program provisions to the *Public Health Act 1997.*

Guidelines

Guidelines issued and in force under the *Public Health Act 1997* include the following:

- *Guidelines for the Sale of Smoking Products (2017)*
- *Guidelines for Notifying Diseases and Food Contaminants (2016)*
- *Tasmanian Drinking Water Quality Guidelines (2015)*
- *Guidelines for the Operation of Solaria in Tasmania (2014)*
- *Guidelines for the Control of Legionella in Regulated Systems (2012)*
- *Recreational Water Quality Guidelines (2007)*
- *Guidelines for Acupuncture (1998)*
- *Guidelines for Ear and Body Piercing (1998)*
- *Guidelines for Tattooing (1998)*

The Recreational Water Quality Guidelines and the *Guidelines for the Control of Legionella in Regulated Systems* are under review.

Also, new guidelines addressing public health risk activities are being prepared to replace the existing *Guidelines for Acupuncture, Guidelines for Ear and Body Piercing and Guidelines for Tattooing.*

10. Data

10.1 Data used in this report

Data in this report were chosen to represent information on health outcomes and risk factors in the Tasmanian population, mostly from 2014 to 2018.

The data presented are selected from authoritative and diverse sources, most of which are publicly available. These include:

- *Report on the Tasmanian Population Health Survey 2016,* and reports of preceding surveys.
- Australian Bureau of Statistics (ABS) data, including the *National Health Survey 2014-15;* causes of death; births, deaths and migration; the age, geographic distribution and socioeconomic characteristics of the population; nutrition and physical activity; and Aboriginal and Torres Strait Islander health and social surveys.
- Australian Institute of Health and Welfare publications, typically drawing on ABS and other sources to provide accounts of the burden of disease, specific diseases, risk factors, drug use, injury, cancer screening and health service use.
- *Cancer in Tasmania Incidence and Mortality* yearly reports of the Tasmanian Cancer Registry, produced by the Menzies Institute for Medical Research, UTAS.
- Various reports including the annual reports of the Tasmanian Council of Obstetric and Paediatric Mortality and Morbidity, the *Nutritional Status of Tasmanians* (produced by the Menzies Institute for Medical Research, UTAS), the *Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substances* reports (produced by the Centre for Behavioural Research in Cancer, Cancer Council Victoria), and others.
- *Needs Assessment: Health Intelligence Reports* for 2016-2017 and 2017-2018 produced by Primary Health Tasmania.
- Public Health Services data on statutory functions such as communicable disease surveillance, food safety, regulation of drinking water quality and recreational water, radiation safety, poisons and tobacco licencing and control.

A wealth of data on population health from diverse sources has become much more publicly accessible over the last 10 or so years. Data are often accompanied by substantial accounts of the meanings of data and summaries providing plain-language interpretations. Many accounts of data are updated annually or every several years, so the currency of the most recent available data varies.

Understanding health statistics and information depends on how the data are presented, and the meaning for a person or a community is influenced by their personal and collective experience, education, values and heath literacy.

The data presented in this report are necessarily selective and reflect information at points in time; most of the data sources are frequently updated and there will be other relevant data. Sometimes only national data were available.

The scope of population health is such that the absence, or a relatively brief account, of a particular issue in this report should not be taken as denying its significance.

10.2 Data caveats

Comparing data across different populations or even apparently similar populations over time requires careful consideration of factors such as how the data were gathered (for example, by self-report or measured various ways), and the populations from which the data came (for example, the age distribution of the populations, bearing in mind the older and ageing Tasmanian population).

Many measures of population health are based on surveys, measurements or monitoring (surveillance) of *samples* of a wider population. The size of a sample may sometimes be relatively small, resulting in estimates of population-wide measures based on the sample having quite wide confidence intervals. This means the 'true' value in the entire population represented by the sample may lie within a quite wide range.

These limitations mean trends in data must be interpreted cautiously, preferably taking into account multiple data points over time and corroborating evidence from additional sources.

Even when all occurrences of a particular health event in the Tasmanian population can be counted, small numbers of events in a relatively small population will vary from year to year, in part by chance, so such changes also need to be interpreted carefully.

10.3 Age standardisation

This report mostly uses age-standardised measures to compare Tasmania with other Australian jurisdictions or Australia overall. Data may also be provided for the crude prevalence of a condition in Tasmania, which is simply the proportion of people with the condition.

Age standardisation uses statistics to take account of the different age structures of different populations. It enables comparisons of the incidence or prevalence of a condition in such populations.

Age standardising the incidence or prevalence of a condition shows how common the condition would be if the population age structure was the same in all states and territories and Australia.

Age standardisation is particularly important when comparing Tasmanian data with data from other Australian jurisdictions or Australia overall. This is because Tasmania has a greater proportion of older people than elsewhere in Australia.

Conditions more common among older people, such as cancers, heart disease, diabetes and osteoarthritis will be more common in populations with relatively more older people, just because of age.

Age-standardisation improves the comparability of data but does not remove the effects of other factors such as socioeconomic disadvantage on health and wellbeing.

Public Health Services

Department of Health

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