NSW Aboriginal Community Controlled Health Tracker

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Technical Appendix 2020

Aboriginal Health & Medical Research Council of NSW

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Foreword

The NSW Aboriginal Community Controlled Health Tracker (Tracker) was created with the goal of providing Aboriginal Community Controlled Health Services (ACCHSs) with a tailored template that communicates stories about the health and wellbeing of Aboriginal peoples in NSW, and helps Boards and Community Members use the latest evidence to identify local priorities for action, advocacy and CQI that will benefit their own communities.

The Tracker uses data presently available in the public domain, and in doing so, highlights the lack of accurate information currently available for certain health indicators – particularly those relating to Aboriginal youth and the broader social, cultural and emotional determinants of health. Aboriginal people in NSW often feel publicly available data does not accurately speak to their lived experiences, and there can be a lack of trust in mainstream data collection and reporting processes, hence the value of a Community Controlled resource such as this Tracker. Development of this Tracker has reinforced the need for quality data reflecting the impact of intergenerational trauma experienced by Aboriginal people in NSW as a result of colonisation, the Stolen Generation, white Australia Policy, on-going racism and discrimination.

AH&MRC wishes to thank the Mitchell Institute for their support in developing this Tracker, and the NSW ACCHS Expert Working Group, which oversaw every stage of the Tracker's development. The Tracker visually represents the information that the Expert Working Group considered to be the important key findings from the technical appendix.

Acknowledgements

The NSW Aboriginal Health Tracker recognises and honours Aboriginal people as our First Nations People of New South Wales. It is our hope that Aboriginal people and services are empowered through this tracker to have a better understanding and control of their health and wellbeing. It is published to assist health services to respond to the issues of most importance to Aboriginal communities and is intended for use by everyone with an interest in Aboriginal health and wellbeing.

The NSW Aboriginal Community Controlled Health Tracker has been developed together with an expert working group comprising of NSW Aboriginal health leaders and the Aboriginal Medical & Research Council of NSW. Working group members are acknowledged below:

- Chin Weerakkody
- Emma Ashby
- Hayley Longbottom
- Raylene Gordon
- Dean Wright
- Imran Mansoor
- Dr Kate Armstrong

About Us

The Mitchell Institute for Education and Health Policy is one of Australia's trusted thought leaders in education and health policy. Our focus is on improving our education and health systems so more Australians can engage with and benefit from these services, supporting a healthier, fairer society.

Established in 2013, the Mitchell Institute is part of Victoria University, whose mission is to create exceptional value for any student from any background and uplift the communities in which it operates.

Contents

List of abbreviations

ABS	Australian Bureau of Statistics
ACCHS	Aboriginal Community Controlled Health Service
AH&MRC	Aboriginal Health & Medical Research Council
AIHW	Australian Institute of Health and Welfare
AMS	Aboriginal Medical Service
CVD	Cardiovascular disease
NCD	Noncommunicable diseases
NSW	New South Wales
WHO	World Health Organization

Introduction

The Aboriginal Health & Medical Research Council (AH&MRC) of NSW is committed to improving the health and wellbeing of Aboriginal people through partnerships with local community (particularly with Elders) and with their Member Services. Central to this commitment is the strong recognition that culture – and preserving culture – is at the heart of protecting and promoting Aboriginal health and wellbeing.

> *"Health is not just the physical wellbeing of an individual but also the social, emotional and cultural wellbeing of the whole community, in which each individual is able to achieve their full potential as a human being, thereby bringing about the total wellbeing of their community" [1].*

Purpose

This technical appendix accompanies the *NSW Aboriginal Community Controlled Tracker* (the Tracker) and the *NSW Aboriginal Community Controlled Storyboard* on mental health (the Storyboard).

It aims to provide contextual information and notes on the data to the select indicators and measures in both documents.

Taking the framework of the *Australia's Health Tracker*, the Tracker includes additional measures core to NSW Aboriginal health and wellbeing such as connection to land and identity.

The Tracker aims to celebrate the strengths of the Aboriginal community living in NSW and where possible, uses stories, quotes and illustrations to depict these strengths.

Background

Chronic health conditions are an Australian health priority

In Australia, one in two Australians live with a chronic health condition and estimates show that 38% of these conditions are preventable [2]. These long term, persistent conditions have significant impacts on individuals, their families and communities.

Within the Australian population, certain groups are more likely to develop poorer health outcomes than the national average. Aboriginal and Torres Strait Islanders, particularly, are significantly more likely to experience poorer health outcomes compared to non-Indigenous people. One reason for this is highlighted in the most recent (2019) Close the Gap report which partially attributes these poor health outcomes to a health care system that lacks commitment and responsiveness to the needs of Aboriginal and Torres Strait Islander people [3]. Connection to land, social and emotion wellbeing, 'spirit' and resilience are core to Aboriginal and Torres Strait Islander people, which in turn affect their health and wellbeing; and these are important factors to consider when addressing health issues that affect Indigenous communities [4]. Chronic health conditions are also a global health priority. The World Health Organization (WHO) released The *Global Action Plan for the Prevention and Control of NCDs 2013-2020*. As a member state of the WHO, Australia is encouraged to set noncommunicable disease targets to track progress.

Why a Health Tracker?

In 2016, the Mitchell Institute's Australian Health Policy Collaboration drew on the agenda set by the World Health Organization in the *Global Action Plan for the Prevention and Control of NCDs 2013-2020* and the *Mental Health Action Plan 2013-2020*, to provide a set of Australian chronic disease prevention and reduction targets and indicators for achievement by the year 2025. The targets and indicators have been carefully selected and developed by leading Australian chronic disease experts, scientists and researchers that will have the most immediate impact on improving the health of Australians and our community.

The *Australia's Health Tracker 2016* is the first national report card to show progress against these targets and will be regularly updated and publicly report on Australia's progress under the WHO Global Action Plan. The Australia's Health Tracker is intended to be used by policy makers, key stakeholders and consumers to reinvigorate action and reporting on preventing chronic health conditions. A second edition of the *Australia's Health Tracker* was released in 2019.

The Aboriginal Health & Medical Research Council of NSW has partnered with the Mitchell Institute to develop the NSW Aboriginal Community Controlled Health Tracker and the NSW Aboriginal Community Controlled Storyboard on mental health.

The purpose of these publications is to use publicly available data to inform a series of snapshot indicators (presented as infographics) that provide a holistic overview of health and wellbeing comparisons for Aboriginal and non-Aboriginal peoples in NSW. These publications also aim to strengthen the capacity of Aboriginal communities and Aboriginal Community Controlled Health Services (ACCHS) to speak about the health of Aboriginal peoples across NSW.

In this technical appendix, the term 'Aboriginal' is not generally inclusive of Torres Strait Islander people. The term Aboriginal and Torres Strait Islander people is referenced and spelt out where necessary.

Stolen Generations

This report acknowledges the impacts of the Stolen Generations on Aboriginal and Torres Strait Islander communities both past and present. This section does not aim to explore the complex issues which have resulted from the Stolen Generations. Instead, this report recognises and highlights the inherent relationship between the Stolen Generations and health and wellbeing outcomes.

Stories in the *Bringing Them Home* report illustrate a holistic view of the severity and interlaced issues experienced by the Stolen Generations and how this has had a lasting impact on health, employment, education, living conditions, and self-esteem for many Aboriginal and Torres Strait Islanders.

While members of the Stolen Generations have known for decades that removal from their families have significantly affected all aspects of their lives, only recently, has data supported this belief.

Recent (2018) analysis of Aboriginal and Torres Strait Islander population data assessed health and socioeconomic outcomes, health risk factors and cultural and social factors of a proxy group of the Stolen Generations and found direct links between members of the Stolen Generation had much lower health, economic and social outcomes [5]. Compared to people who were not removed, peoples of the Stolen Generations were (Figure 1):

- three times more likely to be incarcerated in the last five years
- almost twice as likely to rely on government payments as their main income source
- 1.7 times as likely to have poor self-assessed health
- 1.6 times as likely to have experienced homelessness in the last 10 years
- 1.5 times as likely to have poor mental health
- 1.5 times as likely to have experienced discrimination

Many Stolen Generations members have also expressed their loss of cultural affiliation as a result of being removed from their community. As part of this, many have lost their native language, knowledge and identity as they do not have a strong sense of belonging to either the Indigenous or non-Indigenous community [6].

The disconnect from cultural identity and community and many other factors resulting from the Stolen Generations have contributed to the intergenerational health disparities of Aboriginal and Torres Strait Islander people. The *Bringing Them Home* report estimated that members of the Stolen Generations have double the rate of mental illness than other Aboriginal Australians [6]. Additionally, many Aboriginal Australians are much less likely to engage with the health system due to a number of factors such as, discrimination and racism, lack of culturally appropriate care [7] and a fear or lack of trust in hospitals as institutions [8].

> *"There is massive fear among these women when it comes to giving birth," said the dedicated Aboriginal midwife at Sutherland Hospital in the South East Sydney Local Health District (SESLHD).*
>
> *"I still see families who don't come to services because they are terrified they won't get to take their baby home," she said. [9]*

Despite this knowledge, data and understanding of the persistent and long lasting effects of removal of children, NSW Aboriginal children are 11 times more likely to be in out-of-home care compared to non-Aboriginal children [10].

Figure 1 / The Tragic Impact of Past Policies

The report paints a disturbing picture of health issues, disability and poor economic security factors for the Stolen Generations. As they rapidly approach their elderly years, their ages care needs will be far more complex than the average ageing Australian.

67%
live with a disability or restrictive long-term condition

70%
rely on government payments as their main source of income

66%
of Stolen Generations live in households within the three lowest income percentages

40%
have exeriences homelessness in the past 10 years

91%
never completed Year 12

62%
(of working age) are not employed

39%
(over the age of 50) report poor mental health

Source: Australian Institute of Health and Welfare 2018

Methodology

The *NSW Aboriginal Community Controlled Health Tracker* has used the framework of the *Australia's Health Tracker* 2016, 2019 and includes additional measures most important to the health and wellbeing of NSW Aboriginal peoples.

Data collection

An environmental scan of NSW Aboriginal health data was conducted by the Mitchell Institute and included statistics from state and national data sources, grey literature (such as institute reports) and academic literature. In contrast to the Australia's Health Tracker, the NSW Aboriginal Community Controlled Health Tracker includes additional measures that influence Aboriginal health and wellbeing, such as cultural connection.

These data were presented to the NSW Aboriginal Health & Medical Research Council of NSW staff to provide comment and input. Following several discussions with the NSW AH&MRC staff, feedback was sought from the NSW Aboriginal Community Controlled health community via a consultation document to help shape the development of the NSW Aboriginal Community Controlled Health Tracker.

Data analysis and grouping

Analysis of the data was conducted by the Mitchell Institute and contributed to the formation of four thematic groups' representative of NSW Aboriginal health issues encountered in the data collection phase:

1. risk factors
2. social determinants of health
3. chronic conditions and mental health
4. cultural connection

The grouping of this data was informed by Australia's Health Tracker, key policy documents; and was developed in consultation with the expert working group. The groupings draw from Australia's Health Tracker and complement existing key policy documents including the *NSW Aboriginal Health Plan 2013-2023*. In addition to the thematic group risk factors and noncommunicable diseases (as per Australia's Health Tracker), the inclusion of the other thematic groups place Aboriginal health within a broader, holistic view of health that is an intrinsic part of Aboriginal and Torres Strait Islander culture. There are also many factors that are unique and specific to Aboriginal communities. For example, there are well-known protective factors [11] (such as connection to land, culture, spirituality and ancestry and strong community governance) and risk factors (the removal of children and incarceration) which have a greater influence on Aboriginal health and wellbeing compared to non-Indigenous communities. These groupings are described in more detail in each section.

In accordance with the *Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013-2023* (Figure 2) and the *My Life My Lead report* (Figure 3), the NSW Aboriginal Community Controlled Health Tracker has endeavoured to consider the themes and the integral role culture plays on a person's life and through guidance from the NSW Aboriginal community and stakeholders with the shared intention of improving the health status of Aboriginal and Torres Strait Islander people in NSW.

