



**Australian Government**  
**Australian Institute of  
Health and Welfare**



# **Chronic physical health conditions and the mental health and wellbeing of First Nations people**

Australian Institute of Health and Welfare

**The AIHW is a corporate Commonwealth entity producing authoritative and accessible information and statistics to inform and support better policy and service delivery decisions, leading to better health and wellbeing.**

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**Caution: Some people may find the content in this report confronting or distressing.**

Please carefully consider your needs when reading the following information about Indigenous mental health and suicide prevention. If you are looking for help or crisis support, please contact:

**13YARN (13 92 76), Lifeline (13 11 14) or Beyond Blue (1300 22 4636).**

The AIHW acknowledges the Aboriginal and Torres Strait Islander individuals, families and communities that are affected by suicide each year. If you or your community has been affected by suicide and need support, please contact the **Indigenous Suicide Postvention Services on 1800 805 801**.

The AIHW supports the use of the [Mindframe guidelines](#) on responsible, accurate and safe suicide and self-harm reporting. Please consider these guidelines when reporting on these topics.



# Summary

## What we know

- The experience of trauma, grief and loss from the ongoing effects of colonisation and past policies of forced child removal (the Stolen Generations) can contribute to chronic disease and physical and mental ill-health.
- Stronger connections between these 7 domains of social and emotional wellbeing (SEWB) – mind and emotions, body, family and kinship, community, culture, Country, spirituality and ancestors – have been shown to have positive effects on the overall health of Aboriginal and Torres Strait Islander (First Nations) people.
- Physical health is connected with mental health through the broader context of SEWB. Chronic physical health conditions can increase the risk of mental ill-health, and vice versa.
- Many First Nations people have more than one chronic condition. This increases the complexity of care – and therefore the frequency, duration and cost of medical appointments and treatment – while affecting income by reducing the time available for employment.
- For First Nations people with chronic physical health conditions, depression and anxiety can be exacerbated by the limited availability of culturally safe services, and by primary care and chronic disease management without integrated SEWB care.
- Few government policies explicitly address the mental health of First Nations people with chronic physical health conditions, or the physical health of those with mental health conditions.

## What works

- Programs co-designed with local communities that include elements such as multidisciplinary care, self-management, health behaviours, social connection and relationship building. Culturally appropriate, person-centred care, such as that provided by Aboriginal community-controlled health organisations (ACCHOs).
- Supporting First Nations people in maintaining connections with family, community and Country while receiving treatment for chronic physical health conditions.
- Effective management of chronic physical health conditions to improve quality of life, which reduces the risk of mental health conditions, and increases life expectancy.
- Good patient–practitioner communication, which can encourage First Nations people to access health services in the future.
- Adequate communication between health services to enable continuity of care, which improves health outcomes for patients with chronic conditions.
- Empowering First Nations people to self-manage their conditions to reduce reliance on health-care services.



## What doesn't work

- Conventional, single-discipline approaches to health care.
- The use of medical jargon by health practitioners, which can prevent First Nations people engaging with health services in the future.

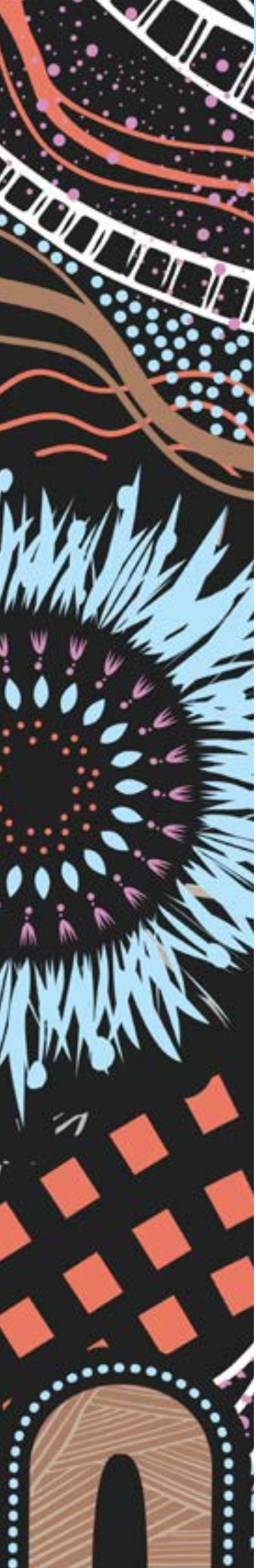
## What we don't know

- The effect of chronic physical health conditions on overall SEWB.
- Whether there are differences in how chronic physical health conditions affect mental health for First Nations people, as most research relates to non-Indigenous Australians.

## Drivers for change

Outlined below are areas where change could help to improve the health and wellbeing of First Nations people with chronic physical health conditions. These drivers have been identified through synthesis of the academic literature, policy documents and program evaluations reviewed for this publication:

- review policy to ensure that the mental health of people with chronic disease and the physical health of people with mental health conditions are more explicitly addressed
- implement a capacity building program to fill current service gaps to provide culturally appropriate, person-centred care, provided by ACCHOs
- support First Nations people in maintaining connections with family, community and Country while receiving treatment for chronic physical health conditions
- improve the cultural safety of mainstream health services in all areas through training and by increasing the First Nations health workforce
- continue funding reforms to support outcome-focused and multidisciplinary care and to address the challenges faced by First Nations people in accessing health care, as outlined in the *Australia's Primary Health Care 10 Year Plan 2022–2032* (Department of Health 2022a)
- reduce service gaps by employing and upskilling local staff before turning to outreach models
- facilitate shared-care arrangements in areas where in-person access to specialists is limited.



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## Introduction

# 1 Introduction

Strong connections between physical and mental health are important for Aboriginal and Torres Strait Islander social and emotional wellbeing (SEWB). When SEWB is strong, Aboriginal and Torres Strait Islander (First Nations) people are healthy. However, First Nations people are disproportionately affected by chronic physical health conditions (chronic disease) due to exposure to health-risk factors. As poor physical health affects mental health, and as chronic disease in particular has been shown to be associated with mental ill-health (Scott et al. 2016), this is an important issue for First Nations communities.

This report explores the relationships between chronic physical health conditions and mental health among the First Nations population by:

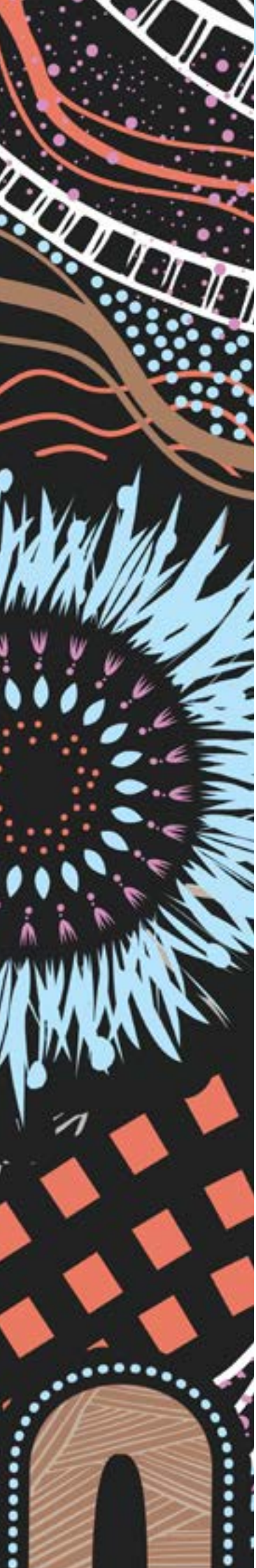
- providing the social, cultural and historical context for First Nations people and their physical and mental health
- examining how chronic physical health conditions affect mental health, and how mental health conditions can influence the development or progression of physical health conditions
- identifying current policies targeting the mental health of First Nations people with chronic disease, or the physical health of those with mental health conditions
- reporting on initiatives and programs aimed at improving SEWB by incorporating both chronic disease and mental health or wellbeing
- discussing approaches to enhance the provision of holistic physical and mental health services for First Nations people.

Chronic diseases are long-lasting conditions that have a persistent effect on health, as well as social and economic consequences that can affect quality of life. Chronic diseases are the leading causes of illness, disability and death among First Nations people (AIHW 2022a). Given the prevalence of chronic disease in the First Nations population, understanding the connection between these conditions and mental health is important, not only to promote overall wellbeing but also to reduce disparities. This understanding, in turn, allows effective programs and services to be developed that can lead to improved health-care outcomes. This understanding allows effective programs and services to be developed that can lead to improved outcomes.

The prevalence of chronic illness, and the accessibility and quality of health care, all contribute to the gap in life expectancy for the First Nations population (Sara et al. 2021). Being aware of the likelihood of mental health issues in individuals with chronic physical health conditions allows effective intervention and prevention strategies to be implemented that will improve quality of life.

This report contributes to the evidence base for programs targeted at chronic physical health conditions by examining the intersection of these conditions and mental health, within the broader SEWB framework. The chronic conditions discussed are those with the highest disease burden for First Nations people and those associated with poorer mental health outcomes: respiratory conditions, musculoskeletal conditions, cardiovascular disease (CVD), type 2 diabetes and chronic kidney disease.





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## Background

## 2 Background

For First Nations people, good health is more than just physical: to be healthy, a person also needs to be well mentally, spiritually and culturally, and have strong ties to a well-functioning family and community. This is known as Aboriginal and Torres Strait Islander social and emotional wellbeing (SEWB) and includes 7 interconnected domains: mind and emotions, body, family and kinship, community, culture, Country, and spirituality and ancestors (Gee et al. 2014). Strengthening the connections that exist between the domains of SEWB has been shown to positively affect the overall health of First Nations people (Salmon et al. 2019).

Mental health and physical health are 2 facets of overall SEWB. Research has shown strong links between physical ill-health and mental ill-health (Bremner et al. 2018; Lawrence et al. 2013; RANZCP 2015; Scott et al. 2016). This section explores (where the research permits) the literature on the relationship between chronic physical health conditions and mental ill-health with a First Nations focus. The most recent available data have been used throughout.

Many First Nations people are in good health:

- First Nations people born in 2018 can expect to live 80% of their lives in full health without disease or injury (AIHW 2022a).
- In 2018–19, 3 in 4 (77%) First Nations people assessed their health as Good or better (AIHW 2020a).

Nonetheless, First Nations people are disproportionately affected by chronic disease.

Chronic disease – also known as chronic conditions, non-communicable diseases, or long-term health conditions – is characterised by long-lasting and persistent effects on health, which can lead to social and economic outcomes that negatively affect quality of life. Common examples of chronic physical health conditions include asthma, cancer, CVD, diabetes, musculoskeletal conditions and stroke.

While effective management of chronic conditions can not only slow the progression of disease but also improve quality of life and increase life expectancy (Thomas et al. 2014; Zhao et al. 2014), they remain major contributors to the burden of disease for the First Nations population (AIHW 2022a; 2023a).

### Cultural and historical context

Chronic physical health conditions among First Nations people need to be understood in the broader cultural and historical context. The experience of trauma, grief and loss from the ongoing effects of colonisation and past policies of forced child removal (the Stolen Generations) can contribute to chronic disease and physical and mental ill-health (Milroy et al. 2014). Dispossession and the intergenerational legacies of colonisation – grief and loss, abuse, violence, removal from family and cultural dislocation – all contribute to low levels of SEWB (Zubrick et al. 2014). In turn, low levels of SEWB contribute to the high burden of chronic disease and poor health among First Nations people (AHMRC 2012). SEWB is also affected by the social determinants of health, including education and unemployment, substance abuse, racism and discrimination, and social disadvantage (Zubrick et al. 2014). Optimal SEWB can be protected at an individual level by strong connections to culture, Country, spirituality and ancestry, and kinship networks, and at a community level by selfdetermination, community governance and cultural continuity (Zubrick et al. 2014).

For more information, see these Clearinghouse publications:

- *Racism and Indigenous wellbeing, mental health and suicide* (<https://www.indigenoumhspsc.gov.au/Publications/Racism>)
- *Intergenerational trauma and mental health* (<https://www.indigenoumhspsc.gov.au/Publications/Trauma>)
- *An overview of Indigenous mental health and suicide prevention in Australia* (<https://www.indigenoumhspsc.gov.au/publications/overview>).

## Connection between mental and physical health

Chronic physical health conditions and mental health conditions are interrelated. For First Nations people, poor physical health from chronic conditions and disability can affect both mental health and overall SEWB (AIHW 2016; Dudgeon et al. 2017).

In general, living with a chronic condition can increase the likelihood of developing mental health issues (and vice versa) (Chen et al. 2017). For example, research has shown that poor overall health or physical functioning is a major risk factor for depression (Cooper et al. 2014). Depression, anxiety and post-traumatic stress disorder (PTSD) can also develop after a traumatic health event (such as stroke or heart attack) from factors such as pain, fear of dying and financial stress associated with the event (Abed et al. 2014; Lett et al. 2007) (see also Box 2.1).

For First Nations people with chronic physical health conditions, depression and anxiety can be exacerbated by limited availability of culturally safe services, and primary care and chronic disease management without integrated SEWB care (McNamara et al. 2018; Nagel et al. 2022). First Nations people, particularly those in regional and remote areas, may face barriers in accessing health services, such as limited availability of doctors and specialists relative to the needs of the community (AIHW 2023c).

Analysis by the AIHW showed that, among First Nations adults, poorer self-assessed health was associated with higher psychological distress (AIHW 2023d). First Nations people with one or more diagnosed mental health conditions were also less likely to rate their health as *Very good* or *Excellent* compared with those without a mental health condition (29% and 49%, respectively) (AIHW 2023d).

Having 2 or more concurrent or co-existing conditions is called comorbidity. Among First Nations adults with long-term physical health conditions, the likelihood of having a comorbid mental health condition ranged from 1 in 3 (35%) for those with kidney disease to 3 in 4 (73%) for those with chronic obstructive pulmonary disease (COPD) (AIHW 2023e). For First Nations adults with no long-term physical health conditions, the likelihood of having a mental health condition was 1 in 20 (5.5%) (AIHW 2023e).

Mental ill-health, in turn, is associated with health-risk factors, such as tobacco smoking, inadequate fruit and vegetable consumption and physical inactivity (Bartlem et al. 2015; Firth et al. 2019). Some mental health conditions can cause or contribute to physical health conditions; for example, because of its effect on lifestyle, depression can contribute to hardening of the arteries (atherosclerosis), which is a precursor to heart disease (Chaddha et al. 2016). Mental ill-health can also impair decision-making, which can compromise an ability to access information on health, prevention, and the quality of health-care providers (Mani et al. 2013).

### **Box 2.1: Chronic pain – interactions with chronic disease and SEWB**

Chronic pain or persistent pain can be an outcome of cancer, and/or start after an injury or surgery. It often occurs alongside musculoskeletal conditions, including osteoporosis and arthritis. Some people may also suffer chronic pain in the absence of an injury or without an obvious cause (Salduker et al. 2019). Since mid-last century, it has been recognised as a disease – not just managed medically as a symptom of disease (Ballantyne and Sullivan 2022). It can have both physical and mental health consequences, including sleep disturbance, impaired mobility, depression and social isolation (RACGP 2019).

A study of experiences of First Nations people with chronic pain in South East Queensland highlighted a reluctance to report pain, which was largely associated with poor cultural safety in health services (Strong et al. 2015). Participants in this study indicated physical pain took second place to the emotional pain associated with dispossession, dislocation and loss (Strong et al. 2015).


The investigation by Lin and colleagues (2012) of the impact of chronic lower back pain among First Nations people in regional and remote areas of Western Australia recognised that experiences of pain were inextricably linked with the cultural, social and historical context of people's lives. Most study participants had multiple comorbidities, including diabetes, stroke, heart disease and a history of cancer. They noted the emotional consequences of pain – such as loss, hope and despair – and highlighted impacts, such as an impeded involvement in cultural activities.

