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Closing the Gap education, employment and housing targets: key findings and implications

HPF Feature article

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Summary

Improving the health and wellbeing of Aboriginal and Torres Strait Islander (First Nations) people requires addressing the underlying systemic inequalities in the social and cultural determinants of health. The 2020 National Agreement on Closing the Gap includes 17 socio-economic outcomes and targets which aim to address these issues (Australian Government 2020). Understanding how these systemic inequalities can be addressed requires high quality evidence on both the determinants of the socio-economic outcomes and on effective strategies at local and national levels.

This feature article draws on the evidence from a larger project (AIHW 2025) which looked at the factors associated with 14 of the 17 socio-economic outcomes in the National Agreement and strategies for their improvement. This article focuses on 5 targets traditionally considered to be social determinants of health, including: housing (Target 9a); youth engagement in employment, education or training (EET) (Target 7); year 12 completion (Target 5); participation in tertiary education (Target 6); and employment (Target 8).

The ABS 2021 Census of Population and Housing (2021 Census) provided the most recent data on the status and trends for each of the 5 targets and was also used to highlight variations by factors such as age, sex, remoteness, state/territory, and area-level socioeconomic status. However, the 2021 Census did not include data on a number of key social and cultural determinants found to be important in the literature review (such as the strength of cultural ties or the experience of racism). These variables are available in the 2018–19 National Aboriginal and Torres Strait Islander Health Survey (2018–19 NATSIHS), which was used in a series of primary data analyses on the association of these factors with the target measures.

Approach to the analyses

The in-depth literature reviews conducted as part of the larger project highlighted the importance of the following sets of factors across the 5 selected targets:

- demographic factors (such as age, sex, marital status)
- individual/household-level socioeconomic status indicators (such as educational attainment, employment status, income, housing)
- health status (such as perceived health, disability status)
- cultural factors and experiences of racism/discrimination (such as identification with tribal group or clan, removal from family, experiences of unfair treatment)
- geographic/area-level characteristics (such as remoteness, area-level socioeconomic status).

For each of the 5 targets, a conceptually based set of variables was selected from the 2018–19 NATSIHS within each of these categories (where applicable).

The interdependency between the targets was reflected in the statistical analyses. For example, crowded housing is a target (and a dependent variable), but it is also a potential determinant of the other 4 targets (engagement in employment, education or training, year 12 attainment, tertiary education, and employment).

Two sets of complementary statistical analyses were performed to examine the relationships between the variables and the target measure:

- multivariate logistic regression models, which estimate the level and direction of association of each individual factor and the target measure after controlling for the other variables in the model
- random forest models, which estimate the relative importance of each variable's association with the target measure (AIHW 2025; Breiman 2001).

It is important to note that the results of random forest analysis can vary from the outcomes of logistic regression analysis. Logistic regression models the effect of different categories of variables on the outcome at the individual level, while random forest analysis estimates the overall importance of these variables at the population level. This means that even if they have strong statistically significant associations with the outcome at the individual level in the logistic regression model, variables ranked as having low importance in the random forest model do not explain a large amount of variation in the outcome. In other words, changes in the factors identified as having high importance from the random forest approach could result in a larger change in the outcome than changes of the factors in other groups of the random forest analysis.

See Closing the Gap targets: key findings and implications (AIHW 2025) methodology section for detailed description of these approaches and full model specifications.

Key findings

Tables S.1 and S.2 present highlights from the logistic regression models and the random forest models, respectively.

The findings from both methods show the importance of the association of individual/household-level socioeconomic indicators with each of the target measures. For example, the regression results show that having a household income of $1,000 or more per week, compared with less than $300 per week, was associated with 0.4 times (60%) lower odds of living in crowded housing, and living in households with an income among the middle 4 and top 3 deciles was associated with 3.2 and 6.6 times higher odds of having completed tertiary education compared with living in households with an income in the bottom 3 deciles. Living in a house that was owned rather than rented was associated with 2.6 times higher odds of a young person being fully engaged in education, employment or training.

The random forest results show that household income and related financial status indicators are ranked among the most important factors for housing, engagement in employment, education or training, year 12 attainment and tertiary education.

Both the regression results and the random forest findings also show that the characteristics of the areas where people live matters. Living in *Major cities* was associated with 4.1 times higher odds of having completed year 12 or equivalent compared with living in *Very remote* areas, and living in areas of the least disadvantage (top 3 deciles of the SEIFA IRSD) was associated with 2.3 times higher odds of being employed compared with those in the bottom 3 deciles (noting that being employed may also affect the areas in which one is able to live).

In the random forest models, remoteness was identified as an important factor for the housing, year 12 attainment, and tertiary education targets, and strategies to improve these outcomes will need to address the considerable challenges faced by people living in the more remote communities. Area-level socioeconomic status was also an important factor for engagement in employment, education or training, year 12 attainment and tertiary education.

Table S.1: Findings from the logistic regression analyses – key findings by target

Target measure	Selected multivariate logistic regression findings
Crowded housing	Living in *Very remote* areas was associated with 4.0 times higher odds of living in crowded housing compared with living in *Major cities.*
	Having 3–4 dependants was associated with 2.7 times higher odds of living in crowded housing compared with having 2 or fewer dependants in the household. Having 5 or more dependants was associated with 8.9 times higher odds of living in crowded housing.
	Household income of $1,000 or more per week, compared with less than $300 per week, was associated with 0.4 times or 60% lower odds of living in crowded housing.
Youth engagement in employment, education or training (EET)	Living in *Major cities* was associated with 3.3 times higher odds of full engagement in EET compared with living in *Inner/Outer regional* areas.
	Being in the younger age group (15–17) was associated with 3.1 times higher odds of full engagement in EET compared with those aged 23–24.
	Living in a home that was owned outright or being purchased was associated with 2.6 times higher odds of full engagement in EET compared with those living in rental accommodation.
Year 12 or equivalent	Living in *Major cities* was associated with 4.1 times higher odds of having completed year 12 or equivalent compared with living in *Very remote* areas.
	Living in households that were not crowded was associated with 3.0 times higher odds of having completed year 12 or equivalent compared with living in crowded households.
	Identifying with a tribe, language group or clan was associated with 2.9 times higher odds of having completed year 12 or equivalent compared with not identifying.
Tertiary education	Living in households with an income among the middle 4 and top 3 deciles was associated with 3.2 and 6.6 times higher odds of having completed tertiary education compared with living in households with an income in the bottom 3 deciles.
	Living in less socioeconomically disadvantaged areas (top 6 deciles of the SEIFA IRSD) was associated with 2.5 times higher odds of having completed tertiary education compared with living in the most disadvantaged decile.
	Being able to raise $2,000 in an emergency was associated with 1.9 times higher odds of having completed tertiary education.
Employment	Having a Bachelor degree or above was associated with 3.0 times higher odds of being employed compared with those whose highest attainment was year 12.
	Not having a disability, limitation or restriction was associated with 2.9 times higher odds of being employed, compared with those with disability.
	Living in areas of the least disadvantage (top 3 deciles of the SEIFA IRSD) was associated with 2.3 times higher odds of being employed compared with those in the bottom 3 deciles.