Figure 2 / Domains and principles from the Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013-2023

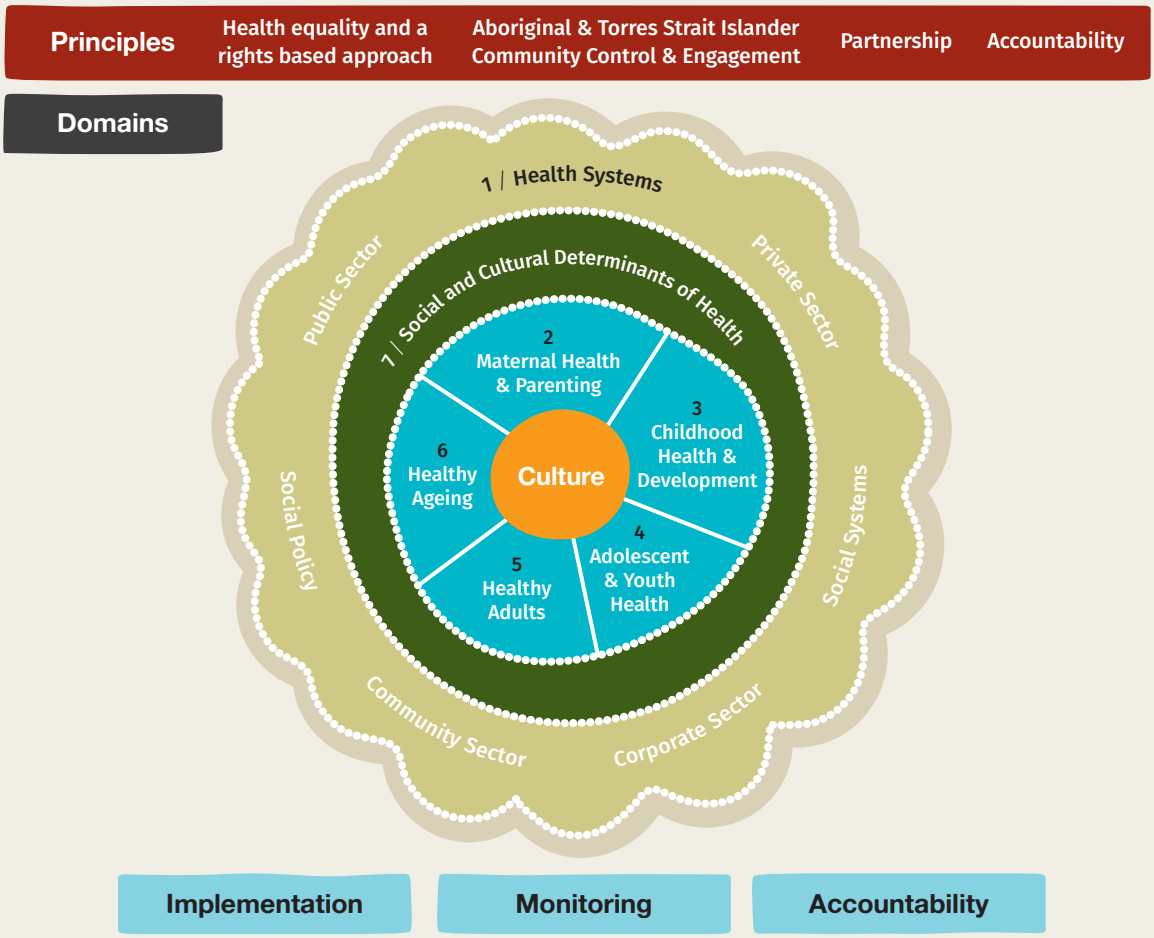
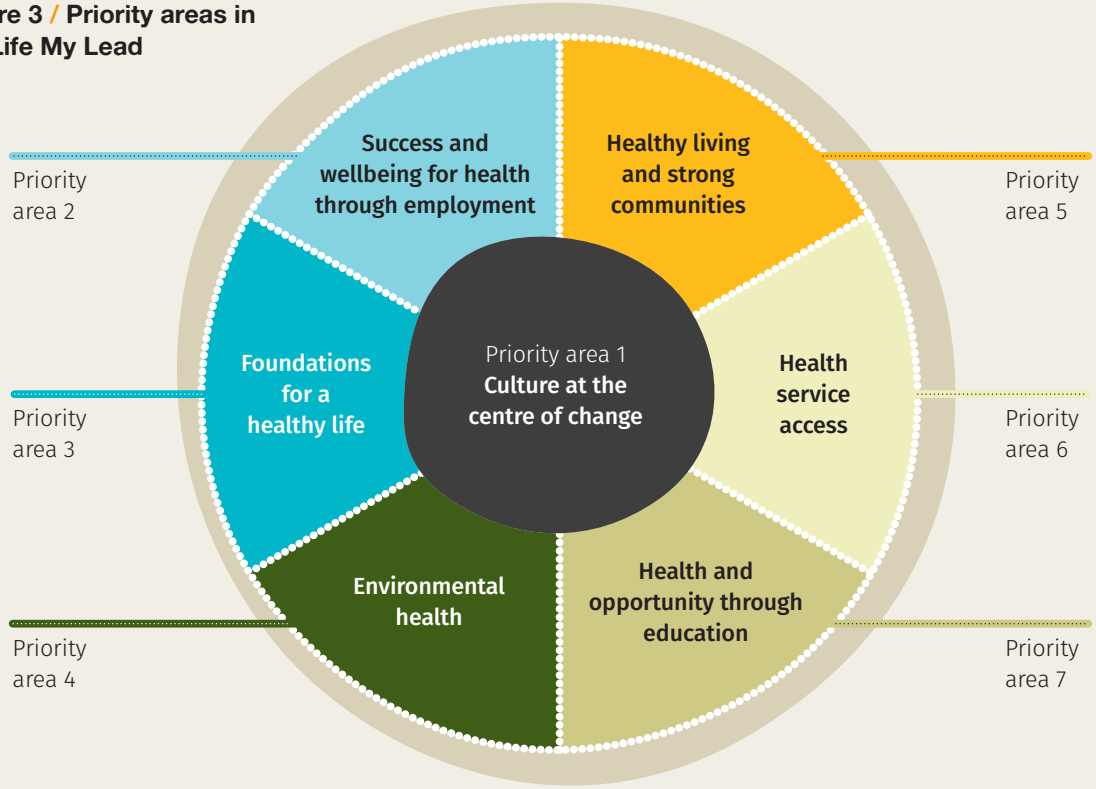


Figure 3 / Priority areas in My Life My Lead



NSW Aboriginal demographics

The following data is sourced from the 2016 ABS Census.

Population and geographic residence

Data from the 2016 ABS Census show there were 216,176 Aboriginal and Torres Strait Islander people in NSW (2.9% of the state population of 7.5 million). Recent estimates from the ABS show that the total number of Aboriginal and/or Torres Strait Islander population has increased to 265,685 [12]. Almost one third, 32.4% (70,135), of NSW's Aboriginal population lived in Sydney. Almost half, 46.4%, of NSW's Aboriginal population lived in major cities (including Sydney) in 2016. 34.5% lived in inner regional NSW, 15.3% lived in outer regional NSW, 2.5% in remote NSW and 1% in very remote NSW. A further breakdown of these figures are presented in Table 1 below.

Housing

Data from the NSW government shows homelessness was more than twice as likely in Aboriginal persons than non-Aboriginal persons in NSW in 2016 (105.4 per 10,000 vs. 45.9 per 10,000). The state average of Aboriginal homeowners was 42% in 2016, compared to 65% non-Aboriginal homeowners. Aboriginals in major cities, inner regional and outer regional NSW maintained the 43% homeowner rate; however Aboriginal persons were less likely to own homes in remote and very remote NSW (38% and 24%). In all areas, Aboriginal residents were less likely to own a home than non-Aboriginal residents; the largest gap between Aboriginal homeowners and non-Aboriginal homeowners was seen in very remote NSW (24% vs. 64%). The smallest gap was seen in major cities with 42% of Aboriginal residents owning homes compared to 63% non-Aboriginal residents.

In all areas, more than 50% of Aboriginal residents rent homes. The highest rate of home rentals was amongst Aboriginals living in very remote NSW (68%). The lowest rate of home rentals amongst Aboriginal persons living in NSW was in outer regional NSW; which was also the highest rate of Aboriginal home ownership (43%).

Households

Aboriginal persons were less likely to live in single-person households compared to their non-Aboriginal counterparts. In all regions, Aboriginal households were more likely to have more people living in them than non-Aboriginal households; the average household had three or more (average of 3.2) residents compared to non-Aboriginal households which, on average, had fewer than three members.

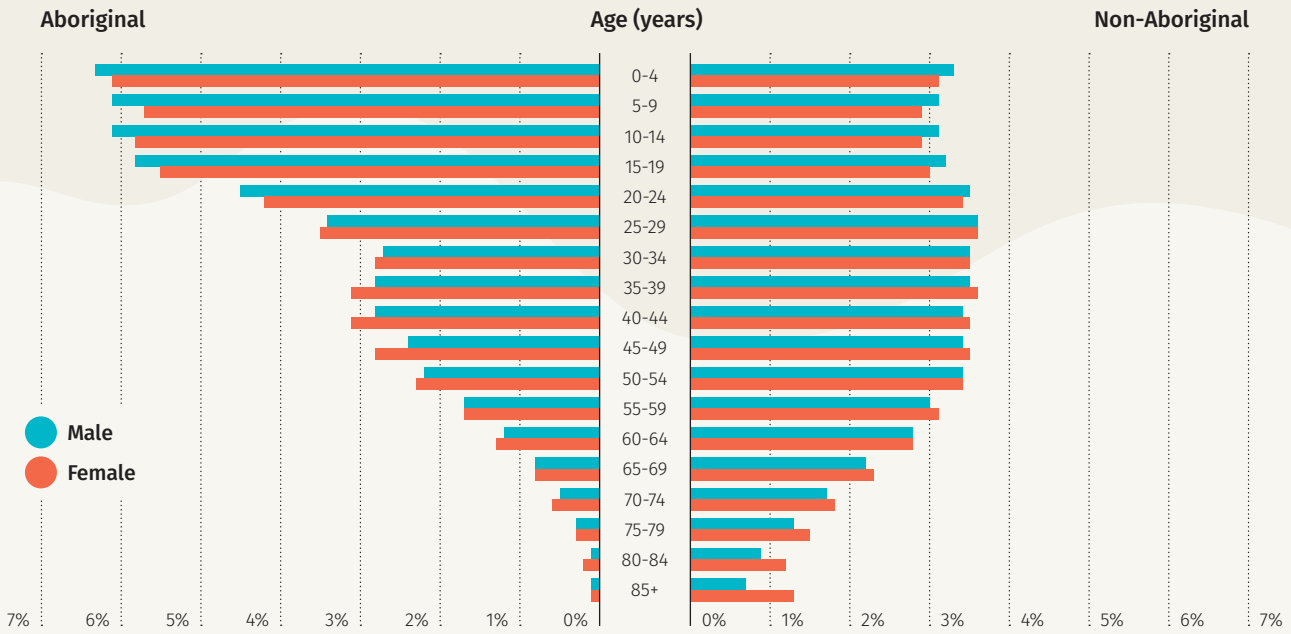
In all regions, Aboriginal households were more likely to be one-parent families than non-Aboriginal households. The rate of Aboriginal single parent households ranged from 28% in outer regional NSW to 50% in remote NSW; compared to non-Aboriginal single parent households (9% outer regional NSW to 22% in remote NSW).

Table 1 / NSW demographics breakdown

Geographic residence	Aboriginal or Torres Strait Islander origins, or both	Non-Aboriginal	Total population
Major cities	100,291 | Of these, 95% were Aboriginal	5,477,247	5,577,538
Inner regional	74,493 | Of these, 96% were Aboriginal	1,346,500	1,420,993
Outer regional	32,985 | Of these, 97% were Aboriginal	401,049	434,034
Remote	5,591 | Of these, 98% were Aboriginal	23,707	29,298
Very remote	1,961 | Of these 98% were Aboriginal	3,703	5,664

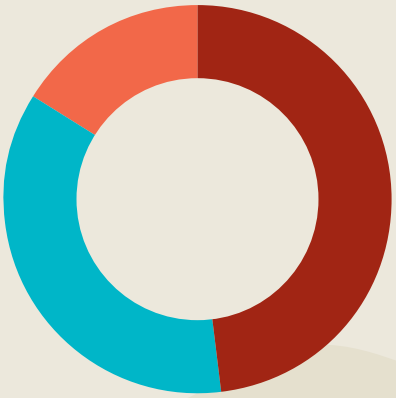
Source: Australian Bureau of Statistics 2018

Proportion of nsw population by sex and age group



The median age is 23 compared with non-Aboriginal residents (37 years)

There are 216,176 Aboriginal people living in NSW (2% of the population)



46.4%

live in major cities

(32.5% of the total population live in Sydney)

34.5%

live in inner regional NSW

15.3%

live in outer regional NSW

Household median income for Aboriginal households was $550

Compared to $850 for non-Aboriginal households

Education

Aboriginal people were less likely to have completed year 12 and beyond qualifications than non-Aboriginal persons. Those living in major cities were more likely to have achieved a higher level of formal education than those in regional and remote areas.

Aboriginal and Torres Strait Islanders between 20-24 years were less likely to have completed year 12 or equivalent compared to non-Indigenous young people (47% vs. 79%) in NSW in 2016. 35% had completed a non-school qualification (university degrees, certificates and diplomas). Aboriginal people living in major cities were more likely to have completed year 12 (36%), received a tertiary qualification (47%), completed a university degree (9%) and received a postgraduate (2%) than in any other NSW region.

Employment

State statistics show over 70% of Aboriginal adults of working age were employed in 2016. This was lower than over 90% of non-Aboriginal adults of working age in NSW employed in 2016. Aboriginal persons living in major cities had the highest rate of employment (59%) of any other region. The highest rate of unemployment amongst NSW Aboriginal populations was in very remote NSW (26%). Non-Aboriginal unemployment in both remote and very remote NSW was at 4% in 2016 whilst this unemployment for Aboriginal people was 21% and 26% respectively. The gap between Aboriginal and non-Aboriginal employment was nearly 20% in every region except major cities.

Income

State data from 2014-2015 show the median weekly household income for Aboriginal households was $550 compared to $850 for non-Aboriginal households in NSW [13].

2016 Census data show the highest individual and household income was amongst persons living in major cities of NSW. Aboriginal individuals' median income in major cities was $521 weekly and the median Aboriginal household was $1410 weekly. In comparison, the median non-Aboriginal individual income was $704 weekly; and median household, $1676 weekly. The disparity is much more apparent when we consider Aboriginal households have more members on average and there is a $250 discrepancy between median household incomes.

Group 1: Culture

1.1 / Why is it important?

> *"Place is so important to us. It's the history book of our family.*
>
> *Being on Country is for me a form of self-preservation.*
>
> *It protects my mental health and puts things back into perspective.*
>
> *It gives me room to reflect and makes me feel stronger and more confident to walk between two worlds" [14].*
>
> ***— Tahnee Jash, Yuin/Kamilaroi woman***

The concept of health and wellbeing among Aboriginal and Torres Strait Islander peoples in Australia involves a holistic and whole-of-life-view. It goes beyond an individual mindset and refers to "the social, emotional and cultural wellbeing of the whole community" [15]. Themes which have been described as relating to wellbeing include: identity, family and community kinship, culture and spirituality, and land [16].

> *"For Aboriginal people, land is not only our mother – the source of our identity and our spirituality – it is also the context for our human order and inquiry" [17].*
>
> *"Our identity as human beings remains tied to our land, to our cultural practices, our systems of authority and social control, our intellectual traditions, our concepts of spirituality, and to our systems of resource ownership and exchange. Destroy this relationship and you damage – sometimes irrevocably – individual human beings and their health" [18].*

There is a growing body of evidence highlighting the link between culture and health, yet little of this knowledge is translated into policy and practice. Cultural connection is an important protective factor and therefore can positively impact on health and wellbeing outcomes [19, 20].