## **Health-risk factors**

Health-risk factors include health behaviours (such as smoking, physical activity and alcohol consumption) and social determinants (such as employment and income, housing, and access to health care). For First Nations people, social determinants also include historical and contemporary effects of colonisation (Dudgeon et al. 2020). Health-risk factors can cause or exacerbate chronic physical health conditions and worsen mental ill-health. At the same time, chronic physical health conditions and mental ill-health can increase the likelihood of being affected by health-risk factors such as unemployment and low income (AIHW 2021, 2024k). In 2018, the health-risk factors (excluding social determinants) contributing most to disease burden among First Nations people were:

- tobacco use (including second-hand smoke) (contributed 12% to the total disease burden)
- alcohol use (11%)
- overweight and obesity (9.7%)
- illicit drug use (6.9%)
- dietary risks (for example, a diet low in legumes or high in salt) (6.2%) (AIHW 2022a).

Social determinants are not included in either Australian or international burden of disease studies, so their direct contribution to the disease burden of First Nations people is unknown (AIHW 2022a).



However, the AIHW (2024d) has analysed the contribution of certain social determinants and other health-risk factors to the health gap between First Nations people and non-Indigenous Australians. That analysis showed that 65% of the gap was due to health-risk factors, predominately 5 specific factors:

- employment (contributed 14% of the total gap)
- tobacco smoking (13%)
- income (13%)
- overweight and obesity (11%)
- educational attainment (8.9%).


Australian and international studies on racial or ethnic minority groups found that depression, stress and anxiety due to disparities in social determinants of health (Javed et al. 2022), adverse childhood experiences (Lehman et al. 2009) and racism/discrimination (Berger and Sarnyai 2015) could place certain subpopulations at a higher risk for:

- poorer general and physical health (Paradies et al. 2015)
- physiological stress (Berger and Sarnyai 2015)
- hypertension (Beatty Moody et al. 2016; Paradies and Cunningham 2012)
- cardiovascular reactivity (Panza et al. 2019)
- poor heart health outcomes (Brewer et al. 2018).

Behavioural risk factors can also be heightened due to pre-existing ill-health, environmental factors and structural inequalities. For example:

- physical activity levels, which are important for maintaining good physical and mental health, can be limited by chronic conditions that are painful or affect mobility (Briggs et al. 2016)
- diet quality for First Nations people can be affected by a lack of resources such as transport, by limited access to nutritious food at affordable prices, and by a lack of access to food due to geographical isolation (AIHW 2022c).

Tobacco smoking is a modifiable behavioural risk factor well known to have serious health consequences (Greenhalgh et al. 2024). Overall, the proportion of First Nations people who reported smoking has been falling, particularly among younger people. However, the decline occurred only among people in non-remote areas. Tobacco smoking is the leading risk factor contributing to disease burden and the second leading contributor to the health gap between First Nations people and non-Indigenous Australians. It has been shown to cause conditions associated with mental ill-health, such as COPD; CVDs, including coronary heart disease and stroke; and type 2 diabetes (Greenhalgh et al. 2024). It also exacerbates asthma and back pain and may be associated with arthritis (Greenhalgh et al. 2024). The AIHW (2020b) found that smoking was more common among First Nations people with *High/Very high psychological distress* and those who had fair or poor self-assessed health status.



Excessive alcohol consumption is another behavioural risk factor that has an effect on both physical and mental health. It is a key risk factor for liver disease, heart disease, stroke and diabetes. It places people with existing physical and mental health conditions at a higher risk of cancer; hepatitis B, C or D; or human immunodeficiency virus (HIV); it can also exacerbate mental health conditions such as depression and anxiety, and induce psychoses (NHMRC 2020). Almost 1 in 5 (18%) First Nations people aged 15 and over reported exceeding the lifetime alcohol risk guidelines (more than 2 standard drinks per day on average) in 2018–19 (AIHW 2023b). Between 2009–10 and 2018–19, hospitalisation rates for alcohol-related conditions increased by 11% and 36% for First Nations males and females, respectively (AIHW 2023b).

For more information, see the following Clearinghouse publications:

- *Intergenerational trauma and mental health* (<https://www.indigenoumhspsc.gov.au/publications/trauma>)
- *Racism and Indigenous wellbeing, mental health and suicide* (<https://www.indigenoumhspsc.gov.au/publications/racism>)
- *Food security and Indigenous mental health* (<https://www.indigenoumhspsc.gov.au/Publications/Food-security>)
- *Harmful use of alcohol and other drugs, its co-occurrence, and relationship with mental health and wellbeing of First Nations people of Australia: a review of the key issues, policy, and practice approaches* (<https://www.indigenoumhspsc.gov.au/publications/aod-mental-health>).

## Physical health conditions and their relationship to mental health


Long-term conditions in most major disease groups are associated with mental ill-health. Certain disease groups, such as respiratory conditions and musculoskeletal conditions, have been shown to have strong relationships with mental ill-health for First Nations people. Other disease groups, such as CVD, contribute substantially to the disease burden for the First Nations population and have been shown to affect mental health in other populations.

This section provides an overview of disease groups that have both high prevalence among First Nations people and a strong relationship with mental ill-health.

### Respiratory conditions

Respiratory conditions affect the airways, including the lungs and the passages that transfer air from the mouth and nose into the lungs. In 2018–19, almost 1 in 3 (29%) First Nations people were estimated to have a respiratory condition lasting or likely to last 6 months or more. Asthma was most commonly reported (16%), followed by chronic sinusitis (7.4%) and COPD (3.4%) (ABS 2019).

In 2018–19, an estimated 3 in 5 (60%) First Nations people with COPD and 2 in 5 (43%) of those with asthma reported *High/Very high psychological distress* (AIHW 2023d). First Nations people with COPD were also less likely to report a strong sense of mastery (control over one's own life) than First Nations people with any other chronic condition (AIHW 2023e). Nearly half (46%) of First Nations people with asthma reported a comorbid mental or behavioural condition and a quarter (24%) had COPD (AIHW 2024c). The rates of comorbidities for First Nations people with COPD are not available; however, in the general Australian population, half (49%) of those with COPD had a comorbid mental or behavioural condition in 2022 (AIHW 2024c).



A meta-analysis of 22 studies published between 2005 and 2012 showed that COPD increased the risk of depression, and that depression and anxiety in people with COPD increased the risk of poor COPD outcomes and mortality (Atlantis et al. 2013). Similarly, a representative population study conducted in Western Australia, South Australia and the Northern Territory showed that people with asthma were more likely to experience high psychological distress, heightened risk of anxiety or depression, and mental health conditions in general (Adams et al. 2004).

The exact mechanism of the relationship between respiratory conditions and mental health conditions is unclear but may be related to the subjective experience of breathlessness (Leyro et al. 2021) or hypersensitivity to physical sensations (Bekhuis et al. 2015).

## **Musculoskeletal conditions**

Conditions that affect the bones, muscles and joints are known as musculoskeletal conditions. These include osteoarthritis, rheumatoid arthritis, juvenile arthritis, back problems, gout, and osteoporosis or osteopenia (low bone density). In 2018–19, an estimated 1 in 5 (21%) First Nations people had a current long-term musculoskeletal condition – the most commonly reported conditions being back problems (dorsopathies) (13%) and arthritis (11%) (ABS 2019).

Musculoskeletal conditions can affect SEWB in several ways. They can cause ongoing pain, physical limitations and depression, which can affect an individual's ability to engage in social, community and occupational activities (Briggs et al. 2016). They can also limit physical activity, which is important for reducing the effects of obesity and chronic disease (Briggs et al. 2016).

In terms of mental health, knee pain, commonly caused by osteoarthritis, has been shown to be associated with depression (Phyomaung et al. 2014). However, despite having a similar or greater prevalence of osteoarthritis as non-Indigenous Australians, First Nations people accessed primary health care for knee or hip pain at around half the rate (Lin et al. 2017).

For First Nations people living with chronic low back pain, negative beliefs and a pessimistic outlook can worsen outcomes by increasing perceptions of disability (Lin et al. 2013). Lin and colleagues (2013) found that the way in which health-care providers speak about low back pain and its future consequences can directly influence these beliefs; hence, practitioners can improve outcomes through careful, positive communication. In a qualitative study, Lin and colleagues (2012) found that, for the 32 First Nations participants, chronic low back pain affected paid employment, domestic work, social connection, sporting participation and participation in spiritual and cultural activities. Half the participants reported feelings of anger and frustration in response to chronic pain and some also reported feeling depressed.

AIHW (2023e) analysis of the 2018–19 data showed that the proportion of First Nations people aged 18 and over reporting *High/Very high psychological distress* was greater among people with musculoskeletal conditions (ranging from 36% for people with arthritis only to 48% for those with arthritis and at least one other musculoskeletal condition) than among those without a musculoskeletal condition (27%). Conversely, half (49%) of First Nations adults with a current long-term mental health condition also reported having a musculoskeletal condition, compared with a quarter (25%) of those without one (AIHW 2023d).

## Cardiovascular disease

CVD includes a range of conditions affecting the heart and blood vessels, such as coronary (also known as ischaemic) heart disease, stroke and other vascular diseases. In 2018, 10% of the total burden of disease for First Nations people was attributed to CVD, making it the third leading contributor to disease burden (AIHW 2022a).

People experiencing depression, anxiety, chronic emotional stress or PTSD over a long period may also experience certain physiological effects, such as increased cardiac reactivity (that is, increased heart rate and blood pressure), reduced blood flow to the heart, and heightened levels of cortisol (Bremner et al. 2018). Over time, these physiological effects can lead to calcium build-up in the arteries, metabolic disease and heart disease (Bremner et al. 2018). Potential complications of CVD – such as myocardial infarction (heart attack), heart failure, stroke, or the need for coronary revascularisation (that is, a procedure to restore good blood supply to the heart) – can also increase the risk of depression (Lichtman et al. 2008). Depression and anxiety can negatively affect heart diseases by increasing the rate of atherosclerosis (precursor for heart disease), cortisol and other hormone levels that leads to a blockage of blood flow (Chaddha et al. 2016).

In 2018–19, an estimated 45% of First Nations people aged 18 and over with heart, stroke and vascular disease reported *High/Very high psychological distress* (AIHW 2023e). A similar proportion (46%) self-reported a current diagnosed mental health condition (AIHW 2023e).

## Type 2 diabetes

Diabetes mellitus (type 2) is a long-term chronic condition in which blood glucose levels become too high because the body produces little or no insulin or cannot use insulin properly. It is associated with health-risk factors, such as physical inactivity, poor diet, being overweight or obese, excessive alcohol consumption and tobacco smoking (AIHW 2024e).

Type 2 diabetes is a major contributor to morbidity and mortality for First Nations people (AIHW 2022a). It can result in permanent disability (such as blindness and lower limb amputation), mental health problems, reduced quality of life and premature death (AIHW 2015a; Burrow and Ride 2016). First Nations people are more likely to experience severe complications from diabetes, such as lower limb amputation (Rodrigues et al. 2016) or vision loss (Estevez et al. 2019), than non-Indigenous Australians.

High rates of metabolic disease (including diabetes) are associated with rapid transitions in lifestyle among previously active populations (Hare et al. 2022). Globally, diabetes is less prevalent among indigenous populations who have maintained traditional lifestyle patterns than among those who have experienced forced acculturation through colonisation (Harris et al. 2017). Among First Nations people in Australia, the prevalence of type 2 diabetes was 1 in 10 (11%) in 2018–19 (AIHW 2024e).

There is a well-established bi-directional relationship between depression and diabetes, where existing depression increases the risk of developing diabetes, and those with diabetes are more likely to experience depression (Nanayakkara et al. 2018). Individuals with diabetes have also been found to have a 2–4-fold greater risk of depression than individuals without diabetes (Bădescu et al. 2016). In 2018–19, an estimated 2 in 5 (38%) First Nations people with diabetes also self-reported a current diagnosed mental health condition, compared with 5.5% of First Nations people without any long-term health conditions (AIHW 2023e).



## Chronic kidney disease

Chronic kidney disease refers to abnormalities of kidney structure or function that are present for 3 months or more. It can be caused by other chronic health conditions, such as diabetes or high blood pressure. There is no cure for chronic kidney disease, so the primary form of treatment is managing the disease and its symptoms. If detected early enough, its progression can be slowed or halted (AIHW 2024b). However, if it continues to progress, it leads to kidney failure (end-stage kidney disease). Chronic kidney disease accounted for 2.6% of the total disease burden for First Nations people in 2018 (AIHW 2022a).

The number of First Nations people living with kidney failure is known to have been around 1,800 people in 2017–2021 (AIHW 2024b). Treatment options for kidney failure are kidney replacement therapy – dialysis or kidney transplantation – or comprehensive conservative care, which focuses on quality of life and symptom control, rather than on prolonging life (AIHW 2024b). In 2017–2021, the incidence rate of kidney replacement therapy among First Nations people was 6.2 times that among non-Indigenous Australians (AIHW 2024b). However, First Nations people are less likely to receive kidney transplants than non-Indigenous Australians. Barriers to kidney transplantation for First Nations people include:

- missed appointments due to competing priorities and communication barriers
- difficulties in accessing and navigating of health-care systems
- transport availability
- comorbidities requiring multidisciplinary care
- health service capacity (Majoni et al. 2021).

Many First Nations people therefore require dialysis for the rest of their lives, which can affect quality of life and SEWB for patients and their carers (Chadban et al. 2005; Devitt et al. 2008; Khanal et al. 2018; Rix et al. 2015).

The stress of living with chronic kidney disease can contribute to depression and anxiety (SANE 2023). Moreover, some depression symptoms can be caused by kidney failure – the build-up of waste products in the blood can cause behavioural changes, such as irritability, and sleep problems (SANE 2023). In 2018–19, more than 2 in 5 (45%) First Nations people with kidney disease had *High/Very high psychological distress* (AIHW 2023e). A qualitative study by Scholes-Robertson and colleagues (2022) showed that the method and location of dialysis treatment can affect mental health and depends on factors such as specific clinical disease, place of residence, advances in dialysis treatment, and the types of services offered in nearby hospitals or satellite kidney clinics.

# 3



## Methods

### 3 Methods

A literature review was conducted across academic databases (such as Google Scholar, PubMed, Medline and so on), government reports and 'grey' literature. Snowballing methods – where references from initially identified sources describing relevant programs, policy or research on the topic – were also used.

The database search was governed by the following set of key eligibility criteria:

- focused on First Nations people
- quantitative, qualitative or mixed methods research
- written in English.

Key terms used in searches are listed below, with these terms, or parsed variants of these terms, used in a variety of combinations:

- Indigenous Australians, First Nations, Aboriginal and/or Torres Strait Islander
- chronic conditions (management, treatment, access to services), social/cultural determinants, behavioural risk factors
- mental health, psychological, social and emotional wellbeing (SEWB)
- multimorbidity, comorbidity, complexity
- respiratory conditions, asthma, COPD
- musculoskeletal conditions, arthritis, back pain, dorsopathies
- CVD
- diabetes
- chronic kidney disease, kidney failure.

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## Key issues

## 4 Key issues

As outlined earlier in this report, chronic physical health conditions affect the mental health of First Nations people. Despite the wide range of chronic conditions, some common themes contribute to the complexity of diagnosing and managing chronic disease among First Nations people. This section discusses the most prominent issues to do with chronic physical conditions and mental health and wellbeing for First Nations people.

### Multimorbidity and complex health needs


People who have 2 or more chronic conditions (multimorbidity) usually have complex health needs. Multimorbidity is a slightly different concept from comorbidity, which refers to additional conditions (comorbidities) experienced by a person who has a specific condition of interest. Multimorbidity includes both physical and mental health conditions and can occur by chance (because the conditions are common) or because there is an underlying association between the conditions (AIHW 2024j). An association can be shared risk factors or a direct causal link, such as kidney disease resulting from type 2 diabetes. Multimorbidity can be associated with disability and pain (AIHW 2024j), lower quality of life (Keramat et al. 2024) and increased risk of mortality (Randall et al. 2018).

