Australian Indigenous HealthInfoNet

Summary of Aboriginal and Torres Strait Islander health status - selected topics 2023

Core funding is provided by the Australian Government Department of Health and Aged Care

AUSTRALIA ECU EDITH COWAN UNIVERSITY

Australian Indigenous Health*InfoNet*

The mandate of the Australian Indigenous Health*InfoNet* (Health*InfoNet*) is to contribute to improvements in Aboriginal and Torres Strait Islander health by making relevant, high quality knowledge and information easily accessible to policy makers, health service providers, program managers, clinicians and other health professionals (including Aboriginal and Torres Strait Islander Health Workers and Health Practitioners) and researchers. The Health*InfoNet* also provides easy-to-read and summarised material for students and the general community.

The Health*InfoNet* achieves its commitment by undertaking research into various aspects of Aboriginal and Torres Strait Islander health and disseminating the results (and other relevant knowledge and information) mainly via Health*InfoNet* websites (https://healthinfonet.ecu.edu.au), the Alcohol and Other Drugs Knowledge Centre (https://aodknowledgecentre.ecu.edu.au), Tackling Indigenous Smoking (https://tacklingsmoking.org.au) and WellMob (https://wellmob.org.au). The research involves analysis and synthesis of data and other information obtained from academic, professional, government and other sources. The Health*InfoNet*'s work in knowledge exchange aims to facilitate the transfer of pure and applied research into policy and practice to address the needs of a wide range of users.

Recognition statement

The Health*InfoNet* recognises and acknowledges the sovereignty of Aboriginal and Torres Strait Islander people as the original custodians of the country. Aboriginal and Torres Strait Islander cultures are persistent and enduring, continuing unbroken from the past to the present, characterised by resilience and a strong sense of purpose and identity despite the undeniably negative impacts of colonisation and dispossession. Aboriginal and Torres Strait Islander people throughout the country represent a diverse range of people, communities and groups, each with unique identities, cultural practices and spiritualities. We recognise that the current health status of Aboriginal and Torres Strait Islander people has been significantly impacted by past and present practices and policies.

We acknowledge and pay our deepest respects to Elders past, present and emerging throughout the country. In particular, we pay our respects to the Whadjuk Noongar peoples of Western Australia on whose Country our offices are located (https://healthinfonet.ecu.edu.au/acknowledging-country).

Contact details

Professor Neil Drew (Director)
Australian Indigenous Health*InfoNet*
Edith Cowan University
2 Bradford Street
Mount Lawley, Western Australia 6050

Phone: (08) 9370 6336
Email: healthinfonet@ecu.edu.au
Website: healthinfonet.ecu.edu.au

ISBN Web: 978-0-6457361-4-4
ISBN Hard copy: 978-0-6457361-3-7

Summary of Aboriginal and Torres Strait Islander health status - selected topics 2023

Publication team

Publication editor
Christine Potter

Contributing authors
Marianne Durbin
Ashleigh Parnell
Christine Potter
Miranda Poynton
Hannah Tarrant

Production coordinator
Christine Potter

Executive editor
Neil Drew

Publication layout
Michelle Pierre

Suggested citation:

Australian Indigenous Health*InfoNet*. (2024). *Summary of Aboriginal and Torres Strait Islander health status - selected topics 2023.* Perth, WA: Australian Indigenous Health*InfoNet.*

Further information

This *Summary* is based on our more comprehensive publication the *Overview of Aboriginal and Torres Strait Islander health status 2023 (Overview)*. The *Summary* does not cover all of the health topics found in the *Overview*, only those which receive specific funding through the Health*InfoNet* funding partners. The *Overview* and *Summary* are produced annually and can be found at: healthinfonet.ecu.edu.au/summaries and healthinfonet.ecu.edu.au/overviews.

Acknowledgements

Special thanks are extended to staff at the Australian Indigenous Health*InfoNet* for their assistance and support, and to the Australian Government Department of Health and Aged Care and other funding partners for their ongoing support of the work of the Australian Indigenous Health*InfoNet.*

Tell us what you think

We value your feedback as part of our post-publication peer review process. Please let us know if you have any suggestions for improving this *Summary*: https://healthinfonet.ecu.edu.au/contact-us

Cover artwork

Bibdjool *by Donna Lei Rioli*

Donna Lei Rioli, a Western Australian Indigenous artist, was commissioned by the Health*InfoNet* to create a logo incorporating a gecko, chosen as it is one of a few animals that are found across the great diversity of Australia.

Donna is a Tiwi/Noongar woman who is dedicated to the heritage and culture of the Tiwi people on her father's side, Maurice Rioli, and the Noongar people on her mother's side, Robyn Collard. Donna enjoys painting because it enables her to express her Tiwi and Noongar heritage and she combines the two in a unique way.

Donna interpreted the brief with great awareness and conveyed an integrated work that focuses symbolically on the pathway through life. This is very relevant to the work and focus of the Health*InfoNet* in contributing to improving the health and wellbeing of Aboriginal and Torres Strait Islander people.

Featured icon artwork *by Frances Belle Parker*

The Health*InfoNet* commissioned Frances Belle Parker, a proud Yaegl woman, mother and artist, to produce a suite of illustrated icons for use in our knowledge exchange products. Frances translates biomedical and statistically based information into culturally sensitive visual representations, to provide support to the Aboriginal and Torres Strait Islander workforce and those participating in research and working with Aboriginal and Torres Strait Islander people and their communities. Frances came to prominence winning the Blake Prize in 2000, making her the youngest winner and the first Indigenous recipient over the 65 year history of the prize.

"Biirrinba is the Yaygirr name for the mighty Clarence River (NSW). It is this river that is the life giving vein for the Yaegl people. And it is this river which inspires much of my artwork. I am deeply inspired by my Mother's land (Yaegl land) and the Island in the Clarence River that my Mother grew up on, Ulgundahi Island. The stories which are contained within this landscape have shaped me as a person, as an artist and most recently as a Mother. This is my history, my story and it will always… be my responsibility to share this knowledge with my family and my children."

Contents

Introduction

Aboriginal and Torres Strait Islander people have lived on their traditional lands across Australia, including the Torres Strait Islands, for upwards of 50,000 years and their continuity, history and cultural traditions are unrivalled in the world [1,2]. Before colonisation, Aboriginal and Torres Strait Islander people lived in family and community groups, and moved across the land following seasonal changes [1]. Aboriginal and Torres Strait Islander people developed complex societies, trading systems and agricultural activities that were celebrated and recorded in dance, song and stories [2]. The Aboriginal and Torres Strait Islander concept of health is not just about the individual person, but a whole-of-life view that includes the social, emotional and cultural wellbeing of the community [3].

There are distinctive ethnic and cultural differences between Aboriginal societies and between Torres Strait Islander societies, each having their own languages and traditions [2,4]. Despite their differences, Aboriginal and Torres Strait Islander people have had many similar experiences of colonisation. Colonisation is now unequivocally recognised as a 'traumatic disruption' to the way of life prior to colonisation when Aboriginal and Torres Strait Islander peoples lived relatively healthy lives [2, p.40]. It is evident that the ongoing impacts of colonisation (including oppression; exploitation; marginalisation; separation from culture, land and family; intergenerational trauma; racism; and poverty) have had negative impacts on health and wellbeing for many Aboriginal and Torres Strait Islander people [2,4,5].

Nationally, there has been a shift away from the deficit approach (focusing on the negative differences between Aboriginal and Torres Strait Islander people and non-Indigenous people) to focus more on the positive affirming impacts of cultural determinants, whereby the narrative can shift more towards strengths based understandings of Aboriginal and Torres Strait Islander health [6-9]. The *Summary of Aboriginal and Torres Strait Islander health status – selected topics 2023* (*Summary*) aims to deliver the most important and up-to-date information about Aboriginal and Torres Strait Islander health while also limiting comparisons with other Australians.

The Health*InfoNet* has prepared this *Summary* as part of our contribution to support those who work in the Aboriginal and Torres Strait Islander health sector. Key health topics are summarised in plain language and an infographic style to enable readers to absorb data easily and quickly.

The accuracy of the identification of Aboriginal and Torres Strait Islander people in health data collections varies across the country. Information about hospitalisations is generally considered to be accurate for all jurisdictions: New South Wales (NSW), Victoria (Vic), Queensland (Qld), Western Australia (WA), South Australia (SA), Tasmania (Tas), the Australian Capital Territory (ACT) and the Northern Territory (NT), however in some jurisdictions private hospital data are not included. Other statistical information is only considered to be sufficient and complete for certain jurisdictions, for example data about deaths are usually only provided for NSW, Qld, WA, SA and the NT. Please refer to the sources for full details on the statistical information presented here.

If you want more information about the health and wellbeing of Aboriginal and Torres Strait Islander people, you can:

- read our latest *Overview* [10] for a more comprehensive health status update
- read our health topic reviews (healthinfonet.ecu.edu.au/reviews)
- visit our website (healthinfonet.ecu.edu.au).

Statistical terms

- **Burden of disease (and injury)** is the quantified impact of a disease or injury on a population using the **disability-adjusted life year** measure.
- **Disability-adjusted life year (DALY)** is a year of healthy life lost, either through premature death or living with a disability due to illness or injury.
- **Fatal burden** is the burden of dying prematurely from a disease or injury as measured by **years of life lost**. It offers a way to compare the impact of different diseases, conditions or injuries on a population. See **non-fatal burden**.
- **Hospitalisation** refers to a period of hospital care for a person admitted to hospital. **Hospitalisation rates** are calculated as the total number of such periods of care divided by the total number of the population of interest. The rate is usually written per 1,000. Unless indicated, rates of hospitalisations provided in this *Summary* are ***excluding dialysis separations*** – these are the regular hospitalisations required by kidney disease patients for dialysis treatment.
- **Incidence** is the number of new cases of a disease or condition during a time period, the **incidence rate** is the number divided by the population of interest.
- **Maternal mortality** refers to pregnancy-related deaths occurring to women during pregnancy, or up to 42 days after delivery.
- **Maternal mortality ratio** is the number of maternal deaths divided by the number of confinements (expressed in 100,000s).
- **Median** is the middle number in a range where 50% fall below and 50% fall above.
- **Non-fatal burden** is the burden from living with ill health, as measured by **years lived with disability**.
- **Prevalence** is the proportion of people living with a disease or condition in a given time period.
- **Rates** are one way of looking at how common a disease or condition is in a population. A rate is calculated by taking the number of cases and dividing it by the population at risk, for a specific time period. A specific type of rate, called an **age-standardised rate**, allows for comparison between populations that have different age profiles. These are different from **crude rates**. Unless stated otherwise, rates presented in this *Summary* are age-standardised.
- **Survival** is statistically measured as the likelihood of a person being alive for a given period of time after being diagnosed with a disease or condition. Data about survival are provided for NSW, Vic, Qld, WA and the NT.
- **Years lived with disability** measures the years of what could have been a healthy life that were instead spent in states of less than full health. Years lived with disability represent **non-fatal burden.**
- **Years of life lost** measures years of life lost due to premature death, defined as dying before the ideal lifespan (based on the lowest observed death rates from multiple countries). Years of life lost represent **fatal burden**.