> *"connection is wellness; if you're connected...you get that help you need" [21].*

Another emerging theme is spirituality – a term which has been used interchangeably with culture. 'Culture spirituality' has been described as a 'driving force' to support and encourage healing of Indigenous people [16]. Activities such as rituals and traditions of the community, storytelling and ceremonies are described as having strong links with individual and community well-being.

Strategies which increase cultural continuity/connection, transfer cultural knowledge and Indigenous systems to enhance cultural identify, self-determination, health and wellbeing are seen as key strategies to improve the health of people and for the land [22, 23]. This supports the notion of 'caring for country' whereby caring for the country can help improve health outcomes such as diets, participation in physical activity and therefore an improvement in quality of life.

Despite the strong recognition that culture influences Aboriginal health and wellbeing, little data is collected about this.

The available indicators for culture relevant to NSW Aboriginal health and wellbeing are listed in Table 2.

1.2 / Indicators

Table 2 / Latest NSW Aboriginal data on culture

Indicator	Latest Aboriginal data	Latest non-Aboriginal data	NSW average	Data source
Indigenous language spoken	0.08%	N/A	0.08%	2016 ABS Census
Identifies as Aboriginal and/or Torres Strait Islander origin	25.2%	N/A	25.2%	2016 ABS Census
Aboriginal and Torres Strait peoples working as registered health professionals	2.6%	N/A	2.6%	NSW Aboriginal Strategic Framework 2016–2020

1.3 / Key indicators

1.3.1
Aboriginal and Torres Strait peoples working as registered health professionals

How does it impact health and wellbeing?

Provision of culturally appropriate care is central to improving health outcomes for Indigenous people and communities. The values and principles among these communities differ significantly to the Western approach and do not consider the extent of issues which many Indigenous people experience within the health system, such as racist stereotyping and misleading assumptions which can lead to suboptimal treatment or service provision [24].

Since the establishment of the first Aboriginal Medical Service (AMS) in the 1970s, AMSs are well-utilised by Aboriginal people when they have a health problem. A national survey estimated that 30% of Aboriginal people go to an AMS when they have a health issue, second only to a doctor/GP (60%) [25].

Aboriginal Community Controlled Health Services/AMSs have been established "to deliver holistic, comprehensive, and culturally appropriate health care to the community which controls it" [26]. During 2015-16, ACCHSs provided around three million episodes of care each year to around 350,000 people [8]. Approximately one million episodes of care was provided to those living in **very remote areas**.

> *"Indigenous peoples are the experts in relation to their own health and health needs. Indigenous knowledge, local, traditional and ecological, provides essential ways of knowing related to Indigenous worldviews that are important for formulating health policy and praxis" [27].*

ACCHSs **place Aboriginal health back into Aboriginal hands**, empower communities and support the principle of self-determination.

> *ACCHSs are one significant example of Aboriginal self-determination in practice, giving Aboriginal people a say on what their health services do and how" [28].*

A key strategy to improving Aboriginal health and wellbeing is through ACCHSs (Figure 4). Unlike the mainstream approach to healthcare, ACCHSs take into consideration the holistic view of health and healthcare, recognising that Indigenous health encompasses the notion of community, is multi-faceted and that local problems require local solutions. In addition, ACCHSs rely on an Aboriginal health workforce and are the largest employers for Aboriginal people [29].

> *"'Health' to Aboriginal [and Torres Strait Islander] peoples is a matter of determining all aspects of their life, including control over their physical environment of dignity, of community self-esteem, and of justice. It is not merely a matter of the provision of doctors, hospitals, medicines or the absence of disease and incapacity" [1].*

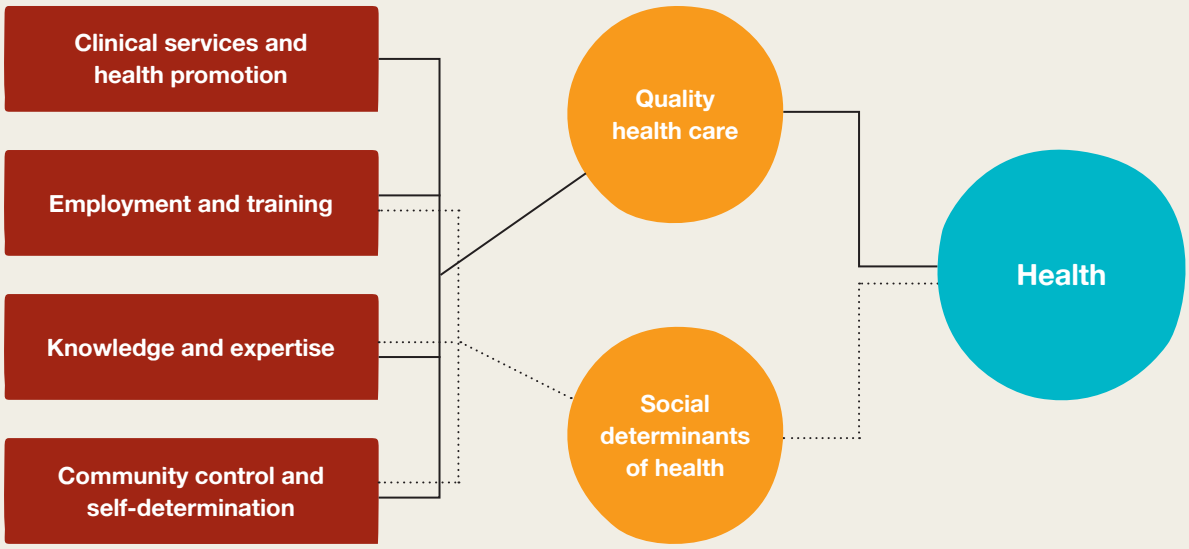
There is strong evidence linking ACCHSs and improved health outcomes in Aboriginal people [30]. Estimates suggest that ACCHSs deliver as high as 70% of health services to Aboriginal and Torres Strait Islander populations [31]. More importantly, ACCHSs address the issue of rurality and access to health care. A recent (2018) report on the Indigenous Australians' Health Programme suggested, "...in the absence of ACCHSs, mainstream services may not even be available in remote areas" [32]. As noted earlier, access and rurality are key barriers for many Indigenous Australians.

The value and importance of ACCHSs is summarised below. Aboriginal Community Controlled Health Services: [29]

- increase access to health services
- are cost-effective
- are clinically effective
- attract and retain Aboriginal clients to assist with preventing and managing chronic conditions
- are the largest employer of Indigenous people
- are a valuable health asset

Figure 4 / How Aboriginal Community Controlled Health Services can influence Aboriginal health

Source: AH&MRC of NSW evidence review on the contribution of Aboriginal Community Controlled Health Services to improving Aboriginal health



Group 2: Social determinants of health

2.1 / Why is it important?

'The social determinants of health are the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries' [33].

This approach to health is not new, especially among the ancestors of Aboriginal people in Australia.

> *"That there could ever been any doubt that what happens in everyday life in one's position within society would have a massive impact on health...Health [for them] was a concept indivisible from life itself" [34].*

While modern medicine has created a tremendous number of advances in understanding human health, there has been a loss in the understanding of the social, economic, cultural and community context which impact health and wellbeing. For example, the current biomedical model does not recognise issues such as housing, identity and racism – issues core to the health and wellbeing of Aboriginal and Torres Strait Islander people. This notion also applies within the public health practice discourse. Associate Professor Chelsea Bond, an Aboriginal (Munanjahli) and South Sea Islander says,

> *"The perception of Aboriginality as nothing more than a label, a health risk, and predicator of unhealthy behaviours within Indigenous public health practice reinforces stereotypical ideas of Aboriginality, demonises those who possess it, and disconnects Aboriginal people from their own identities in a manner similar to past oppressive policies of colonisation, assimilation, segregation and integration" [35].*

The Lowitja Institute's Beyond the Bandaid report provides an insight into the complex, multi-layered and multi-faceted relationships experienced by the Koori community (Victoria) and touches on several indicators included in this section. As described by the authors, "The big question is how we learn collectively to integrate the social with the biomedical" [34].

The social determinants do not operate in isolation but are interwoven together and operate in a dynamic and open system. The available indicators for social determinants of health relevant to NSW Aboriginal health and wellbeing are listed in Table 3.

The expert working group have also selected key indicators which are described in the following section.

2.2 / Indicators

Table 3 / Latest NSW Aboriginal data on social determinants of health

Indicator	Latest Aboriginal data	Latest non-Aboriginal data	NSW average	Data source
Weekly median income	$550	$850	$664	Aboriginal affairs key data on Aboriginal people in NSW 2018
Unemployment	13%	6%	6%	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
Adults 15 years+ who have completed school	36%	63%	62%	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
5-14 year olds in education	94%	96%	N/A	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
Household size	3.2	3.1	2.6	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
Housing home-owners	42%	63%	67%	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
Median age	23	37	38	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
People aged 0-4 years	11%	6%	6%	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
People aged 5- 9 years	11%	6%	6%	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
People aged 10-14	11%	6%	6%	NSW Aboriginal Affairs Community Portrait: Major Cities of Australia (NSW)
Self-related health status (as excellent, very good or good)	75%	82%	N/A	Aboriginal Health report card
Lives in Regional NSW	50.8%	N/A	–	Indigenous NSW: Findings from the 2016 Census
Lives in Sydney region	27.1%	N/A	–	Indigenous NSW: Findings from the 2016 Census
Lives in greater metropolitan region	22%	N/A	–	Indigenous NSW: Findings from the 2016 Census
Children in out-of-home care 0-17 years (per 1,000)	71.2	6.4	10	Productivity Commission Report on Government services Table 16A.2
Young people aged 10-17 years in youth justice under supervision on an average day (per 1,000)	154	9	13	AIHW Youth Justice in Australia 2016-17
Adult incarceration rates	24.3%	75.6%	17.1%	ABS Prisoners in Australia 2018 Table 14

2.3 / Key indicators

2.3.1 Housing access and maintenance

There is strong evidence to suggest housing environments impact on the health of people [36]. Housing is a key determinant in the health of Aboriginal people and enhances the effect of inequities between Aboriginal Australians and non-Aboriginal Australians [37]. Housing instability and quality impacts on physical and emotional health and emotional wellbeing [38]. The history of colonisation, the processes of dispossession, and the creation of reserves and resettlement that occurred with the establishment of missions, cattle stations and mines is widely recognised as having had a major impact on the lifestyles and health of Australia's Indigenous people [39].

Aboriginal people are less likely to own their own homes largely due to the ongoing effects of colonisation and dispossession, which includes intergenerational poverty, marginalisation, and ongoing racial discrimination in employment and housing markets [40, 41]. Tenure, the state of owning or renting a home, has been associated with health status. Aboriginal residents living in urban NSW were found to have fewer health issues related to housing maintenance if they were home owners, while those who privately rented or lived in social housing reported poorer housing conditions, associated with poorer health outcomes [40].

The issue of housing provision is an issue which significantly impacts Aboriginal people living in remote parts of Australia. There is a dire shortage of housing as well as significant maintenance backlogs in almost all Indigenous communities which thereby impacts on the health and wellbeing of the community [42]. Remote Aboriginal families are far more likely than other Australians to live in inadequate, crowded and insecure housing [39].

> *"Inadequate housing affects every aspect of community life: it affects children's schooling, it affects residents' health, it makes it harder for people to work, it reduces opportunities to save money, it inflames tensions between families, and it creates conditions for substance abuse, violence and juvenile crime" [42].*

The main housing issues that contribute to poor health outcomes include poor conditions due to crowding, poor water quality, dust and animals [40, 43]. Poor health conditions amongst Aboriginal communities often occurs as a result of untimely maintenance and repairs [44].

Extended kin households are a persistent feature of Aboriginal communities. Because of this, some Aboriginal families choose to live in large, multi-generational households in which occupants do not recognise or acknowledge crowding, despite other vacant houses being available in the community [45]. Nevertheless, traditional Aboriginal and Torres Strait Islander cultural practices such as multi-generational living and the importance of the extended family are a strength current housing policy has not yet tapped into and should consider in future policy development. We have known that family and kinship are cohesive forces which bind Aboriginal people together and that the makeup of families beyond the nuclear family are important to Aboriginal wellbeing. Moreover, the ongoing support from extended family members such as local Aboriginal Elders are particularly valued and can pass on valuable cultural, spiritual and lifelong lessons to all family members. The following quotes are gathered from a series of focus groups conducted by Lohoar, Butera [46].

> *"We have faith in the community because we know everyone, plus we've had that history of support."*
>
> ***— Mother, NT***

> *"Maybe it's the definition of family between Indigenous and non-Indigenous culture. I don't know. Even the other week, there was an Aboriginal family and one of the little girls, she was about 2 or 3, and she was walking away … I don't know this child, I don't know this family, but I just went and grabbed this child and said, "You alright bub?" And then I went over and went and had a chat to this family, and there was no issue with this at all, because there is something … I don't know, if I was non-Indigenous, maybe I would have acted differently, but it was just instinct, this woman was like, "Oh thanks." Even though it's not blood family, it's still community. We still look after our mob, you know … even if you don't know them."*
>
> ***— Grandmother, Qld***

> *"I think Elders bring connection to our past and our history, and they bring us stories … I wish I still had my grandmother around … When you've got an older person, they can confirm your connection … they can confirm your connection to country and family and their stories— which is what we should have and a lot of us don't have. And your language, you don't have a lot of language. And their stories that they tell you are our history and it tells you where you belong, and it gives you that strength."*
>
> ***— Auntie and mother, Vic.***

However, overcrowding in other instances occurs due to poor access to housing, when people are then forced to find accommodation with other family members. Crowding in households can negatively impact on health and wellbeing of residents due to lack of food security, sharing sickness and disturbances in the night affecting sleep [37]. Crowded conditions can cause household facilities to deteriorate quickly due to enhanced use. Houses deteriorate quickly without consistent upkeep of hardware and facilities [47].