Indigenous populations around the world have a 2-fold greater risk of multimorbidity than their non-indigenous equivalents (Shahunja et al. 2024). In Australia, an estimated 2 in 3 (67%) First Nations people have 2 or more conditions and 1 in 3 (36%) have 3 or more (AIHW 2024g). Co-existing physical and mental health conditions are common among First Nations people with multimorbidity (Carman et al. 2022), particularly among younger people (Carman et al. 2022; Randall et al. 2018).

People with multimorbidity have more frequent and longer medical appointments and more medications to manage than those without it (RACGP 2023). They incur more direct and indirect costs, due to increased use of health services and decreased work productivity, than those without multimorbidity (Carman et al. 2022). They also require ongoing management and coordination of care across multiple parts of the health system (AIHW 2024j). Managing multiple chronic conditions usually involves a multidisciplinary team of medical professionals, including primary health, specialists and pharmacists. However, mainstream models of care generally focus on specific disciplines, such as general medicine or psychology, and on the diagnosis and treatment/management of conditions particular to discrete areas of the body such as the heart, kidneys or lungs.

Effective management of chronic disease can delay the progression of disease, improve quality of life, increase life expectancy and decrease the need for high-cost interventions (Thomas et al. 2014; Zhao et al. 2014). The literature highlights the persistent challenges for First Nations people in accessing culturally appropriate health services in rural and urban areas (Clapham et al. 2016).

People with severe mental health often require intensive management, are likely to have complex health needs and may have psychosocial disability. Severe mental illness can include psychosis, severe depression and mania. There are not good estimates of the prevalence of severe mental ill-health among First Nations people. In the general population, 5.8% of Australians were estimated to have severe mental illness between 2020 and 2022 (ABS 2023b). People with psychosocial disability are likely to experience challenges with communication and social inclusion, and often face barriers



in finding employment and housing and in maintaining physical health (AIHW 2024k). First Nations people with severe mental illness will face additional challenges, such as in accessing culturally appropriate supports.

## Access to services

Health care is considered ‘accessible’ when it is available at the right place and time, taking account of different population needs and the affordability of care. Access to appropriate, high-quality and timely health care throughout life is essential for improving health outcomes for First Nations people (AIHW and NIAA 2024).

Access to primary health care is of particular importance for people living with chronic conditions and multimorbidity (Gibson et al. 2015). For First Nations people with chronic conditions, lack of access to primary health care can result in serious complications due to delayed diagnosis and potentially preventable hospitalisations (Thomas et al. 2014). Despite having a greater need for health care than non-Indigenous Australians, First Nations people are less likely to access services (AIHW and NIAA 2024; Lin et al. 2017). Many factors contribute to this disparity:

- cultural safety (discussed in detail below)
- availability of services (AIHW 2024h) (discussed in detail below)
- mistrust of government services (AIHW 2015b, 2022b; Artuso et al 2013)
- remoteness (AIHW 2024h)
- access to transport (Artuso et al. 2013)
- racism – both individual and structural – and stereotyping (Strong et al. 2015)
- poor communication (Einseidel et al. 2013; Lin et al. 2017) and lack of translators (Artuso et al. 2013)
- wait times (AIHW and NIAA 2024; Artuso et al. 2013).

Barriers to access can affect First Nations people regardless of where they live, though the reasons differ between people in remote and non-remote areas. In 2018–19, First Nations people in non-remote areas were more likely to report cost and disliking the service as barriers than those in remote areas (AIHW and NIAA 2024). First Nations people in remote areas were more likely to report logistical reasons – such as service availability and transport/distance – as the main barriers (AIHW and NIAA 2024).

## Cultural safety

To provide culturally safe care, health-care practitioners must critically reflect on knowledge, skills, attitudes, behaviours and power imbalances. Whether care is culturally safe for First Nations people is determined by First Nations people and communities (Commonwealth of Australia 2020). Cultural safety has been repeatedly identified in the literature as an enabler of access (Harfield et al. 2024). Conversely, experiences of racism can prevent First Nations people accessing health care through mainstream services (Truong and Moore 2023). Culturally unsafe services can also result in First Nations patients discharging themselves against medical advice (Einsiedel et al. 2013).

Poor patient–practitioner communication also affects engagement with health services (Einsiedel et al. 2013; Lin et al. 2017). Several studies have reported that the use of medical jargon by practitioners contributes to avoidance of health services in the future (Artuso et al. 2013; Einsiedel et al. 2013; Lin et al. 2014; Strong et al. 2015). In some areas, lack of a common language between English-speaking practitioners and patients who speak a First Nations language adds another barrier (Artuso et al. 2013).

Cultural safety can be improved through community control and a First Nations health workforce (Truong and Moore 2023). In 2022–23, 213 organisations provided First Nations-specific primary health care, 69% (148) of which were community controlled (AIHW 2024a). ACCHOs can provide community-based, person-centred care, meaning that they care for the whole person rather than just treating a condition (ACSQHC 2024). Though ACCHOs are increasingly able to meet the needs for specialist treatment within their communities – for example, through local dialysis units (WDNWPT n.d.) – contact with mainstream services, such as hospitals, is still necessary. Mainstream services can improve cultural safety by employing more First Nations people in diverse roles (Aspin et al. 2012) and by allowing family and kin to escort First Nations patients during visits (Artuso et al. 2013).

For more information, see the following Clearinghouse publications:


- *Patient experiences of integrated services for chronic disease and social and emotional wellbeing: a case study of the Integrated Team Care Program* (<https://www.indigenoumhspc.gov.au/publications/itc>)
- *Racism and Indigenous wellbeing, mental health and suicide* (<https://www.indigenoumhspc.gov.au/publications/racism>).

## Service availability

Service availability varies across Australia. Availability barriers for First Nations people include services not being available in the area (especially for those living in remote areas), services being too far away, lack of transport, cost and waiting times (AIHW 2024f). According to modelled drive-time analysis, unmet need for general practitioners (GPs) for First Nations people increased with increasing remoteness (AIHW 2024i). In more remote areas, primary health care may be provided by nurses and Aboriginal Health Workers, rather than by GPs (AIHW 2023c).

Limited availability of primary health care in remote areas is a significant issue for the First Nations population, 15% of whom live in *Remote or Very remote* areas (compared with 1.4% of the non-Indigenous Australian population) (ABS 2023a). For First Nations people with chronic conditions, regular engagement with primary health care leads to better outcomes through earlier diagnosis and better disease management (AIHW and NIAA 2020). The same is true for those with multimorbidity – primary health-care practitioners can help to manage medications, coordinate care and reduce the likelihood of complications through early intervention (AIHW 2021).

Consistent with their access to GPs, First Nations people's access to specialists also decreased with increasing remoteness (AIHW 2023c). For First Nations people with chronic conditions living in remote areas, this can mean leaving community and Country – and sometimes travelling interstate – for necessary tests or treatment. For people who do not own a car, travelling between home and major centres can be difficult or impossible (Artuso et al. 2013). Also affected are the carers who need to travel to support attendance at services for antenatal care, for young children, for people with disability, for people living with chronic health conditions or for people with mental health or substance use issues (Lee et al. 2014).

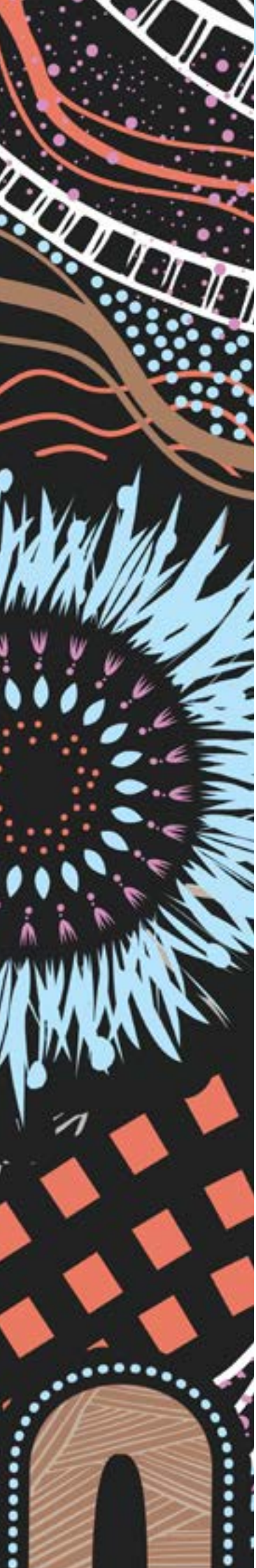


For First Nations people with chronic conditions living outside of major cities, patient outcomes can be improved through continuity of care (Street et al. 2019); however, this can be adversely affected by communication breakdown between health services and limited local resources (Artuso et al. 2013; Street et al. 2019). Telehealth has been found to facilitate continuity of care for rural patients through shared care consultations between specialists and local health-care practitioners (Street et al. 2019).

The Skills Priority List 2023 report shows that more than 4 in 5 health professional occupations (82%) were in shortage in 2023. Workforce shortages exist in all medical practitioner occupations, Registered Nurse occupations and for many medical specialists, diagnostic professionals and allied health professionals (JSA 2023). These shortages, particularly in allied health, affect the workforce's capacity to adequately manage chronic conditions alongside mental ill-health.

Community-controlled services are making it easier for people to access care on Country. For example, the Purple House is an ACCHO service, providing remote dialysis, social support, aged care and National Disability Insurance Scheme services. It operates 20 dialysis units in Western Australia, South Australia and the Northern Territory. It also operates 2 mobile dialysis units that allow dialysis patients to temporarily return to Country (WDNWPT n.d.). Survival rates for haemodialysis in Central Australia are now higher than for the rest of Australia, going from the worst to the best in the country over the last 20 years (AIHW 2024b; Gorham et al. 2016; UNE 2020).





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## Policy context

## 5 Policy context

This section focuses on national strategies and frameworks intended to address physical health conditions and to support the mental health of First Nations people. Policies aimed at all Australians, such as *Australia's Primary Health Care 10 Year Plan 2022–2032*, highlight the need for coordinated, person-centred care, such as provided by Primary Health Networks (PHNs), and for strengthening the Aboriginal community-controlled health sector. Several national policies are entirely focused on the health and wellbeing of First Nations people; however, most of these focus on either physical health or mental health. In general, few are geared towards both physical and mental health in a holistic way. (Appendix A provides more detail about each of these policies).

### National Aboriginal and Torres Strait Islander Health Plan 2021–2031

The *National Aboriginal and Torres Strait Islander Health Plan 2021–2031* incorporates a partnership approach with First Nations communities and organisations, including Aboriginal Community Controlled Health Services (ACCHSs). The plan recognises the diversity of First Nations communities across Australia, adopting a strengths-based approach to diversity and inclusion. It also acknowledges the importance of considering intersectionality in health care – that is, when many types of disadvantage and inequality coalesce, creating issues and barriers beyond conventional thinking – and the need to cater for this for First Nations people living with mental illness and disability (Department of Health 2021a). The plan does not explicitly address the mental health needs of people with chronic physical health conditions, or the physical health of those with mental health conditions.

For more information, see the *National Aboriginal and Torres Strait Islander Health Plan 2021–2031* (<https://www.health.gov.au/resources/publications/national-aboriginal-and-torres-strait-islander-health-plan-2021-2031?language=en>).

### Fifth National Mental Health and Suicide Prevention Plan (2017–2022)

This was the first plan to specifically address SEWB, mental health conditions and suicide among First Nations people as a top priority. It was also the first to emphasise the importance of addressing the physical health needs of individuals with mental illness and of reducing associated stigma and discrimination (COAG Health Council 2017). Priority area 4 of this plan – *Improving Aboriginal and Torres Strait Islander mental health and suicide prevention* – notes the high rates of chronic disease and comorbid mental and physical health issues among the First Nations population (COAG Health Council 2017).

For more information, see the *Fifth National Mental Health and Suicide Prevention Plan (2017–2022)* (<https://www.mentalhealthcommission.gov.au/monitoring-and-reporting/fifth-plan>).



## National Mental Health and Suicide Prevention Plan

Supporting the physical health of people with mental health conditions is a funding priority under pillar 3 of the *National Mental Health and Suicide Prevention Plan*. This plan has a strong focus on suicide prevention for First Nations people (Department of Health and Aged Care 2021). The plan does not specifically address the physical health needs of First Nations people with mental ill-health (or vice versa).

For more information, see the *National Mental Health and Suicide Prevention Plan* (<https://www.health.gov.au/resources/publications/the-australian-governments-national-mental-health-and-suicide-prevention-plan?language=en>).

## National Agreement on Closing the Gap

The *National Agreement on Closing the Gap* (2021) aims to address inequality and improve life outcomes for First Nations people through collaborative efforts between different levels of government in Australia. The Closing the Gap Agreement directly targets social determinants of health and tracks health behaviours and chronic disease care as drivers of Target 1 (Close the gap in life expectancy within a generation) (Commonwealth of Australia 2020). The agreement does not target or track specific chronic conditions or the physical health of people with mental health conditions.

For more information, see the *National Agreement on Closing the Gap* (<https://www.closingthegap.gov.au/national-agreement>), and the Closing the Gap Information Repository (<https://www.pc.gov.au/closing-the-gap-data>).

## National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2031

The *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2031* was co-designed with First Nations people and released by the Department of Health in 2021. The plan's target is for First Nations people to be fully represented in the health workforce by 2031. It includes actions to attract, recruit and retain workers across all roles, levels and locations within the health sector to improve access to health care for First Nations people (Department of Health 2022b). Improving access to health care is important for addressing the complex needs of people with chronic conditions.

For more information, see the *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2031* (<https://www.health.gov.au/resources/publications/national-aboriginal-and-torres-strait-islander-health-workforce-strategic-framework-and-implementation-plan-2021-2031>).

## Cultural Respect Framework for Aboriginal and Torres Strait Islander Health 2016–2026

The Cultural Respect Framework was developed for the Australian Health Ministers' Advisory Council (AHMAC) by the National Aboriginal and Torres Strait Islander Health Standing Committee. This framework commits the Australian and state and territory governments to embedding cultural respect principles in their health systems. It is intended for the government health sector, health departments and hospital and primary health-care settings to guide strategies to improve culturally respectful services (AHMAC 2016). As for the *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2031*, the aim of this framework is to improve health outcomes through improved cultural safety of health services.

For more information, see the *Cultural Respect Framework for Aboriginal and Torres Strait Islander Health 2016–2026* (<https://apo.org.au/node/256721>).

## National Preventive Health Strategy 2021–2030

In 2021, the Department of Health released the *National Preventive Health Strategy 2021–2030*. This strategy is largely aimed at preventing chronic conditions. It details a long-term approach that focuses on enhancing the health and wellbeing of all Australians, while identifying First Nations people as a priority population. The strategy acknowledges that health for First Nations people is a state of physical, mental and social wellbeing (Department of Health 2021b). Several components targeting First Nations people emphasise the importance of connection to land, spirituality, ancestry and family and community.

For more information, see the *National Preventive Health Strategy 2021–2030* (<https://www.health.gov.au/resources/publications/national-preventive-health-strategy-2021-2030?language=en>).