Sources of information

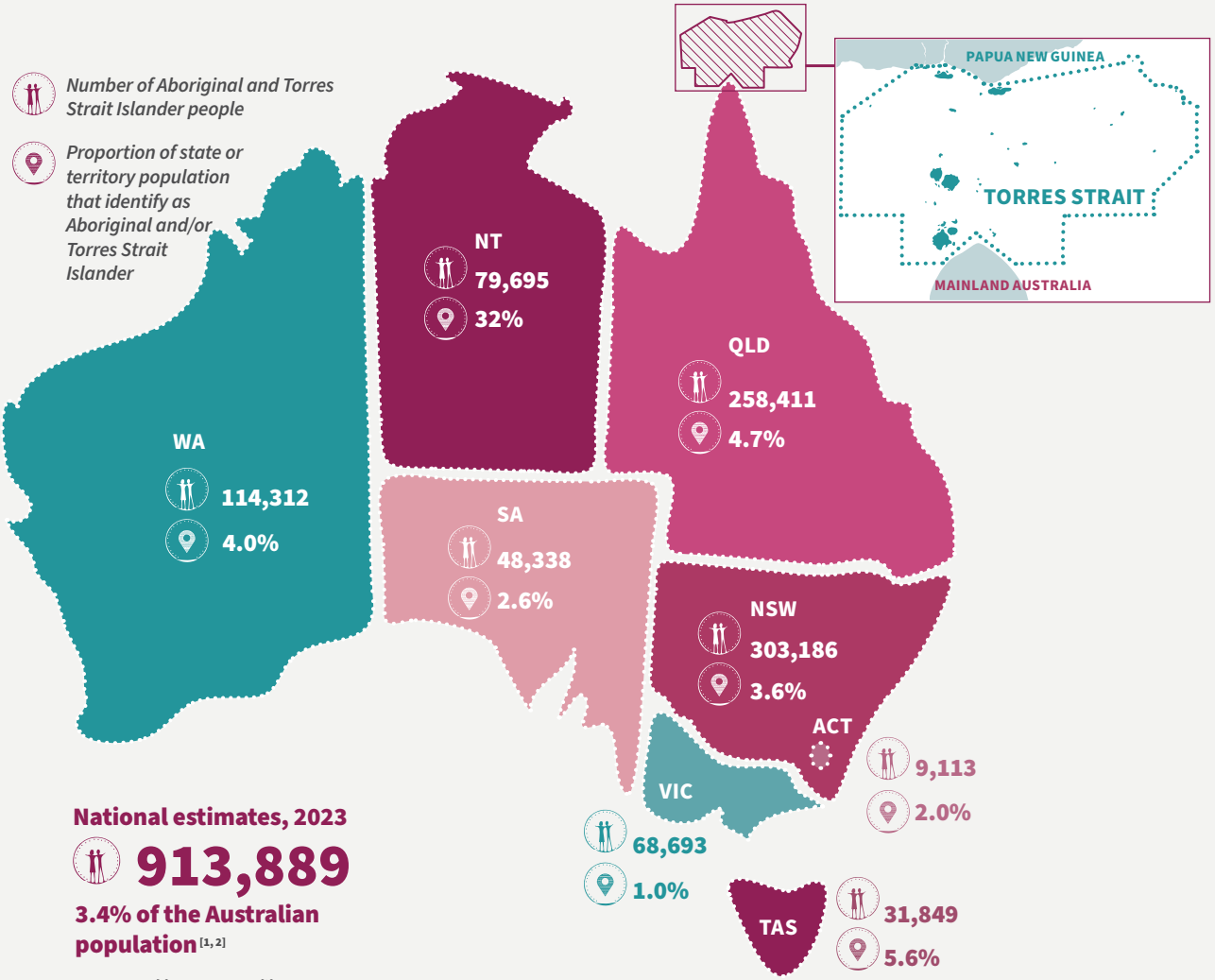
Most of the information presented in this *Summary* is sourced from government reports, particularly those produced by the Australian Bureau of Statistics (ABS), the Australian Institute of Health and Welfare (AIHW), the Health Chief Executives Forum (formerly the Australian Health Ministers Advisory Council) and the Steering Committee for the Review of Government Service Provision (SCRGSP). Data in these reports come from national health surveys, hospitals and other government agencies (including the birth and death registration systems).

It is important to note that data presented from national health surveys were generally calculated from responses by people aged 15 years and over. For children aged 14 years and under, a parent or guardian of a child generally provided responses on behalf of the child.

Surveys that have informed this *Summary*

2012-13 Australian Aboriginal and Torres Strait Islander Health Survey	**2012-13 AATSIHS**
2018-19 National Aboriginal and Torres Strait Islander Health Survey	**2018-19 NATSIHS**
2019 National Drug Strategy Household Survey	**2019 NDSHS**

Aboriginal and Torres Strait Islander population



In 2023, it was estimated that about one-third (**32%**) of the Aboriginal and Torres Strait Islander population was aged **<15 years** and **6%** of Aboriginal and Torres Strait Islander people were aged **65 years+** [1].

More detailed information about the Aboriginal and Torres Strait Islander population can be found in the 2021 Census [3]:

91.4% Aboriginal

4.4% Torres Strait Islander

4.2% both Aboriginal and Torres Strait Islander

The ABS estimated that of the population of **913,889** in 2023:

39% lived in major cities

44% lived in inner/outer regional areas

17% lived in remote/very remote areas [1]

The top five Indigenous Regions where Aboriginal and Torres Strait Islander people resided in 2023 were **Brisbane, NSW Central-North Coast, Sydney-Wollongong, Perth and Townsville-Mackay** [1].

Determinants of health

among Aboriginal and Torres Strait Islander people

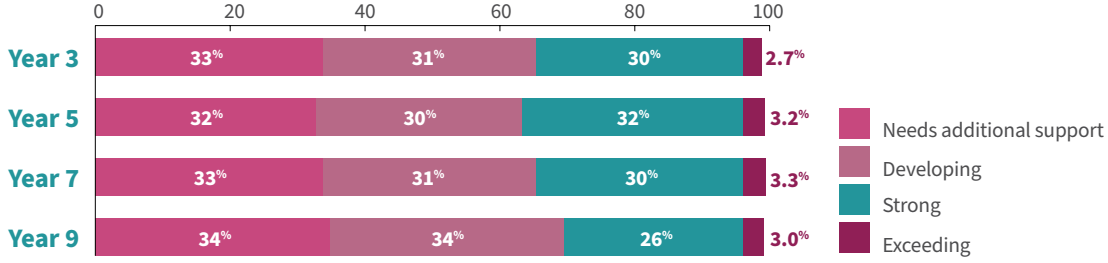
Factors known as the '**determinants of health**' impact the health and wellness of individuals [1]. Social determinants of health are the conditions in which people are born, grow, work, live and age, and include [2]:

Education

In 2022, **99%** **of eligible children were enrolled in early childhood education** in the year before full-time school [3].

In 2022, the proportions of students who stayed enrolled full-time in high school were [4]:

NAPLAN results for 2023 show the proportion of students who were assessed as having a particular level of skill (on average across literacy/numeracy areas) [5]:



In 2021:

Employment and income

The 2021 Australian Census reported for Aboriginal and Torres Strait Islander people:

1. This is based on equivalised household income, which is a special calculation that allows for the comparison of incomes of different types of households.

Births and pregnancy

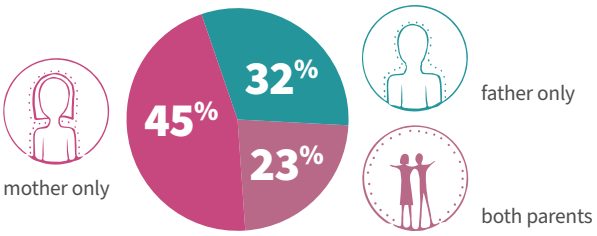
among Aboriginal and Torres Strait Islander people

In 2022, there were **24,388 births**[1] registered in Australia where one or both parents were Aboriginal and/or Torres Strait Islander, this represented **8.1% of all births** registered [1]:

12,321 males

12,067 females

Aboriginal and/or Torres Strait Islander status of parents for births registered as Indigenous:



Babies

Low birthweight (LBW) is a birthweight of less than 2,500 grams [2]. Babies with LBW are at greater risk of health problems and death [3]. For babies born to Aboriginal and Torres Strait Islander mothers in 2021 [4]:

3,217 grams average weight

12% were of LBW

Mothers

Antenatal (pre-birth) care from health professionals during pregnancy supports positive health outcomes for mother and child, especially when provided during the first trimester (less than 14 weeks) of pregnancy [5, 6, 7].

In 2021, **72%** of pregnant women attended their first antenatal care appointment during their first trimester of pregnancy [4].

For Aboriginal and Torres Strait Islander **mothers who gave birth in 2022** [1]:

- the median age was **26.7 years**
- **58%** were aged **20-29 years**
- **8.8%** were **teenagers** aged 15-19 years

The total fertility rate[2] was: **2.4** babies **per 1,000** women

There have been **improvements in birth and pregnancy outcomes** for Aboriginal and Torres Strait Islander mothers and babies, with evidence of:

- an increase in the proportion of mothers attending antenatal care in the first trimester
- a decrease in the rate of mothers smoking during pregnancy
- a majority of babies being born at a healthy birthweight and normal size for their gestational age [8].

1. Likely to be underestimated as Indigenous status is not always identified, and there may be a delay in birth registrations.
2. The total fertility rate is the number of children born to 1,000 women at the current level and age pattern of fertility.

Deaths

among Aboriginal and Torres Strait Islander people

In 2022, there were **5,082 deaths**[1] registered for Aboriginal and/or Torres Strait Islander people [1]. This accounts for **2.7% of all deaths in Australia** for 2022.

Leading causes of death[2] in 2022[2] were:

12% ischaemic heart disease

7.2% diabetes

6.4% chronic lower respiratory disease

5.9% lung and related cancers

In 2022 [1] the **median age at death** was **62.3 years**:

60.1 years males

65.1 years females

In 2022, the rate of deaths for **babies** 12 months or younger was **5.2 per 1,000** live births [1].

For 2012-2021, the maternal mortality ratio was **17** deaths **per 100,000** women who gave birth [3].

The **life expectancy** for Aboriginal and Torres Strait Islander people born in 2020-2022 was [4]:

71.9 years males

75.6 years females

Aboriginal and Torres Strait Islander **females had a greater life expectancy** across all age-groups compared with Aboriginal and Torres Strait Islander males.

Life expectancy was **lower** for people living in remote and very remote areas than those living in inner and outer regional areas:

	males:	females:
inner and outer regional areas	**72.8** years	**76.7** years
remote and very remote areas	**67.3** years	**71.3** years

In 2017-2021, there were **7,766 deaths from avoidable causes**[3] [5].

In July 2020, a new national agreement on Closing the Gap was endorsed by Aboriginal and Torres Strait Islander leaders. Specific outcomes, targets and monitoring measures were set for life expectancy; deaths; leading causes of death; and potentially avoidable deaths [7,8].

1. The ABS notes that the actual number of deaths may be slightly higher because of inaccurate data or delays in registration.
2. In 2022, leading causes of death only included data from NSW, Qld, WA, SA and the NT (4,587 deaths).
3. Deaths that could have been prevented with timely and effective health care, including early detection and effective treatment [6].

Hospitalisations

among Aboriginal and Torres Strait Islander people

Statistics on hospitalisation provide some indication of the burden of disease in the population [1]. However, they provide only a part of the overall picture of health because:

- they only report on conditions that are serious enough to require hospitalisation
- depending on where people live, not everyone has access to hospitals
- different hospitals may have different admission policies and procedures for illnesses
- the statistics relate to events of hospitalisation rather than to individual patients, i.e. one person may be hospitalised several times in the time period [2-5].

In 2021-22 there were [6]:

619,767 hospitalisations identified as Aboriginal and/or Torres Strait Islander

5.3% of all Australian hospitalisations

42% males

58% females

91% Aboriginal people

4.2% Torres Strait Islander people

4.6% both Aboriginal and Torres Strait Islander people

A key factor in the high rates of hospitalisation for Aboriginal and Torres Strait Islander people is dialysis treatment for kidney disease, which involves repeat admissions for the same patients [3,6].

Leading causes of Aboriginal and Torres Strait Islander hospitalisation in 2021-22 [6]:

47% mostly care involving dialysis

5.4% pregnancy and birth

4.3% respiratory conditions

6.5% injuries

5.1% digestive conditions

4.1% mental and behavioural disorders

Potentially preventable hospitalisations

Potentially preventable hospitalisations are those that could have been avoided with preventative care actions and early disease management [7]. They can be used as a way to measure how easily people can access primary health or community care and how effective it is [8].