Notes

1. The specific variables and age groups included in the analyses differ by target. Only results from the regressions using the 2018–19 NATSIHS are shown here. See AIHW (2025) for full model specifications and the results of both the logistic regressions and the random forest models.
2. The table shows selected results for statistically significant variables with the largest effect sizes (based on odds ratios). See Appendix table A.1 for an overview of the specific variables included in the models and the odds ratios for the statistically significant variables.

Source: AIHW analysis of 2018–19 NATSIHS (ABS 2019)

Table S.2: Findings from the random forest analyses by target measure: high importance variables

Target measure	Variables in the top 2 relative importance groups
Crowded housing	Age group
	Number of dependent children in household
	Household income
	Labour force status
	Remoteness
	State/territory
Youth engagement in employment, education or training (EET)	Age group
	Being a parent
	Household income
	Whether experienced financial stress
	Area-level socioeconomic index
Year 12 or equivalent	Crowded household
	House with structural problems
	Household income
	Main spoken language is English
	Remoteness
	Area-level socioeconomic index
	State/territory
Tertiary education	Household income
	Could raise $2000 in an emergency
	Remoteness
	Area-level socioeconomic index
	State/territory
Employment	Educational attainment
	Whether has disability

Notes

1. The specific variables and age groups included in the analyses differ by target. See AIHW (2025) for the full model specifications and the results of both the logistic regressions and the random forest models.
2. Numerical variable importance was obtained using random forest estimation techniquesin the R statistical package . Two methods were used. Method A was based on the bias-corrected Gini method of determining variable importance. Method B was based on the permutation method of determining variable importance (Nembrini et al. 2018; Wright and Ziegler 2017). Variables were grouped into importance categories based on the numeric values with clear distinctions between the groups.
3. Variables were included in Table S.2 if they were in the top 2 relative importance groups using either Method A or Method B.

Source: AIHW analysis of ABS 2018–19 NATSIHS.

Interaction between targets and strategies for improvement

The individual targets are strongly related to one another and are linked across the life course. They also highlight the importance of the cumulative impacts that experiences in early life may have on opportunities and outcomes later in life (life course perspective). People's experiences in childhood (including factors such as good health and social

development, positive relationships, preschool engagement, early schooling experiences, school attendance) have been shown to be associated with later educational attainment and employment. An accumulation of these protective factors will lead to more positive outcomes in the future, highlighting that strong foundations in childhood are essential.

Research has shown that school attendance and achievement in the early and middle school years is related to youth engagement in employment, education or training and year 12 attainment. The findings discussed in this article highlight that adult employment is related to educational attainment, particularly at the Certificate III and above level, and that living in crowded housing and unemployment were associated with each other. Living in housing that was not crowded and not having an educational disability were associated with completing year 12.

These interdependencies between the targets indicate that improvement in one target is likely to lead to improvements in others. For example, improving school completion of First Nations youth is likely to lead to further improvements in tertiary education attainment, which are linked to better employment and housing outcomes. Improved housing outcomes and higher levels of socioeconomic resources at both the individual and local area levels is then likely to affect school attendance and completion for the next generation.

Strategies aimed at increasing school attendance should take into consideration the broader social challenges in communities, and foster connections with First Nations peers, mentors and communities. These strategies may include:

- increasing recruitment and professional development of First Nations teachers
- applying culturally responsive teaching
- providing young people with opportunities to stay engaged with school education through vocational education and training programs
- supporting young people throughout their secondary schooling for successful post-school transition, particularly in remote areas.

It is also important to provide additional support for First Nations students with disability and other physical and mental health issues through holistic linked services between schools, community organisations and health care that are designed and led by and for First Nations people.

Institutional support has been identified as the most crucial contributor to the success of First Nations students in higher education (Milne et al. 2016; Usher et al. 2005; West et al. 2016). This support may include:

- acknowledging the value of First Nations people within the institution
- maintaining a respectful First Nations culture at the institution
- having supportive First Nations academics and mentors
- recognising the importance of family commitments and being flexible in enabling these to be met through the delivery of blended online courses.

Improved educational attainment is likely to contribute to better employment outcomes. However, improvement in employment also depends on improved health outcomes and increased support for First Nations people with disability. Investing in programs (such as the Indigenous Skills and Employment Program) that have been shown to be successful in connecting First Nations people with jobs, career advancement opportunities, and new training and job-ready activities could further contribute to the employment target.

Programs aimed at improving the housing target could focus on increasing the social housing dwellings available to First Nations people, with consideration given to cultural obligations, appropriate size for accommodating multi-family households and the observation of cultural practices (that is allowing for families and visitors to live comfortably together). The policy response to crowded housing in First Nations households will also need to consider the needs of First Nations people by remoteness:

- In urban areas, improving household income or providing targeted assistance to First Nations people can help improve access to existing housing stock.
- In regional and remote areas, additional housing stock is required.

Change in the upstream factors (policies/systemic factors) that help drive current inequalities is essential. In addition, improving the wellbeing of First Nations people requires taking into account the impact of historical and contemporary racism and the importance of culture and connections to country. Changes in policies and systemic factors need to be made in partnership with First Nations people (for example, designing housing that is culturally appropriate and designed for the environment), and it is essential that changes recognise the strengths of First Nations people and communities and build on First Nations perspectives.