Housing maintenance remains an enduring health policy challenge in remote Indigenous Australian communities [44]. Infectious diseases are the main health consequences of poor maintenance of household facilities and structures [48]. Gastrointestinal, skin, eye, ear and respiratory illnesses are the primary categories of infectious diseases experienced by Aboriginal people due to inadequate housing facilities [43, 44, 49]. This can also contribute to chronic health conditions, particularly through increased risk of Acute Rheumatic Fever and Rheumatic Heart Disease.

In order for health to be maintained, household infrastructures must be able to support Healthy Living Practices [44], which include:

1. Washing people
2. Washing clothes and bedding
3. Removing waste water safely
4. Improving nutrition and the ability to store, prepare and cook food
5. Reducing negative impacts of overcrowding
6. Reducing negative impacts of animals and insects
7. Reducing the health impacts of dust
8. Controlling the temperature of the living environment
9. Reducing hazards that cause trauma

2.3.2 Education

Research across the world has acknowledged a connection between education status and health outcomes for populations [50]. There are strong positive correlations between years of education and improved health status. Health outcomes are influenced by a person's ability to use a wide range of materials and resources to build health knowledge and enable empowered decision-making [51].

Education for Aboriginal people refers to two systems of knowledge: Schooling, which is associated with Western education; and Culture (Figure 5), which encompasses the sharing of knowledge of Aboriginal systems of law, cultural practice, governance, ethics, behavior, control and relationships [52].

Due to the histories of colonisation, some families have rejected the non-Aboriginal education system as it can be seen as 'whitefellas' promoting their own culture, which may provide some reasons as to the low attendance and commitment rates among Aboriginal communities [34].

In addition, school attendance may also impede on a young person's ability to connect with their culture.

"For many Aboriginal people, allowing young people to leave their community at twelve or thirteen years of age to go to secondary school means that they will not be around much of the time to participate in Aboriginal ceremonies" [34].

Figure 5 / Education and culture

The importance of schooling (Western education) was widely acknowledged by the Yolgnu participants, particularly for its role in preparing people for employment although there is some disillusionment about this connection due to the limited employment opportunities in the community and there are concerns about current levels of educational achievement. Western education, however, was not recognised as having a positive influence on health [34].

One study found that to some Aboriginal people, formal education was believed to be important for preparing people for employment, however, employment opportunities are limited, particularly in rural and remote communities [52]. In this study, Indigenous participants attributed health problems to cultural change which they acknowledged as a breakdown in traditional systems of law, relationship, education and loss of traditional health, nutrition and hygiene knowledge and practices rather than a lack of formal (Western) education [52]. This breakdown indicated indigenous people in this community saw their health issues to be a result of a lack of relevant education.

Furthermore, there are cultural barriers and different understandings of 'education'.

In some instances, Aboriginal children are exposed to poor learning conditions. Housing insecurity can impact on a child's ability to focus and learn in a classroom environment [53].

2.3.3 Employment and income

Employment participation has shown to improve health, social and emotional wellbeing outcomes at a population level. Employment offers economic independence, which in turn improves security of housing and a range of social/health factors. There is a reciprocal relationship between health and employment. Health impacts on one's ability to engage with employment while employment status can also impact on health and wellbeing [54].

Aboriginal people in NSW experience lower levels of employment due to experiencing lower levels of formal education and training, higher levels of contact with the criminal justice system and discrimination in the workforce [55]. Education outcomes are a key determinant of employment. Higher levels of educational attainment are correlated with higher likelihood of employment. Despite having lower rates of employment and higher rates of unemployment, there is evidence to suggest Aboriginal are keen and motivated to work [56].

One way in which Indigenous Australians face socioeconomic disadvantage is through income disparity. Low income is associated with poor health status and increased risk of mortality. Lower rates of employment are one reason for the income gap between Aboriginal and non-Aboriginal people.

2.3.4
Children in out-of-home care

How does it impact on health and wellbeing?

Children in out-of-home care often have poorer health outcomes than other children [57]. Removal of children from their birth family is recognised as a risk factor for poor health and wellbeing and can have short and long term impacts on school performance, education outcomes and even health outcomes as an adult [58]. Many of these health challenges are often complex and chronic and require well-coordinated health care to address their compromised health status.

A recent (2018) study of the views of children and young people brought into out-of-home care estimated that 90% of children brought into out-of-home care reported to have regular health checks (at least once a year) with a doctor, however, these figures dropped to 82.4% for cultural[1] groups [59].

Contributors

A recent (2019) Western Australia study suggests two key factors to the removal of Aboriginal children from their families: substance abuse and mental health issues deriving from the intergenerational trauma caused by previous removal of children [60]. The authors also call for "urgent action to prevent intergenerational trauma".

Another contributing factor to the high rates of Indigenous children in out-of-home care is the lack of support for women trying to leave family violence [61]. A recent (2019) study investigating interactions between housing and domestic and family violence describes the already complex situation for many Indigenous women [59]. This study explains that dealing with circumstances largely outside of their control, women are concerned of the likelihood of child protection services getting involved and the risk of losing their children [61].

Prevalence, trends, figures

Recent figures (2019) show the significant disproportion of Indigenous children aged 0-17 years in out-of-home care compared to non-Indigenous children.

71.2 / 1,000
Indigenous children in out-of-home care (0-17 years)

3.4 / 1,000
Non-Indigenous children in out-of-home care (0-17 years)

The number of reported Indigenous children in out-of-home care have been relatively stable the last few years. These figures are relatively similar at a national level (Figure 6), however, there are indications that there is an increase of Aboriginal infants entering out-of-home care than previously [60]

Figure 6 / Child protection Australia, 2017-18 AIHW 2019

	Major cities	Inner & outer regional	Remote & very remote
Indigenous	72.7	59.0	29.7
Non-Indigenous	4.4	7.8	3.2

1 Cultural groups in this study included African, Asian, European, Latino, Maori, Pacific Islander and South African.

2.3.5
Youth justice and adult incarceration

How does it impact on health and wellbeing?

Incarceration has been associated with a negative change in health status with health status decreasing as incarceration length increases [62]. Many offenders also experience disproportionately high rates of serious mental illness and substance abuse. Time spent in prison also increases risk of:

- blood borne virus transmission
- physical violence
- sexual assault
- isolation

The impacts on health and wellbeing also extend following their release such as:

- stigmatisation
- social and cultural exclusion
- inadequate access to support networks and health and social services.

All these factors in and out of prison exacerbate the already poor health status experienced by this group.

Contributors

The issue of incarceration for both youth and adults is complex (Figure 7). There is recognition and acknowledgement of the long-term harms done to Aboriginal people by colonisation which has led to intergenerational trauma and contributes to the burden of disease, substance misuse and incarceration [63]. International voices have commented on the "extraordinarily high rate of incarceration of Aboriginal and Torres Strait Islanders, including women and children" [64].

National Aboriginal and Torres Strait Islander surveys have identified several factors which underpin Indigenous contact with the justice system. These are: age, gender, drug and alcohol abuse and employment. Family violence and family disruption (including removal from birth families) can also contribute to the risk of arrest or imprisonment [65].

Racism – institutional racism – has been documented as a contributor to the cases of over-incarceration rates of Indigenous Australians. As noted in The Victorian Aboriginal Justice Agreement (1999), it "recognises that Indigenous people continue to be over-represented at all levels of the criminal justice system at unacceptable and disproportionate rates" [66]. Furthermore, prominent figures have pointed to direct evidence linking these two issues as well [67, 68].

> *"We see institutional racism at play in many, if not most, Aboriginal deaths in custody" [68].*

Prevalence, trends and figures

On any given day, latest NSW figures show Aboriginal young people are 17 times more likely to be in youth justice compared to non-Aboriginal young people. The adult incarceration statistics are much lower in Aboriginal adults compared to non-Aboriginal adults.

154 / 1,000

Aboriginal young people aged 10-17 years in youth justice under supervision on an average day

9 / 1,000

Non-Aboriginal young people aged 10-17 years in youth justice under supervision on an average day

24.3%

Aboriginal adult incarceration rates

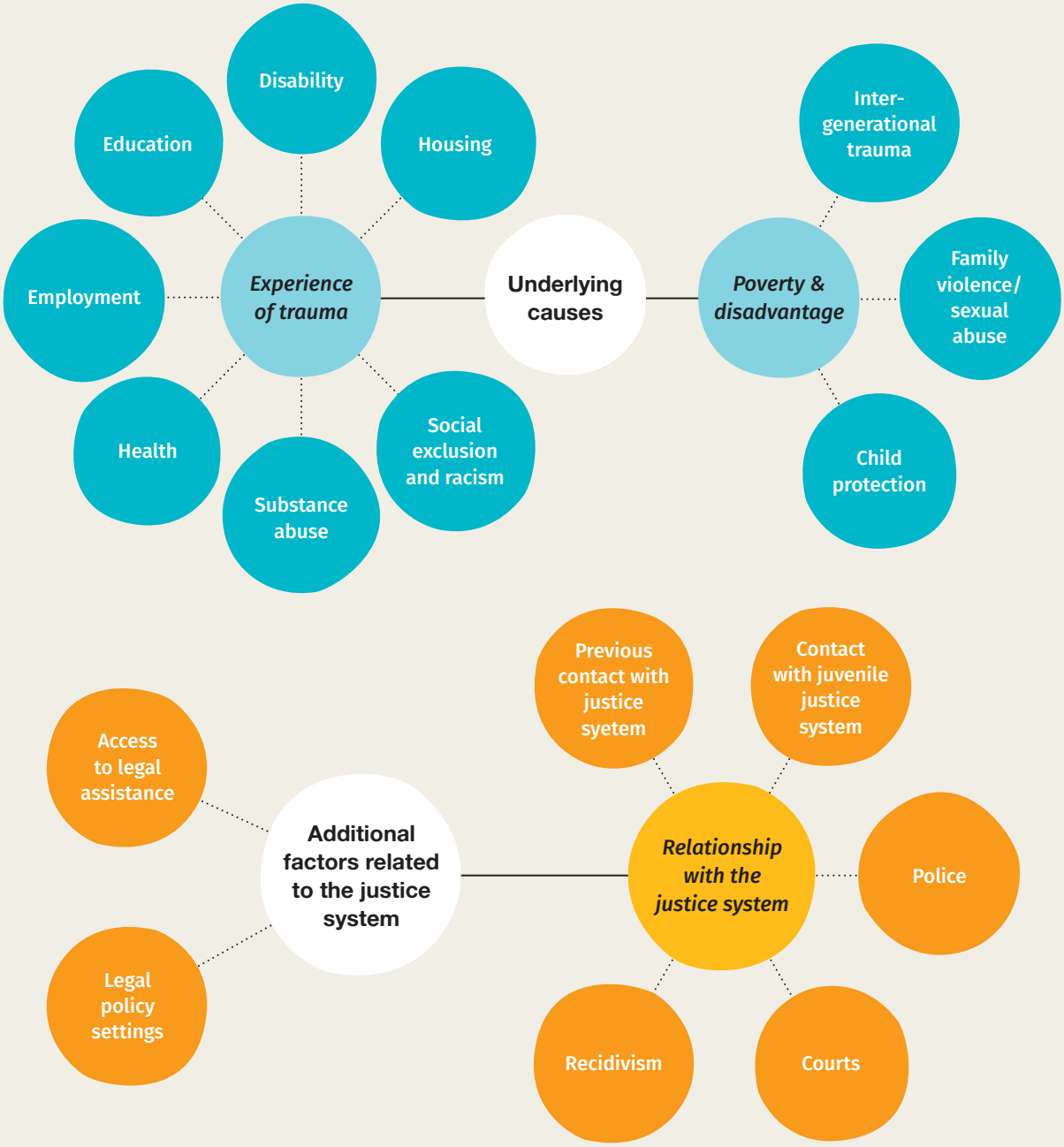
75.6%

Non-Aboriginal adult incarceration rates

There is also evidence to suggest that both Indigenous and non-Indigenous youth juveniles are likely to serve term as an adult [69].

Figure 7 / Key drivers of Indigenous incarceration

Taken from PwC Indigenous incarceration: unlocking the factors report



Group 3: Risk factors for chronic health conditions/preventive measures

3.1 / Why is it important?

The latest Australian Burden of Disease Study estimates more than one-third of chronic diseases can be prevented by addressing high blood pressure, diet, alcohol consumption and smoking [70]. These figures are similar among Indigenous Australians – an estimated 37% of Indigenous disease burden could be prevented by addressing risk factors such as tobacco use, physical inactivity and poor diet [71]. Smoking, physical inactivity, poor nutrition and harmful use of alcohol are recognised modifiable risk factors for poor health and linked to a number of preventable chronic health conditions such as cardiovascular disease, diabetes and some cancers [72].

Tackling key risk factors could substantially improve the health and wellbeing of Aboriginal people living in NSW. Latest NSW Aboriginal data show that more Aboriginal people (compared to non-Aboriginal people):

- never drink
- eat the recommended vegetable intake
- engage in more physical activity

For example, good nutrition is a protective factor which can reduce risk of overweight and obesity, cardiovascular disease, tooth decay and other chronic conditions [73]. Despite the higher rates of overweight and obesity compared to non-Indigenous residents, vegetable intake is higher in NSW Aboriginal residents. The traditional diets of Indigenous Australians was low in saturated fat and nutrient rich, markedly different to modern diets that are typically energy dense and rich in sugar, salt and fat. Although complete reliance on a traditional diet is not recommended, evidence suggests a diet of 30-40% of traditional foods can lower the incidence of chronic health conditions among Indigenous populations [74]. The role of traditional diet and foods should be considered as a key strategy to improve the health of Aboriginal peoples.

The indicators for risk factors relevant to NSW Aboriginal health and wellbeing are listed below. The expert working group have also recommended a set of key indicators for monitoring of chronic health conditions for Aboriginal NSW residents.

The available indicators for risk factors relevant to NSW Aboriginal health and wellbeing is listed in Table 4.

The expert working group have also selected key indicators which are described in the follow section.