## Australia's Primary Health Care 10 Year Plan 2022–2032

*Australia's Primary Health Care 10 Year Plan 2022–2032* – a future-focused plan released by the Department of Health – is about strengthening primary health care as part of the health system, and providing an agenda for its reform over a decade. The plan aims to support patient-centred continuity of care through a proposed system of voluntary patient registration with general practice. It proposes funding reform over time both to support outcome-focused and multidisciplinary care, and to address the challenges borne by priority populations (including First Nations people) who face barriers in accessing appropriate care (Department of Health 2022a). The plan does not specifically target mental health in the context of chronic disease. However, it does commit to strengthening the community-controlled sector; for example, by 'work[ing] in partnership to empower First Nations communities by support[ing] the staged transition of state/territory government run clinics in relevant areas to Aboriginal community controlled health organisations' (Department of Health 2022a:35).

For more information, see *Australia's Primary Health Care 10 Year Plan 2022–2032* (<https://www.health.gov.au/resources/publications/australias-primary-health-care-10-year-plan-2022-2032?language=en>).

## National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing 2017–2023

The *National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing 2017–2023* was designed to align with the *Fifth National Mental Health and Suicide Prevention Plan (2017–2022)*. It contributed to the objectives outlined in the *National Aboriginal and Torres Strait Islander Health Plan 2012–2023*. The framework outlined a comprehensive stepped-care model applicable to both First Nations-specific and mainstream health services (PM&C 2017). This framework does not address physical health or chronic disease.

For more information, see the *National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing 2017–2023* (<https://www.niaa.gov.au/resource-centre/national-strategic-framework-aboriginal-and-torres-strait-islander-peoples-mental>).

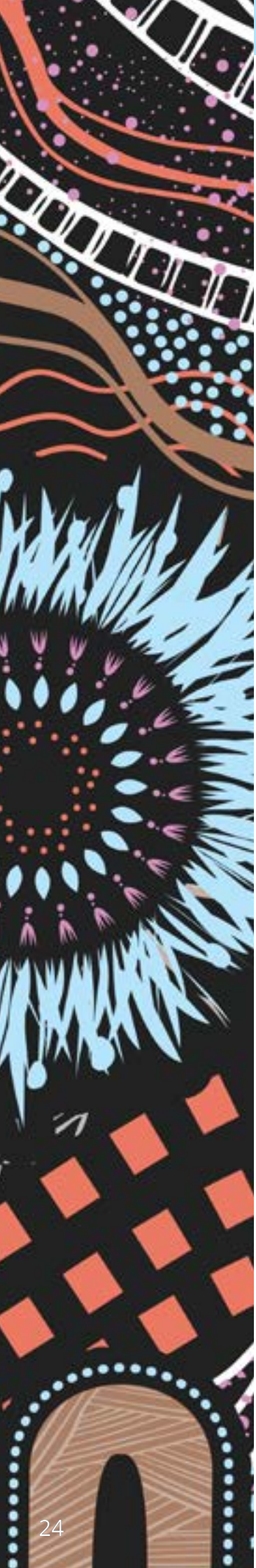
## National Strategic Framework for Chronic Conditions

The *National Strategic Framework for Chronic Conditions* was released in 2019. The need for integrated care to address the physical and mental health needs of people with chronic conditions is identified under Strategic Priority Area 2.2: Continuity of care. First Nations people are classified as a priority population under the framework, with a focus on enhancing health-care access by improving cultural safety (COAG Health Council 2019). The framework does not specifically address the mental health needs of First Nations people with chronic conditions.

For more information, see the *National Strategic Framework for Chronic Conditions* (<https://www.health.gov.au/resources/publications/national-strategic-framework-for-chronic-conditions?language=en>).

## Relevant condition-specific policies

- *National Asthma Strategy 2018* (<https://www.health.gov.au/resources/publications/national-asthma-strategy-2018>)
- *National Strategic Action Plan for Lung Conditions* (<https://www.health.gov.au/resources/publications/national-strategic-action-plan-for-lung-conditions>)
- *National Strategic Action Plan for Arthritis* (<https://www.health.gov.au/resources/publications/national-strategic-action-plan-for-arthritis>)
- *National Strategic Action Plan for Osteoporosis 2019* (<https://www.health.gov.au/resources/publications/national-strategic-action-plan-for-osteoporosis-2019>)
- *National Strategic Action Plan* (<https://www.health.gov.au/resources/publications/national-strategic-action-plan-for-heart-disease-and-stroke>)
- *Australian National Diabetes Strategy 2021–2030* (<https://www.health.gov.au/resources/publications/australian-national-diabetes-strategy-2021-2030>)
- *National Strategic Action Plan for Kidney Disease* (<https://www.health.gov.au/resources/publications/national-strategic-action-plan-for-kidney-disease>)



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## Programs

## 6 Programs

As mentioned earlier, few policies deal with the intersection of chronic physical health conditions and mental ill-health for First Nations people. Hence, most funding is aimed at programs to do with either physical health conditions or mental health (or SEWB).

This section provides an overview of evaluated programs targeted at the First Nations population that aim to improve SEWB by improving *both* mental and physical health. Any evaluation findings related to SEWB or mental health have been noted. Broadly, these programs can be grouped into mental health support, self-management of chronic conditions, and multidisciplinary care.

### AIMhi Stay Strong App

Based on more than 15 years of research, the AIMhi Stay Strong App was developed by the Menzies School of Health Research in collaboration with the Queensland University of Technology. It is designed to be used by First Nations people engaging with health and community service providers to address mental health literacy needs, and to support client–practitioner communication (Menzies n.d).

**Evaluation:** Previous evaluations have established the acceptability and appropriateness of the AIMhi Stay Strong app for both practitioners and clients (Dingwall et al. 2015). More recently, it has been appraised for First Nations people with kidney failure: Dingwall and colleagues (2021) evaluated its efficacy in reducing psychological distress and depressive symptoms among First Nations people undergoing haemodialysis in the Northern Territory. The researchers used a different, culturally appropriate health app (focused on physical health and storytelling) as a control; it also performed well during the study period.

The major findings indicated were that:

- culturally responsive app-based health assessments and interventions were helpful in improving the wellbeing of First Nations people on dialysis
- both apps were found to reduce psychological distress and depressive symptoms in patients with moderate to severe symptoms of distress or depression
- the wellbeing of people on dialysis can be improved by talking to people about their wellbeing using a culturally adapted, locally relevant app.

Nagel and colleagues (2022) conducted a qualitative study to explore the feasibility of the Stay Strong App to support self-management through goal setting for First Nations people with kidney failure.

Key findings included that:

- the goals set by participants centred around physical health, cultural connection and SEWB
- the app is suitable as a chronic condition self-management tool.

## Aunty Jean's Program

Aunty Jean's Program, developed and piloted in the Illawarra district of New South Wales, focuses on improving health outcomes for First Nations people through community collaboration, under the leadership of Elders. The program, named in memory of Aunty Jean Morris, has been running since 2003. It emphasises community capacity-building and self-management for participants with chronic and complex care needs. Its key objectives include:

- enhancing self-management
- fostering effective partnerships
- co-creating a supportive environment for good health and for culturally appropriate information-sharing, activities and strategies for self-management.

The program's identity and direction are rooted in the strong relationship between local Elders and Aboriginal Health Workers (Illawarra Health 2004).

**Evaluation:** Carried out in 2004, this program evaluation was funded by the Aboriginal Vascular Program and carried out by ORTAN Consulting in partnership with Illawarra Health. While improving the SEWB of participants is central to the program, the evaluation did not cover this in detail. It did reveal, however, that participants' understanding of their medical conditions and medications improved through culturally appropriate information sessions (Curtis et al. 2004).

## Work It Out

Work It Out is a chronic disease self-management program based in Queensland that aims to assist First Nations people in preventing and/or managing their chronic disease. The program, led by an accredited exercise physiologist with support from a multidisciplinary team, is designed to enhance participants' health and wellness. It focuses on:

- confidence and ability in managing health and wellness
- cardiovascular fitness
- muscular strength
- balance
- mental health.

Delivered in a culturally appropriate yarning style, the program runs in 12 week cycles, after which participants receive a tailored exercise plan and community support (Institute for Urban Indigenous Health 2024).

**Evaluation:** Researchers from the School of Public Health and Social Work, Queensland University of Technology conducted the evaluation of the Work It Out Program (Mills et al. 2017). The key findings were as follows:

- The Work It Out Program is a culturally responsive chronic condition self-management program.
- Participants showed statistically significant improvements in their blood pressure, blood glucose levels, and SEWB.
- Participants with poor SEWB benefited most from the social connectedness of the program, improving their motivation.



## Wurli-Wurlinjang Diabetes Day Program

Wurli-Wurlinjang is an ACCHO that delivers a wide range of culturally appropriate and progressive health-care services to First Nations people from Katherine, Northern Territory, and surrounding communities. Wurli-Wurlinjang operated a Diabetes Day Program from 2008 to improve the wellbeing of First Nations patients with type 2 diabetes. The goal of the program was to create a supportive environment that promoted self-management and provided comprehensive care (Entwistle et al. 2011).

**Evaluation:** Researchers from the Centre for Remote Health, Charles Darwin University conducted the evaluation of Wurli-Wurlinjang in 2011 (Entwistle et al. 2011). The key findings were that:

- the Diabetes Day Program was highly acceptable to First Nations clients
- clients experienced considerable improvements in SEWB and there were small but significant improvements in clinical outcomes.

Clients preferred education sessions that were informal, interactive and realistic, and which used examples and explanations rather than analogies. Clients reported a willingness to learn from the education sessions but found them confusing.

## Integrated Team Care Program

The Integrated Team Care (ITC) Program, funded by the Department of Health and Aged Care as part of the Indigenous Australian's Health Program, began in 2014. The ITC program supports First Nations people with chronic conditions in accessing necessary health care.

The primary aims of the ITC Program are to:

- treat and manage chronic conditions among First Nations people better
- improve the health of First Nations people with chronic health conditions
- improve access to culturally appropriate mainstream primary health-care services
- foster collaboration and support between the mainstream and the Aboriginal and Torres Strait Islander health sectors (Department of Health and Aged Care 2024).

The Department funds the PHNs to manage the program and work with the First Nations health sector and mainstream primary care providers to ensure culturally appropriate services are available to First Nations people.

**Evaluation:** In 2022, the Hunter New England and Central Coast PHN's ITC program was evaluated by Nama Jalu Consulting (2023). The evaluation focused on assessing program implementation and overall performance and on identifying future opportunities to improve program delivery. The evaluation highlighted the importance of the program and its positive outcomes. The key findings were that:

- program delivery largely aligns with program guidelines
- the self-management aspect of the program needs greater focus and resourcing
- clear communication, strong relationships and passionate staff are key enablers for program delivery
- barriers to delivery include systemic and local-level funding and resourcing issues

- clients reported improved health outcomes and engagement with the health system
- mixed success was noted in supporting clients towards self-management of health conditions
- more work was needed to improve the capacity of mainstream primary care providers to deliver culturally appropriate care
- the program was especially effective for clients with diabetes and multiple chronic conditions (Nama Jalu Consulting 2023).

## Medical Outreach Indigenous Chronic Disease Program

The Medical Outreach Indigenous Chronic Disease Program (MOICDP) is funded by the Department of Health and Aged Care under the Indigenous Australians Health Program. The aim of the MOICDP is to improve access to a range of health services for First Nations people with chronic conditions, regardless of geographical location. The program does this by covering some of the costs of health professionals providing outreach services to First Nations people. The types of service available through the MOICDP include medical specialists, general practitioners, Aboriginal and Torres Strait Islander Health Workers, allied health workers and other health professionals (Department of Health and Aged Care 2023).

**Evaluation:** In 2022, Health Policy Analysis evaluated the MOICDP, along with 5 other outreach funding programs, to assess its appropriateness, efficiency and effectiveness. Some key findings were that:


- more than 85% of services in the MOICDP program were provided to First Nations people
- 1.7% of outreach visits under the MOICDP were provided by mental health professionals and 0.5% were provided by care/service co-ordinators
- local solutions were the preferred response to service gaps. Outreach should be implemented only when other options are not feasible.

Note that the evaluation could not assess health outcomes due to data limitations (Health Policy Analysis 2022).

## Lighthouse Hospital Project Phase 3

The Lighthouse Hospital Project Phase 3, funded by the Department of Health and led by the Heart Foundation and the Australian Hospital and Healthcare Association, was a 3-year initiative from January 2017 to December 2019 (Heart Foundation 2022, as cited in NIAA 2024). It aimed to improve health outcomes for First Nations people with acute coronary syndrome across 18 participating hospitals in Australia. These populations are significantly more likely to be admitted to hospital for heart-related issues, and experience higher rates of discharge against medical advice (DAMA). The project focused on reducing the incidence and impact of DAMA for these patients (NIAA 2024).

**Evaluation:** While most patients rated their hospital experience positively, the project did not significantly reduce DAMA rates during the implementation period. The study concluded that, while progress was evident in various aspects, a longer time frame, possibly 5–10 years, might be needed to fully realise the desired outcomes. The complexity of hospital settings and the need to navigate



various challenges (including institutional racism and bureaucracy) were noted as factors affecting the project's progress. The evaluation highlighted the importance of strong leadership, support, and a culturally safe workforce in implementing initiatives such as this (Heart Foundation 2022, as cited in NIAA 2024).

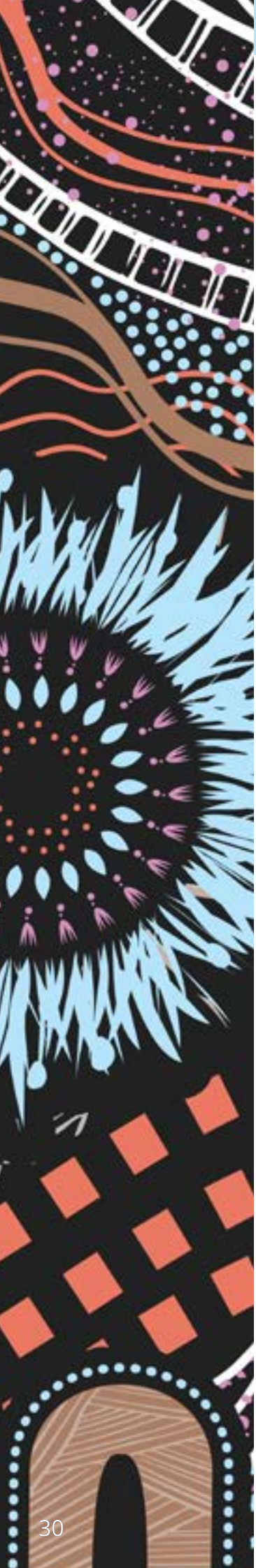
## Rural Support Service mobile dialysis truck

South Australia Health's Rural Support Service operates a mobile dialysis unit for kidney dialysis patients wanting to visit their home communities in the most remote areas of South Australia. The 'truck' has 3 dialysis chairs and provides short-term dialysis to several communities (SA Health 2024). This service visits remote South Australian communities for 1–2 weeks to allow patients requiring dialysis to return to Country, enabling them to reconnect with family and community and to participate in cultural activities (Conway et al. 2018).

**Evaluation:** The service was qualitatively evaluated in 2018. The study included semistructured interviews with 15 First Nations dialysis patients and 10 nurses who had staffed the mobile dialysis truck. Patient and nursing experiences were gathered and analysed using realist evaluation methodology and thematic analysis (Conway et al. 2018).

The key findings were that the mobile dialysis service:

- improved the SEWB of First Nations patients who had relocated for dialysis
- built positive relationships and trust between metropolitan nurses and remote patients
- fostered trust, which improved engagement with associated health services
- provided valuable cultural learning opportunities for nursing staff. This format of health service may improve cultural competencies with nursing staff who provide regular care for First Nations patients.



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## Overarching approaches

## 7 Overarching approaches

The key issues affecting First Nations people with chronic conditions are multimorbidity (including co-existing mental and physical ill-health) and access to services. These issues increase the complexity of management and can contribute to low SEWB.

The program evaluations in the previous section highlight different successful elements of chronic disease management, including multidisciplinary care, self-management, health behaviours, social connection and relationship building. The most successful programs are those that are co-designed with local communities.