1 Introduction

For Aboriginal and Torres Strait Islander (First Nations) people, good health is more than just the absence of disease or illness; it is a holistic concept that includes physical, social, emotional, cultural, spiritual and ecological wellbeing, for both the individual and the community (Dudgeon et al. 2014; Gee et al. 2014; Parker and Milroy 2014; Social Health Reference Group 2004; Verbunt et al. 2021; Williams and Ragg 2023).

Cultural identity and participation in cultural activities, access to traditional lands, connection to family and kinship, and self-determination are recognised as protective factors and can positively influence overall health and wellbeing (AIHW 2024a; Verbunt et al. 2021). Factors posing risks to good health include the long-term adverse effects of colonisation and its ongoing impact on matters such as self-determination, the disruption of ties to land, and direct and systemic racism (Osborne et al. 2013; Reading and Wien 2009; Selvarajah et al. 2022; Theodore et al. 2019).

Inequalities between First Nations people and non-Indigenous Australians in the social determinants of health (such as housing, education, employment, and income) and access to adequate health care and other goods and services, as well as the ongoing historical legacy of colonisation, helps to explain and contextualise variation in health-related indicators within the First Nations population, as well as the 'health gap' or disparities in health outcomes between First Nations people and non-Indigenous Australians (AIHW 2024a; AIHW 2024b).

While it is relatively straightforward to identify the associations between social and cultural determinants and health variables, understanding the pathways or mechanisms by which they affect health is much more complex. Figure 1.1 presents a conceptual framework illustrating these pathways (note that it is a 'point in time' picture).[1]

The framework shows that:

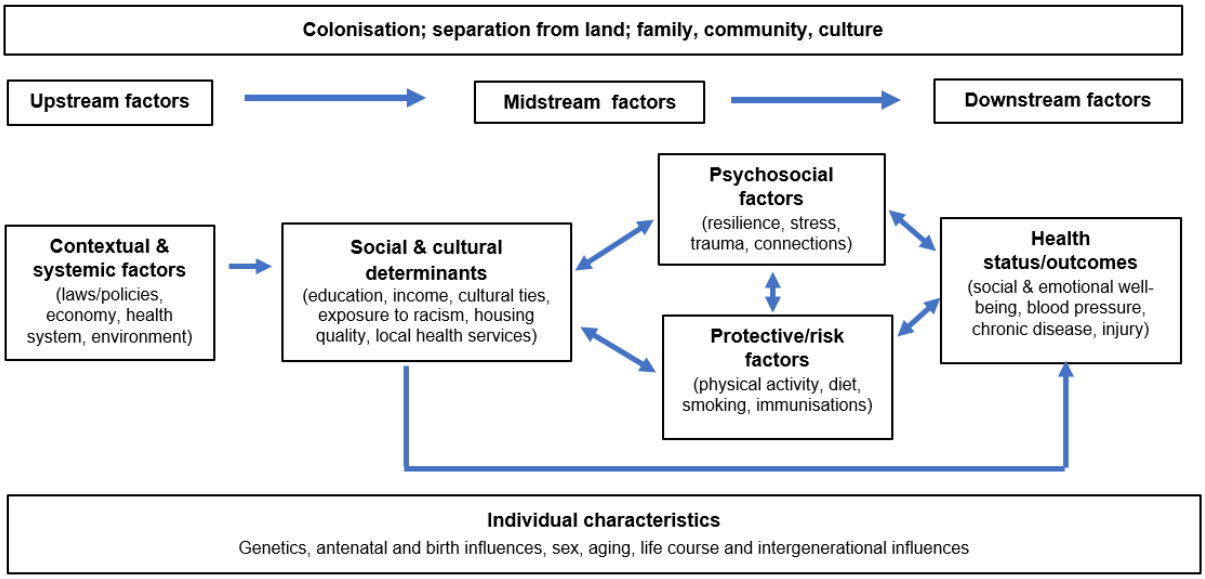
- The continuing adverse effects of colonisation including intergenerational trauma and disrupted ties to culture and families are felt across all the domains (top box).
- The social and cultural determinants (midstream factors) generally 'work through' a series of intervening variables (psychosocial factors and protective/risk factors) which then affect health (downstream factors).[2]
- Social and cultural determinants are the direct result of what are referred to as upstream systemic factors such as laws, government policies, and the broader social, health, environmental and economic context. Examples include local, national and international economic conditions; and cultural heritage laws which permitted damage and destruction of cultural sites (Australian Government 2022).
- The ways in which individuals experience the effects of social and cultural determinants depend upon individual characteristics, including age, gender, and genetic factors (bottom box). Health determinants can have different impacts at various life stages and can accumulate over the life course and across generations (Department of Health 2021; van Zwieten et al. 2024).

[1] See Appendix Figure A.1 for a more detailed version of the framework.

[2] There are certain instances where the social determinants do have a direct effect on health. For example, ongoing exposure to mould in a house may increase respiratory illnesses and worsen asthma. Unsafe working conditions can lead to injuries and exposure to toxins at work (such as asbestos) has physiological implications.

Although not displayed in the figure, there are also relationships between the variables within each box/domain (for example, education and housing are related).

Figure 1.1: Contextual framework: social and cultural determinants of health for First Nations people



Source: Adapted from AIHW (2024d); Osbourne et al. (2013); BARHII (2014); Lovett et al. (2020). Cultural domains from the Mayi Kuwayu Study conceptual model, Lovett et al. (2020). The examples within each domain are not an exhaustive list.

Note: See Appendix Figure A.1 for the detailed framework

The framework in Figure 1.1 can be used in 2 ways. First, it can be used to situate a determinant in context and then to look at the upstream factors that affect it, and how it influences more downstream factors. For example, the link between self-reported experiences of racism and poorer physical and mental health is well established (AHMAC 2017; NACCHO and the RACGP 2024), but it is important to note that contemporary racism is itself the outcome of numerous upstream factors from colonisation through to many ongoing racially discriminatory policies (Thurber et al. 2021).