In 2021-22, the rate of potentially preventable hospitalisations was **65 per 1,000** [6].

The highest rates for potentially preventable hospitalisations were for:

chronic conditions (includes 7.0 for diabetes complications)	30
acute conditions	28
vaccine-preventable conditions	9.0

per 1,000

Burden of disease

among Aboriginal and Torres Strait Islander people

In 2022, detailed findings for Aboriginal and Torres Strait Islander people were released for Australia's National Burden of Disease study [1]. The reference year for this study was 2018.

Burden of disease studies have been undertaken in Australia for more than 20 years by the Australian Institute of Health and Welfare (AIHW) [2]. These studies measure the impact of diseases and injuries on a group of people in terms of:

- the number of years of healthy life lost through living with illness, and
- the number of years of life lost through dying prematurely [1].

When added together, these measures are called **total burden**.

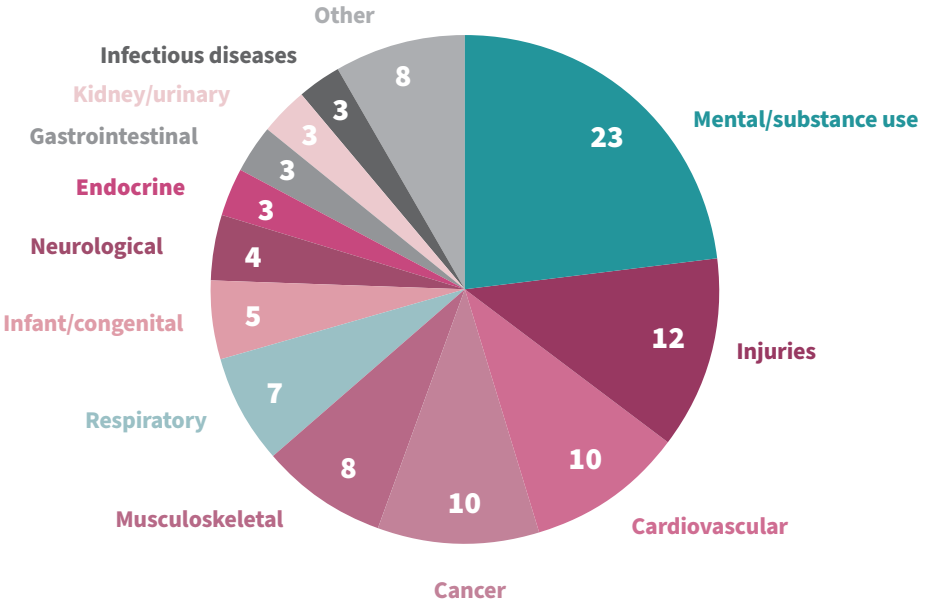
The findings from the burden of disease analysis are useful to people who plan health services because they highlight which diseases and injuries are having the most impact on a population.

This *Summary* presents information[1] about the impact that selected diseases and risk factors have on total burden among Aboriginal and Torres Strait Islander people.

Contribution of disease groups to total burden

Each **disease group** made a different contribution to overall burden for Aboriginal and Torres Strait Islander people. The leading contributors were **mental and substance use disorders** and **injuries** [1].

Contribution (%) of disease groups to total burden (DALY[2]) among Aboriginal and Torres Strait Islander people, 2018

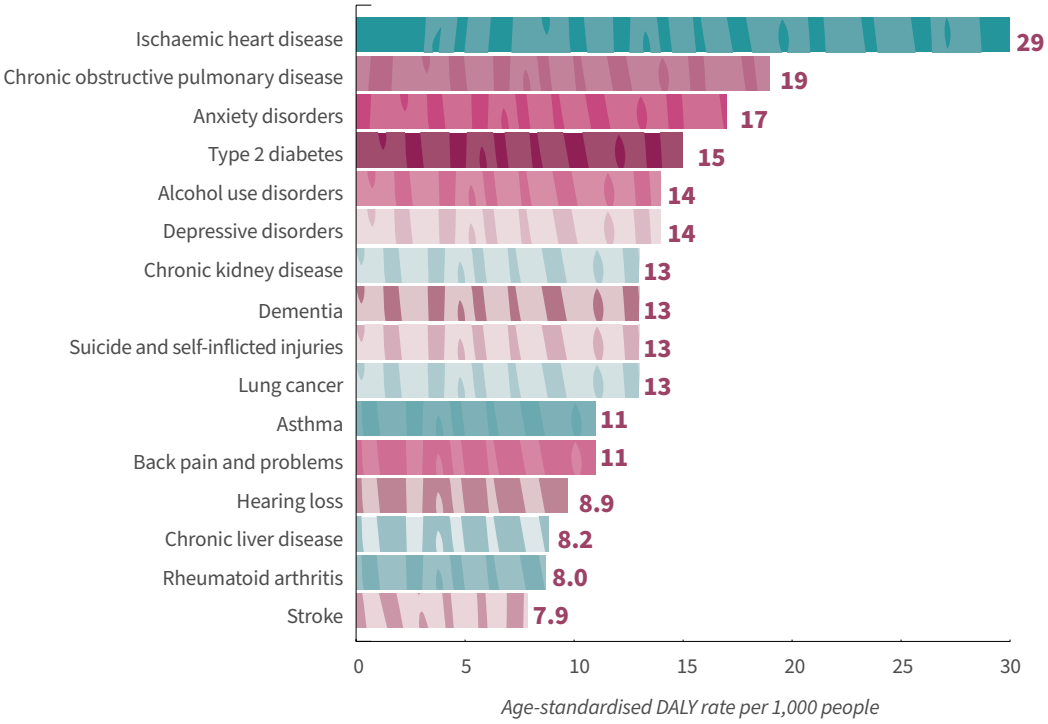


1. Findings from the burden of disease study selected for inclusion in this *Summary* differ slightly from those included in the *Overview of Aboriginal and Torres Strait Islander health status 2023*.
2. For definition of DALY, see Statistical terms on page 3.

Leading specific causes of total burden

Ischaemic heart disease, chronic obstructive pulmonary disease and **anxiety disorders** were the leading **specific** causes of total burden among Aboriginal and Torres Strait Islander people [1].

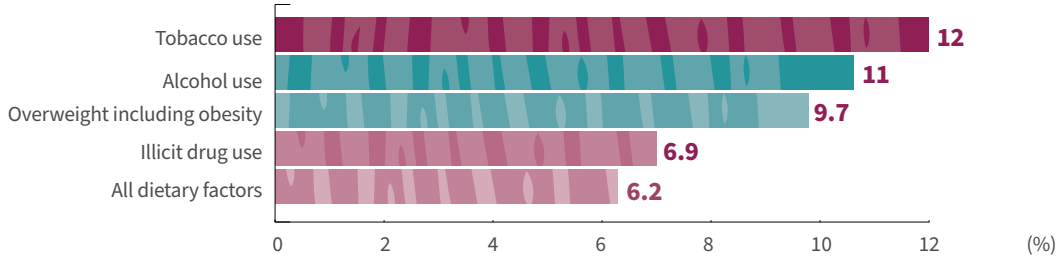
Leading specific causes of total burden (based on age-standardised DALY rate) among Aboriginal and Torres Strait Islander people, 2018



Leading risk factors contributing to total burden

The study calculated the contribution made by modifiable risk factors to the total burden of disease among Aboriginal and Torres Strait Islander people. **It found that almost half (49%) of total burden could have been prevented by avoiding modifiable risk factors**. Tobacco use was the risk factor that contributed the most burden [1].

Proportion (%) of total burden attributable to the leading five risk factors among Aboriginal and Torres Strait Islander people, 2018



Note: Risk factor contributions in this graph can not be added together to estimate totals, due to interactions between factors.

Cardiovascular health

among Aboriginal and Torres Strait Islander people

Cardiovascular disease (CVD) is the common term for all of the diseases and conditions that affect the heart and blood vessels [1]. These include [1-3]:

- ischaemic heart disease (**IHD**)
- heart failure
- vascular disease
- cerebrovascular disease (including stroke)
- rheumatic heart disease (**RHD**)
- high blood pressure.

Prevalence

In the 2021 Census, **heart disease** (including heart attack or angina) was **reported by 3.7%** of the Aboriginal and Torres Strait Islander population and **stroke by 0.9%** [4]. In 2018-19, about **one quarter of Aboriginal and Torres Strait Islander adults had high blood pressure and 4.5% reported high cholesterol** which are risk factors for CVD [3].

In the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) 2018-19 [3]:

15% of participants reported having CVD

14% males

17% females

CVD was reported more frequently by females than by males

the prevalence of CVD increased with age

from **1.9%** among those **aged 0-14 years** to **56%** among those **aged 55 years and over**

Risk factors

Risk factors for CVD include [5-7]:

- smoking
- drinking alcohol at risky levels
- lack of physical activity
- obesity
- depression and social isolation
- inadequate diet
- high blood pressure
- high cholesterol
- age and gender
- ethnicity
- family history

Other health conditions like diabetes and chronic kidney disease can also increase the risk of developing CVD [7].

Due to the high prevalence of CVD among Aboriginal and Torres Strait Islander people, it is now recommended for all adults to participate in regular screening for CVD risk factors from the age of 18 years [7].

Hospitalisations

There were **16,986** hospitalisations for CVD in 2021-22 [8]:

representing **5.1%** **of all Aboriginal and Torres Strait Islander hospitalisations**

The crude rate of hospitalisations in 2017-19 was [9]:
19 per 1,000

Although rates of CVD are highest among older people, CVD is recognised as having a substantial impact on **younger** Aboriginal and Torres Strait Islander people [9].

In 2017-19 the crude rate of hospitalisations for CVD in Aboriginal and Torres Strait Islander **people aged 35-44 years** was **20 per 1,000**

Deaths

23% of all deaths were caused by **CVD** in 2015-2019 [9].

IHD was the leading cause of deaths in 2022 [10]:

81 males

56 females

per 100,000 (crude rate)

Age-specific mortality rates for **overall CVD increased with age**, with **high rates** seen among people as **young as 25-34 years at 23 per 100,000** [9].

Acute rheumatic fever (ARF) and rheumatic heart disease (RHD)

ARF and RHD are preventable health problems that affect many Aboriginal and Torres Strait Islander people and communities [11]. RHD occurs when ARF, a sickness caused by the germ *Streptococcus*, leads to permanent damage to the heart valves. Risk factors for ARF include overcrowding and poor sanitation [11, 12].

In NSW, Qld, WA, SA and the NT combined in 2017-2021, among Aboriginal and Torres Strait Islander people, there were [13]:

2,570 episodes of **ARF**

Rates were highest in the **5–14 age-group** **140 per 100,000**

NT had the highest rate **371 per 100,000**

1,750 new diagnoses of **RHD**[1]

the rate for **females was nearly double** the rate for males

x2

A roadmap for ending RHD in Australia by 2031 was released in 2020 [11].

1. NSW data not included for RHD because NSW uses different RHD notification criteria than other jurisdictions.

Cancer

among Aboriginal and Torres Strait Islander people

Cancer is a disease that causes damage to healthy body cells [1]. It can form almost anywhere in the body, and refers to about 100 different diseases. The location in the body where the cancer cells begin forming is known as the primary site. For example, lung cancer begins in the lungs. When cancer cells spread to other parts of the body it is known as 'metastasis' [2]. 'Neoplasm' is sometimes used to describe conditions associated with abnormal growth of new tissue (tumour) [3]. Neoplasms can be benign (not cancerous) or malignant (cancerous).