This section provides a summary of approaches from the literature and from program evaluations described in this publication that have shown some success in catering for the social and emotional needs of First Nations people with chronic physical health conditions.

### Improving cultural safety

Improving access to effective health care is essential to improve the SEWB of First Nations people with chronic physical health conditions. Successful programs for First Nations people empower individuals, families and communities through the principles of co-design and First Nations governance (CBPATISIP 2024). Empowering local communities to provide regular specialised treatment, such as dialysis, through community-controlled clinics allows First Nations people to remain in their communities, instead of needing to dislocate to access treatment. Similarly, mobile services, such as the Purple Truck and the Rural Support Service mobile dialysis truck, allow dialysis patients to return to community and Country and maintain connections with family, friends and culture.

Mainstream services can be made more culturally safe by expanding the First Nations workforce, educating non-Indigenous staff and allowing First Nations people to be escorted through health service visits by family or kin. As well, health-care practitioners can increase engagement with services by using plain language instead of medical jargon when speaking with patients and their families/kin.

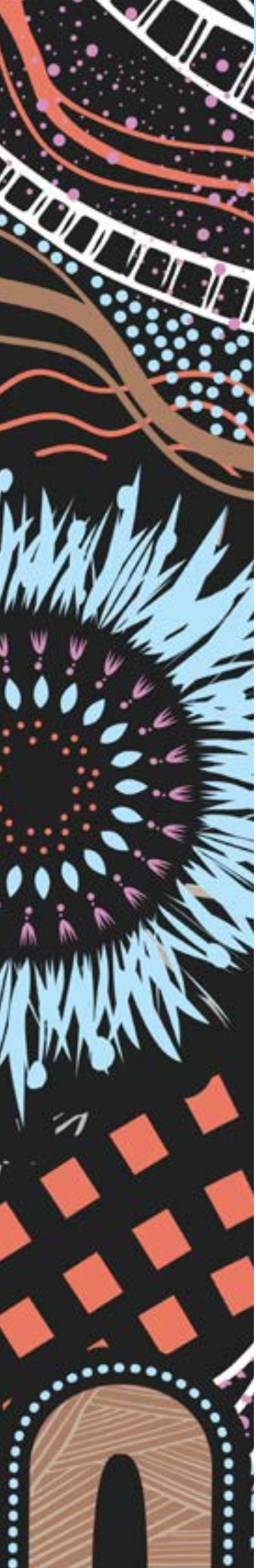
### Facilitating person-centred care and chronic disease self-management

People living with both a chronic physical health condition and a mental health condition have multimorbidity. Multimorbidity requires multidisciplinary care, centred around the patient as an individual. Programs, such as the ITC program, that focus on coordinated team care improve health-care access and outcomes for First Nations people. ACCHSs provide person-centred care and are well placed to coordinate patient care. Effective communication between local and interstate health services is essential for continuity of care, where patients are travelling interstate to receive essential treatment and then returning to their local community. Shared care, where local primary care practitioners consult with city-based specialists via phone or video call, reduce the need for First Nations people to travel away from their communities.



Further, empowering people to self-manage their conditions is a common focus of the programs discussed in the previous section of this publication. Chronic disease self-management, with the support of family and kin, can enable people with chronic conditions to be active participants in their treatment and reduce reliance on health-care services. Chronic disease self-management programs have greater participation when run through ACCHOs and are most effective when co-designed with the local community (Parmenter et al. 2018).

Self-managed care may be challenging for some people, such as for those with severe mental health conditions. However, there is evidence from mainstream studies that self-management interventions for people with severe mental illness can empower individuals, building hope and self-confidence; however, it is important that such interventions occur alongside care supports (Lean et al. 2019). Studies of digital technologies for use in mental health and wellbeing of First Nations people, such as the AIMhi Stay Strong App, have found that where such resources include decolonising, culturally appropriate approaches they can be effective and contribute to identity building (Dingwall et al. 2015; Li and Brar 2022).



# 8



## Conclusion



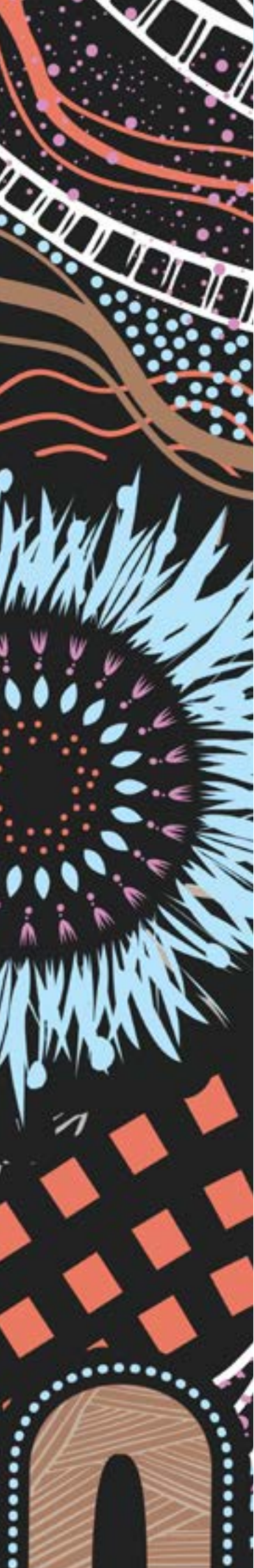
## 8 Conclusion

Physical health and mental health are both essential for SEWB. However, First Nations people are particularly exposed to health-risk factors that contribute substantially to health disparities between First Nations people and non-Indigenous Australians. First Nations people are disproportionately affected by chronic physical health conditions, which are well known risk factors for mental ill-health. Co-occurring chronic physical and mental health conditions increase the complexity of care and worsen patient outcomes. Health outcomes can be exacerbated by delayed diagnosis and management of chronic conditions such as type 2 diabetes, due to barriers that prevent First Nations people from accessing health care.

Quality of life and life expectancy can be improved by effectively managing chronic conditions. Multimorbidity, whether due to physical and mental health conditions or multiple physical health conditions, is best managed through person-centred, multidisciplinary team care. However, effective care relies on enabling First Nations people to access services. Enablers to access include adequate continuity of care; service availability; and cultural safety, including good communication between patient and practitioner.

For First Nations people requiring ongoing chronic disease management, such as dialysis, SEWB can be improved by supporting connections with family, community and Country, even when living away from home for treatment. ACCHOs can enable First Nations people to remain connected to their communities by providing local treatment or by providing social support for people living away from home. Finally, culturally adapted education can empower First Nations people to self-manage their conditions and reduce their reliance on health services.





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# Appendixes

# Appendix A: Policies and frameworks

**Table A1: Description of policies and frameworks**

Name	Details	Key recommendations	Implementation
National Aboriginal and Torres Strait Islander Health Plan 2021–2031	This plan includes a partnership approach with First Nations communities and organisations, including Aboriginal Community Controlled Health Services (ACCHSs). It takes into account the diversity of First Nations communities across Australia and adopts a strengths-based approach to diversity and inclusion. It also acknowledges the need to cater for the intersectionality of First Nations people who are living with mental illness and disability (Department of Health 2021a).	<p>The plan has 52 objectives across 12 priority areas. These priority areas are grouped under:</p> <ul style="list-style-type: none"> <li>• Enablers for change</li> <li>• Focusing on prevention</li> <li>• Improving the health system</li> <li>• Culturally informed evidence base.</li> </ul> <p>The priorities and objectives of the plan will work towards achieving a vision that First Nations people enjoy long, healthy lives centred in culture, with access to services that are prevention focused, culturally safe and responsive, equitable and free of racism.</p>	The plan recognises that First Nations people are best placed to determine and deliver solutions that are best for their communities. The plan will be implemented in partnership with First Nations people and be flexible in adapting to the differing needs and priorities of each jurisdiction, as well as across urban, regional, rural and remote settings.
Fifth National Mental Health and Suicide Prevention Plan (2017–2022)	This plan was endorsed by the Council of Australian Governments Health Council in August 2017.	<p>The plan was the first to specifically address social and emotional wellbeing (SEWB), mental health conditions and suicide among First Nations people as a top priority. It was also the first to emphasise the importance of both addressing the physical health needs of individuals with mental illness and reducing the associated stigma and discrimination.</p>	The Australian Health Ministers' Advisory Council (AHMAC), the Mental Health Principal Committee and its subordinate committees were responsible for implementing the plan – intended for completion in 2022. The Mental Health Commission will deliver an annual report, for presentation to health ministers, on progress in implementing the plan's actions and on performance against the identified indicators.
National Mental Health and Suicide Prevention Plan	This plan sets out the Australian Government's commitment to supporting mental health and suicide prevention for all Australians. It responds to the findings of the Productivity Commission Inquiry Report into Mental Health, and the Final Advice of the National Suicide Prevention Adviser (NSPA).	<p>The plan centres on 5 pillars, reflecting key themes from the 21 recommendations from the Productivity Commission report and the 8 recommendations from the NSPA advice:</p> <ul style="list-style-type: none"> <li>• Prevention and early intervention</li> <li>• Suicide prevention</li> <li>• Treatment</li> <li>• Supporting the vulnerable</li> <li>• Workforce and governance.</li> </ul>	The majority of the recommendations of the Productivity Commission and the NSPA require collaboration with state and territory governments. A number of these will be pursued jointly through a new National Mental Health and Suicide Prevention Agreement.

(continued)

**Table A1 (continued): Description of policies and frameworks**

Name	Details	Key recommendations	Implementation
National Agreement on Closing the Gap	The agreement is a formal partnership between the Australian and state and territory governments, the Coalition of Aboriginal and Torres Islander Peak Organisations, and the Australian Local Government Association. It was signed in March 2019.	<p>There are 19 national socioeconomic targets across 17 socioeconomic outcome areas that have an impact on life outcomes for First Nations people.</p> <p>The agreement also has 4 priority reforms:</p> <ol style="list-style-type: none"> <li>1. Formal partnerships and shared decision-making</li> <li>2. Building the community-controlled sector</li> <li>3. Transforming government organisations</li> <li>4. Sharing access to data and information at a regional level.</li> </ol> <p>Through these 4 priority reforms, the Australian governments aim to close the gap in life outcomes between First Nations people and nonIndigenous Australians.</p>	<p>Each party to the agreement has developed its own Implementation Plan and will report annually on its actions to achieve the outcomes of the agreement. Plans have been developed and will be delivered in partnership with Aboriginal and Torres Strait Islander partners.</p> <p>Each Implementation Plan sets out how policies and programs are aligned to the agreement and what actions will be taken to achieve the priority reforms and outcomes, including information on funding and time frames for actions.</p>
National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2031	This strategic framework and implementation plan was co-designed with First Nations people and released by the Department of Health in 2021.	<p>The plan is guided by 6 overarching strategic directions that support the ongoing development of the size, capability and capacity of the First Nations health workforce. The plan's target is for First Nations people to be fully represented in the health workforce by 2031.</p>	<p>Implementation strategies have been identified to achieve the desired outcomes of the 6 strategic directions, from short-term interventions to longer term systemic reforms. Many of the actions require communities, stakeholders and all governments to collaborate.</p> <p>The Australian Government is accountable for implementing the plan at a national level. This includes through a partnership approach that embraces the leadership of Aboriginal and Torres Strait Islander organisations – including ACCHSS – and communities.</p>

*(continued)*

**Table A1 (continued): Description of policies and frameworks**

Name	Details	Key recommendations	Implementation
Cultural Respect Framework for Aboriginal and Torres Strait Islander Health 2016-2026	This framework was developed for the AHMAC by the National Aboriginal and Torres Strait Islander Health Standing Committee. It commits Australian and state and territory governments to embedding cultural respect principles in their health systems.	<p>The framework is guided by 5 principles, with 6 domain areas (below) that underpin culturally accessible, responsive and safe health services:</p> <ol style="list-style-type: none"> <li>1. Whole-of-organisation approach and commitment</li> <li>2. Communication</li> <li>3. Workforce development and training</li> <li>4. Consumer participation and engagement</li> <li>5. Stakeholder partnerships and collaboration</li> <li>6. Data, planning, research and evaluation</li> </ol>	The implementation arrangements of governments will reflect particular jurisdictional needs, requirements and environments. Governance structures are in place for regular monitoring, reporting and reviewing of cultural respect implementation and to share knowledge on what works.
National Preventive Health Strategy 2021-2030	This strategy was released by the Department of Health in 2021. It aims to improve the health and wellbeing of all Australians at all stages of life, through a systems-based approach to prevention that takes account of the wider determinants of health, reduces health inequities and decreases the overall burden of disease.	<p>The strategy includes several sections that describe what Australia needs to do over the next 10 years to improve the health and wellbeing of all Australians at all stages of life through prevention. These are:</p> <ul style="list-style-type: none"> <li>• 4 overarching aims that describe what the strategy is intending to achieve. They have targets that are measurable and trackable</li> <li>• 7 principles that guide actions that are implemented to enhance prevention in Australia</li> <li>• 7 enablers that are critical to shift the health system focus to prevention</li> <li>• 7 focus areas that require stronger and better coordinated action to reduce the risks of poor health and wellbeing.</li> </ul>	A 'Blueprint for Action' will be developed which outlines implementation details for the strategy (including how existing health infrastructure will be leveraged in reaching the 'Policy achievements by 2030' and targets outlined in this strategy. A key focus of the strategy is the need to mobilise the prevention system to ensure an enduring system into the future; it is important that this starts in the first year of the strategy. Hence, in parallel to the development of the 'Blueprint for Action', the immediate priorities outlined in the strategy will start to be implemented.

*(continued)*

**Table A1 (continued): Description of policies and frameworks**

Name	Details	Key recommendations	Implementation
National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing 2017–2023	This framework was designed to align with the Fifth National Mental Health and Suicide Prevention Plan (2017–2022). It contributed to the objectives outlined in the National Aboriginal and Torres Strait Islander Health Plan 2012–2023.	The framework has a dedicated focus on First Nations people's SEWB. It sets out a comprehensive and culturally appropriate stepped-care model equally applicable to both Indigenous-specific and mainstream health services.  The framework has 9 guiding principles. They are drawn from the Ways Forward report and the 2004 Framework to emphasise the holistic and whole-of-life definition of health held by First Nations people.	Strategy 1C of the Implementation Plan identifies that the Australian Government, the National Aboriginal and Torres Strait Islander Leadership in Mental Health, and the Aboriginal and Torres Strait Islander Mental Health and Suicide Prevention Advisory Group have a monitoring role in implementing the framework. Progress will be reported every 2 years in line with the release of the Aboriginal and Torres Strait Islander Health Performance Framework.
National Strategic Framework for Chronic Conditions	This framework was released in 2017 and updated in 2019. The need for integrated care to meet the physical and mental health needs of people with chronic conditions is identified under Strategic Priority Area 2.2: Continuity of care. First Nations people are identified as a priority population under the framework, with a focus on improving access to health care by improving cultural safety.	There are 8 guiding principles and 7 specific enablers identified to help achieve the framework's vision: 'All Australians live healthier lives through effective prevention and management of chronic conditions'. The vision is supported by 3 objectives: <ol style="list-style-type: none"> <li>1. focus on prevention for a healthier Australia</li> <li>2. provide efficient, effective and appropriate care to support people with chronic conditions to optimise quality of life</li> <li>3. target priority populations.</li> </ol> Strategic Priority Areas have been identified for each objective.	Outcomes are described for each Strategic Priority Area. They describe the result of actions, rather than the actions required, to allow flexibility for partners to develop and implement their own strategies, policies, actions and services within the boundaries of their specific health responsibilities and governing authorities.  Due to the complexities associated with the prevention and management of chronic conditions, there is no single indicator to determine the impact of the framework. Rather, a description of what success will look like, and example indicators, have been included at the objective level.