Racism can lead to reduced access to the resources associated with positive health outcomes, such as education, employment, housing and medical care (see Health Performance Framework (HPF) measure 3.08 Cultural competency). Studies have also found a strong association between experiences of racism and ill health, psychological distress, mental health conditions and risk behaviours such as substance use (AHMAC 2017). Selvarajah and co-authors (2022:2110) explain that:

> Discrimination directly affects the body through activation of the stress response, resulting in short-term and long-term biological changes. Through mechanisms such as epigenetic changes, exposure to discrimination in one generation might propagate adverse health effects to the subsequent generation. The importance for health of biological responses to discrimination has been severely under-recognised, due to a tendency to assume that population differences in disease risk have a genetic basis.

The Mayi Kuwayu Study of Aboriginal and Torres Strait Islander Wellbeing included a number of questions about respondents' experiences of everyday racial discrimination, with 42% reporting no discrimination, 48% low discrimination, and 11% moderate–high discrimination (Thurber et al. 2021). Those who reported no discrimination experienced

better overall health, while the authors found statistically significant associations between experiences of everyday discrimination and poorer outcomes across several domains, including:

- culture and identity outcomes – feelings of a lack of control over life; feeling torn between cultures; feeling disconnected from culture; choosing not to identify as Aboriginal and/or Torres Strait Islander in the Census, or to study institutions, workplaces, Centrelink, or to real estate agencies
- social and emotional wellbeing outcomes – frequent experience of pain, low life satisfaction, low happiness, high or very high psychological distress, doctor-diagnosed anxiety, doctor-diagnosed depression
- health risk factors – smoking, gambling, alcohol dependence
- health outcomes – poor/fair general health, doctor-diagnosed heart disease, high cholesterol, high blood pressure, diabetes.

Using the 2018–19 NATSIHS data, AIHW (2024b) found that among adults who had experienced racial discrimination in the past 12 months, there was a strong preference for having an Aboriginal Medical Service/Community Clinic (AMS/CC) as the main source of primary care. However, nearly 24,000 adults who had experienced unfair treatment over the previous 12 months and who preferred an AMS/CC were not able to access one because there was none available in their local area.

The second way the framework can be used is to select a single outcome of interest and then look at how the full range of social and cultural determinants may affect that outcome. For example, there is a well-established literature showing how social and cultural determinants affect the likelihood of developing type 2 diabetes, a significant chronic disease that disproportionately affects First Nations people (see HPF measure 1.09 Diabetes).

Understanding the impact of these determinants led to the Northern Territory Government developing a series of resources for health professionals to present to community members (PowerPoint presentation, booklet, and a YouTube video) that explain these relationships in plain language and highlight the factors that could reduce these outcomes (NT Diabetes Network 2022). These included practical examples of how local governments/organisations could make communities healthier (which would decrease the risk of developing type 2 diabetes and improve the health of those with it), such as:

- promoting drinking water and providing healthy take-away food options in community stores
- providing opportunities for children and adults to be active every day
- running community or school gardens and cooking sessions
- improving housing availability and household facilities for safe food preparation and storage
- providing and promoting parklands and playgrounds for outdoor activities
- promoting cultural practices such as ceremonial dancing as a form of exercise, and access to traditional foods via hunting and gathering.

Other researchers/clinicians have explored how to incorporate an understanding of social and cultural determinants directly into the clinical management of First Nations patients with type 2 diabetes (Frier et al. 2021).

1.1 Impact of social determinants on health

From a policy perspective, it is important to examine the impact of specific social determinants on health and on the health gap between First Nations people and non-Indigenous Australians. Previous research has shown that there are a number of differences between First Nations people and non-Indigenous Australians in the social determinants of health, health risk factors and access to appropriate health services (AHMAC 2017; AIHW 2024a, AIHW 2024b).

These inequities can be used to identify particular areas where investments and programs can reduce the gaps, and to highlight determinants which would improve the health outcomes of all First Nations people.

Using a composite good health score made up of 3 components[3] (self-assessed health rating; number of long-term health conditions; a measure of emotional wellbeing based on the Kessler Psychological Distress scale), AIHW (2024a; AIHW 2024c) found that in 2017–19, just under 3 in 10 (29%) First Nations people aged 18–64 were considered to be in good health compared with more than 5 in 10 (52%) non-Indigenous Australians in this age group, resulting in an overall 'health gap' of 23 percentage points (pp) between the proportion of First Nations and non-Indigenous adults assessed to be in 'good health'.

After accounting for differences in average age, sex, marital status, remoteness and state/territory of residence between First Nations and non-Indigenous survey respondents, the adjusted health gap was slightly higher at 24 pp. This gap has fallen slightly, by 2.9 pp, from 27 pp, which was the adjusted health gap previously reported using the same composite good health score for 2011–13 data (AIHW 2018).

Further analysis looked at the relative contribution of two sets of variables to the gap, including social determinants (highest post school qualification, adequate sized housing, highest level of school completed, equivalised household income, employment status and hours worked) and health risk (high blood pressure, binge drinking status, physical exercise level, fruit and vegetable consumption, BMI category, and smoking status).

As shown in Figure 1.2, almost two-thirds (65%) of the heath gap was explained by the social determinants of health (35%) and the health risk factors (30%). An estimated 20% of the explained health gap was attributed to the overlap, or interactions, between the social determinants and health risk factors.

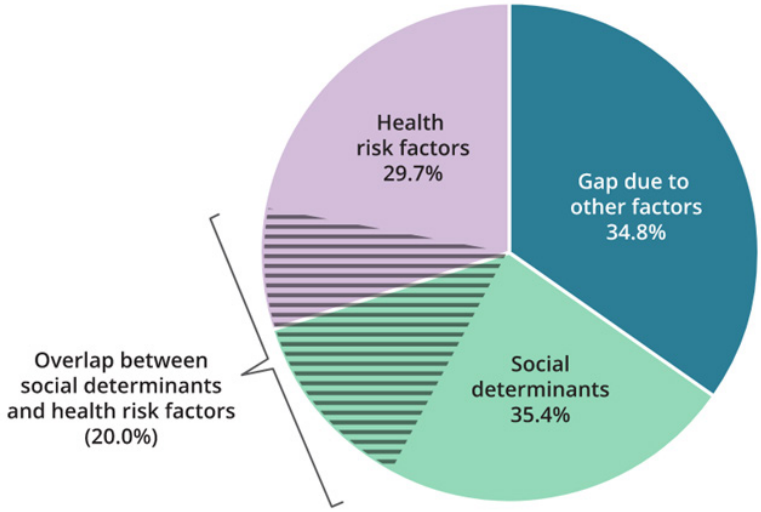
Of the 35% of health gap due to social determinants, the largest effects were due to differences in employment status and hours worked (contributing to 14% of the health gap), equivalised household income (13% of the health gap), and the highest level of school attainment (8.9% of the health gap). Of the 30% of the health gap due to risk factors, the largest effects were due to differences in current smoking rates (contributing 13% of the health gap) and overweight and obesity rates (11% of the health gap).