Incidence and prevalence

In the 2018-19 NATSIHS [4], **1.1%** of Aboriginal and Torres Strait Islander people reported having cancer (malignant neoplasm):

1.2% males

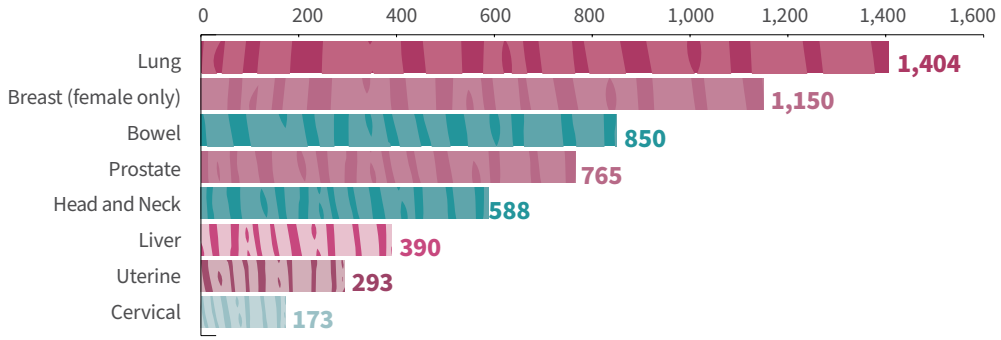
1.1% females

1.3% non-remote areas

0.7% remote areas

In 2014-2018, **9,262** new cases were diagnosed, an average of **1,852** new cases per year [5].

New cases of the most common cancers [5]:



For 2014-2018, when comparing by remoteness, major cities, inner regional and outer regional locations had higher crude rates than very remote and remote locations [5]:

major cities **542**
inner regional **521**
outer regional **519**

per 100,000

466 very remote
464 remote

Survival

For the period 2009-2018, the likelihood of **surviving five years after a cancer diagnosis was 55%** [5]. Observed survival decreased with remoteness:

54% major cities

39% remote/very remote areas

The approximate relative survival rates were highest for bowel cancer and head and neck cancers, and lowest for lung cancer and liver cancer [5]:

64% bowel cancer

47% head and neck cancers

13% lung cancer

11% liver cancer

Hospitalisations

In 2021-22, there were **11,232** hospitalisations for neoplasms, representing **3.4%** of all hospitalisations [6].

In 2017-19, there were **11, 970** hospitalisations for cancer as the principal diagnosis, at a crude rate of **7.2 per 1,000** [5]:

7.9 males

6.5 females

per 1,000

outer regional areas	7.8
remote areas	7.8
inner regional areas	7.5
major cities	7.0
very remote areas	5.8

per 1,000

Deaths

In 2017-2021, the mortality rate for cancer among Aboriginal and Torres Strait Islander people was **244 per 100,000** [7]:

highest in the **NT - 282**
lowest in **NSW - 211**

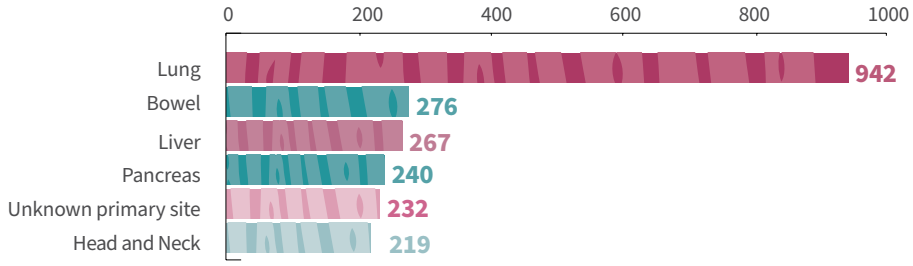
per 100,000

There were **3,576 deaths** due to cancer in 2015-2019, at a rate of **230 per 100,000** [8]:

1,939 males
276 per 100,000

1,637 females
194 per 100,000

Number of deaths for selected cancers 2015-2019 [8]:



Cancers of the **trachea, bronchus and lung combined** were the **4th highest overall cause of death** in 2022 [9].

Diabetes

among Aboriginal and Torres Strait Islander people

Diabetes is a chronic disease marked by high levels of glucose in the blood [1].

There are different types of diabetes with the three most common being:

- **type 1 diabetes**
- **type 2 diabetes**
- **gestational diabetes mellitus (GDM)** (a type of diabetes that occurs in pregnancy) [2-3].

Diabetes can cause life-threatening complications [1].

Incidence and prevalence

Diabetes (excluding GDM) was reported by **5.9%** of Aboriginal and Torres Strait Islander people in the 2021 Census [4].

In the 2018-19 NATSIHS, **7.9%** of people self-reported diabetes (including GDM) [5]:

7.6% males

8.2% females

12% remote areas

7.0% non-remote areas

WA and the NT had the highest levels of diabetes (both **11%**).

Diabetes increased with age:

35% of people **55 years +** had diabetes

Crude rates of new diabetes diagnoses in 2021 were [6]:

Type 1 diabetes:

19 males

15 females

per 100,000

Type 2 diabetes:

230 males

220 females

per 100,000

In 2020-21 [6]:

There were **2,360 new cases of GDM among females aged 15-49 years,** with a crude incidence of **16%**

Risk factors

Risk factors for diabetes include [1, 2, 7, 8]:


smoking


family history


obesity


other chronic conditions such as kidney disease, cardiovascular disease, liver disease and anaemia

Hospitalisations

In 2020-21 there were **85,460 hospitalisations** for diabetes as a main and/or additional diagnosis [9].

In 2017-19, there were **2,150** hospitalisations for **type 1** diabetes as a main diagnosis [10]:

The hospitalisation rate was **1.3** per 1,000 — **1.2** males; **1.4** females

There were **5,389** hospitalisations for **type 2** diabetes as a main diagnosis:

The hospitalisation rate was **5.3** per 1,000 — **5.8** males; **4.9** females

In 2017-19, there were **1,291** hospitalisations for diabetes as the main diagnosis during pregnancy (GDM) [10].

In 2019-20, there were **4,835 potentially preventable hospitalisations** of Aboriginal and Torres Strait Islander people for a principal diagnosis of diabetes [11].

Deaths

Diabetes was the **second leading cause of death** for Aboriginal and Torres Strait Islander people in 2022 [12]:

329 deaths, **7.2%** of all deaths — **79** males; **91** females — per 100,000

The **NT** had the highest rate of deaths due to diabetes — **185** per 100,000

Social and emotional wellbeing

(including mental health) among Aboriginal and Torres Strait Islander people

For many Aboriginal and Torres Strait Islander people, social and emotional wellbeing (SEWB) includes mental health and also:

- connection to Country
- culture
- spirituality
- the body and emotions
- ancestry
- family and community [1, 2].

Factors that have been found to support wellbeing include [2,3]:

cultural continuity

self-determination

supporting Indigenous knowledge systems

maintaining family networks

strong community governance

Prevalence

In the 2018-19 NATSIHS there were some **encouraging and positive indicators** [4].

For Aboriginal and Torres Strait Islander people over 18 years of age:

80% males reported feeling calm and peaceful all/most of the time

87% felt happy all/most of the time

78% females reported feeling calm and peaceful all/most of the time

88% felt happy all/most of the time

These are similar to the results of the 2018-2020 Mayi Kuwayu Study[1]. For Aboriginal and Torres Strait Islander participants over 18 years of age [3]:

87% reported being satisfied with their lives

78% reported feeling a 'fair bit' to 'alot' of control over their lives

69% reported moderate to high family wellbeing

In the 2018-19 NATSIHS, **31%** of Aboriginal and Torres Strait Islander respondents aged 18 years and over reported high or very high levels of psychological distress [5]:

31% of Aboriginal people

23% of Torres Strait Islander people

More females reported high or very high levels of psychological distress compared with males:

26% males

35% females

Non-remote areas reported high or very high levels of psychological distress compared with remote areas:

28% remote areas

31% non-remote areas

The 2018-2020 Mayi Kuwayu Study[1] found that, **up to half of the psychological distress burden** among Aboriginal and Torres Strait Islander people **could be attributable to experiences of discrimination** [6].

1. The study was 'conceptualised, designed, conducted and analysed by Aboriginal and Torres Strait Islander people for our mobs'.

References

Mental health conditions

In the 2018-19 NATSIHS [5]:

25% of Aboriginal people and **17%** of Torres Strait Islander people aged two years and over were reported as having a mental and/or behavioural condition.

17%
Anxiety was the most common mental and behavioural condition reported.

13%
Depression was the second most common mental and behavioural condition reported.

Mental and behavioural conditions were more likely to be reported by people living in non-remote areas compared with remote areas:

9.8% remote areas

28% non-remote areas

Hospitalisations

In 2021-22 [7]:

There were **25,440** hospitalisations of Aboriginal and Torres Strait Islander people for **mental** and **behavioural** disorders:

7.7% of all hospitalisations

Intentional **self-harm**[2] was responsible for **3,027** hospitalisations:

0.9% of all hospitalisations

Deaths

In 2022, **212 people died** from intentional self-harm (suicide) [8].

Suicide was the 5th leading cause of death overall in 2022 for Aboriginal and Torres Strait Islander people.

27% Suicide was the leading cause of death for Aboriginal and Torres Strait Islander children aged 5-17 years in the period 2018-2022 (27% of deaths).

75% A little over 75% of children who died by suicide were aged between 15 and 17 years.

57% Over half of Aboriginal and Torres Strait Islander children who died by suicide were female.

For 2018-2022, the age groups with the highest rate of death by suicide were:

males 35-44 years — **85 per 100,000**

females 15-24 years — **27 per 100,000**

For 2018-2022, rates of death from suicide ranged from **23 per 100,000 in NSW** to **38 per 100,000 in WA**[3].

2. Intentional self-harm as a principal diagnosis for external causes of injury or poisoning for Aboriginal and Torres Strait Islander people.
3. Data from NSW, Qld, WA, SA and the NT.

Kidney health

among Aboriginal and Torres Strait Islander people

Kidneys clean the blood by processing excess fluid, unwanted chemicals and waste, and producing urine [1]. If the kidneys stop working properly, waste can build up in the blood and lead to kidney disease [2]. Many people are unaware that they have kidney disease as up to 90% of kidney function can be lost before symptoms appear [3].

Incidence and prevalence

For the 2018-19 NATSIHS, **1.8%** of Aboriginal and Torres Strait Islander people reported kidney disease as a long-term health condition [4]:

1.9% Aboriginal people

0.4% Torres Strait Islander people

1.2% males

2.3% females

Prevalence increased with age and remoteness:

7.6% for people aged 55 years +

3.4% remote areas

1.4% non-remote areas

For 2018-2022, the incidence rate of end-stage kidney disease **(ESKD)** for Aboriginal and Torres Strait Islander people was:

605 **per 1,000,000 population**
(Derived from [5-6])

NT highest **1,781** per 1,000,000 NSW lowest **153**

For ESKD, **54%** of people were aged **less than 55 years**.

Risk factors

Risk factors for kidney disease which can be changed or controlled include [3, 7]:

- overweight or obesity
- high blood pressure
- high blood glucose (sugar)
- smoking

Risk factors for Aboriginal and Torres Strait Islander people that cannot be changed or controlled include [8]:

- age (30yrs+)
- family history of CKD
- history of acute kidney injury
- vascular disease

Hospitalisations

In 2020-21, the crude rate of **CKD** hospitalisation was **35 per 1,000** [9]:

29 males — **per 1,000** — **41** females

In 2018-19, there were **242,274** hospitalisations for **ESKD** at a crude hospitalisation rate of **289 per 1,000** [10].

In 2016-18, the crude rate of **ESKD** hospitalisation was **278 per 1,000**:

241 males — **per 1,000** — **316** females

In 2016-18, the rate for people living in remote and very remote locations (681 per 1,000) was **5x higher** than for those living in major cities (137 per 1,000) [10].

Dialysis: **Dialysis is the most common reason** Aboriginal and Torres Strait Islander people are hospitalised [11].

In 2020-21, the rate of hospitalisation for regular dialysis was **303 per 1,000** [9].

In 2022, **372** people commenced dialysis, **up from 354** in 2021 [12].