3.2 / Indicators

Table 4 / Latest NSW Aboriginal data on risk factors for chronic health conditions

Indicator	Latest Aboriginal data	Latest non-Aboriginal data	NSW average	Data source
High blood pressure	31.1%	28.4%	28.4%	NSW population Health Survey 2013
High cholesterol	16.7%	21.1%	20.99	NSW population Health Survey 2013
Adults who **never drink** (16 years and over)	30.1%	28.6%	28.7%	NSW population Health Survey 2017-18
Adults who **drink less** than weekly	29.8%	26.5%	26.7%	NSW population Health Survey 2017-18
Adults who **drink weekly**	33.6%	37.2%	37.1%	NSW population Health Survey 2017-18
Adults who **drink daily**	6.5%	7.6%	7.6%	NSW population Health Survey 2017-18
Alcohol related hospitalisations (per 100,000)	Males: 1808.5 Females: 892.5	Males: 716.9 Females: 434.3	459.4	NSW combined admitted patient epidemiology data and ABS estimates 2016-17
Daily smokers	28.5%	14.7%	10.6%	NSW population Health Survey 2017-18
Smoking in pregnancy	42.4%	7.2%	8.8%	NSW perinatal data collection 2017-18
Fruit intake	41%	46.6%	46.4%	NSW population Health Survey 2018
Vegetable intake	8.4%	6.6%	6.6%	NSW Population Health Survey 2018
Adults meeting physical activity recommendations	61.2%	60.3%	60.2%	NSW Population Health Survey 2018
Sugar intake per day (national data)	111g	105g	N/A	ABS data consumption of sugar
Adults experiencing psychological distress	23.3%	14.9%	15.1%	NSW Population Health Survey 2017
Breast cancer screening rates	42%	14.9%	53%	Cancer Institute NSW 2016-2017
Indigenous status of active participants with an approved plan	6.2% (6,300) identified as Indigenous	89.9% (90,923) identified as non-Indigenous	101,252* Total number of NDIS participant with an active plan	NDIS Dashboard 30 Sept 2019
Full immunisations by age 2	91%	90.2%	90.2%	Australian Immunisation Register 2018

3.3 / Key indicators

3.3.1
Smoking in pregnancy

How does it impact health and wellbeing?

In Australia, one in ten women smoked during the first 20 weeks of pregnancy and three in four continued to smoke after the first 20 weeks [75]. Women experiencing disadvantage, teenagers, women living with a mental health condition and Indigenous women are more likely to smoke during pregnancy compared to the wider population placing them and their baby at increased risk of health problems throughout the pregnancy and later in life. Furthermore, Indigenous women are likely to experience poorer health than other Australian women [76]. Complications relating to smoking in pregnancy include [77, 78]:

- stillbirth, miscarriage or ectopic pregnancy
- pre-term labour and birth
- low birth weight
- changes to the baby's brains and lungs
- impaired development and working of the placenta
- reduced oxygen supply
- retarded growth and development
- chemicals passed through breast milk and reduced milk production.

Following the birth of the baby, these health and developmental risks can continue particularly if the baby is exposed to a household where other members of the family smoke. For example, sudden death infant syndrome (SIDS) is reported to be three times higher in babies who were exposed to smoking during pregnancy. Other health effects may include, higher risks of, developing asthma and childhood cancers as well as behavioural conditions such as a attention deficit hyperactivity disorder (ADHD) [79].

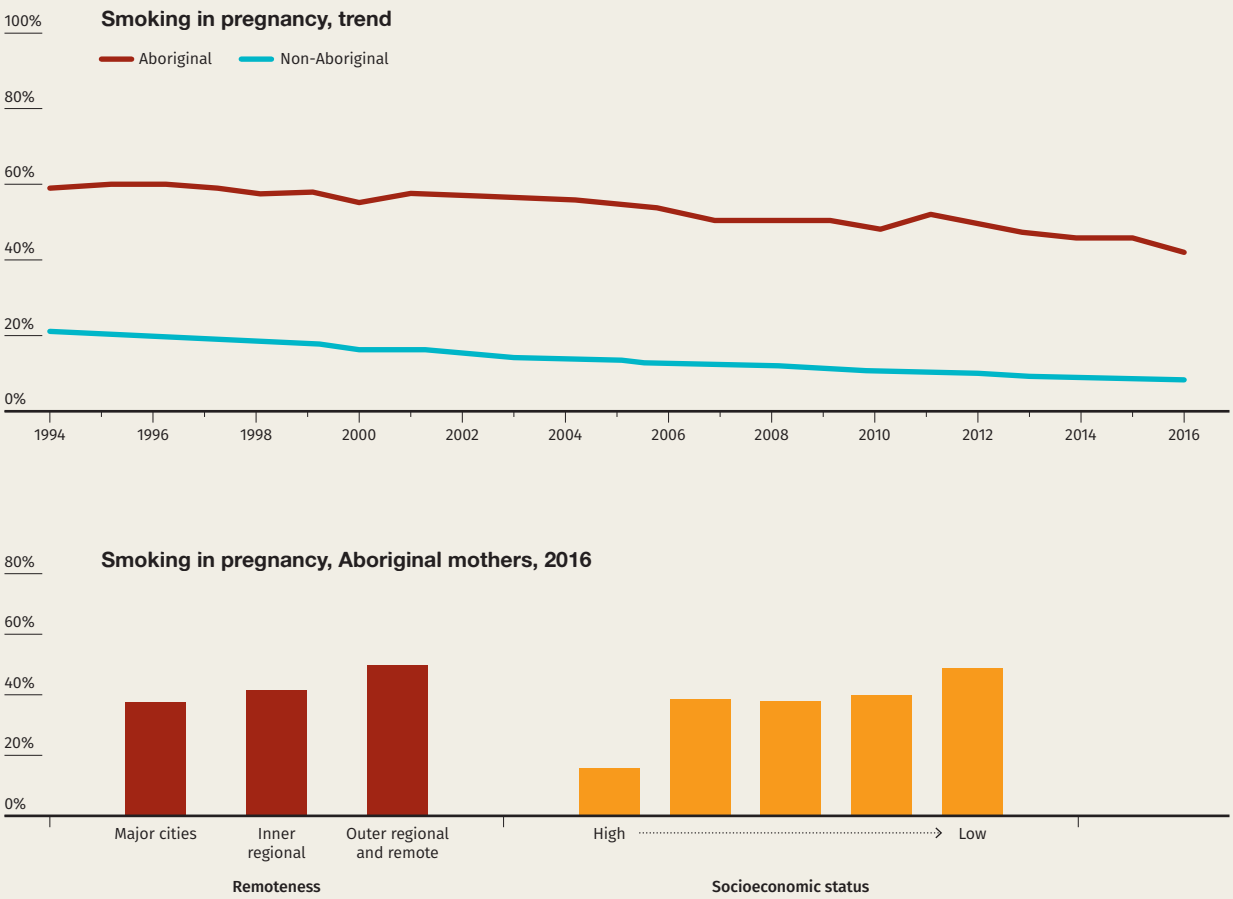
Helping women and family members quit smoking as early as possible is the best option for the health of the mother and the baby. This continues to be the most preventable causes of infant death and illness [78].

Prevalence, trends and figures

Among the NSW Aboriginal population, an estimated 42.4% of women smoked in pregnancy in 2017 compared to 7.2% of non-Aboriginal women. Smoking in pregnancy among Aboriginal mothers has fallen by a third since 1996 [80] - see Figure 8 for more trend data.

Currently, it is illegal (in all states and territories) to smoke in a vehicle when a child is present. In various states, there are also smoking bans in public spaces. The Aboriginal Tobacco Resistance and Control (ATRAC) Framework developed by the Aboriginal Health & Medical Research Council in partnership with the NSW government also provides key principles and best practice approaches for reducing smoking and its harms for Aboriginal people living in NSW.

Figure 8 / Smoking in pregnancy from the Chief Health Officers report 2018



Relevant policy documents

- The ATRAC Framework: A Strategic Framework for Aboriginal Tobacco Resistance and Control in NSW

3.3.2 Daily smoking

Smoking rates are at an all-time low in Australia. Since 1991, rates of daily smoking have declined each year across all age groups, with the 18-34 year old group experiencing the largest falls since 1995 [81]. Despite the declines in population-level smoking in Australia, smoking disproportionately affects communities of disadvantage. Recent ABS estimates suggest that 21.7% of smoking occurs in areas of most disadvantage compared to only 6.8% in the least disadvantaged areas with little changes in the smoking pattern over the last decade [81].

Smoking rates are 2.7 times higher in Indigenous people compared to non-Indigenous people [82]. Smoking is also the largest contributing risk factor to the 23% gap in disease burden between Indigenous and non-Indigenous Australians [83]. Latest national figures show a decline in daily smoking among young Indigenous people (15-24 years) (Figure 9).

How does it impact on health and wellbeing?

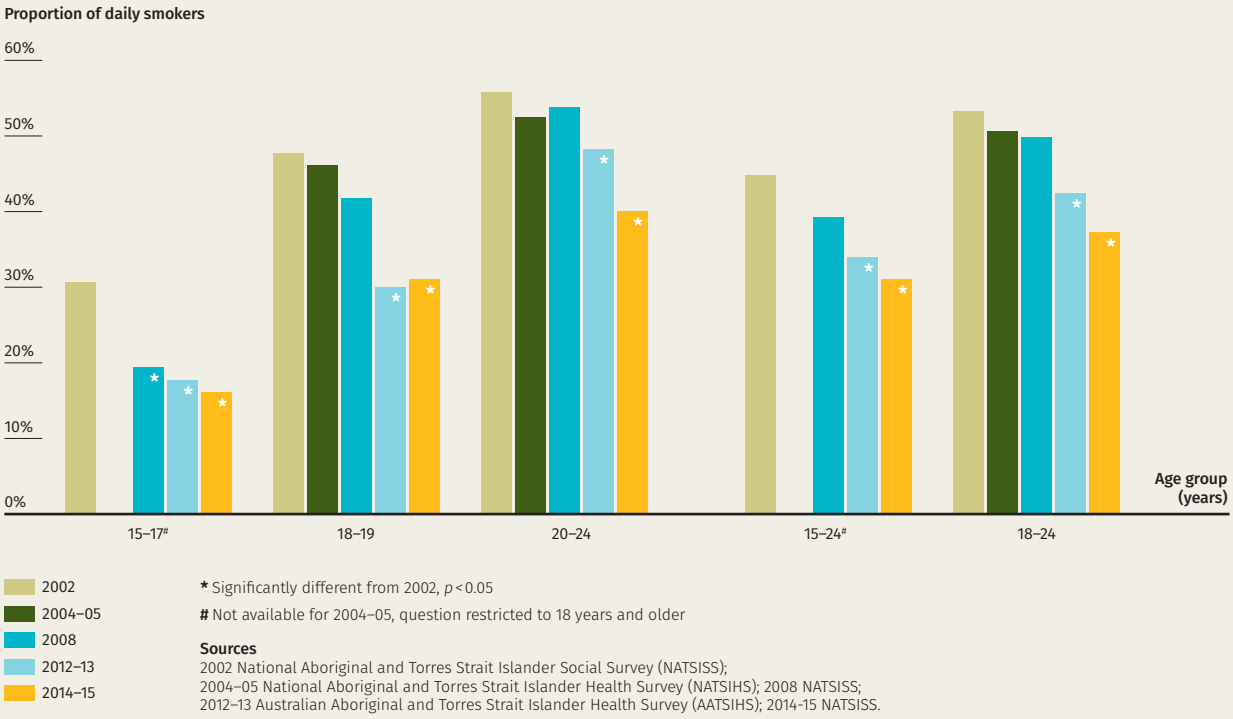
Tobacco smoke is toxic and addictive. Despite efforts in tobacco cessation over the last four decades, around 21,000 people died from smoking in 2015 [78]. Tobacco use is related to a range of health conditions including: 19 types of cancers, seven cardiovascular diseases, chronic obstructive pulmonary disease and asthma.

A very recent (2019) study into smoking and cardiovascular disease in Australia showed that smoking at least doubles the risk of all cardiovascular diseases and that quitting reduces the risk substantially [84].

Prevalence, trends and figures

Around 30% of NSW Aboriginal adults smoked daily in 2017. In 2008, all Australian governments committed to a target of 10% or less for adult daily smoking and to 'halve the rate' of smoking among Aboriginal and Torres Strait Islander peoples by 2018 [85].

Figure 9 / Daily smoking rates in young Indigenous (between 2002 and 2014–15)



Relevant policy documents

- NSW Tobacco Strategy 2012-2021
- The ATRAC Framework: A Strategic Framework for Aboriginal Tobacco Resistance and Control in NSW 2015

3.3.3
Alcohol consumption

Alcohol is the drug of choice for many Australians. The consumption of alcohol is weaved into the social and cultural tapestry of Australia and is widely accepted. Although many Australians drink within the national guidelines, a reported 17% of people in 2016 consumed alcohol at 'risky'[2] levels placing them at lifetime risk of an alcohol-related disease or injury [86]. A further one in four people consumed alcohol at 'risky' levels at least monthly [86].

Figure 10 / Alcohol-related harms as taken from NSW Health Snapshot 2018 reducing alcohol-related harm snapshot

Several national health surveys indicate that Aboriginal and Torres Strait Islander people are less likely to consume alcohol [87]. Latest figures also show that Indigenous Australians are also more likely to abstain from alcohol compared to non-Indigenous (31% compared with 23%, respectively) [88]. This trend (to abstain from drinking) has been increasing among Aboriginal people since 2010. When Aboriginal people consume alcohol, they are more likely to experience alcohol related harm.

How does it impact health and wellbeing?

No amount of alcohol is considered safe. Drinking small amounts can increase the risk of cancer with risk increasing with every drink (Figure 10) [89]. Consumption of alcohol is also linked with weight gain, heart disease and can lead to dependence or addiction particularly in people living with depression or anxiety [90]. Alcohol not only impacts the individual, but can also harm others. Family, domestic and sexual violence is more likely to occur in the context of alcohol use [88]. Furthermore, in 2017, an estimated 55 people were killed and 425 seriously injured in alcohol-related motor vehicle accidents in NSW [88].

Prevalence, trends and figures

Alcohol consumption among Aboriginal NSW people is much lower compared to non-Aboriginal NSW people.