Together, household income (adjusted for household size and composition), employment status or number of hours worked, and smoking account for 40% of the total health gap. If First Nations adults were to have the same average equivalised household income, same average employment rate and hours worked, and same average smoking rate levels as non-Indigenous adults, the health gap would be reduced by more than a third – from 24 to around 14 percentage points.

[3] Using data from the 2018–19 NATSIHS (ABS 2019) and the 2017–18 National Health Survey (NHS) (ABS 2018).

This analysis did not explain about 35% of the health gap. The unexplained health gap includes possible effects from factors that might have contributed to good or poor health but were not available in the survey data analysed. For example, these factors could include access to affordable and culturally appropriate health care services, connection to country and language, and the effects of structural disadvantage and racism.[4]

Figure 1.2: Proportion of the adjusted health gap explained by differences in social determinants and health risk factors between First Nations people and non-Indigenous Australians aged 18–64, 2017–19



Note: Gap due to other factors refers to the component of the gap unexplained by differences in the factors included in this study. This reflects the fact that the available data do not provide a complete picture of the differences between the First Nations and non-Indigenous populations.

Source: AIHW analysis of ABS NATSIHS 2018–19 and ABS NHS 2017–18 (AIHW 2024a).

The analysis was only able to examine the relationships between health status and the social and health risk factors at one point in time (2017–19). Longitudinal or panel data (ideally linked with administrative data) are required to better understand these relationships.

1.2 Social and cultural determinants are at the heart of the Closing the Gap agenda

Reducing inequality in life experiences and outcomes for First Nations people through improvements in key social, structural and cultural determinants has been at the core of the Closing the Gap agenda since the first Council of Australian Governments (COAG) agreement in 2008 (COAG 2012).

In 2020, all Australian governments and Aboriginal and Torres Strait Islander Coalition of Peaks' representatives worked in partnership to develop the National Agreement on Closing the Gap (the National Agreement), the purpose of which is to overcome the entrenched inequality faced by many First Nations people so that their life outcomes are equal to all Australians (Australian Government 2020).

The National Agreement is built around 4 Priority Reforms which outline obligations for governments to work in partnership; share decision making; build the community-controlled

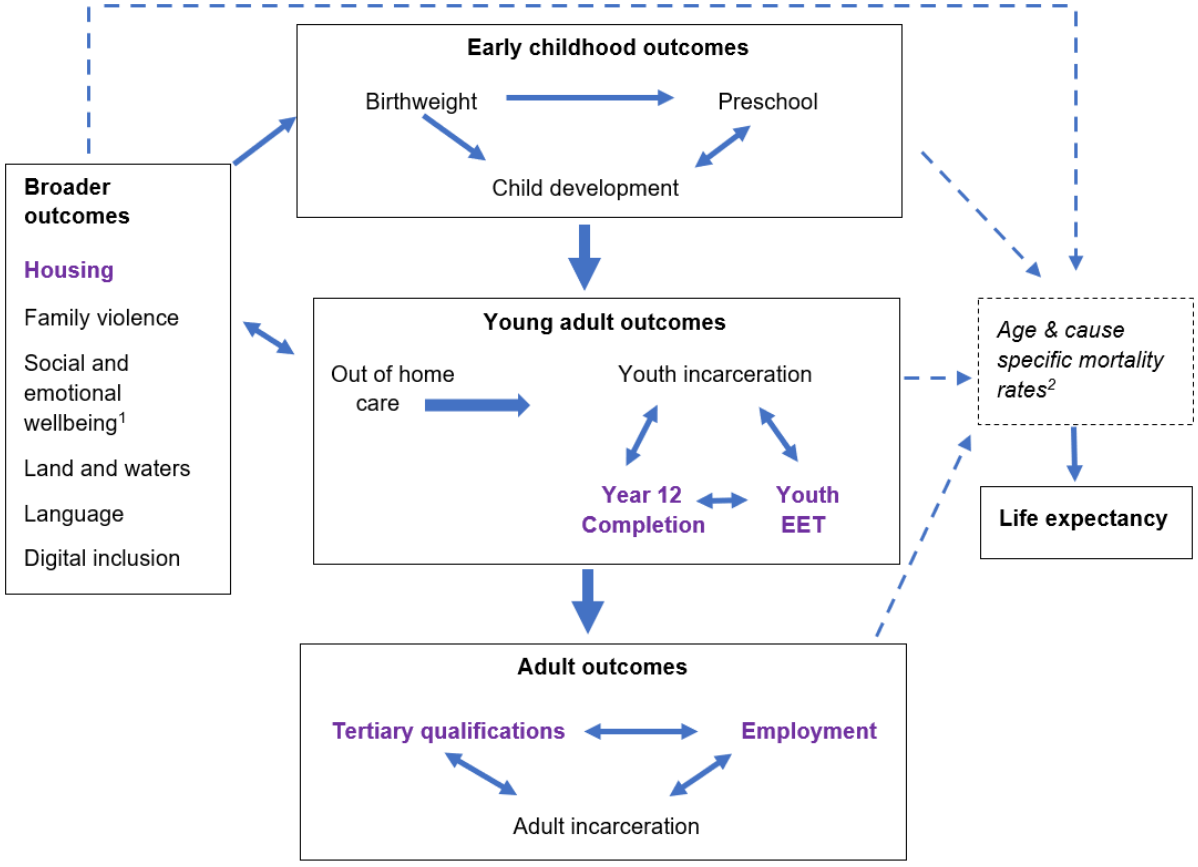
[4] Data on these aspects were available for First Nations people, but were not available for non-Indigenous Australians. Because the focus was on the 'health gap' these variables were not included in the models.

sector; transform government organisations; and provide shared access to regional level data (Australian Government 2020).