In 2022, **2,204** people were receiving dialysis: **haemodialysis 94%** and **peritoneal dialysis 6%** [12].

Kidney transplants: In 2022, there were **55 transplant operations** for Aboriginal and Torres Strait Islander people [12].

Deaths

In 2022, there were **108 deaths due to diseases of the urinary system** (including disorders of the bladder and urethra, as well as disease of the kidneys and ureters) [13].

In 2017-21, the death rate for kidney disease (major cause) was [14]:

22 — **per 100,000**

In 2022, **321** Aboriginal and Torres Strait Islander people who were receiving dialysis died [12].

The **most common cause of death for the dialysis patients was CVD (113 deaths)**.

Respiratory health

among Aboriginal and Torres Strait Islander people

Conditions that affect the airways and other structures of the lung, and harm the process of breathing, can have an impact on a person's respiratory health [1]. They range from those that come on quickly or do not last long (acute respiratory conditions), to those that last a long time (chronic respiratory conditions) [2].

Prevalence

Long-term respiratory health conditions reported by Aboriginal and Torres Strait Islander people in the 2021 Census included [3]:

13% asthma

2.2% COPD

In the 2018-19 NATSIHS, **29%** of Aboriginal and Torres Strait Islander people reported **having a long-term respiratory condition** [4].

The level of respiratory disease among Aboriginal and Torres Strait Islander **females** was approximately **1.2x higher** than for males:

26% males

32% females

The proportion of Aboriginal and Torres Strait Islander people **reporting respiratory diseases increased with age**:

19% 0-14 years

47% 55 years +

Risk factors

The main risk factors for respiratory disease include [1]:

- age
- family history
- inadequate nutrition
- physical inactivity
- tobacco smoking
- obesity
- environmental conditions
- occupational exposures and hazards

Risk factors for infants and children include [5,6]:

- premature birth
- exposure to second-hand tobacco smoke
- poor living conditions
- inadequate nutrition
- limited access to medical care

References

Hospitalisations

In 2021-22, there were **26,770 hospitalisations for respiratory disease** among Aboriginal and Torres Strait Islander people [7].

There were **1,780 hospitalisations for asthma**, with a crude rate of 2.0 per 1,000 [8].

In 2018-19, crude hospitalisation rates were highest for Aboriginal and Torres Strait Islander people with [9]:

influenza and pneumonia	**9.2**	**per 1,000 hospitalisations**	**4.6**	acute upper respiratory infections
COPD	**6.7**		**2.7**	asthma

Deaths

In 2022, **chronic lower respiratory disease** (which includes asthma, bronchitis, emphysema, and COPD), was the **3rd leading cause of death** for Aboriginal and Torres Strait Islander people, **responsible for 293 deaths** [10].

Of the **top five causes of death (by sex)**, **chronic lower respiratory disease** ranked as the third most common cause of death for females and fifth most common cause of death for males:

134 males

159 females

COVID-19

From December 2021 to September 2023 there were [11]:

421,696 confirmed and probable cases of COVID-19 among Aboriginal and Torres Strait Islander people.

There were **3.6x as many cases** in major cities compared with remote areas:

188,950 major cities

51,886 remote areas

In 2021-22, **7.9% of hospitalisations involving a COVID-19 diagnosis** were for Aboriginal and Torres Strait Islander people (20,856 of 263,425 total COVID-19 hospitalisations) [7].

From January 2020 to September 2023, there were **741 admissions to an intensive care unit for COVID-19 cases** among Aboriginal and Torres Strait Islander people, with a rate of 1.1 per 1,000 [11].

From August 2021 to September 2023, there were **220 reported deaths from COVID-19** among Aboriginal and Torres Strait Islander people [12].

Sexually transmissible infections

among Aboriginal and Torres Strait Islander people

Sexually transmissible infections (STIs) include bacterial, viral and parasitic infections that are primarily transmitted through sexual contact [1]. **The STIs reported on in this section are all bacterial infections**. Most STIs are treatable although early detection is important. Safe sex practices, such as using condoms, are recommended to prevent exposure and the spread of STIs.

Incidence and prevalence of some notifiable[1] STIs

In 2020, there were [2]:

7,241 notifications of chlamydia	**1,162**	rate per 100,000
4,653 notifications of gonorrhoea	**484**	
959 notifications of syphilis	**107**	

In 2020 [2]:

Females were **1.8x** more likely to be diagnosed with **chlamydia** than males.

Males and females were diagnosed with **gonorrhoea** at similar rates.

Males and females were diagnosed with **syphilis** at similar rates.

In 2020 [3]:

Chlamydia notification rates were highest among those **aged 15-19 years of age**.

Gonorrhoea notification rates were highest among those **aged 20-24 years of age**.

Syphilis notification rates were highest among those **aged 20-24 years of age**.

In 2020 [2]:

Chlamydia notifications were highest in the **NT at 1,626 per 100,000**.

Gonorrhoea notifications were highest in the **NT at 1,609 per 100,000**.

Syphilis notifications were highest in **WA at 319 per 100,000**.

In 2020 [2]:

Chlamydia notification rates were highest in **remote areas at 1,537 per 100,000**.

Gonorrhoea notification rates were highest in **remote areas at 1,450 per 100,000**.

Syphilis notification rates were highest in **remote areas at 333 per 100,000**.

1. A disease required by law to be reported to government authorities in order to monitor its spread.

Environmental health

among Aboriginal and Torres Strait Islander people

Environmental health refers to the physical, chemical and biological factors which impact a person's health and wellbeing such as: housing conditions; drinking water; air quality; sanitation; disease control; food safety and climate [1-3]. Health conditions associated with poor environmental health include:

- infectious diseases of the bowels (such as 'gastro')
- skin infections (such as scabies, boils)
- middle ear infections
- chronic diseases (such as ARF)
- respiratory issues (such as asthma)
- some cancers (such as lung cancer) [4, 5].

Aboriginal and Torres Strait Islander people are disproportionately affected by the diseases associated with environmental health due to:

- the remoteness of some communities
- lack of adequate housing
- lack of cleaning, health and personal care equipment
- poor infrastructure
- lack of access to tradespeople and repairs
- the cost of maintenance
- overcrowding [2,4-6].

Overcrowding

In 2021, **19%** of Aboriginal and Torres Strait Islander people reported living in an **overcrowded house** [7]

Overcrowding was:
highest in the **NT** (**57%**)
and lowest in the **ACT** (**9.2%**) [7]

Infrastructure

In the 2018-19 NATSIHS [1]:

80% of Aboriginal and Torres Strait Islander households reported living in housing of an acceptable[1] standard

The majority of respondents reported having access to household facilities for:
- washing people **97%**
- washing bedding and clothes **96%**
- preparing/storing food **91%**
- sewerage facilities **98%**

Access to functioning facilities was lowest in remote areas.

33% of households reported major structural issues including:
- major cracks in walls/floors **12%**
- walls or windows not straight **10%**
- sinking/moving foundations **7.7%**
- major plumbing problems **6.6%**
- wood rot/termite damage **6.6%**

Households with **major structural** issues were highest in:
SA (**44%**) and **NT** (**41%**)
Other jurisdictions fell between **30%** and **36%**

Hospitalisations for diseases related to environmental health

influenza and pneumonia	**9.2**	crude rate **per 1,000 hospitalisations** 2018-19 [1]	**4.6** acute upper respiratory infections
infectious diseases of bowels	**9.0**		**2.7** asthma
bacterial diseases	**8.0**		**1.8** scabies

In 2016-18 [1] rates were higher in remote/very remote areas compared with major cities for: **scabies** (**3.2 times**) and **influenza and pneumonia** (**1.7 times**).

Deaths related to poor environmental health

In 2014-2018 [1]: **44** males per 100,000 **40** females

1. Housing of an 'acceptable' standard must have at least four working household facilities and not more than two major structural problems [1].

Alcohol use

among Aboriginal and Torres Strait Islander people

Drinking too much alcohol, both on single drinking occasions (binge drinking) and over a person's lifetime can lead to health and social harms including:

- chronic diseases
- injury and transport accidents
- mental health disorders
- intergenerational trauma
- violence.

Alcohol use not only affects individuals, but also families and the wider community [1, 2].

The 2020 National Health and Medical Research (NHMRC) *Australian guidelines to reduce health risks from drinking alcohol* provide recommendations on reducing the risk of alcohol-related harm for adults, young people, and women who are pregnant or breastfeeding [3]:

- **Guideline 1** recommends that to reduce the risk of alcohol-related disease or injury, men and women should drink no more than four standard drinks on any day or no more than 10 standard drinks in a week.
- **Guideline 2** recommends that to reduce the risk of alcohol-related harm and injury, children and people aged under 18 years should not drink alcohol.
- **Guideline 3** recommends that to prevent alcohol-related harm to an unborn child, women who are planning a pregnancy, or who are pregnant, should not drink alcohol. For women who are breastfeeding, not drinking alcohol is the safest option for their baby.

The 2018-19 NATSIHS assessed a person's alcohol consumption for short-term and lifetime risk using the previous (2009) NHMRC alcohol guidelines.

Abstinence and alcohol consumption

The following information was self-reported by participants in the 2018-19 NATSIHS aged 18 years and over [4]:

Abstinence (or those who had never drunk alcohol) in the last 12 months:

26% of Aboriginal people

23% of Torres Strait Islander people

The proportion of people who abstained was highest for those **aged 55 years** and older.

The proportion of people who abstained was **higher** for people living in **very remote areas**:

43% very remote areas

19% major cities

Short-term risk (no more than four drinks on a single occasion) in the last 12 months:

18% of Aboriginal people and **22%** of Torres Strait Islander people consumed some alcohol but **did not exceed** the guidelines.

54% of people reported **exceeding** the short-term risk guideline.

Males were 1.5x more likely to exceed the guideline compared with females:

65% males

43% females

Young people were more likely to exceed the guideline compared with people **aged 55 years** and older:

65% aged 18-24 years

34% aged 55 years +

Lifetime risk (no more than two standard drinks on a single day) in the last week:

26% of Aboriginal people and **21%** of Torres Strait Islander people consumed some alcohol but **did not exceed** the guidelines.

20% of Aboriginal people and **24%** of Torres Strait Islander people reported **exceeding** the guideline for lifetime risk.

Males were 3x more likely to exceed the guideline for lifetime risk compared with females:

30% males

10% females

The proportion of people exceeding the guideline for lifetime risk was higher for people living in non-remote areas compared with remote and very remote areas:

21% non-remote areas

17% remote and very remote areas

Hospitalisations

In 2017-19 [5], the crude alcohol-related hospitalisation rate was **7.0 per 1,000**:

8.1 males — **per 1,000** — **5.8** females

Deaths

For 2015-2019 [5], the crude rate of death due to alcohol use was **13 per 100,000**, **2.1x higher for males** than for females:

17 males — **per 100,000** — **8.1** females

The main cause of alcohol-related deaths was **alcoholic liver disease**.

Between 2010 and 2019 there was a **reduction** in the proportion of Aboriginal and Torres Strait Islander people aged 14 years and older exceeding the 2009 alcohol guidelines for lifetime risk [2].

32% in 2010 → **19%** in 2019

In 2021, **92% of pregnant** Aboriginal and Torres Strait Islander women **had not drunk alcohol** during the first 20 weeks of pregnancy. After 20 weeks of pregnancy, this **increased to 97%** of women [6].

Illicit drug and volatile substance use

among Aboriginal and Torres Strait Islander people

Illicit drug use is the use of illegal drugs such as cannabis, heroin, cocaine and methamphetamine, as well as the use of prescribed drugs, such as painkillers, in ways in which they were not intended or prescribed [1]. Illicit drug use is associated with an increased risk of mental illness, poisoning, self-harm, infection with blood borne viruses from unsafe injection practices, chronic disease and death [2-4].

Most Aboriginal and Torres Strait Islander people surveyed do not use illicit drugs [1,5,6].