*(continued)*

**Table A1 (continued): Description of policies and frameworks**

Name	Details	Key recommendations	Implementation
Australia's Primary Health Care 10 Year Plan 2022-2032	This future-focused plan is about strengthening primary health care as part of the health system and providing an agenda for primary health-care reform over a decade.	<p>The plan aims to support patient-centred continuity of care through a proposed system of voluntary patient registration with general practice. It proposes funding reform over time to support outcome-focused and multidisciplinary care and to address the challenges faced by priority populations, including First Nations people, who face barriers in accessing appropriate care.</p> <p>The plan identifies 12 action areas, grouped under 3 reform streams:</p> <ul style="list-style-type: none"> <li>• future focused primary health care</li> <li>• person-centred primary health care supported by funding reform</li> <li>• integrated care, locally delivered.</li> </ul> <p>The National Roadmap for Improving the Health of People with Intellectual Disability forms part of the plan.</p>	<p>Implementation of the plan will be considered, together with other areas where action taken will be important for primary health care. These include:</p> <ul style="list-style-type: none"> <li>• the National Medical Workforce Strategy</li> <li>• the Commonwealth Stronger Rural Health Strategy</li> <li>• the National Aboriginal and Torres Strait Islander Health Plan 2021-2031</li> <li>• action on digital health by the Australian Government, and through national digital health initiatives</li> <li>• the Australian Government's part in implementing National Health Reform Agreement (NHRA) – Long-term health reforms roadmap.</li> </ul>

# Appendix B: Programs

Program	Program details		Evaluation	Evaluation details		Findings
Integrated Team Care (ITC)	Location(s)	Australia	Nama Jalu 2023	Location(s)	Hunter New England and Central Coast	<p>The evaluation highlighted the importance of the program and its positive outcomes:</p> <ul style="list-style-type: none"> <li>The program delivery largely aligns with program guidelines.</li> <li>The self-management aspect of program requires greater focus and resourcing.</li> <li>Clear communication, strong relationships and passionate staff are key enablers for program delivery.</li> <li>Barriers to delivery include systemic and local-level funding and resourcing issues.</li> <li>Clients reported increased health outcomes and engagement with the health system.</li> <li>Mixed success was noted in supporting clients towards self-management of health conditions.</li> <li>More work is needed to improve the capacity of mainstream primary care providers to deliver culturally appropriate care.</li> <li>The program was especially effective for clients with diabetes and multiple chronic conditions (Nama Jalu Consulting 2023).</li> </ul>
	Participants	First Nations people with a Chronic condition		Participants	Hunter New England and Central Coast Primary Health Network's ITC program Participants	
	Duration	2014 – present		Duration	2022	
	Indigenous specific	Yes		Indigenous specific	Yes	
	Focus	Chronic condition management		Focus	Assessing program implementation, overall performance and identifying future opportunities to improve program delivery	

(continued)

**Table B1: Description of programs, associated evaluations and outcomes**

Program	Program details			Evaluation	Evaluation details			Findings
Aunty Jean's Program	Location(s)	Illawarra region, NSW	Curtis et al. 2004	Location(s)	Central Coast, NSW	The evaluation showed that: <ul style="list-style-type: none"> <li>participants' understanding of their medical conditions and medications improved through culturally appropriate information sessions</li> <li>self-awareness and recognition of early warning signs were exemplified by a participant who sought medical advice on early chest pain. He not only underwent triple bypass surgery, but also returned to the program to become one of its star performers</li> <li>improving the SEWB of participants is central to the program, but the evaluation does not cover this in detail.</li> </ul>		
	Participants	First Nations people		Participants	First Nations communities and Elders			
	Duration	2003 – present	Duration	2004				
	Indigenous specific	Yes	Indigenous specific	Yes				
	Focus	Improving health outcomes through community collaboration with Elders						
Work It Out	Location(s)	Queensland	Mills et al. 2017	Location(s)	Urban areas	The evaluation found the following: <ul style="list-style-type: none"> <li>The Work It Out Program is a culturally responsive chronic condition self management program.</li> <li>Participants of the program showed statistically significant improvements in their blood pressure, blood glucose levels and SEWB.</li> <li>Participants with poor SEWB benefited most from the social connectedness of the program, improving their motivation.</li> </ul>		
	Participants	First Nations adults		Participants	Urban First Nations people with or at risk of cardiovascular disease			
	Duration	n.p. – present	Duration	2017				
	Indigenous specific	Yes	Indigenous specific	Yes				
	Focus	Chronic condition management	Focus	Clinical outcomes				

*(continued)*



**Table B1: Description of programs, associated evaluations and outcomes**

Program	Program details		Evaluation	Evaluation details		Findings
AIMhi Stay Strong App	Location(s)	Australia	Dingwall et al. 2021 Nagel et al. 2022	Location(s)	Northern Territory	<p>Dingwall and colleagues (2021) found that:</p> <ul style="list-style-type: none"> <li>culturally responsive app-based health assessments and interventions were helpful in improving the wellbeing of First Nations people on dialysis</li> <li>both apps were found to reduce psychological distress and depressive symptoms in patients with moderate to severe symptoms of distress or depression</li> <li>findings indicate that the wellbeing of people on dialysis can be improved by talking to people about their wellbeing using a culturally adapted, locally relevant app.</li> </ul> <p>Nagel and colleagues (2022) found that:</p> <ul style="list-style-type: none"> <li>the goals set by participants centred around physical health, cultural connection and SEWB</li> <li>the app is suitable as a chronic condition self-management tool.</li> </ul>
	Participants	First Nations people		Participants	First Nations people with kidney failure	
	Duration	n.p – present		Duration	n.p.	
	Indigenous specific	Yes		Indigenous specific	Yes	
	Focus	Mental health client support	Focus	Outcomes		
Medical Outreach Indigenous Chronic Disease Program (MOICDP)	Location(s)	Australia	Health Policy Analysis (2022)	Location(s)	Australia	<p>Health Policy Analysis evaluated the MOICDP, along with 5 other outreach funding programs, to assess its appropriateness, efficiency and effectiveness. Some key findings were that:</p> <ul style="list-style-type: none"> <li>more than 85% of services in the MOICDP program were provided to First Nations people</li> <li>1.7% of outreach visits under the MOICDP were provided by mental health professionals and 0.5% by care/service coordinators</li> <li>local solutions are the preferred response to service gaps. Outreach should be implemented only when other options are not feasible.</li> </ul> <p>The evaluation could not assess health outcomes due to data limitations (Health Policy Analysis 2022).</p>
	Participants	First Nations people with chronic conditions		Participants	MOICDP	
	Duration	n.p – present		Duration	2022	
	Indigenous specific	Yes		Indigenous specific	Yes	
	Focus	Chronic condition management	Focus	Outcomes		



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## Abbreviations

ACCHO	Aboriginal community-controlled health organisation
ACCHS	Aboriginal community-controlled health service
AHMAC	Australian Health Ministers' Advisory Council
AIHW	Australian Institute of Health and Welfare
COPD	chronic obstructive pulmonary disease
CVD	cardiovascular disease
DAMA	discharge against medical advice
GP	general practitioner
HIV	human immunodeficiency virus
ITC	Integrated Team Care
MOICDP	Medical Outreach Indigenous Chronic Disease Program
NSPA	National Suicide Prevention Adviser
PHN	Primary Health Network
PTSD	post-traumatic stress disorder
SEWB	social and emotional wellbeing

## References

- Abed MA, Kloub MI and Moser DK (2014) 'Anxiety and adverse health outcomes among cardiac patients: a biobehavioral model', *Journal of Cardiovascular Nursing*, 29(4):354–363, accessed 14 August 2024. <https://pubmed.ncbi.nlm.nih.gov/23640451/>
- ABS (Australian Bureau of Statistics) (2019) *National Aboriginal and Torres Strait Islander Health Survey 2018–19*, ABS, Australian Government, accessed 14 August 2024. <https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/national-aboriginal-and-torres-strait-islander-health-survey/latest-release>
- (2023a) *Estimates of Aboriginal and Torres Strait Islander Australians*, ABS, Australian Government, accessed 4 September 2024. <https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/estimates-aboriginal-and-torres-strait-islander-australians/latest-release>
- (2023b) *National Study of Mental Health and Wellbeing 2020–2022*, ABS, Australian Government, accessed 3 October 2024. <https://www.abs.gov.au/statistics/health/mental-health/national-study-mental-health-and-wellbeing/2020-2022#data-downloads>
- ACSQHC (Australian Commission on Safety and Quality in Health Care) (2024) *Person-centred care*, ACSQHC website, accessed 4 September 2024. <https://www.safetyandquality.gov.au/our-work/partnering-consumers/person-centred-care>
- Adams RJ, Wilson DH, Taylor AW, Daly A, Tursan d'Espaignet E, Dal Grande E and Ruffin RE (2004) 'Psychological factors and asthma quality of life: a population based study', *Thorax*, 59(11):930–935, accessed 14 August 2024. doi:10.1136/thx.2003.010256.
- AHMAC (Australian Health Ministers' Advisory Council) (2016) *Cultural Respect Framework 2016–2026 for Aboriginal and Torres Strait Islander Health*, Australian Health Ministers' Advisory Council, accessed 13 August 2024. [https://nacchocommunique.com/wp-content/uploads/2016/12/cultural\\_respect\\_framework\\_1december2016\\_1.pdf](https://nacchocommunique.com/wp-content/uploads/2016/12/cultural_respect_framework_1december2016_1.pdf)
- AHMRC (Aboriginal Health and Medical Research Council of Australia) (2012) *Social and emotional wellbeing and chronic care: a rapid review*, The George Institute for Global Health, Barangaroo, New South Wales.
- AIHW (Australian Institute of Health and Welfare) (2015a) *Cardiovascular disease, diabetes and chronic kidney disease – Australian facts: Aboriginal and Torres Strait Islander people*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/indigenous-australians/cardiovascular-diabetes-chronic-kidney-indigenous/summary>
- (2015b) *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/indigenous-australians/indigenous-health-welfare-2015/contents/table-of-contents>
- (2016) *Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/burden-of-disease/illness-death-indigenous-australians/summary>
- (2020a) *Measure 1.17 Perceived health status – data findings*, AIHW, Australian Government, accessed 28 August 2024. <https://www.indigenoushpf.gov.au/measures/1-17-perceived-health-status>

- (2020b) *Measure 2.15 Tobacco use – data findings*, AIHW, Australian Government, accessed 28 August 2024. <https://www.indigenoushpf.gov.au/measures/2-15-tobacco-use>
- (2021) *Chronic condition multimorbidity*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/chronic-disease/chronic-condition-multimorbidity/contents/chronic-conditions-and-multimorbidity>
- (2022a) *Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/burden-of-disease/illness-death-indigenous-2018/summary>
- (2022b) *Cultural safety for Indigenous Australians: monitoring framework*, AIHW, Australian Government, accessed 10 January 2023. <https://www.aihw.gov.au/reports/indigenous-australians/cultural-safety-health-care-framework/contents/summary>
- (2022c) *Food security and Indigenous mental health*, AIHW, Australian Government, produced for the Indigenous Mental Health and Suicide Prevention Clearinghouse, catalogue number IMH 12, accessed 14 August 2024. <https://www.indigenoushmhspc.gov.au/publications/food-security>
- (2023a) *Measure 1.05 Cardiovascular disease – data findings*, AIHW, Australian Government, accessed 28 August 2024.
- (2023b) *Measure 2.16 Risky alcohol consumption – data findings*, AIHW, Australian Government, accessed 28 August 2024. <https://www.indigenoushpf.gov.au/measures/2-16-risky-alcohol-consumption>
- (2023c) *Measure 3.14 Access to services compared with need – data findings*, AIHW, Australian Government, accessed 15 August 2024. <https://www.indigenoushpf.gov.au/measures/3-14-access-to-services-compared-with-need>
- (2023d) *Physical health [data tables]*, AIHW, Australian Government, accessed 4 September 2024. <https://www.indigenoushmhspc.gov.au/topics/physical-health#keystatistics>
- (2023e) *Social and emotional wellbeing* [Excel data tables], Indigenous Mental Health and Suicide Prevention Clearinghouse website, AIHW, Australian Government.
- (2024a) *Aboriginal and Torres Strait Islander specific primary health care: results from the OSR and nKPI collections*, AIHW, Australian Government, accessed 15 August 2024. <https://www.aihw.gov.au/reports/indigenous-australians/indigenous-primary-health-care-results-osr-nkpi/contents/about>
- (2024b) *Chronic kidney disease*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/chronic-kidney-disease/overview>
- (2024c) *Chronic respiratory conditions*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/chronic-respiratory-conditions/overview>
- (2024d) 'Determinants of health for First Nations people', Australia's health 2024, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/australias-health/social-determinants-and-indigenous-health>
- (2024e) *Diabetes: Australian facts*, AIHW, Australian Government, accessed 09 August 2024. <https://www.aihw.gov.au/reports/diabetes/diabetes/contents/summary>
- (2024f) *First Nations people and the health system*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/australias-health/indigenous-australians-use-of-health-services>

— (2024g) *Health and wellbeing of First Nations people*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/australias-health/indigenous-health-and-wellbeing>

— (2024h) *Mental health services*, AIHW, Australian Government, accessed 3 October 2024. <https://www.aihw.gov.au/mental-health/topic-areas/psychosocial-disability-support>

— (2024i) *Modelling access to GPs relative to need in Australia: geographic variation among First Nations and non-Indigenous populations*, AIHW, Australian Government, accessed 14 August 2024.

— (2024j) *Multimorbidity*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/australias-health/multimorbidity>

— (2024k) *Physical health of people with mental illness*, AIHW, Australian Government, accessed 14 August 2024. <https://www.aihw.gov.au/reports/mental-health/physical-health-of-people-with-mental-illness>

AIHW and NIAA (National Indigenous Australians Agency) (2020) *Measure 3.05 Chronic disease management*, AIHW, Australian Government, accessed 22 August 2024. <https://www.indigenoushpf.gov.au/measures/3-05-chronic-disease-management>

— (2024) Measure 3.14 Access to services compared with need, Aboriginal and Torres Strait Islander Health Performance Framework website, AIHW, Australian Government, accessed 14 August 2024. <https://www.indigenoushpf.gov.au/measures/3-14-access-to-services-compared-with-need>  
ANZDATA (Australia and New Zealand Dialysis and Transplant Registry) (2022) ANZDATA 45th Annual Report 2022, ANZDATA, accessed 14 August 2024. <https://www.anzdata.org.au/report/anzdata-45th-annual-report-2022-data-to-2021/>

Artuso S, Cargo M, Brown A and Daniel M (2013) 'Factors influencing health care utilisation among Aboriginal cardiac patients in central Australia: a qualitative study', *BMC Health Services Research*, 13:83, accessed 14 August 2024. doi:10.1186/1472-6963-13-83.

Aspin C, Brown N, Jowsey T, Yen L and Leeder S (2012) 'Strategic approaches to enhanced health service delivery for Aboriginal and Torres Strait Islander people with chronic illness: a qualitative study', *BMC Health Services Research*, 12:143. doi:10.1186/1472-6963-12-143.