30.1%
Aboriginal adults who never drink

28.6%
Non-Aboriginal adults who never drink

33.6%
Aboriginal adults who drink weekly

37.2%
Non-Aboriginal who drink weekly

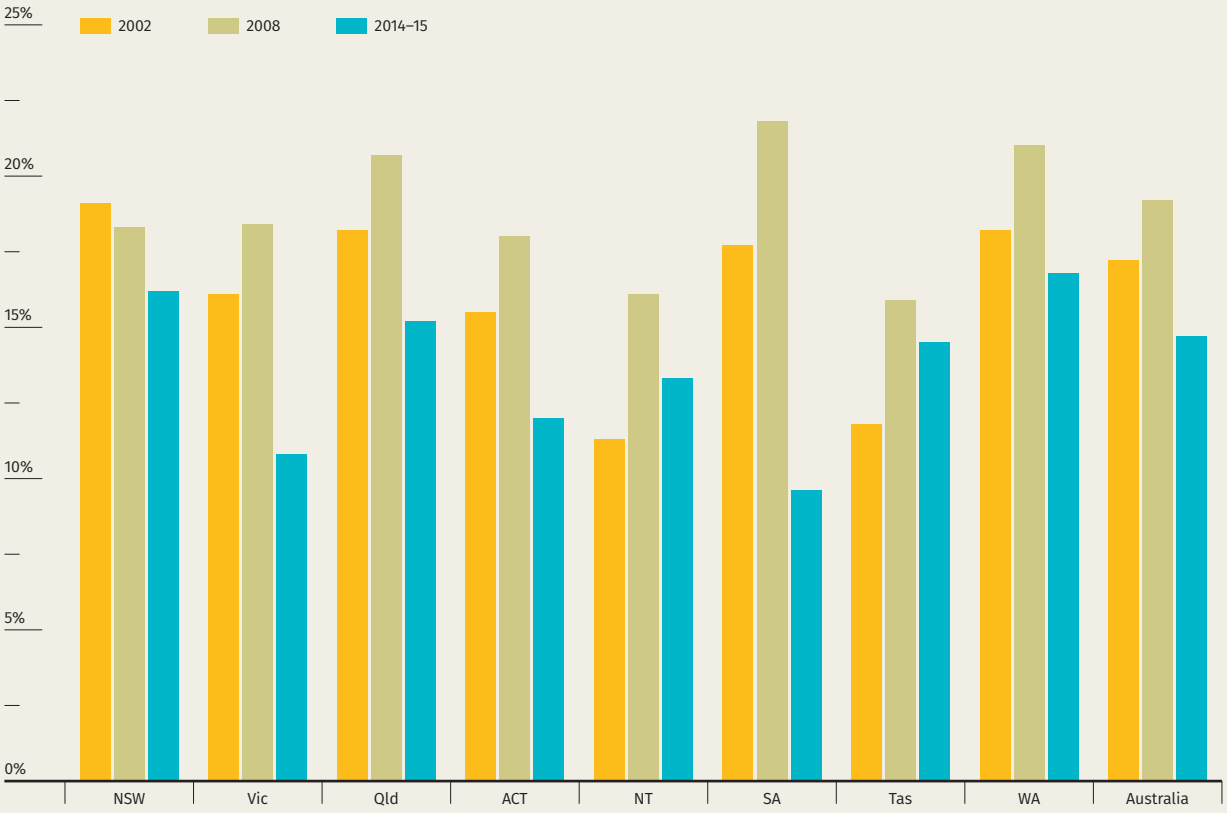
6.5%
Aboriginal adults who drink daily

7.6%
Non-Aboriginal adults who drink daily

Furthermore, alcohol-related harms from both lifetime and single risk has decreased in the NSW Aboriginal community (Figure 11 and Figure 12).

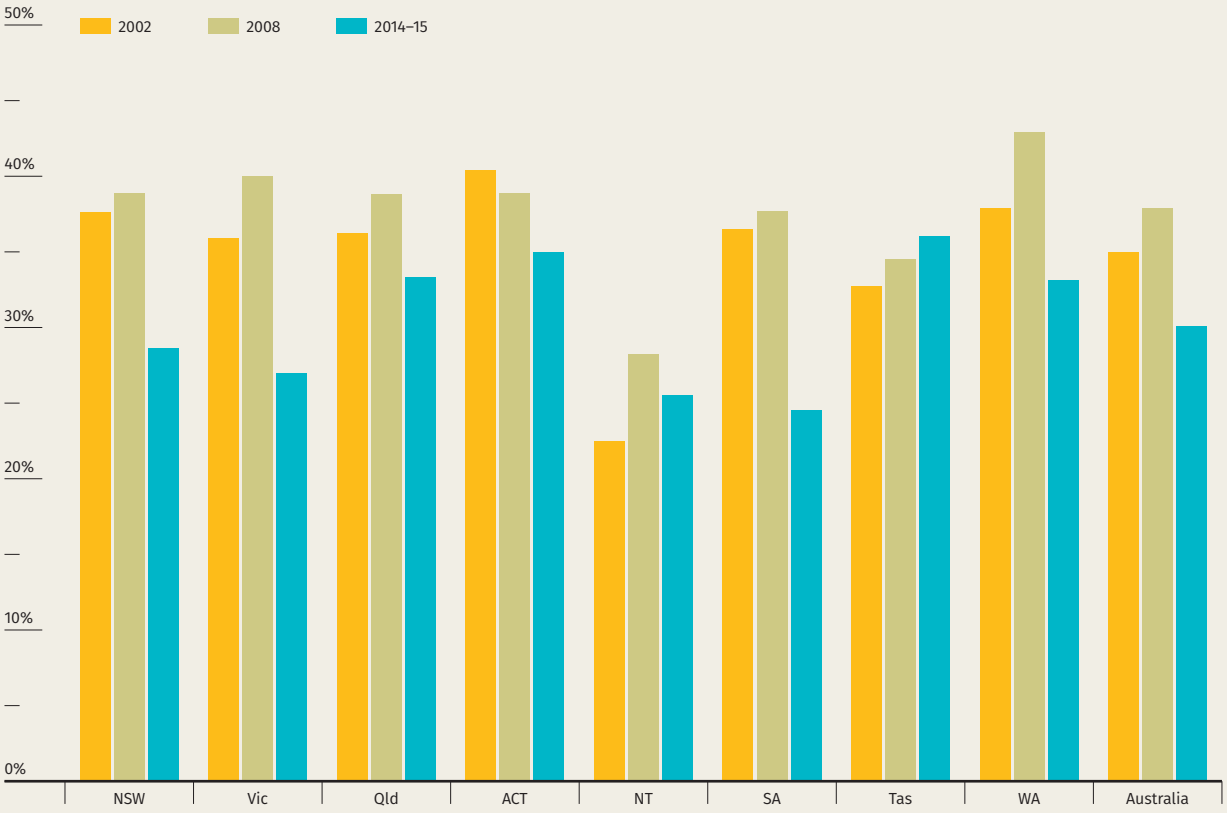
2 'Risky' is defined in the National Health and Medical Research Council (NHMRC) guidelines for lifetime risk as consuming, on average, more than two standard drinks per day.

Figure 11 / Alcohol-related harm by lifetime in Aboriginal and Torres Strait Islander persons 15 years+



Source: AIHW, Table S3.9

Figure 12 / Alcohol-related harm by single occasion in Aboriginal and Torres Strait Islander persons 15 years+



Source: AIHW, Table S3.8

3.3.4
Poor diet/nutrition

An unhealthy diet is one of the major risk factors for poor health. Many Australians do not eat the recommended two fruit and five vegetable servings as per the Australian Guide to Healthy Eating but instead are consuming more nutrient-dense foods such as added sugars, salt and foods high in energy and fat. Less than one in ten adults met the recommended vegetable intake in 2017-18 [91].

How does it impact on health and wellbeing?

Eating a healthy diet can support better development and growth, foster better learning and can be protective against a number of noncommunicable diseases such as cardiovascular disease, dementia and diabetes [92].

Prevalence, trends and figures

In NSW, Aboriginal and non-Aboriginal people consume similar amounts of fruit and vegetables, however, Aboriginal people eat more vegetables – 8.4% compared to 6.6% respectively.

The NSW Government has a target to 'reduce overweight and obesity rates in children by five percent by 2025' [93]. The state of NSW is one of very few jurisdictions in the world to lower rates of childhood overweight and obesity [94] (Figure 13).

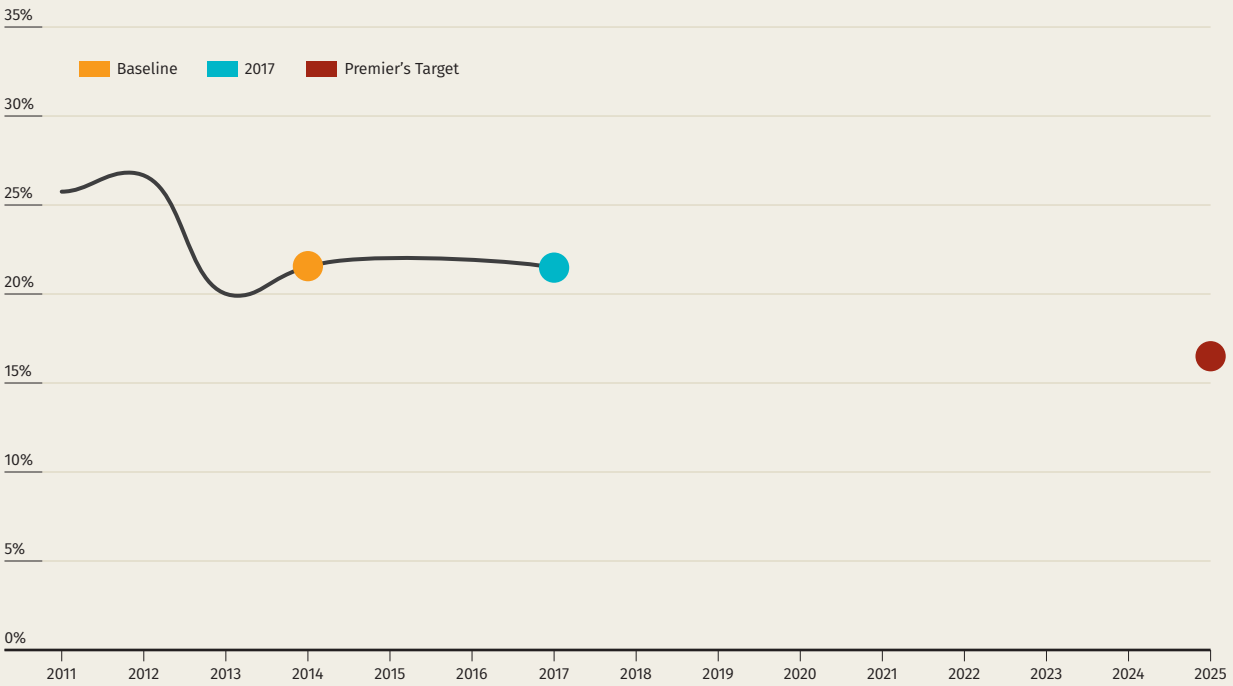
There is strong and consistent evidence to show that changing behaviours including promoting healthier nutrition is effective in influencing weight status. There are several NSW programs which have demonstrated success in increased fruit and vegetable intake among Aboriginal children. Programs such as Munch & Move and the Bulgarr Ngaru Medical Aboriginal Corporation: Fruit and vegetable program are existing programs which should be adapted, replicated and tailored for other Aboriginal communities as evidence-based strategies to improve overall health and wellbeing and to improve long-term health outcomes. An evaluation of a subsidised fruit and vegetable program for Aboriginal children in northern NSW found similar results [95].

Consideration of the role of traditional foods and diet is also suggested as a key strategy to improve diets among Aboriginal communities.

Relevant policy documents

- NSW Healthy Eating and Active Living (HEAL) Strategy

Figure 13 / Rates of overweight and obesity in NSW children



Source: NSW Population Health Survey (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health

3.3.5
Psychological distress

*Refer to **non-communicable disease/chronic conditions** and **social determinants of health section** for more information.*

High psychological distress is recognised to be more prevalent among many First Peoples of high-income countries [96]. Aboriginal people are twice as likely to have high psychological distress compared to non-Aboriginal people. Psychological distress is a significant risk factor for other chronic conditions, including smoking, 'risky' drinking and drug use [97].

Contributors

A recent study suggested there are four key factors contributing to the Aboriginal and non-Aboriginal psychological disparities gap (estimated to be 88%). These are [96].

1 poorer physical health

2 lower education status

3 lower socioeconomic environment

4 lower social support

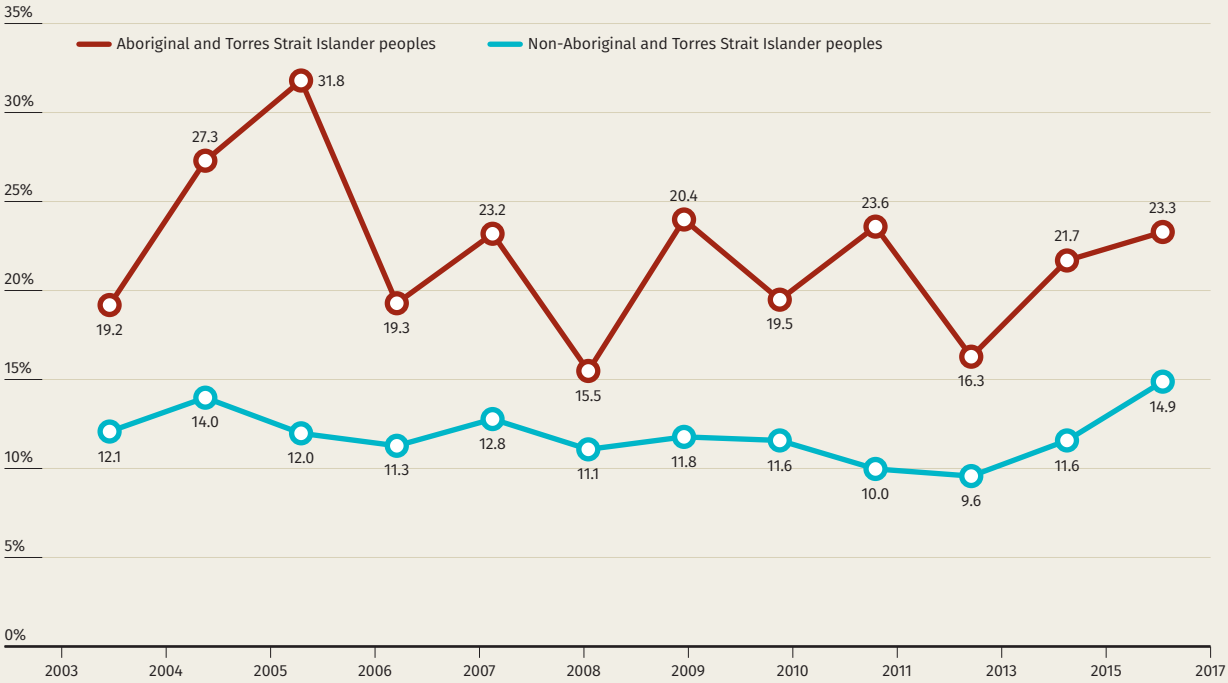
Prevalence, trends and figures

In NSW, Aboriginal people experience higher rates of psychological distress compared to their counterparts. An estimated 23.3% of Aboriginal people are psychologically distressed compared to 14.9%.