Prevalence

In the 2019 National Drug Strategy Household Survey (NDSHS)[1]:

77% of people aged 14 years + had **never used illicit drugs** or had not done so in the previous 12 months.

23% of people aged 14 years + reported they **had used illicit drugs** in the previous 12 months.

In the 2018-19 NATSIHS [6], people aged 15 years + reported **specific drug** use in the previous 12 months:

24% had used cannabis (marijuana)

5.9% had used other drugs[1] such as heroin, cocaine, petrol and kava

3.8% reported illicit use of analgesics and sedatives (sleeping pills)

3.3% had used amphetamines, ice or speed

3.3% reported taking ecstasy or designer drugs

Illicit drug use was **1.8x** higher among males than females [6]:

37% males

21% females

In 2021-22, the most common principal illicit drugs of concern that Aboriginal and Torres Strait Islander people **sought treatment** for were **amphetamines, cannabis and heroin** [7].

1. Drugs included in the 'other' category includes heroin, cocaine, petrol, LSD/synthetic hallucinogens, naturally occurring hallucinogens, kava, methadone and other inhalants.

Hospitalisations

The two main reasons for **drug-related hospitalisations** among Aboriginal and Torres Strait Islander people in 2018-19 were **mental and behavioural disorders** (crude rate of 4.7 per 1,000) and **poisoning** (crude rate of 3.0 per 1,000)[8].

In 2017-19, the **leading drugs of concern** that Aboriginal and Torres Strait Islander people were hospitalised for were[9]:

1.9 methamphetamines

1.1 cannabis

per 1,000

Crude hospitalisation rates due to drug use were higher in non-remote areas than remote areas:

non-remote **7.7**

remote areas **4.3**

per 1,000

Deaths

In 2017-2021[10]:

There were **536** **unintentional** drug-induced deaths among Aboriginal and Torres Strait Islander people.

Volatile substance use

Volatile substance use (VSU) involves sniffing inhalants - substances that give off fumes such as petrol, paint, glue or deodorants[11]. Sniffing can have serious short and long-term health effects, including a condition known as sudden sniffing death which causes the heart to stop within minutes[12].

In the 2018-19 NATSIHS, **0.9%** of Aboriginal and Torres Strait Islander people aged 15 years and over **reported using petrol and other inhalants** in the 12 months prior to the survey[9].

The crude rate of hospitalisation for VSU in 2017-19 was 0.1 per 1,000[9]:

Poisoning due to the toxic effect of volatile solvents **0.1**

Mental/behavioural disorders from use of volatile substances **0.1**

per 1,000

Overall, the number of people using volatile substances is small but the issue of VSU is still a concern in some communities[13]. **Positively**, one study reported a **95% reduction of VSU between 2006 and 2018**, attributed to the replacement of regular unleaded petrol with low aromatic fuel.

Tobacco use

among Aboriginal and Torres Strait Islander people

Tobacco smoking increases the risk of chronic disease, such as CVD, many forms of cancer and lung diseases [1]. It is also a risk factor associated with preterm birth and LBW. Environmental tobacco smoke (passive smoking) and thirdhand smoke (the residue left from second-hand smoke on surfaces and in indoor dust) can also make people sick, especially children [1, 2]. Passive smoking is a risk factor for children who are particularly susceptible to middle ear infections, asthma and increased risk of sudden infant death syndrome (SIDS).

Smoking and vaping among Aboriginal and Torres Strait Islander people

In the 2018-19 NATSIHS [3]:

37% of people aged 15 years+ reported they were current daily smokers

39% males

36% females

the age-group with the **highest** proportion of current daily smokers was **35-44 years**

47%

people living in **remote areas** reported a **higher proportion of people who smoked daily** compared with those living in non-remote areas

49% remote areas

35% non-remote areas

8.1% of Aboriginal and Torres Strait Islander adults self-reported having ever used **e-cigarettes** and **1.3%** reported that they were currently using e-cigarettes either daily or weekly [4].

Passive smoking reported in the 2018-19 NATSIHS [3]

57% of Aboriginal and Torres Strait Islander children aged 0-14 years lived in households with a person who smoked daily.

For those children living with a person who smoked daily, **15%** were living in households where people smoked indoors.

Deaths

In 2018, **835 deaths** (**23% of all deaths** among Aboriginal and Torres Strait Islander people) were due to tobacco use [5].

The proportion of **young people starting to smoke has decreased**, which will result in improved health outcomes over time.

Daily smoking rates reduced between the 2012-13 AATSIHS and the 2018-19 NATSIHS [3]:

15-17 year olds decreasing from 18% to **9.7%**

18-24 year olds decreasing from 42% to **36%**

25-34 year olds decreasing from 52% to **44%**

A 2021 study found that there was a **15% lower prevalence** of smoking inside the home in areas funded under the Tackling Indigenous Smoking (TIS) program compared to non-TIS areas [6].

The proportion of Aboriginal and Torres Strait Islander mothers who reported smoking during pregnancy **has decreased** from 50% in 2011 to **42%** in 2021 [7].

References

Introduction

1. Dudgeon, P., Wright, M., Paradies, Y., Garvey, D., & Walker, I. (2014). Aboriginal social, cultural and historical contexts. In P. Dudgeon, H. Milroy & R. Walker (Eds.), *Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice* (2nd ed., pp. 3-24). Canberra: Department of The Prime Minister and Cabinet.

2. Elias, A., Mansouri, F., & Paradies, Y. (2021). *Racism in Australia today*. Singapore, Singapore: Springer.

3. National Aboriginal Community Controlled Health Organisation. (2022). *Aboriginal Community Controlled Health Organisations (ACCHOs): what is the definition of Aboriginal health?* From https://www.naccho.org.au/acchos

4. Griffiths, K., Coleman, C., Al-Yaman, F., Cunningham, J., Garvey, G., Whop, L., . . . Madden, R. (2019). The identification of Aboriginal and Torres Strait Islander people in official statistics and other data: Critical issues of international significance. *Statistical Journal of the IAOS, 35*(1), 91-106. http://dx.doi.org/10.3233/SJI-180491

5. Dudgeon, P., Derry, K. L., Mascall, C., & Ryder, A. (2022). Understanding Aboriginal models of selfhood: The National Empowerment Project's Cultural, Social, and Emotional Wellbeing Program in Western Australia. *International Journal of Environmental Research and Public Health, 19*(7) 4078. https://doi.org/10.3390/ijerph19074078

6. Verbunt, E., Luke, J., Paradies, Y., Bamblett, M., Salamone, C., Jones, A., & Kelaher, M. (2021). Cultural determinants of health for Aboriginal and Torres Strait Islander people - a narrative overview of reviews. *International Journal for Equity in Health, 20* 1-9. https://doi.org/10.1186/s12939-021-01514-2

7. Butler, T. L., Anderson, K., Garvey, G., Cunningham, J., Ratcliffe, J., Tong, A., . . . Howard, K. (2019). Aboriginal and Torres Strait Islander People's domains of wellbeing: A comprehensive literature review. *Social Science & Medicine, 233*, 138-157. https://doi.org/10.1016/j.socscimed.2019.06.004

8. Lovett, R., Brinckley, M. M., Phillips, B., Chapman, J., Thurber, K. A., Jones, R., . . . Wenitong, M. (2020). Marrathalpu mayingku ngiya kiyi. Minyawaa ngiyani yata punmalaka; wangaaypu kirrampili kara [Ngiyampaa title]; In the beginning it was our people's law. What makes us well; to never be sick. Cohort profile of Mayi Kuwayu: The National Study of Aboriginal and Torres Strait Islander Wellbeing [English title]. *Australian Aboriginal Studies* (2), 8-30. https://search.informit.org/doi/10.3316/informit.705705172059519

9. Lovett, R., Jones, R., & Maher, B. (2020). The intersection of Indigenous data sovereignty and Closing the Gap policy in Australia. In M. Walter, T. Kukutai, S. R. Carroll & D. Rodriguez-Lonebear (Eds.), *Indigenous data sovereignty and policy* (pp. 36-50). New York: Routledge.

10. Australian Indigenous Health*InfoNet* (2024). *Overview of Aboriginal and Torres Strait Islander health status 2023*. Perth: Australian Indigenous Health*InfoNet.*

Population

1. Australian Bureau of Statistics. (2019). *Estimates and projections, Aboriginal and Torres Strait Islander Australians, 2006 to 2031*. Canberra: Australian Bureau of Statistics.

2. Australian Bureau of Statistics. (2023). *National, state and territory population*. Retrieved 14 December 2023 from https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release

3. Australian Bureau of Statistics. (2022). *Aboriginal and Torres Strait Islander people: Census [2021].* Retrieved 28 June 2022 from https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/aboriginal-and-torres-strait-islander-people-census/2021

Determinants of health

1. National Aboriginal Community Controlled Health Organisation. (2013). *Healthy Futures 2013-2030: NACCHO 10 point plan*. Canberra: National Aboriginal Community Controlled Health Organisation.
2. World Health Organization. (2021). *Social determinants of health.* From https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1
3. Australian Government Productivity Commission. (2023). *Closing the Gap annual data compilation report July 2023*. Canberra: Australian Government Productivity Commission.
4. Australian Bureau of Statistics. (2023). *Schools, Australia, 2022*. Retrieved from https://www.abs.gov.au/statistics/people/education/schools/2022
5. Australian Curriculum Assessment and Reporting Authority. (2023). *NAPLAN national results.* Retrieved from https://www.acara.edu.au/reporting/national-report-on-schooling-in-australia/naplan-national-results
6. Australian Institute of Health and Welfare, & National Indigenous Australians Agency. (2023). *Aboriginal and Torres Strait Islander Health Performance Framework report.* Retrieved 7 July 2023 from https://www.indigenoushpf.gov.au/
7. Australian Bureau of Statistics. (2022). *Aboriginal and Torres Strait Islander people: Census [2021]*. Retrieved 28 June 2022 from https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/aboriginal-and-torres-strait-islander-people-census/2021

Births and pregnancy

1. Australian Bureau of Statistics. (2023). *Births, Australia 2022*. Retrieved 18 October 2022 from https://www.abs.gov.au/statistics/people/population/births-australia/2022
2. World Health Organization. (2023). *ICD-11 for mortality and morbidity statistics*. Retrieved 01/2023 from https://icd.who.int/browse11/l-m/en
3. Australian Institute of Health and Welfare. (2014). *Birthweight of babies born to Indigenous mothers* (AIHW Catalogue no IHW 138). Canberra: Australian Institute of Health and Welfare.
4. Australian Institute of Health and Welfare. (2023). *Australia's mothers and babies [web report]*. Retrieved 29 June 2023 from https://www.aihw.gov.au/reports/mothers-babies/australias-mothers-babies/contents/about
5. Australian Institute of Health and Welfare. (2020). *Antenatal care use and outcomes for Aboriginal and Torres Strait Islander mothers and their babies 2016-2017.* Canberra: Australian Institute of Health and Welfare.
6. Australian Government Department of Health (2020). *Clinical practice guidelines: pregnancy care.* Canberra: Australian Government Department of Health.
7. Australian Bureau of Statistics. (2020). *Births, Australia, 2019*. Retrieved 9 December 2020 from https://www.abs.gov.au/statistics/people/population/births-australia/2019
8. Australian Institute of Health and Welfare. (2023). *Aboriginal and Torres Strait Islander mothers and babies*. Retrieved 31 October 2023 from https://www.aihw.gov.au/reports/mothers-babies/indigenous-mothers-babies/contents/about

Deaths

1. Australian Bureau of Statistics. (2023). *Deaths, Australia, 2022.* Canberra: Australian Bureau of Statistics.
2. Australian Bureau of Statistics. (2023). *Causes of death, Australia 2022.* Retrieved 27 September 2023 from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2022
3. Australian Institute of Health and Welfare (2023) *Australia's mothers and babies [web report]*. Retrieved 23 November 2023 from https://www.aihw.gov.au/reports/mothers-babies/australias-mothers-babies/contents/about
4. Australian Bureau of Statistics (2023) *Aboriginal and Torres Strait Islander life expectancy.* Retrieved 29 November 2023 from https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/aboriginal-and-torres-strait-islander-life-expectancy/2020-2022
5. Australian Government Productivity Commission. (2023). *Report on government services 2023, part E: health*. Canberra: Australian Government Productivity Commission.