Atlantis E, Fahey P, Cochrane B and Smith S (2013) 'Bidirectional associations between clinically relevant depression or anxiety and COPD: a systematic review and meta-analysis', *Chest*, 144(3):766–777, accessed 14 August 2014. doi:10.1378/chest.12-1911. <https://pubmed.ncbi.nlm.nih.gov/23429910/>

Bădescu SV, Tătaru C, Kobylinska L, Georgescu EL, Zahiu DM, Zăgrean AM and Zăgrean L (2016) 'The association between diabetes mellitus and depression', *Journal of Medicine and Life*, 120–125, accessed 28 August 2024. <https://pubmed.ncbi.nlm.nih.gov/27453739/>

Ballantyne JC and Sullivan MD (2022) 'Is chronic pain a disease?', *The Journal of Pain* 23(10):1651–1665, doi:10.1016/j.jpain.2022.05.001, accessed 14 August 2024. <https://pubmed.ncbi.nlm.nih.gov/35577236/>

Bartlem KM, Bowman JA, Bailey JM, Freund M, Wye PM, Lecathelinais C, McElwaine KM, Campbell EM, Gillham KE and Wiggers JH (2015) 'Chronic disease health risk behaviours amongst people with a mental illness', *Australian & New Zealand Journal of Psychiatry*, 49(8):731–741, doi:10.1177/0004867415569798.

- Beatty Moody DL, Waldstein SR, Tobin JN, Cassells A, Schwartz JC and Brondolo E (2016) 'Lifetime racial/ethnic discrimination and ambulatory blood pressure: the moderating effect of age', *Health Psychology*, 35(4):333–342, doi:10.1037/hea0000270.
- Bekhuis E, Boschloo L, Rosmalen JG, Schoevers RA (2015) 'Differential associations of specific depressive and anxiety disorders with somatic symptoms', *J Psychosom Res*, 78(2):116–22, doi: 10.1016/j.jpsychores.2014.11.007.
- Berger M and Sarnyai Z (2015) "More than skin deep": stress neurobiology and mental health consequences of racial discrimination', *The International Journal on the Biology of Stress*, 18:1, doi:10.3109/10253890.2014.989204.
- Bremner JD, Campanella C, Khan Z, Shah M, Hammadah M, Wilmot K, Al Mheid I, Lima BB, Garcia EV, Nye J, Ward L, Kutner MH, Raggi P, Pearce BD, Shah AJ, Quyyumi AA and Vaccarino V (2018) 'Brain correlates of mental stress-induced myocardial ischemia', *Psychosomatic Medicine*, 80(6):515–525, doi:10.1097/PSY.0000000000000597.
- Brewer LC, Redmond N, Slusser JP, Scott CG, Chamberlain AM, Djousse L, Patten CA, Roger VL and Sims M (2018) 'Stress and Achievement of Cardiovascular Health Metrics: The American Heart Association Life's Simple 7 in Blacks of the Jackson Heart Study', *Journal of the American Heart Association*, 5;7(11):e008855. doi:10.1161/JAHA.118.008855.
- Briggs AM, Cross MJ, Hoy DG, Sánchez-Riera L, Blyth FM, Woolf AD and March L (2016) 'Musculoskeletal health conditions represent a global threat to healthy aging: a report for the 2015 World Health Organization World Report on Ageing and Health', *The Gerontologist*, S243–S255, doi:10.1093/geront/gnw002.
- Carman W, Ishida M, Trounson JS, Mercer SW, Anindya K, Sum G, Armstrong G, Oldenburg B, McPake B and Lee JT (2022) 'Epidemiology of physical-mental multimorbidity and its impact among Aboriginal and Torres Strait Islander in Australia: a cross-sectional analysis of a nationally representative sample', *BMJ Open*, 12:e054999, doi:10.1136/bmjopen-2021-054999.
- CBPATISIP (Centre for Best Practice in Aboriginal and Torres Strait Islander Suicide Prevention) (2024) *Best Practice Programs and Services*, accessed 14 August 2024. <https://cbpatsisp.com.au/clearing-house/best-practice-programs-and-services/>
- Chadban S, McDonald S, Excell L, Livingstone B and Shtangey V (2005) *Twenty Eighth Report: Australia and New Zealand Dialysis and Transplant Registry*, Department of Health and Ageing with Kidney Health Australia and New Zealand Ministry of Health, ANZDATA Registry.
- Chaddha A, Robinson EA, Kline-Rogers E, Alexandris-Souphis T and Rubenfire M (2016) 'Mental health and cardiovascular disease', *American Journal of Medicine*, 129(11):1145–1148, doi:10.1016/j.amjmed.2016.05.018.
- Chen CM, Lee IC, Su YY, Mullan J and Chiu HC (2017) 'The longitudinal relationship between mental health disorders and chronic disease for older adults: a population-based study', *International Journal of Geriatric Psychiatry*, 32(9):1017–1026. doi:10.1002/gps.4561.
- Clapham K, Winch S, Senior K, Grootemaat P, Neal N, Marshall V and Manning C (2016) *Aboriginal chronic disease care pathways: summary report*, Centre for Health Service Development, Australian Health Services Research Institute, University of Wollongong, accessed 14 August 2024. [https://www.islhd.health.nsw.gov.au/sites/default/files/Health%20Plans/ACDCP\\_Summary\\_Report\\_December2016.pdf](https://www.islhd.health.nsw.gov.au/sites/default/files/Health%20Plans/ACDCP_Summary_Report_December2016.pdf)

COAG (Council of Australian Governments) Health Council (2017) *The Fifth National Mental Health and Suicide Prevention Plan*, COAG, accessed 4 September 2024. [https://www.mentalhealthcommission.gov.au/monitoring-and-reporting/fifth-plan/5th-national-mental-health-and-suicide-prevention#:~:text=The%20Fifth%20National%20Mental%20Health%20and%20Suicide%20Prevention%20Plan%20\(Fifth,and%20suicide%20prevention%20related%20services](https://www.mentalhealthcommission.gov.au/monitoring-and-reporting/fifth-plan/5th-national-mental-health-and-suicide-prevention#:~:text=The%20Fifth%20National%20Mental%20Health%20and%20Suicide%20Prevention%20Plan%20(Fifth,and%20suicide%20prevention%20related%20services)

— (2019) *National Strategic Framework for Chronic Conditions*, COAG, Australian governments, accessed 4 September 2024. <https://www.health.gov.au/resources/publications/national-strategic-framework-for-chronic-conditions?language=en>

Commonwealth of Australia (2020) *National Agreement on Closing the Gap*, Australian governments, accessed 14 August 2024. <https://www.closingthegap.gov.au/national-agreement/national-agreement-closing-the-gap>

Conway J, Lawn S, Crail S and McDonald S (2018) 'Indigenous patient experiences of returning to country: a qualitative evaluation on the Country Health SA Dialysis bus', *BMC Health Services Research*, 18:1010, doi:10.1186/s12913-018-3849-4.

Cooper DC, Trivedi RB, Nelson KM, Reiber GE, Beaver KA, Eugenio EC and Fan VS (2014) 'Post-traumatic stress disorder, race/ethnicity, and coronary artery disease among older patients with depression', *Journal of Racial and Ethnic Health Disparities*, 1:163–170, accessed 14 August 2024. <https://psycnet.apa.org/record/2016-38534-005>

CRC for Aboriginal Health Project (n.d.) *Chronic illness care for Indigenous Australians: implications for policy from the ABCD Project Chronic Illness Care for Indigenous Australians* (health.qld.gov.au) [policy brief], accessed 29 May 2024. [https://www.health.qld.gov.au/\\_data/assets/pdf\\_file/0025/369034/chcillcare.pdf](https://www.health.qld.gov.au/_data/assets/pdf_file/0025/369034/chcillcare.pdf)

Curtis S, Pegg D and Curtis O (2004) *Aunty Jean's Good Health Team: listening to the voices of the elders to create an Aboriginal chronic and complex care program*. Wollongong, NSW: Illawarra Health.

Department of Health (2021a) *National Aboriginal and Torres Strait Islander Health Plan 2021–2031*, Department of Health and Aged Care, Australian Government, accessed 13 August 2024. <https://www.health.gov.au/resources/publications/national-aboriginal-and-torres-strait-islander-health-plan-2021-2031?language=en>

— (2021b) *National Preventive Health Strategy 2021–2030*, Department of Health, Australian Government, accessed 13 August 2024. <https://www.health.gov.au/resources/publications/national-preventive-health-strategy-2021-2030?language=en>

— (2022a) *Australia's Primary Health Care 10 Year Plan 2022–2032*, Department of Health and Aged Care, Australian Government, accessed 13 August 2024. <https://www.health.gov.au/resources/publications/australias-primary-health-care-10-year-plan-2022-2032?language=en>

— (2022b) *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2031*, Department of Health and Aged Care, Australian Government, accessed 13 August 2024. <https://www.health.gov.au/resources/publications/national-aboriginal-and-torres-strait-islander-health-workforce-strategic-framework-and-implementation-plan-2021-2031?language=en>

Department of Health and Aged Care (2021) *National Mental Health and Suicide Prevention Plan*, Department of Health and Aged Care, Australian Government, accessed 4 September 2024. <https://www.health.gov.au/resources/publications/the-australian-governments-national-mental-health-and-suicide-prevention-plan?language=en>



— (2023) *Medical Outreach Indigenous Chronic Diseases Program*, Department of Health and Aged Care, Australian Government, accessed 4 September 2024. <https://www.health.gov.au/our-work/medical-outreach-indigenous-chronic-diseases-program>

— (2024) *Integrated Team Care program*, Department of Health and Aged Care, Australian Government, accessed 4 September 2024. <https://www.health.gov.au/our-work/integrated-team-care-program>

Devitt J, Cass A, Cunningham J, Preece C, Anderson K and Snelling P (2008) 'Study protocol – improving access to kidney transplants (IMPAKT): a detailed account of a qualitative study investigating barriers to transplant for Australian Indigenous people with end-stage kidney disease', *BMC Health Services Research*, 8:31, doi:10.1186/1472-6963-8-31.

Dingwall KM, Puszka S, Sweet M and Nagel T (2015) "Like drawing into sand": acceptability, feasibility, and appropriateness of a new e-mental health resource for service providers working with Aboriginal and Torres Strait Islander people, *Australian Psychologist*, 50:60–69, doi:10.1111/ap.12100.

Dingwall KM, Sweet M, Cass A, Hughes JT, Kavanagh D, Howard K, Barzi F, Brown S, Sajiv C, Majoni SW and Nagel T (2021) 'Effectiveness of wellbeing intervention for chronic kidney disease (WICKD): results of a randomised controlled trial', *BMC Nephrology*, 22;1:136, doi:10.1186/s12882-021-02344-8.

Dudgeon P, Bray A, D'Costa B and Walker R (2017) 'Decolonising psychology: validating social and emotional wellbeing', *Australian Psychologist*, 52;4:316–325, <https://doi.org/10.1111/ap.12294>.

Dudgeon P, Bray A, Smallwood G, Walker R and Dalton T (2020) *Wellbeing and healing through connection and culture*, accessed 24 April 2024. <https://apo.org.au/node/308730>

Einsiedel LJ, Van Iersel E, Macnamara R, Spelman T, Heffernan M, Bray L, Morris H, Porter B and Davis A (2013) 'Self-discharge by adult Aboriginal patients at Alice Springs Hospital, Central Australia: insights from a prospective cohort study', *Australian Health Review*, 37;2:239–245, DOI:10.1071/AH11087

Entwistle P, Entwistle D and Stothers K (2011) *Wurli-Wurlinjang Diabetes Day Program: evaluation report*. Katherine, NT: Centre for Remote Health, Flinders University and Charles Darwin University.

Estevez J, Howard NJ, Craig JE and Brown A (2019) 'Working towards eye health equity for Indigenous Australians with diabetes', *International Journal of Environmental Research and Public Health*, 16(24):5060, doi:10.3390/ijerph16245060.

Firth J, Siddiqi N, Koyanagi AI, Siskind D, Rosenbaum S, Galletly C, Allan S, Caneo C, Carney R, Carvalho AF and Chatterton ML (2019) 'The Lancet Psychiatry Commission: a blueprint for protecting physical health in people with mental illness', *The Lancet Psychiatry*, 6;8:675–712, DOI:10.1016/S2215-0366(19)30132-4.

Gee G, Dudgeon P, Schultz C, Hart A and Kelly K (2014) 'Chapter 4: Aboriginal and Torres Strait Islander social and emotional wellbeing and mental health', in Dudgeon P, Milroy M and Walker R (eds) *Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice*, 2nd edn, Department of the Prime Minister and Cabinet, Australian Government.

Gibson O, Lisy K, Davy C, Aromataris E, Kite E, Lockwood C, Riitano D, McBride K and Brown A (2015) 'Enablers and barriers to the implementation of primary health care interventions for Indigenous people with chronic diseases: a systematic review', *BMC Implementation Science*, 10:71, doi:10.1186/s13012-015-0261-x.

- Gorham G, Cass A, Howard K and Evans K (2016) *Central Australia Renal Study: technical report update*, Menzies School of Health Research & Department of Health, accessed 14 August 2024. [https://www.menzies.edu.au/icms\\_docs/248898\\_Central\\_Australia\\_Renal\\_Study\\_Technical\\_Report\\_Update.pdf](https://www.menzies.edu.au/icms_docs/248898_Central_Australia_Renal_Study_Technical_Report_Update.pdf)
- Greenhalgh EM, Scollo MM and Winstanley MH (2024) *Tobacco in Australia: facts and issues*, Cancer Council Victoria, accessed 14 August 2024. <https://www.tobaccoinaustralia.org.au/>
- Hare MJL, Zhao Y, Guthridge S, Burgess P, Barr ELM, Ellis E, Butler D, Rosser A, Falhammar H and Maple-Brown LJ (2022) 'Prevalence and incidence of diabetes among Aboriginal people in remote communities of the Northern Territory, Australia: a retrospective, longitudinal data-linkage study', *BMJ Open*, 12:e059716. doi:10.1136/bmjopen-2021-059716.
- Harfield S, Purcell T, Schioldann E, Ward J, Pearson O and Azzopardi P (2024) 'Enablers and barriers to primary health care access for Indigenous adolescents: a systematic review and meta-aggregation of studies across Australia, Canada, New Zealand, and USA', *BMC Health Services Research*, 24:553, doi:10.1186/s12913-024-10796-5.
- Harris SB, Tompkins JW and TeHiwi B (2017) 'Call to action: a new path for improving diabetes care for Indigenous peoples, a global review', *Diabetes Research and Clinical Practice*, 123:120–133, doi:10.1016/j.diabres.2016.11.022.
- Health Policy Analysis (2022) *Evaluation of outreach programs*, Health Policy Analysis and Department of Health and Aged Care, Australian Government, accessed 13 August 2024. <https://www.health.gov.au/resources/publications/evaluation-of-outreach-programs-report?language=en>
- IUIH (Institute for Urban Indigenous Health) (2024) *Work it Out*, IUIH, accessed 23 October 2024.
- Javed Z, Maqsood MH, Yahya T, Amin Z, Acquah I, Valero-Elizondo J, Andrieni J, Dubey P, Jackson RK, Daffin MA, Cainzos-Achirica M, Hyder AA and Nasir K (2022) 'Race, racism, and cardiovascular health: applying a Social Determinants of Health Framework to racial/ethnic disparities in cardiovascular disease', *Circulation: Cardiovascular Quality and Outcomes*, 15(1):e007917, doi:10.1161/CIRCOUTCOMES.121.007917.
- Jennings W, Egert S, Fisher C, Renouf S, Bryce V, Grugan S, Wang W and Askew D (2023) 'Better cardiac care – the patient experience – a qualitative study', *International Journal for Equity in Health*, 22(1):122. doi:10.1186/s12939-023-01931-5.
- JSA (Jobs and Skills Australia) (2023) *Skills shortages analysis*, Australian Government, accessed 4 October 2024. <https://www.jobsandskills.gov.au/data/occupation-shortages-analysis#keyfindings>
- Keramat SA, Perales F, Alam K, Rashid R, Haque R, Monasi N, Hashmi R, Siddika F, Siddiqui ZH, Ali MA, Gebremariam ND and Kondalsamy-Chennakesavan S (2024) 'Multimorbidity and health-related quality of life amongst Indigenous Australians: A longitudinal analysis', *Quality of Life Research*, 33(1):195-206, doi: 10.1007/s11136-023-03500-3.
- Khanal N, Lawton PD, Cass A and McDonald SP (2018) 'Disparity of access to kidney transplantation by Indigenous and non-Indigenous Australians', *Medical Journal of Australia*, 209:261–266, doi: 10.5694/mja18.00304.
- Lawrence D, Hancock KJ and Kisely S (2013) 'The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population-based registers', *British Medical Journal*, 21:346.