Interestingly, the trends in psychological distress are on the rise for both Aboriginal and non-Aboriginal people and have been slowly increasing since 2013 (Figure 14).

Several studies reiterate the importance of reducing inequities in socio-economic status as a strategy to improve psychological distress in Aboriginal populations. A Victoria study into Aboriginal psychologic distress, suggested the need to improve employment support, access to affordable housing and increasing educational opportunities as part of a list of recommendations.

Figure 14 / Rates of high/very high psychological distress in NSW



Source: NSW Population Health Survey, HealthStats NSW, NSW Ministry of Health

Note:

— The Living Well measure reported is the percentage of Aboriginal and Torres Strait Islander peoples (aged over 15 years) with High and Very High psychological distress.

— The Kessler Psychological Distress Scale (K10) is used to measure levels of psychological distress among NSW adults and Aboriginal people within the NSW Population Health Survey. Responses are based on self-reported feelings of psychological distress in the most recent four week period. There is a strong association between high Kessler scale scores and the diagnosis of a mental health condition.

— Since 2011, K10 questions are included in the NSW Population Health Survey every 2 years. For the K10 questions refer to the 2015 Survey questionnaire: http://www.health.nsw.gov.au/surveys/adult

— Next update expected in 2020. When next K10 results are published.

Group 4: Chronic health conditions (non-communicable diseases (NCDs))

4.1 / Why is it important?

Noncommunicable diseases, also known as chronic diseases affect many people.

Box 1 / Definition of non-communicable diseases

> *Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors.*
>
> *The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.*
>
> ***— World Health Organization [98]***

An estimated one in two Australians live with a chronic disease. NSW has the largest population of Aboriginal people of any state in Australia and state data reflects national data of higher prevalence and mortality of chronic conditions for Aboriginal people compared to non-Aboriginal people.

Chronic health conditions have a greater effect among socioeconomically disadvantaged people. People in the most disadvantaged communities are:

- 60% more likely to live with diabetes compared to the most advantaged [99]
- twice as likely to smoke compared to the most advantaged
- 57% more likely to be obese compared to the most advantaged.

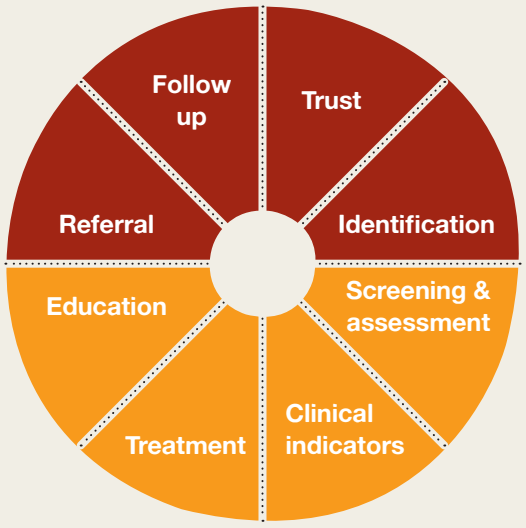
A 2012 state report indicated Aboriginal people living in NSW report higher rates of chronic health conditions compared to non-Aboriginal people [100].

As discussed in **Group 1: culture**, many Aboriginal people experience a range of barriers when seeking health treatment therefore leading to lower rates of health services and impacting their health outcomes. For example, even with the high rates of mental illness among Aboriginal people, many are reluctant to seek treatment. Barriers such as differences in culture, speaking to health practitioners of the opposite sex, language barriers and issues around racism are reported by Indigenous people [101]. More examples are provided in Box 2.

While the data shows a large discrepancy between health outcomes for Aboriginal and non-Aboriginal NSW residents, trend data overall shows promising results that health outcomes for Aboriginal people in NSW has improved in the last decade. The major remaining issues are access to appropriate services, health literacy, screening and communication between health professionals and Aboriginal patients. The use of Aboriginal health workers and community liaison officers are one way forward to build strong and effective partnerships between mainstream health services and Aboriginal people.

The NSW Health *Clinical Services Redesign Program Chronic Care for Aboriginal People Model of Care* acknowledges that you cannot improve the health of the Aboriginal community without trust and therefore, a new model of care – focused on reducing chronic health conditions – has been developed. This model, as depicted in Figure 15, found eight key elements to effectively contribute to the success of chronic health conditions programs in Aboriginal people as well as to prevent and manage chronic health conditions among this population [102]. As described previously, the use of Aboriginal health workers or an Aboriginal person is also a critical element to improving health outcomes which is referred to in the NSW Model of Care report.

Figure 15 / Chronic Care for Aboriginal People Model of Care



Some recommendations to improve chronic health condition outcomes for Aboriginal people include restructuring of organisational structures to promote culturally-friendly and welcoming environments to encourage engagement with mainstream cardiac services [103].

The available indicators for noncommunicable diseases relevant to NSW Aboriginal health and wellbeing are listed in Table 5.

The expert working group have also selected key indicators which are described in the following section.

Box 2 / Barriers to healthcare and their relation to health and wellbeing

Limited access to and engagement with health services targeted towards prevention, management and treatment of cardiac conditions exacerbate the severity and consequences associated with circulatory disease, which in turn contribute to higher rates of cardiovascular morbidity and mortality amongst Aboriginal people in NSW [104]. Service-access issues and the prioritisation of cultural obligations contribute to poor attendance rates for scheduled appointments by Aboriginal people with heart conditions [103]. Furthermore, mainstream services may be culturally inappropriate which may make Aboriginal people feel unwelcome [103].

For some Aboriginal people, cancer can be a very isolating diagnosis because the community does not know enough about it and there may be a perception that it is contagious. Because the prognosis for cancer amongst Indigenous Australians is so poor some members of the community link cancer with certain death [105]. Furthermore access to treatment can be a frightening and foreign experience for rural Aboriginals who have to travel sometimes thousands of kilometers to interact with a system that is clinical and unfamiliar to them [105]. Such factors are disincentives for rural Aboriginals and likely contributes to delayed diagnosis and ultimately higher likelihood of mortality.

Aboriginal people with Type 2 diabetes living in remote communities are more likely to have poorly managed diabetes due to a lack of access to appropriate services. Furthermore, research shows Aboriginal Australians living remotely lack access to fresh fruits and vegetables and therefore the vast majority do not meet fruit and vegetable intake recommendations [106].

4.2 / Indicators

Table 5 / Latest NSW Aboriginal data on noncommunicable diseases/chronic conditions

Indicator	Latest Aboriginal data	Latest non-Aboriginal data	NSW average	Data source
Circulatory disease hospitalisations (per 100,000)	Males: 3099.5 Females: 2500.5	Males: 1956.6 Females: 1202.9	Males: 186.7 Females: 128	NSW Combined Admitted Patient Epidemiology Data and ABS population estimates
Heart failure (per 100,000)	Males: 428.9 Females: 408.7	Males: 291.3 Females: 141.2	Males: 2051.5 Females: 1254.1	NSW Combined Admitted Patient Epidemiology Data and ABS population estimates
Stroke hospitalisations (per 100,000)	Males: 264.9 Females: 259.3	Males: 138.4 Females: 160.6	Males: 168.3 Females: 122.4	NSW Combined Admitted Patient Epidemiology Data and ABS population estimates
Coronary heart disease hospitalisations (per 100,000)	Males: 1267.9 Females: 838.9	Males: 733.8 Females: 293.8	Males: 775.8 Females: 312.9	NSW Combined Admitted Patient Epidemiology Data and ABS population estimates
Diabetes in adults	14%	9.9%	10.1%	NSW Population Health Survey
Asthma in adults	15.8%	10.7%	10.9%	NSW Population Health Survey
Adults who are overweight and obese	61%	53.2%	53.5%	NSW Population Health Survey
Adults who are overweight	30.7%	32.6%	32.5%	NSW Population Health Survey
Rhematic heart disease (notifications of rheumatic heart disease between 2016-18)	24 notifications (34%)	46 notifications (66%)	70 total notifications	AIHW 2019 Acute Rheumatic Fever and Rheumatic Heart Disease in Australia
Tooth decay, missing and filled teeth (children 5-6 years)	3.04	1.44	1.53	NSW Dental Health Survey 2007
Tooth decay, missing and filled teeth (children 11-12)	1.17	0.68	0.74	NSW Dental Health Survey 2007
People living with chronic hepatitis C (between 2007-2016)[3]	17% (5,979 cases)	73% (25,912 cases)	36,691 (total number of notifications	NSW Hepatitis B and C Strategies 2014-2020 2017 Annual Data report
Gonorrhoea notifications	81 per 100,000	63 per 100,000	116 per 100,000	NSW Sexually Transmissible Infections Data report Jan-Dec 2017
Syphilis notifications	18.5 per 100,000	12.4 per 100,000	13.9 per 100,000	NSW Sexually Transmissible Infections Data report Jan-Dec 2017

3 Aboriginality was not known for 4,156 notifications (11%)

4.3 / Key indicators

4.3.1
Circulatory/cardiovascular diseases

The two leading causes of death for NSW Aboriginal people are circulatory diseases and cancers. Circulatory diseases, also known as cardiovascular diseases, include all diseases of the heart and blood vessels. The four most prominent and deadly types of circulatory diseases in NSW include coronary heart disease, stroke, heart failure and peripheral vascular disease. Circulatory diseases remain the leading cause of death for Australian Aboriginals in NSW and Australia.

Contributors

Risk factors for circulatory diseases include smoking, physical inactivity, poor diet and risky consumption of alcohol [107]. Medical conditions include high blood pressure, high cholesterol, diabetes and kidney disease [108].

How does it impact on health and wellbeing?

Of the estimated 10–11 year life expectancy gap between Indigenous (Aboriginal and Torres Strait Islander people) and non-Indigenous Australians, approximately one quarter is attributable to cardiovascular disease (CVD) [109, 110].

Prevalence, trends and figures

Hospitalisations for circulatory diseases are nearly double for Aboriginal people compared to non-Aboriginal people in NSW. While hospitalisations for circulatory diseases have decreased and plateaued for non-Aboriginal people in NSW over the last 15 years, hospitalisations for Aboriginal people have increased [111].

2788.9 / 100,000
Aboriginal hospitalisations due to circulatory diseases

1564.2 / 100,000
Non-Aboriginal hospitalisations due to circulatory diseases

237.3 / 100,000
Aboriginal deaths due to circulatory diseases

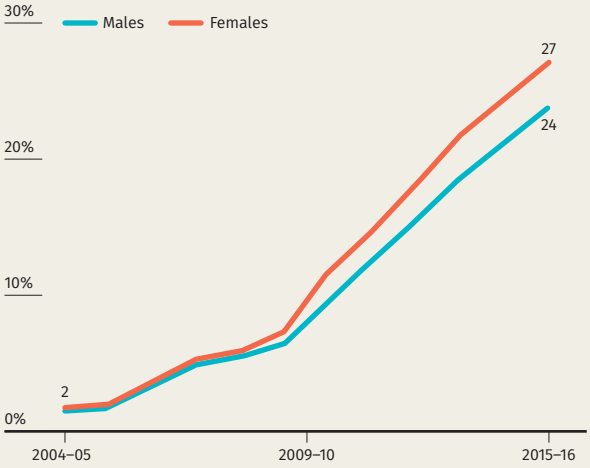
152.7 / 100,000
Non-Aboriginal deaths due to circulatory diseases

Some progress has been made toward better cardiac care for Indigenous Australians – the level of access for cardiac-related health services is improving, and the mortality rate from cardiac conditions is falling among the Indigenous population [104]. While the mortality rate from cardiovascular disease is falling, it is still much higher among Indigenous Australians than non-Indigenous Australians [104].

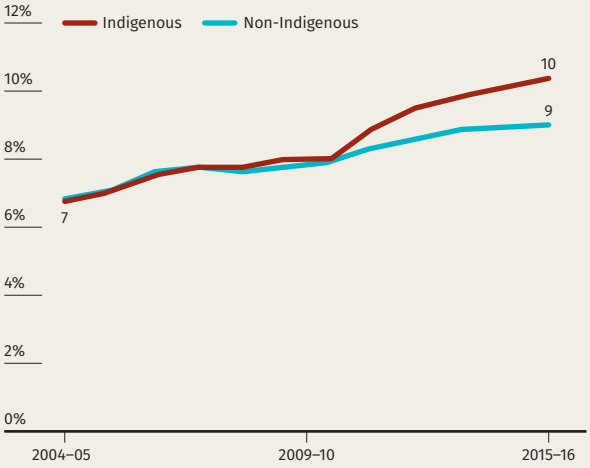
Figure 16 / Hospitalisations trend data relating to circulatory diseases

Access for cardiac-related health services has improved

Between 2004–05 and 2015–16, the age-standardised proportion of Indigenous males who received a health assessment under the Medicare Benefits Schedule rose from about 2% to 24%, while for females it rose from about 2% to 27% (see Measure 1.1, Figure 1.1 for more information).