6. Australian Institute of Health and Welfare. (2010). *National Healthcare Agreement: P20-Potentially avoidable deaths, 2010*. Retrieved 16 December 2020 from https://meteor.aihw.gov.au/content/index.phtml/itemId/394495

7. Australian Institute of Health and Welfare, & National Indigenous Australians Agency. (2023). *Aboriginal and Torres Strait Islander Health Performance Framework report.* Retrieved 7 July 2023 from https://www.indigenoushpf.gov.au/

8. Coalition of Peaks. (2020). *National Agreement on Closing the Gap.* Coalition of Peaks.

Hospitalisations

1. Australian Institute of Health and Welfare, & Australasian Association of Cancer Registries. (2012). *Cancer in Australia: an overview 2012* (AIHW Catalogue no CAN 70, cancer series no 74). Canberra: Australian Institute of Health and Welfare.

2. Australian Institute of Health and Welfare, & National Indigenous Australians Agency. (2023). *Aboriginal and Torres Strait Islander Health Performance Framework report.* Retrieved 7 July 2023 from https://www.indigenoushpf.gov.au/

3. Australian Institute of Health and Welfare. (2018). *Australia's health 2018* (Australia's health series no. 16, Cat. no: AUS 221). Canberra: Australian Institute of Health and Welfare.

4. Australian Institute of Health and Welfare. (2019). *Data quality statement: Admitted Patient Care 2017-18*. Retrieved 27 November 2019 from https://meteor.aihw.gov.au/content/index.phtml/itemId/724188

5. Australian Institution of Health and Welfare. (2016). *Data quality statement: National Hospital Morbidity Database 2014–15.* Canberra: Australian Institute of Health and Welfare.

6. Australian Institute of Health and Welfare. (2023). *Admitted patients.* Retrieved 18 May 2023 from https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients

7. Australian Institute of Health and Welfare. (2020). *National Healthcare Agreement: PI 18 - Selected potentially preventable hospitalisations, 2021* Retrieved 16 September 2020 from https://meteor.aihw.gov.au/content/index.phtml/itemId/725793

8. Australian Institute of Health and Welfare. (2020). *Disparities in potentially preventable hospitalisations across Australia, 2012-13 to 2017-18*. Canberra: Australian Institute of Health and Welfare.

9. Steering Committee for the Review of Government Service Provision. (2020). *Overcoming Indigenous disadvantage: key indicators 2020.* Canberra: Productivity Commission.

Burden of disease

1. Australian Institute of Health and Welfare. (2022). *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018.* Canberra: Australian Institute of Health and Welfare.

2. Moon, L., Gourley, M., Goss, J., Lum On, M., Laws, P., Reynolds, A., & Juckes, R. (2020). History and development of national burden of disease assessment in Australia. *Archives of Public Health, 78.* Retrieved from: https://doi.org/10.1186/s13690-020-00467-2

Cardiovascular health

1. World Health Organization. (2017). *Cardiovascular diseases (CVDs) [factsheet]*. Retrieved 17 May 2017 from https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)

2. World Health Organization. (2019). *ICD-11 for mortality and morbidity statistics: diseases of the circulatory system.* From https://icd.who.int/browse11/l-m/en#/http%3a%2f%2fid.who.int%2ficd%2fentity%2f426429380

3. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics.

4. Australian Bureau of Statistics. (2022). *Aboriginal and Torres Strait Islander people: Census [2021]*. Retrieved 28 June 2022 from https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/aboriginal-and-torres-strait-islander-people-census/2021

5. Australian Institute of Health and Welfare. (2015). *Cardiovascular disease, diabetes and chronic kidney disease - Australian facts: risk factors* (AIHW Catalogue no CDK 004, cardiovascular, diabetes and chronic kidney disease series no 4). Canberra: Australian Institute of Health and Welfare.

6. World Heart Federation. (2017). *Cardiovascular risk factors.* Retrieved 30 May 2017 from https://www.world-heart-federation.org/resources/risk-factors/

7. Agostino, J. W., Wong, D., Paige, E., Wade, V., Connell, C., Davey, M. E., . . . Banks, E. (2020). Cardiovascular disease risk assessment for Aboriginal and Torres Strait Islander adults aged under 35 years: a consensus statement. *Medical Journal of Australia, 212*(9), 422-427.

8. Australian Institute of Health and Welfare. (2023). *Admitted patients.* Retrieved 18 May 2023 from https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients

9. Australian Institute of Health and Welfare, & National Indigenous Australians Agency. (2023). *Aboriginal and Torres Strait Islander Health Performance Framework report.* Retrieved 7 July 2023 from https://www.indigenoushpf.gov.au/

10. Australian Bureau of Statistics. (2023). *Causes of death, Australia 2022*. Retrieved 27 September 2023 from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2022

11. Wyber, R., Noonan, K., Halkon, C., Enkel, S., Ralph, A., Bowen, A., . . . Carapetis, J. (2020). *The RHD Endgame Strategy: The blueprint to eliminate rheumatic heart disease in Australia by 2031.* Perth: The END RHD Centre of Research Excellence, Telethon Kids Institute.

12. Rheumatic Heart Disease Australia. (2020). *The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease (3rd edition).* Darwin: Menzies School of Health Research.

13. Australian Institute of Health and Welfare. (2023). *Acute rheumatic fever and rheumatic heart disease in Australia 2017-21* (Cat. no: CVD 99). Canberra: Australian Institute of Health and Welfare.

Cancer

1. Cancer Council Australia. (2019). *What is cancer?* Retrieved 2-10 from https://www.cancer.org.au/cancer-information/what-is-cancer

2. Australian Cancer Research Foundation. (2018). *What is cancer?* Retrieved 2018 from https://www.acrf.com.au/support-cancer-research/what-is-cancer/

3. Australian Institute of Health and Welfare. (2019). *Cancer in Australia 2019*. Canberra, Australian Capital Territory: Australian Institute of Health and Welfare.

4. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics.

5. Australian Institute of Health and Welfare, & National Indigenous Australians Agency. (2023). *Aboriginal and Torres Strait Islander Health Performance Framework report.* Retrieved 7 July 2023 from https://www.indigenoushpf.gov.au

6. Australian Institute of Health and Welfare. (2023). *Admitted patients.* Retrieved 18 May 2023 from https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients

7. Australian Government Productivity Commission. (2023). *Report on government services 2023, part E: health.* Canberra: Australian Government Productivity Commission.

8. Australian Institute of Health and Welfare. (2021). *Cancer in Australia 2021* (Cancer series no. 133. Cat. no. CAN 144). Canberra: Australian Institute of Health and Welfare.

9. Australian Bureau of Statistics. (2023). *Causes of death, Australia 2022.* Retrieved 27 September 2023 from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2022

Diabetes

1. Ride, K., & Burrow, S. (2022). Review of diabetes among Aboriginal and Torres Strait Islander people. *Journal of the Australian Indigenous HealthInfoNet, 3*(2). Retrieved from: https://doi.org/10.14221/aihjournal.v3n2.1

2. Australian Institute of Health and Welfare. (2022). *Australia's health 2022.* Retrieved 7 July 2022 from https://www.aihw.gov.au/reports-data/australias-health

3. Diabetes Australia. (2015). *Gestational Diabetes.* Retrieved 2015 from https://www.diabetesaustralia.com.au/about-diabetes/gestational-diabetes/

4. Australian Bureau of Statistics. (2022). *Aboriginal and Torres Strait Islander people: Census [2021].* Retrieved 28 June 2022 from https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/aboriginal-and-torres-strait-islander-people-census/2021

5. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics.

6. Australian Institute of Health and Welfare. (2022). *Diabetes: Australian facts [web report].* Retrieved 13 July 2022 from https://www.aihw.gov.au/reports/diabetes/diabetes/contents/about

7. Atkinson-Briggs, S., Jenkins, A., Ryan, C., & Brasionis, L. (2022). Prevalence of health-risk behaviours among Indigenous Australians with diabetes: a review. *Journal of the Australian Indigenous HealthInfoNet, 3*(4). Retrieved from: https://doi.org/10.14221/aihjournal.v3n4.6

8. Australian Bureau of Statistics. (2014). *Australian Aboriginal and Torres Strait Islander health survey: biomedical results, 2012-13 - Australia: table 6.3 [data cube].* Retrieved 10 September 2014 from https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/4727.0.55.003?OpenDocument

9. Australian Institute of Health and Welfare. (2023). *Diabetes: Australian facts [web report].* Retrieved 30 June 2023 from https://www.aihw.gov.au/reports/diabetes/diabetes/contents/about

10. Australian Institute of Health and Welfare. (2020). *Indicators for the Australian National Diabetes Strategy 2016-2020: data update.* https://www.aihw.gov.au/reports/diabetes/diabetes-indicators-strategy-2016-2020/contents/summary

11. Australian Government Productivity Commission. (2022). *Report on government services 2022, part E: health.* Retrieved 1 February 2022 from https://www.pc.gov.au/ongoing/report-on-government-services/2022/health

12. Australian Bureau of Statistics. (2023). *Causes of death, Australia 2022.* Retrieved 27 September 2023 from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2022

Social and emotional wellbeing

1. Gee, G., Dudgeon, P., Schultz, C., Hart, A., & Kelly, K. (2014). Aboriginal and Torres Strait Islander social and emotional wellbeing. In P. Dudgeon, H. Milroy & R. Walker (Eds.), *Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice* (2nd ed., pp. 55-68). Canberra: Department of The Prime Minister and Cabinet.

2. Dudgeon, P., Bray, A., Smallwood, G., Walker, R., & Dalton, T. (2020). *Wellbeing and healing through connection and culture*. Sydney: Lifeline.

3. Lovett, R., Brinckley, M. M., Phillips, B., Chapman, J., Thurber, K. A., Jones, R., Banks, E., Dunbar, T., Olsen, A., & Wenitong, M. (2020). Marrathalpu mayingku ngiya kiyi. Minyawaa ngiyani yata punmalaka; wangaaypu kirrampili kara [Ngiyampaa title]; In the beginning it was our people's law. What makes us well; to never be sick. Cohort profile of Mayi Kuwayu: The National Study of Aboriginal and Torres Strait Islander Wellbeing [English title]. *Australian Aboriginal Studies* (2), 8-30.

4. Steering Committee for the Review of Government Service Provision. (2020). *Overcoming Indigenous disadvantage: key indicators 2020*. Canberra: Productivity Commission.

5. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics.

6. Thurber, K. A., Brinckley, M. M., Jones, R., Evans, O., Nichols, K., Priest, N., . . . Lovett, R. (2022). Population-level contribution of interpersonal discrimination to psychological distress among Australian Aboriginal and Torres Strait Islander adults, and to Indigenous–non-Indigenous inequities: cross-sectional analysis of a community-controlled First Nations cohort study. *The Lancet,* 400(10368), 2084-2094.

7. Institute of Health and Welfare. (2023). *Admitted patients.* Retrieved 18 May 2023 from https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients

8. Australian Bureau of Statistics. (2023). *Causes of death, Australia 2022*. Retrieved 27 September 2023 from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2022

Kidney health

1. Kidney Health Australia. (2020). *Know your kidneys*. From https://kidney.org.au/your-kidneys/know-your-kidneys

2. Kidney Health Australia. (2020). *What is kidney disease?* Retrieved 2020 from https://kidney.org.au/your-kidneys/what-is-kidney-disease

3. Kidney Health Australia. (2020). *Keeping your kidneys healthy*. Retrieved 2022 from https://kidney.org.au/your-kidneys/know-your-kidneys/keeping-your-kidneys-healthy

4. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics

5. Australia and New Zealand Dialysis and Transplant Registry. (2023). *End stage renal disease notifications, by Indigenous status, age, jurisdiction and year* [2018 to 2022, unpublished]. Australia and New Zealand Dialysis and Transplant Registry. Adelaide.