- Lean M, Fornells-Ambrojo M, Milton A, Lloyd-Evans B, Harrison-Stewart B, Yesufu-Udechuku A, Kendall T and Johnson S (2019) 'Self-management interventions for people with severe mental illness: systematic review and meta-analysis', *The British Journal of Psychiatry* 214(5):260–268, doi:10.1192/bjp.2019.54.
- Lee KS, Harrison K, Mills K and Conigrave KM (2014) 'Needs of Aboriginal Australian women with comorbid mental and alcohol and other drug use disorders', *Drug & Alcohol Review* 33:473–481.
- Lehman BJ, Taylor SE, Kiefe CI and Seeman TE (2009) 'Relationship of early life stress and psychological functioning to blood pressure in the CARDIA Study', *Health Psychology*, 28(3):338–346, doi:10.1037/a0013785.
- Lett HS, Blumenthal JA, Babyak MA, Catellier DJ, Carney RM, Berkman LF, Burg MM, Mitchell P, Jaffe AS and Schneiderman N (2007) 'Social support and prognosis in patients at increased psychosocial risk recovering from myocardial infarction', *Health Psychology*, 26(4):418–427, doi:10.1037/0278-6133.26.4.418.
- Leyro TM, Versella M, Yang M, Brinkman HR, Hoyt DL and Lehrer P (2021) 'Respiratory therapy for the treatment of anxiety: meta-analytic review and regression', *Clinical Psychology Review*, 84:101980, doi:10.1016/j.cpr.2021.101980.
- Li J and Brar A (2022) 'The use and impact of digital technologies for and on the mental health and wellbeing of Indigenous people: a systematic review of empirical studies', *Computers in Human Behavior* 126(C):106988, doi.org/10.1016/j.chb.2021.106988.
- Lichtman JH, Bigger JT, Blumenthal JA, Frasure-Smith N, Kaufmann PG, Lespérance F, Mark DB, Sheps DS, Barr Taylor C and Froelicher ES (2008) 'Depression and coronary heart disease: recommendations for screening, referral, and treatment: a science advisory from the American Heart Association Prevention Committee of the Council on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Epidemiology and Prevention, and Interdisciplinary Council on Quality of Care and Outcomes Research', endorsed by the American Psychiatric Association, *Circulation*, doi:10.1161/CIRCULATIONAHA.108.190769.
- Lin IB, Bunzli S, Mak DB, Green C, Goucke R, Coffin J and O'Sullivan PB (2017) 'Unmet needs of Aboriginal Australians with musculoskeletal pain: a mixed-method systematic review', *Arthritis Care and Research*, 70(9):1335–1347, doi:10.1002/acr.23493.
- Lin IB, O'Sullivan PB, Coffin JA, Mak DB, Toussaint S and Straker L (2012) "'I am absolutely shattered": the impact of chronic low back pain on Australian Aboriginal people', *European Journal of Pain*, 16(9):1331–1341, doi:10.1002/j.1532-2149.2012.00128.x.
- Lin IB, O'Sullivan PB, Coffin JA, Mak DB, Toussaint S and Straker LM (2013) 'Disabling chronic low back pain as an iatrogenic disorder: a qualitative study in Aboriginal Australians', *BMJ Open*, 3:e002654, doi:10.1136/bmjopen-2013-002654.
- Lin IB, O'Sullivan PB, Coffin JA, Mak DB, Toussaint S and Straker L (2014) "'I can sit and talk to her": Aboriginal people, chronic low back pain and healthcare practitioner communication', *Australian Family Physician*, 43(5):320–324, accessed 14 August 2024. <https://www.racgp.org.au/afp/2014/may/i-can-sit-and-talk-to-her>
- Majoni SW, Dole K, Hughes JT and Pain C (2021) 'Review of current pathways to wait-listing for kidney transplantation for Aboriginal and Torres Strait Islander peoples with end-stage kidney disease in the Top End of Northern Australia', *Australian Health Review*, 45(2):185–193, doi.org/10.1071/AH20011.

Mani A, Mullainathan S, Shafir E and Zhao J (2013) 'Poverty impedes cognitive function', *Science*, 341:976–980, doi:10.1126/science.1238041.

McNamara BJ, Banks E, Gubhaju L, Joshy G, Williamson A, Raphael B and Eades S (2018) 'Factors relating to high psychological distress in Indigenous Australians and their contribution to Indigenous–non-Indigenous disparities', *Australian and New Zealand Journal of Public Health*, 42:145–152, doi:10.1111/1753-6405.12766.

Menzies School of Public Health Research (n.d.) *AIMhi NT – Aboriginal and Islander Mental Health Initiative*, Menzies School of Health Research, accessed 5 September 2024. [https://www.menzies.edu.au/page/Research/Projects/Mental\\_Health\\_and\\_wellbeing/AIMhi\\_NT\\_-\\_Australian\\_Integrated\\_Mental\\_Health\\_Initiative/](https://www.menzies.edu.au/page/Research/Projects/Mental_Health_and_wellbeing/AIMhi_NT_-_Australian_Integrated_Mental_Health_Initiative/)

Mills K, Gatton ML, Mahoney R and Nelson A (2017) 'Work it out': evaluation of a chronic condition self-management program for urban Aboriginal and Torres Strait Islander people, with or at risk of cardiovascular disease', *BMC Health Serv Res*, 17(1):680. doi: 10.1186/s12913-017-2631-3.

Milroy H, Dudgeon P and Walker R (2014) 'Community Life and Development Programs – pathways to healing', in Dudgeon P, Milroy M and Walker R (eds) *Working together: Aboriginal and Torres Strait Islander Mental Health and Wellbeing Principles and Practice*, revised edn, Department of the Prime Minister and Cabinet, Australian Government.

Nagel T, Dingwall KM, Sweet M, Kavanagh D, Majoni SW, Sajiv C and Cass A (2022) 'The stay strong app as a self-management tool for first nations people with chronic kidney disease: a qualitative study', *BMC Nephrology*, 23(1):244. doi:10.1186/s12882-022-02856-x.

Nama Jalu Consulting (2023) *Evaluation of the Integrated Team Care program*, Nama Jalu Consulting, Hunter New England and Central Coast Primary Health Network, accessed 24 September 2024. <https://hneccphn.imgix.net/assets/src/uploads/images/PHN1117.-ITC-Evaluation-Report-v3.pdf>

Nanayakkara N, Pease A, Ranasinha S, Wischer N, Andrikopoulos S, Speight J, de Courten B and Zoungas S (2018) 'Depression and diabetes distress in adults with type 2 diabetes: results from the Australian National Diabetes Audit (ANDA) 2016', *Scientific Reports*, 8(1):7846, doi:10.1038/s41598-018-26138-5.

NHMRC (National Health and Medical Research Council) (2020) *Australian Guidelines to Reduce Health Risks from Drinking Alcohol*, (ed. Department of Health), Department of Health: NHMRC.

NIAA (National Indigenous Australians Agency) (2024) *Measure 3.06 Access to hospital procedures – research and evaluation findings*, AIHW, Australian Government, accessed 13 August 2024. <https://www.indigenoushpf.gov.au/measures/3-06-access-to-hospital-procedures>

Panza GA, Puhl RM, Taylor BA, Zaleski AL, Livingston J and Pescatello LS (2019) 'Links between discrimination and cardiovascular health among socially stigmatized groups: a systematic review', *PLoS ONE*, 14(6):e0217623, doi:10.1371/journal.pone.0217623.

Paradies YC and Cunningham J (2012) 'The DRUID study: racism and self-assessed health status in an indigenous population', *BMC Public Health*, 12:131, doi:10.1186/1471-2458-12-131.

Paradies YC, Ben J, Denson N, Elias A, Priest N, Pieterse A, Gupta A, Kelaher M and Gee G (2015) 'Racism as a determinant of health: a systematic review and meta-analysis', *PLoS ONE*, 10(9), doi:10.1371/journal.pone.0138511.

Parmenter J, Basit T, Nelson A, Crawford E and Kitter B (2018) 'Chronic disease self-management programs for Aboriginal and Torres Strait Islander people: factors influencing participation in an urban setting', *Health Promotion Journal Australia*, 104–111, doi:10.1002/hpja.256.

Phyomaung PP, Dubowitz J, Cicuttini FM, Fernando S, Wluka AE, Raaijmakers P, Wang Y and Urquhart DM (2014) 'Are depression, anxiety and poor mental health risk factors for knee pain? A systematic review', *BMC Musculoskeletal Disorders*, 15:10, doi:10.1186/1471-2474-15-10.

PM&C (Department of the Prime Minister and Cabinet) (2017) *National strategic framework for Aboriginal and Torres Strait Islander peoples' mental health and social and emotional wellbeing 2017–2023*, PM&C, Australian Government, accessed 13 August 2024. <https://www.niaa.gov.au/resource-centre/national-strategic-framework-aboriginal-and-torres-strait-islander-peoples-mental>

RACGP (Royal Australian College of General Practitioners) (2019) 'Part A. Pain', in *RACGP Aged Care Clinical Guide* (Silver Book) (5th edn), accessed 3 October 2024. <https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/silver-book/part-a/pain>

— (2023) *General practice: health of the nation 2023*, RACGP, accessed 01 February 2024. <https://www.racgp.org.au/getmedia/122d4119-a779-41c0-bc67-a8914be52561/Health-of-the-Nation-2023.pdf.aspx>

Randall DA, Lujic S, Havard A, Eades SJ and Jorm L (2018) 'Multimorbidity among Aboriginal people in New South Wales contributes significantly to their higher mortality', *Medical Journal Australia*, 209(1):19–23, doi:10.5694/mja17.00878.

RANZCP (Royal Australian and New Zealand College of Psychiatrists) (2015) *Keeping body and mind together: improving the physical health and life expectancy of people with serious mental illness*, RANZCP, accessed 18 September 2023. <https://www.ranzcp.org/clinical-guidelines-publications/clinical-guidelines-publications-library/keeping-body-and-mind-together>

Rix EF, Barclay L, Stirling J, Tong A and Wilson S (2015) 'The perspectives of Aboriginal patients and their health care providers on improving the quality of haemodialysis services: a qualitative study', *Haemodialysis International: International Symposium on Home Haemodialysis*, 19:80–89, doi: 10.1111/hdi.12201

Rodrigues BT, Vangaveti VN and Malabu UH (2016) 'Prevalence and risk factors for diabetic lower limb amputation: a clinic-based case control study', *Journal of Diabetes Research*, 2016:5941957, doi:10.1155/2016/5941957.

SA (South Australia) Health (2024) *Aboriginal and Torres Strait Islander patients and families using CNARTS*, SA Health.

Salduker S, Allers E, Bechan S, Hodgson RE, Meyer F, Meyer H, Smuts J, Vuong E and Webb D (2019) 'Practical approach to a patient with chronic pain of uncertain etiology in primary care', *Journal of Pain Research* 3:2651–2662, doi:10.2147/JPR.S205570.

Salmon M, Doery K, Dance P, Chapman J, Gilbert R, Williams R and Lovett R (2019) *Defining the indefinable: descriptors of Aboriginal and Torres Strait Islander peoples' cultures and their links to health and wellbeing*, Lowitja Institute, Collingwood, Victoria, accessed 14 August 2024. [https://www.lowitja.org.au/wp-content/uploads/2023/05/Defining\\_Indefinable\\_report\\_FINAL\\_WEB.pdf](https://www.lowitja.org.au/wp-content/uploads/2023/05/Defining_Indefinable_report_FINAL_WEB.pdf)

SANE (2023) *Chronic kidney disease & mental health*, SANE, accessed 5 September 2024. <https://www.sane.org/information-and-resources/facts-and-guides/chronic-kidney-disease-and-mental-health#ckd-and-mental-health>

Sara G, Chen W, Large M, Ramanuj P, Curtis J, McMillan F, Mulder CL, Currow D and Burgess P (2021) 'Potentially preventable hospitalisations for physical health conditions in community mental health service users: a population-wide linkage study', *Epidemiology and Psychiatric Sciences*, 30:22, doi: 10.1017/S204579602100007X

Scholes-Robertson N, Howell M, Carter SA, Manera KE, Viecelli AK, Au E, Chong C, Matus-Gonzalez A, van Zwieten A, Reidlinger D, Wright C, Owen K, Craig JC and Tong A (2022) 'Perspectives of a proposed patient navigator programme for people with chronic kidney disease in rural communities: report from national workshops', *Nephrology (Carlton)*, 27(11):886–896, doi:10.1111/nep.14105.

Scott KM, Lim C, Al-Hamzawi A, Alonso J, Bruffaerts R, Caldas-de-Almeida JM, Florescu S, De Girolamo G, Hu C, De Jonge P and Kawakami N (2016) 'Association of mental disorders with subsequent chronic physical conditions: world mental health surveys from 17 countries', *JAMA Psychiatry*, 73(2):150–158.

Shahunja KM, Ushula TW, Hussain MA, Pati S and Mamun AA (2024) 'Multimorbidity among the Indigenous population: a systematic review and meta-analysis', *Annals of Epidemiology*, 98:8–17, doi:10.1016/j.annepidem.2024.07.047.

Street TD, Somoray K, Richards GC and Lacey SJ (2019) 'Continuity of care for patients with chronic conditions from rural or remote Australia: a systematic review', *Australian Journal of Rural Health*, 196–202, doi:10.1111/ajr.12511.

Strong J, Nielsen M, Williams M, Huggins J and Sussex R (2015) 'Quiet about pain: experiences of Aboriginal people in two rural communities', *Australian Journal of Rural Health*, 23(3):181–184, doi:10.1111/ajr.12185.

Thomas S, Zhao Y, Guthridge SL and Wakerman J (2014) 'The cost-effectiveness of primary care for Indigenous Australians with diabetes living in remote Northern Territory communities', *Medical Journal of Australia* 200:658–662, doi: 10.5694/mja13.11316

Truong M and Moore E (2023) *Racism and Indigenous wellbeing, mental health and suicide*, produced for the Indigenous Mental Health and Suicide Prevention Clearinghouse, catalogue number IMH 17, AIHW, Australian Government.

UNE (University of New England) (2020) *Home-grown Indigenous healthcare – the Purple House* [website], UNE, accessed 14 August 2024. <https://www.une.edu.au/connect/news/2020/03/home-grown-indigenous-healthcare-the-purple-house>

WDNWPT (Western Desert Nganampa Walytja Palyantjaku Tjutaku Aboriginal Corporation) (n.d) *Our story*, accessed 5 September 2024. <https://www.purplehouse.org.au/our-story>

Zhao Y, Thomas S, Guthridge SL and Wakerman J (2014) 'Better health outcomes at lower costs: the benefits of primary care utilisation for chronic disease management in remote Indigenous communities in Australia's Northern Territory', *BMC Health Services Research* 14:463.

Zubrick S, Shepherd C, Dudgeon P, Gee G, Paradies Y, Scrine C and Walker R (2014) 'Social determinants of social and emotional wellbeing' in Dudgeon P, Milroy M and Walker R (eds) *Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice*, revised edn, Department of the Prime Minister and Cabinet, Australian Government.

This paper examines the intersection of physical and mental health among First Nations people, focusing on chronic disease management and social and emotional wellbeing. It evaluates various culturally safe and community-driven health programs and policies, highlighting the importance of cultural connection, person-centred care, and overcoming barriers to improve health outcomes.



Stronger evidence,  
better decisions,  
improved health and welfare