The National Agreement also includes 17 socio-economic outcomes across the life course which are supported by 19 targets. Some of the targets are age-specific, focused on key points in the life course (early childhood, adolescence/young adulthood, adulthood), while others apply to the whole population.[5]

The targets themselves are also highly related to one another (Figure 1.3). For example, over time, improving outcomes in the early childhood period would be expected to lead to improved outcomes for young adults, which in turn should lead to improved outcomes in adults and older people. Improvements in some of the broader outcomes (like housing) can have considerable effects across a wide range of outcomes.

Figure 1.3: Illustrative relationships between the socio-economic outcomes/targets in the 2020 National Agreement on Closing the Gap



[1] While the target associated with this outcome is related to suicide, we have included the broader outcome here because of its importance and relationship with the other outcome measures

[2] The socio-economic outcomes do not directly affect life expectancy, but work through age and cause-specific death rates. These relationships are reflected by the dotted arrows.

In 2022, the National Indigenous Australians Agency (NIAA) funded AIHW to produce analysis on the key factors associated with the targets for 14 of the 17 socio-economic outcomes in the National Agreement (Digital inclusion, First Nations languages and Land and

[5] The full list can be found in Appendix Table A.2.

sea rights were excluded due to the lack of readily available data to undertake this analysis). A final report bringing together the analysis on these 14 targets along with a synthesis of key factors was published in 2025 (AIHW 2025).

The report includes a chapter for each of the 14 targets. Each of the 14 chapters includes:

- an overview of the target's definition/specification and current status
- historical trend data on the target measures where possible, with disaggregation of current data by key factors such as remoteness and state/territory
- a literature review on the factors associated with the targets
- primary data analyses of these factors where feasible, including multivariate logistic regression modelling to identify risk and protective factors for the target and random forest data mining methods for ranking the importance of the variables.[6]
- examples of policies/strategies for improving the target.

Five of the targets relate specifically to three key social determinants (education, employment, and housing) (AIHW 2024a, AIHW 2025) (Table 1.1). Early childhood education is an additional target in the National Agreement and is relevant in the context of the current feature article. This target, however, together with the early childhood development target will be the focus of a future HPF feature article.

Table 1.1: Closing the Gap education, employment and housing outcomes and associated targets included in this article

Outcome	Target
5. Aboriginal and Torres Strait Islander students achieve their full learning potential	By 2031, increase the proportion of Aboriginal and Torres Strait Islander people (age 20–24) attaining year 12 or equivalent qualification to 96%.
6. Aboriginal and Torres Strait Islander students reach their full potential through further education pathways	By 2031, increase the proportion of Aboriginal and Torres Strait Islander people aged 25–34 who have completed a tertiary qualification (Certificate III and above) to 70%.
7. Aboriginal and Torres Strait Islander youth are engaged in employment or education	By 2031, increase the proportion of Aboriginal and Torres Strait Islander youth (15–24 years) who are in employment, education or training to 67%.
8. Strong economic participation and development of Aboriginal and Torres Strait Islander people and communities	By 2031, increase the proportion of Aboriginal and Torres Strait Islander people aged 25–64 who are employed to 62%.
9. Aboriginal and Torres Strait Islander people secure appropriate, affordable housing that is aligned with their priorities and need	A. By 2031, increase the proportion of Aboriginal and Torres Strait Islander people living in appropriately sized (not overcrowded) housing to 88%. B. By 2031, all Aboriginal and Torres Strait Islander households: - within discrete Aboriginal or Torres Strait Islander communities receive essential services that meet or exceed the relevant jurisdictional standard - in or near to a town receive essential services that meet or exceed the same standard as applies generally within the town (including if the household might be classified for other purposes as a part of a discrete settlement such as a 'town camp' or 'town based reserve').

Note: For Outcome 9, only target 9a is included in this article.

Source: Australian Government (2020)

While progress against each of the targets is measured individually, the targets are related to one another. It can also be difficult to disentangle cause from consequence, particularly as their impacts may be cumulative. For example, a child's housing situation when they are growing up may affect their educational attainment, which then may affect their employment

[6] Full details on the methodology are available in AIHW 2025.

(and income/financial security) as an adult, which then affects their ability to obtain safe, secure and appropriately sized housing (which may then affect their own child's educational attainment).

This feature article presents evidence on the factors associated with the target measures for these 5 socio-economic outcomes, with a focus on the role that social determinants play in improving outcomes and the inter-relationships between these targets (such as education and housing, education and employment). The findings are drawn from the larger AIHW project described above (AIHW 2025).

Analyses of the factors associated with the 5 target measures are drawn mainly from 2 data sources: the ABS 2021 Census of Population and Housing and the 2018–19 National Aboriginal and Torres Strait Islander Health Survey. Both are cross-sectional data collections which reflect a particular point in time.

The rest of the article is organised as follows:

- Chapter 2 highlights the key findings on each of the 5 targets individually. For each target it includes a discussion of its importance, current status, an overview of the factors that underpin it, and examples of supports to improve the target.
- Chapter 3 focuses on the themes that emerged across the 5 targets on the determinants of the targets and the opportunities for improving the targets.
- The Appendix contains supplementary material.

2 Factors associated with the education, employment and housing targets

For each of the 5 included targets, this chapter presents an overview of the target definition, why the indicator/outcome is important, its current status, the key factors associated with the target and then some examples of opportunities for additional supports, programs, or policy changes for improving the target.