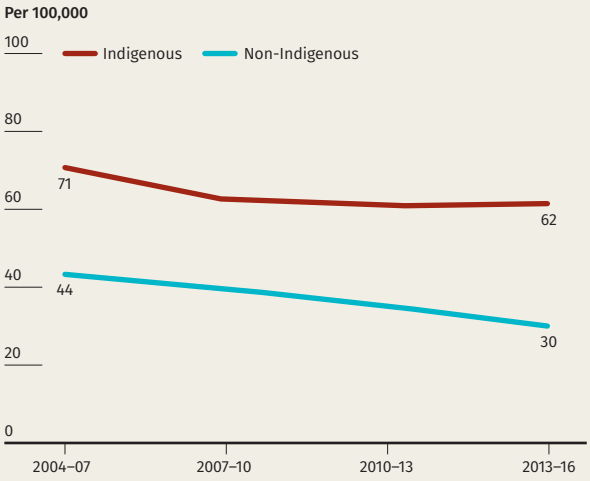


Between 2004–05 and 2015–16, the age-standardised proportion of Indigenous Australians who claimed cardiac-related diagnostic items under the Medicare Benefits Schedule rose from 7% to 10%, similar to the pattern among non-Indigenous Australians (see Measure 2.1, Figure 2.1 for more information).

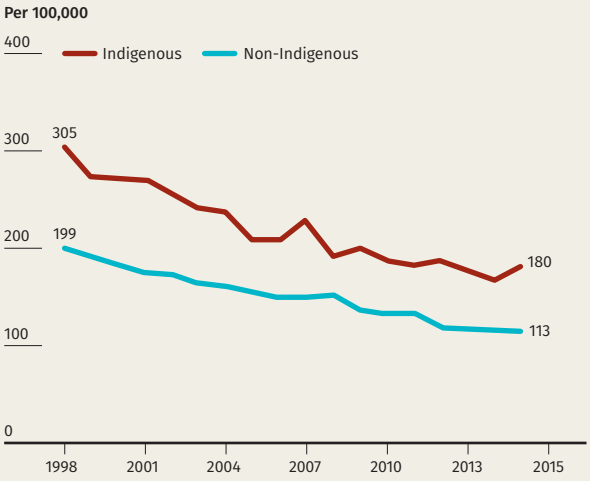


The mortality rate of cardiac conditions has fallen

Between 2004–07 and 2013–16, the age-standardised in-hospital mortality rate for Indigenous patients admitted for a heart attack fell from 71 to 62 per 100,000 population. But in 2013–16, it was still twice the rate for non-Indigenous Australians (see Measure 6.2, Figure 6.2.2 for more information).



Between 1998 and 2015, the mortality rate due to cardiac conditions for Indigenous Australians fell by 41% from 305 to 180 per 100,000 population. But in 2015, it was still 1.5 times the rate for non-Indigenous Australians (see Measure 6.2, Figure 6.2.1 for more information).



Relevant policy documents

- Better cardiac care measures for Aboriginal and Torres Strait Islander people [104].

4.3.2
Cancer

Cancer is the second leading cause of death for NSW Aboriginal people [112]. Aboriginal people are often younger at diagnosis than non-Aboriginal people and higher proportions are diagnosed before the target screening age [113]. Furthermore, Aboriginal people are more likely to be diagnosed with distant or distant/regional stage for all cancers, leading to higher rates of death due to cancer [114].

> *"And thing is like you said it's the distance too. Coming 7, 800 K. 900 K. Even a bit further. They don't realise how far we've got to travel" [105].*

> *"When someone's diagnosed with cancer, they think more or less that's it. And because of future dealings with seeing sisters, brothers, going away with cancer and they don't come back. They come back in a box. That's traumatised a lot of people and even when they get flown to Toowoomba, you know, in their minds they're probably thinking they've signed their own death warrant" [105].*

Contributors

Smoking, risky alcohol consumption, poor oral hygiene, poor diet and physical inactivity are risk factors for developing cancer. Smoking is the leading cause of lung cancer in Australia, while liver cancer, the second deadliest cancer amongst NSW Aboriginals, is associated with risky consumption of alcohol.

How does it impact on health and wellbeing?

Cancer can be more complex for Aboriginal people because of:

- anxiety around the diagnosis,
- difficulties navigating the healthcare system,
- lack of communication with health professionals,
- perceptions around the cost of services and,
- the daunting journey of leaving their communities to receive treatment [105].

Prevalence, trends and figures

The three leading types of cancers resulting in death for Aboriginal people in NSW include are lung, liver and head and neck cancers, respectively. For non-Aboriginal people, the three most deadly types of cancers are lung, colorectal and prostate cancers [115].

668.8 / 100,000
Aboriginal cancer prevalence

1669.3 / 100,000
Non-Aboriginal cancer prevalence

Despite having a lower prevalence rate of all cancers, Aboriginal people are more likely to die from cancer once diagnosed than non-Aboriginal people. This is likely due to late diagnosis and poor access to adequate treatment. Both Aboriginal and non-Aboriginal people in NSW are more likely to die from lung cancer than any other cancer.

214.1 / 100,000
Aboriginal deaths due to cancer

159.5 / 100,000
Non-Aboriginal deaths due to cancer

4.3.3
Diabetes

Diabetes mellitus refers to a group of chronic conditions characterised by high blood sugar levels [116]. There are three main types of diabetes: Type 1, Type 2 and gestational. Type 1 is often caused by genetic and environmental factors while Type 2 is generally associated with a range of modifiable risk factors. Gestational diabetes is a temporary form of diabetes that occurs in pregnant women who have not previously had diabetes and usually resolves once the baby is born – although it does increase the risk of subsequently developing diabetes in the future.

Contributors

Genetic predisposition and ageing can contribute to the development of Type 2 diabetes. There are also several modifiable risk factors associated with the onset of Type 2 diabetes, including physical inactivity and poor nutrition, low levels of education and psychological distress [117]. The same risk factors drive the prevalence of diabetes in the Aboriginal and non-Aboriginal populations; predominantly age and BMI.

How does it impact on health and wellbeing?

Some studies suggest a growing diagnosis of youth onset diabetes in the Indigenous population [118-120]. One Western Australian study reported a 20-fold difference in the rate of Type 2 diabetes in Indigenous and non-Indigenous youth [118].

Among Indigenous Australians living with Type 2 diabetes, many will live with more than one chronic condition. For example,

- 59% have hypertension
- 25% have dyslipidemia
- 61% have obesity [118]

These complications will have significant long-term health impacts and may lead to the development of renal, cardiac, neurological and ophthalmological complications.

Prevalence, trends and figures

2017 state data shows Aboriginal residents of NSW were more likely to have diabetes or high blood glucose compared to non-Aboriginal residents.

	14% Aboriginal diabetes prevalence	**9.9%** Non-Aboriginal diabetes prevalence
Type 1 diabetes	**15.1** / 100,000	**21.4** / 100,000
Type 2 diabetes	**12.7** / 100,000	**2.1** / 100,000
	Aboriginal children incidence of diabetes	**Non-Aboriginal children incidence of diabetes**

While incidence of Type 1 diabetes was lower in NSW Aboriginal children, research has shown Aboriginal children in NSW (aged 10-14) were more than six times likely to develop Type 2 diabetes than non-Aboriginal children [121].

Type 1 diabetes	**140.1** / 100,000	**45** / 100,000
Type 2 diabetes	**339.3** / 100,000	**76.9** / 100,000
Other types	**20.9** / 100,000	**9.3** / 100,000
	Aboriginal diabetes hospitalisations	**Non-Aboriginal diabetes hospitalisations**

In 2016-17 Aboriginal NSW residents with Type 1 diabetes were more than three times likely to be hospitalised for diabetic complications that non-Aboriginal NSW residents. For Aboriginal residents with Type 2 diabetes, diabetes hospitalisation was more than four times likely than non-Aboriginal residents suggesting that there is poorer management of diabetes among these residents.

Relevant policy documents

- NSW diabetes prevention framework

4.3.4
Rheumatic heart disease

Rheumatic fever is a disease that can occur following an infection caused by the Group A streptococcus bacterium. Usually, rheumatic heart disease develops after recurring or lengthy bouts of rheumatic fever during childhood. However, it can also develop after a single incident of rheumatic fever. Rheumatic heart disease (RHD) is a mostly preventable disease.

> *"More than any other condition, RHD is emblematic of the health gap between Indigenous and non-Indigenous Australians" [122].*

Contributors

The underlying factors contributing to RHD is the entrenched disadvantaged experienced by many Aboriginal and Torres Strait Islander communities which points to the significant work required to address the social determinants of health (housing, poverty etc.) and the broader health disadvantages [123].

How does it impact on health and wellbeing?

Cases of rheumatic heart disease is highest among remote Aboriginal and Torres Strait Islander communities [124]. The risk of death is estimated to be 20 times that of Australians in the general population.

People who have had an episode of acute rheumatic fever need long-term treatment to prevent repeat episodes, which may cause further damage to the heart [125].

Prevalence, trends and figures

Many Aboriginal and Torres Strait Islander children who have rheumatic fever are not diagnosed or treated. This is why the incidence of rheumatic heart disease is high in Australian Indigenous communities. Only a small percentage of people who have a streptococcal infection will develop rheumatic fever. About 250 to 350 Aboriginal and Torres Strait Islander children out of every 100,000 develop rheumatic fever. This rate is among the highest in the world [126].

Acute rheumatic fever primarily affects children between the ages of 5 and 14 years. NSW hospital records indicate that approximately 24 people are newly diagnosed with acute rheumatic fever in the state each year [125]. Further, an estimated 40% of RHD cases is in children under the age of 15 [127].

Relevant policy documents

- Framework for Acute Rheumatic Fever and Rheumatic Heart Disease in NSW

4.3.5
Heart failure

Heart failure is a chronic condition associated with multiple structural or functional cardiac disorders in which the heart is unable to provide blood flow adequate for the body to function normally [128].

There appears to be considerable under-diagnosis of heart failure amongst Aboriginal people living in NSW (and all Australia), particularly in remote areas [129, 130].

Contributors

Heart failure in a Central Australian adult Aboriginal population sample was strongly associated with well-recognised risk factors (in particular coronary disease, diabetes mellitus, hypertension, obesity and rheumatic heart disease or history of rheumatic fever [130]. The antecedents of heart failure are especially hypertension and coronary heart disease including myocardial infarction [129].

Prevalence, trends and figures

Due to an aging population the rate of heart failure in NSW and Australia-wide is expected to rise putting further strain on the health system [131]. Australia lacks data on the rate of heart failure nationally. However, one study found patients admitted to hospital with acute heart failure in NSW and the ACT were generally elderly and frail, with multiple comorbidities [131].

15.3 / 100,000
Aboriginal heart failure deaths

10.8 / 100,000
Non-Aboriginal heart failure deaths

Additional data – early deaths

Table 6 / Latest NSW Aboriginal data on early deaths

Indicator	Latest Aboriginal data	Latest non-Aboriginal data	NSW average	Data source
Male death rates for circulatory diseases	250.8 per 100,000	179.1 per 100,000	186.7 per 100,000	ABS death registration data 2012-2016
Female death rates for circulatory diseases	223 per 100,000	129.3 per 100,000	128 per 100,000	ABS death registration data 2012-2016
Adult suicide	16.3 per 100,000	9.9 per 100,000	10.3 per 100,000	ABS death registration data 2012-2016
Male suicide	26.2 per 100,000	14.9 per 100,000	15.4 per 100,000	ABS death registration data 2012-2016
Female suicide	7 per 100,000	5 per 100,000	5.2 per 100,000	ABS death registration data 2012-2016

Discussion

This technical appendix is a companion and reference tool for the publications, *NSW Aboriginal Community Controlled Health Tracker* (the Tracker), and the *NSW Community Controlled Storyboard* (the Storyboard).

Compiled through the collaborative effort and guidance of NSW Aboriginal health experts, the Tracker and Storyboard have been developed by the Mitchell Institute at Victoria University, Melbourne.

The most recent publicly available NSW Aboriginal health and non-Aboriginal health data was used for the development of this report. Some of the data are as recent as 2018 and mostly sourced from HealthStats NSW.

The collection and use of population health data is an effective and vital tool in health service planning and management. NSW Health routinely collects adult and children health data each year and has been since as early as 2006. The *Adult Population Health Survey* and *Child Population Health Survey* is conducted annually with a representative sample size of 15,000 people. Every three years, a *School Students Health Behaviours Survey* is also conducted. These data sets and health information provide invaluable intelligence to address the burden of chronic health conditions to individuals, families, carers, employers, the economy and the NSW community. In a 2012 report on data collection activities, NSW Health describes the importance of surveillance activities to inform population health policies and programs, "we recognise the need for timely, relevant and accurate information in order to monitor, protect and improve population health and reduce health inequalities in NSW" [132]. The same report also states, that "particular attention is given to Aboriginal population health surveillance and program data collection activities...."

Despite the investment into the collection of population health data, there are many gaps in the data. For example, whilst HealthStats reports on childhood obesity, these stats **are not available by Aboriginality**. Other state health data which should be collected include: rates of youth suicide and cancer data. In addition to collection of population health data, there is strong recognition of the importance of gathering management and outcomes data for heart failure and other chronic conditions, however, this data does not currently exist [131].

Infrastructure necessities for Aboriginal patients, particularly instrumental and emotional support, are noted with recommendations for greater participation and representation of Aboriginal people in decision making bodies (Shahid et al. 2009b) [133].

Furthermore, careful consideration into how to measure and collect social and cultural data such as connection to land and spirit and engagement in cultural activities is suggested given the interrelationships between Aboriginal health and wellbeing and culture. Existing platforms such as *Mukurtu* and *Keeping Culture* aim to retain cultural knowledge and heritage as well as empowering communities to manage, share, narrate and exchange information.

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