6. Australian Bureau of Statistics. (2019). *Estimates and projections, Aboriginal and Torres Strait Islander Australians, 2006 to 2031*. Canberra: Australian Bureau of Statistics.

7. Australian Institute of Health and Welfare (2020). *Aboriginal and Torres Strait Islander Health Performance Framework 2020 summary report.* Canberra: Australian Institute of Health and Welfare.

8. National Aboriginal Community Controlled Health Organisation, & Royal Australian College of General Practitioners. (2018). *National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people: 3rd edition.* East Melbourne: Royal Australian College of General Practitioners.

9. Australian Institute of Health and Welfare. (2023). *Chronic kidney disease: Australian facts* [web report]. Retrieved 30 June 2023 from https://www.aihw.gov.au/reports/chronic-kidney-disease/chronic-kidney-disease/contents/about

10. Steering Committee for the Review of Government Service Provision. (2020). *Overcoming Indigenous disadvantage: key indicators 2020.* Canberra: Productivity Commission.

11. Australian Institute of Health and Welfare. (2023). *Admitted patients*. Retrieved 18 May 2023 from https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients

12. Australia and New Zealand Dialysis and Transplant Registry. (2023). *The forty-sixth annual Australia and New Zealand Dialysis and Transplant Registry report 2023*. Adelaide: Australia and New Zealand Dialysis and Transplant Registry.

13. Australian Bureau of Statistics. (2023). *Causes of death, Australia 2022*. Retrieved 27 September 2023 from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2022

14. Australian Government Productivity Commission. (2023). *Report on government services 2023, part E: health*. Canberra: Australian Government Productivity Commission.

Respiratory health

1. Australian Institute of Health and Welfare. (2022). *Australia's health 2022.* Retrieved 7 July 2022 from https://www.aihw.gov.au/reports-data/australias-health

2. Australian Institute of Health and Welfare. (2016). *Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011* (Australian Burden of Disease Study series no. 6, Cat no. BOD 7). Canberra: Australian Institute of Health and Welfare.

3. Australian Bureau of Statistics. (2022). *Aboriginal and Torres Strait Islander people: Census [2021].* Retrieved 28 June 2022 from https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/aboriginal-and-torres-strait-islander-people-census/2021

4. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics.

5. Janu, E. K., Annabattula, B. I., Kumariah, S., Zajaczkowska, M., Whitehall, J. S., Edwards, M. J., . . . Masters, I. B. (2014). Paediatric hospitalisations for lower respiratory tract infections in Mount Isa. *Medical Journal of Australia, 200*(10), 591-594.

6. Hall, K. K., Chang, A. B., Anderson, J., Dunbar, M., Arnold, D., & O'Grady, K. F. (2017). Characteristics and respiratory risk profile of children aged less than 5 years presenting to an urban, Aboriginal-friendly, comprehensive primary health practice in Australia. *Journal of Paediatrics and Child Health, 53*(7), 636-643.

7. Australian Institute of Health and Welfare. (2023). *Admitted patients.* Retrieved 18 May 2023 from https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients

8. Australian Institute of Health and Welfare. (2023). *Chronic respiratory conditions: First Nations people with asthma.* From https://www.aihw.gov.au/reports/chronic-respiratory-conditions/first-nations-people-with-asthma

9. Steering Committee for the Review of Government Service Provision. (2020). *Overcoming Indigenous disadvantage: key indicators 2020.* Canberra: Productivity Commission.

10. Australian Bureau of Statistics. (2023). *Causes of death, Australia 2022.* Retrieved 27 September 2023 from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2022

11. COVID-19 Epidemiology and Surveillance Team. (2023). COVID-19 Australia: epidemiology report 79 - reporting period ending 24 September 2023. *Communicable Diseases Intelligence, 47*, 24.

12. Australian Bureau of Statistics. (2023). *COVID-19 mortality in Australia: deaths registered until 30 September 2023.* From https://www.abs.gov.au/articles/covid-19-mortality-australia-deaths-registered-until-30-september-2023#covid-19-mortality-among-aboriginal-and-torres-strait-islander-people

Sexually transmitted infections

1. Australian Government Department of Health. (2018). *Fifth National Aboriginal and Torres Strait Islander Blood Borne Viruses and Sexually Transmissible Infections Strategy 2018-2022.* Canberra: Australian Government Department of Health.

2. The Kirby Institute. (2022). *Australia's annual report card: Aboriginal & Torres Strait Islander people report.* Retrieved 2022 from https://data.kirby.unsw.edu.au/atsi-report

3. The Kirby Institute (2022). *Australia's annual report card: Aboriginal & Torres Strait Islander people report.* Retrieved 2022 from https://data.kirby.unsw.edu.au/atsi-report

Environmental Health

1. Steering Committee for the Review of Government Service Provision. (2020). *Overcoming Indigenous disadvantage: key indicators 2020.* Canberra: Productivity Commission.

2. Australian Government Department of Health. (2019). *Report card for the implementation plan for the National Aboriginal and Torres Strait Islander Health Plan 2013-2023.* Canberra: Australian Government Department of Health.

3. Lowitja Institute. (2023). *Let's walk together, work together, we'll be stronger together: the need for an Aboriginal and Torres Strait Islander Coalition on Climate and Health.* Melbourne: Lowitja Institute.

4. Clifford, H. D., Pearson, G., Franklin, P., Walker, R., & Zosky, G. R. (2015). Environmental health challenges in remote Aboriginal Australian communities: clean air, clean water and safe housing. *Australian Indigenous HealthBulletin, 15*(2), 1-14.

5. Lansbury Hall, N., Memmott, P., Barnes, S., Redmond, A., Go-Sam, C., Nash, D., . . . Simpson, P. (2020). *Pilyii papulu purrukaj-ji (good housing to prevent sickness): a study of housing, crowding and hygiene-related infectious diseases in the Barkly Region, Northern Territory.* Brisbane: University of Queensland Global Change Institute.

6. enHealth. (2010). *Environmental health practitioner manual: a resource manual for environmental health practitioners working with Aboriginal and Torres Strait Islander communities.* Canberra: Australian Government Department of Health.

7. Australian Bureau of Statistics. (2022). *Aboriginal and Torres Strait Islander people: Census [2021].* Retrieved 28 June 2022 from https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/aboriginal-and-torres-strait-islander-people-census/2021

Alcohol use

1. Australian Government Department of Health. (2017). *National drug strategy 2017-2026.* Canberra: Australian Government Department of Health.

2. Australian Institute of Health and Welfare. (2020). *National Drug Strategy Household Survey 2019* (Drug Statistics series no. 32. PHE 270). Canberra: Australian Institute of Health and Welfare.

3. National Health and Medical Research Council. (2020). *Australian guidelines to reduce health risks from drinking alcohol.* Canberra: National Health and Medical Research Council.

4. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics.

5. Australian Institute of Health and Welfare, & National Indigenous Australians Agency. (2023). *Aboriginal and Torres Strait Islander Health Performance Framework report*. Retrieved 7 July 2023 from https://www.indigenoushpf.gov.au/

6. Australian Institute of Health and Welfare. (2023). *Australia's mothers and babies [web report].* Retrieved 29 June 2023 from https://www.aihw.gov.au/reports/mothers-babies/australias-mothers-babies/contents/about

Illicit drug use

1. Australian Institute of Health and Welfare. (2020). *National Drug Strategy Household Survey 2019* (Drug Statistics series no. 32. PHE 270). Canberra: Australian Institute of Health and Welfare.
2. Degenhardt, L., & Hall, W. (2012). Extent of illicit drug use and dependence, and their contribution to the global burden of disease. *The Lancet,* 379(9810), 55-70.
3. Australian Institute of Health and Welfare. (2016). *Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011* (Australian Burden of Disease Study series no. 6, Cat no. BOD 7). Canberra: Australian Institute of Health and Welfare.
4. The Kirby Institute. (2018). *Bloodborne viral and sexually transmissible infections in Aboriginal and Torres Strait Islander people: annual surveillance report 2018.* Sydney: The Kirby Institute.
5. Australian Bureau of Statistics. (2016). *National Aboriginal and Torres Strait Islander Social Survey, 2014-15*. Canberra: Australian Bureau of Statistics.
6. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19*. Canberra: Australian Bureau of Statistics.
7. Australian Institute of Health and Welfare. (2023). *Alcohol and other drug treatment services in Australia annual report.* Retrieved 21 June 2023 from https://www.aihw.gov.au/reports/alcohol-other-drug-treatment-services/alcohol-other-drug-treatment-services-australia/contents/about
8. Steering Committee for the Review of Government Service Provision. (2020). *Overcoming Indigenous disadvantage: key indicators 2020.* Canberra: Productivity Commission.
9. Australian Institute of Health and Welfare, & National Indigenous Australians Agency. (2023). *Aboriginal and Torres Strait Islander Health Performance Framework report.* Retrieved 7 July 2023 from https://www.indigenoushpf.gov.au/
10. Penington Institute. (2023). *Australia's annual overdose report 2023*. Melbourne: Penington Institute.
11. National Drug and Alcohol Research Centre. (2022). Volatile inhalants (pp. 2). Sydney: National Drug and Alcohol Research Centre.
12. Marel, C., MacLean, S., & Midford, R. (2016). *Review of volatile substance use among Aboriginal and Torres Strait Islander people* (Australian Indigenous HealthReviews no. 15). Perth: Australian Indigenous Health*InfoNet*.
13. d'Abbs, P., Gillick, V., Hodson, S., Kavanagh, M., Payne, S., & Ray, T. (2019). *Longitudinal research into petrol sniffing and other substance abuse trends in Indigenous communities: final report.* Brisbane: The University of Queensland.

Tobacco use

1. Australian Institute of Health and Welfare and National Indigenous Australians Agency. *Aboriginal and Torres Strait Islander Health Performance Framework report.* Retrieved 19 June 2022 from: https://www.indigenoushpf.gov.au/
2. Northrup, T. F., Jacob, P., Benowitz, N. L., Hoh, E., Quintana, P. J. E., Hovell, M. F., . . . Stotts, A. L. (2016). *Thirdhand smoke: state of the science and a call for policy expansion.* Public Health Reports, 131(2), 233-238.
3. Australian Bureau of Statistics. (2019). *National Aboriginal and Torres Strait Islander Health Survey, 2018-19.* Canberra: Australian Bureau of Statistics.
4. Thurber, K. A., Walker, J., Maddox, R., Marmor, A., Heris, C., Banks, E., & Lovett, R. (2020). *A review of evidence on the prevalence of and trends in cigarette and e-cigarette use by Aboriginal and Torres Strait Islander youth and adults.* Canberra: National Centre for Epidemiology and Population Health.
5. Australian Institute of Health and Welfare. (2022). *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018* (Cat. no. BOD 32). Canberra: Australian Institute of Health and Welfare.
6. Cohen, R., Maddox, R., Sedgwick, M., Thurber, K. A., Brinckley, M. M., Barrett, E. M., & Lovett, R. (2021). Tobacco related attitudes and behaviours in relation to exposure to the Tackling Indigenous Smoking program: evidence from the Mayi Kuwayu study. *International Journal of Environmental Research and Public Health, 18*(20). Retrieved from: https://doi.org/10.3390/ijerph182010962
7. Australian Institute of Health and Welfare. (2023). *Australia's mothers and babies [web report].* Retrieved 29 June 2023 from https://www.aihw.gov.au/reports/mothers-babies/australias-mothers-babies/contents/about

Core funding is provided by the Australian Government Department of Health and Aged Care

AUSTRALIA ECU EDITH COWAN UNIVERSITY