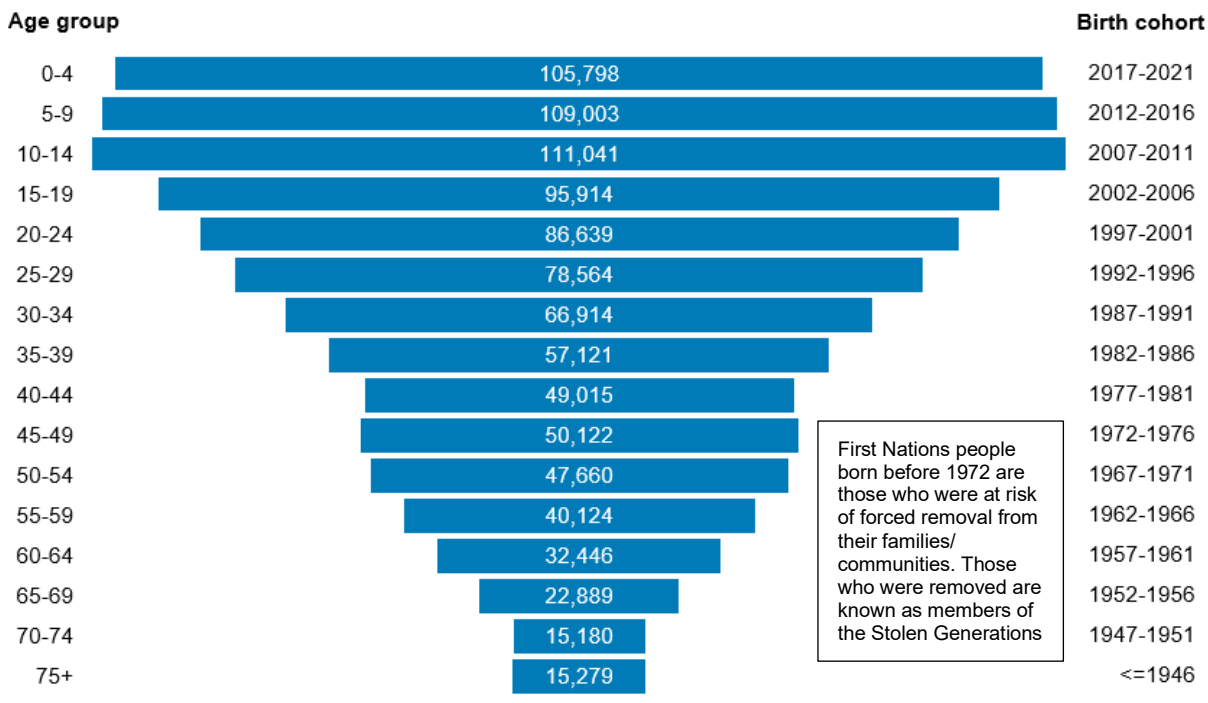
When interpreting the data for the targets, it is critical to take into account historical time and place and their intersection with age and birth cohort (key elements of the life course perspective).

These include:

- A person's age in the period of interest – age can refer to chronological or biological age or to the assignment of social roles and expectations (e.g. preschooler, teenager, elder).
- Cohort – which refers to everyone born at a certain time (e.g. Baby Boomers; Generations X, Y, Z). All members of the cohort experience similar historical conditions at similar ages. Cohorts are often compared with one another, but there are also variations in experiences within cohorts.
- Period – refers to a specific historical time period or event in time. Everyone alive at that time experiences the event (such as the COVID-19 epidemic), but the ways in which they experience the event differ by their age/cohort.

Figure 2.1 shows the distribution of the First Nations population by age group and birth cohort in 2021.

Figure 2.1: Distribution of First Nations population by age group and birth cohort, 2021



Source: ABS (2023a)

Figure 2.1 highlights the young age distribution of the First Nations population. One-third of the First Nations population in 2021 was aged 14 and under (born between 2007 and 2021) while 5.4% were aged 65 and older (those born in the years up to and including 1956).

The concept of age-period-cohort is particularly important for understanding the factors underpinning the outcomes/indicators in the National Agreement and helps ground the impact of historical events and policies that shape people's life experiences and trajectories. Children aged 0–4 in 2021 will be growing up in a very different world than their parents did, and it is important to take into account those historical and social contexts.

For example, the laws and policies that not only permitted but encouraged the removal of First Nations children from their families and communities did not end until 1972. Anyone born before then would be in the cohorts of First Nations people who would have been at risk of forced removal from their families and communities. In 2021, this includes nearly 18% of the First Nations population (173,600 people) who were born before 1972 and are now aged 50 and older. The psychological, spiritual, health, and economic impacts for those who were members of the Stolen Generations and their families continue today (AIHW 2021a).

Even within this overall cohort, however, there are differences in people's experiences by their age/year of birth. For the birth cohorts before 1957, they may themselves have been removed as children (a member of the Stolen Generations), they may have been the child of a parent who had been removed (descendant of a member of the Stolen Generations), they may have had their own child/children removed (parent of a member of the Stolen Generations), or all three. Those born after 1957 would potentially have been either a member of the Stolen Generations or a descendant of a member of the Stolen Generations.

The youngest of the Stolen Generations cohort would have been aged 36 in 2008 when Prime Minister Kevin Rudd apologised to the Stolen Generations, their families and communities for the lasting harm caused by past government policies and practices.

It is also important to consider age, period and cohort when assessing progress against the individual targets. For example, the year 12 attainment target includes those aged 20–24. The 2021 Census data for that indicator included only those born between 1997 and 2001. The youngest members of that cohort (those born in 2001) would have been completing high school in 2019, just prior to the start of the COVID-19 pandemic in 2020.

When the 2026 Census data are collected, however, the 20–24 year old cohort that will be included in the target are those been born between 2002 and 2006. This cohort would have been in high school during the COVID-19 pandemic, and this will need to be taken into account when considering both progress against the target and the factors associated with the target.

The remainder of this chapter focuses on the key findings for each of the 5 included targets: housing, engagement in employment, education or training, year 12 completion, tertiary education, and employment.

2.1 Housing

Target: increase the proportion of Aboriginal and Torres Strait Islander people living in appropriately sized (not crowded) housing to 88% by 2031, from a 2016 baseline of 79%.

The quality and affordability of housing affects all aspects of people's lives at all stages of the life course. A wide range of international and First Nations literature has found that crowding is stressful to health and wellbeing across cultures (Memmott, Birdsall-Jones et al. 2012) and is directly linked with poorer long-term health and higher rates of preventable and infectious

diseases (SCRGSP 2020). As indicated by the World Health Organization Housing and Health Guidelines (WHO 2018), crowded housing conditions can lead to poor hygiene and the spread of infectious diseases (such as respiratory illnesses) and infections that can lead to acute rheumatic fever (AIHW 2023a; Clifford et al. 2015) and subsequently rheumatic heart disease, as well as acute post-streptococcal glomerulonephritis (Cannon and Bowen 2021; Marshall et al. 2011). Crowding puts additional pressure on facilities and infrastructure thereby limiting the ability of residents to employ healthy living practices (Bailie & Wayte 2006) (see HPF measures 2.01 Housing and 2.02 Access to functional housing with utilities). Further, multiple studies have shown crowded housing results in an increased number of COVID-19 infections and a higher mortality rate (Aldridge R et al. 2021; Varshney et al. 2022).

Crowded housing is also associated with several risks for children, including:

- poorer school attendance (Silburn et al. 2014)
- increased risk of emotional and behavioural problems and reduced school performance, likely due to disrupted sleep, lack of space to study and the impact of noise levels on concentration (Solari and Mare 2012).

Lack of privacy can have an impact on family relationships, leading to family conflict. It can contribute to childhood mental health problems, including anxiety, depression and stress (Solari and Mare 2012). Crowding can also affect children's physical health, with asthma frequently reported by families experiencing crowding (Reynolds 2005; Solari and Mare 2012). Crowding can compromise children's access to adequate nutrition, with flow-on effects for their health and development (Lowell et al. 2018; Thurber et al. 2017).

Distress over lack of control of living conditions is frequently reported by adults living in crowded dwellings (Lowell et al. 2018). Other implications of crowding include disrupted sleep, enhanced conditions for inappropriate and abusive relationships (Fien et al. 2011), and increased wear and tear of facilities and structures (Memmott et al. 2011).

2.1.1 Current status of the target

Between 2016 and 2021, the proportion of First Nations people (79% to 81%) and First Nations households (89% to 90%) living in appropriately sized housing increased. However, the number of First Nations people living in crowded dwellings (based on the ABS's Census of Population and Housing count) also increased – from 114,000 to around 130,000 – as did the number of First Nations households living in crowded dwellings (from 26,400 to 31,300).

If the results for this target continue to improve at the current rate, the national target is likely to be met, or very close to being met, by 2031. Almost half (49%) of First Nations people living in crowded conditions in 2011 were living in appropriately sized housing 5 years later (in 2016), indicating some degree of persistence, but also improvements for many. Further, 89% of First Nations people living in appropriately sized housing in 2011 were still doing so 5 years later.

The proportion of First Nations people living in appropriately sized housing in 2021 was at or above the 2031 national target of 88% in 3 jurisdictions (Victoria, Tasmania and the Australian Capital Territory) but the Northern Territory proportion (43%) was considerably lower.

Of the First Nations people living in crowded conditions in 2021, 29% were in Queensland, 23% in New South Wales and 23% in the Northern Territory.

The proportion of First Nations people living in appropriately sized housing in 2021 was close to the 2031 national target in:

- *Major cities* (88%)
- *Inner regional* areas (87%)
- *Outer regional* areas (82%).

The proportion of First Nations people living in appropriately sized housing was lower in *Remote* (68%) and *Very remote* areas (45%), however.

In 2021, the proportion of First Nations people who were living in appropriately sized housing was highest in the least disadvantaged socioeconomic areas of Australia (95%). The proportion declined in more disadvantaged areas, down to 71% for people living in the most disadvantaged socioeconomic areas of Australia. The proportions have increased in all socioeconomic areas since the 2016 baseline year (Productivity Commission 2025).

2.1.2 Factors associated with crowded housing

Findings from the literature review

The ability to secure adequately sized housing is dependent upon both upstream factors such as the location, supply, and cost of appropriately sized dwellings, as well as housing policies and larger macroeconomic factors such as interest rates and lending policies. Midstream and downstream factors (such as employment or health status) affect whether an individual person/family is then able to secure adequately sized housing.

Data from the 2021 Census show a higher level of crowding in social housing dwellings, with 37% of First Nations people in public housing and 43% of First Nations people in community housing living in crowded conditions. Fewer than 12% of First Nations people are home owners.

While First Nations people living in social housing face higher levels of crowding than they do in other tenure types, many were not even able to obtain social housing, due to long waiting periods (often years). This is indicative of the supply shortage for social housing. This is true especially among remote communities where there is no or very limited access to private rental or home ownership, and public housing is the only option. As existing housing stock is insufficient for the population, families often remain on a housing waiting list for years. Most young families have no access to independent housing and therefore rely on extended family to provide accommodation.

Some families will choose to live in large multi-generational households for cultural reasons, despite other houses being available in the community. These families will not necessarily consider their house to be crowded; nonetheless, they could still suffer the same health effects of crowding, such as infectious diseases, poor hygiene (due to inadequate household facilities) and poor mental health. Such crowding can also cause structural damage to housing infrastructure (Memmott et al. 2011).

Cost-of-living pressures can lead to crowding. These pressures encompass a wide range of factors, including income, employment, housing affordability and vacancy rates. Renting costs that grow faster than income can also lead to higher levels of crowding and homelessness.

Findings from the analyses

The results from the logistic regression models[7] show that independent of other demographic and individual-level factors, the factors significantly associated with higher odds of living in crowded housing were:

- living in households with more dependants compared with households with 0–2 dependants
- living in more remote areas (compared to those in *Major cities)*
- living in specific states and territories such as the Northern Territory (compared with Queensland)
- a history of having previously lived in crowded households – suggesting a high degree of persistence in crowded living
- being unemployed or not in the labour force
- having a lower equivalised household income (<$300 per week compared with $1,000 or more per week)
- living in the areas in the lowest socioeconomic (SEIFA IRSD[8]) decile compared with the top 5 deciles
- living in social housing
- identifying with a clan, tribe or language group.

The most important factors associated with crowding according to the random forest analysis were:

- age
- the number of dependent children in the household
- past history of crowded living
- household income
- labour force status
- remoteness
- state/territory.

2.1.3 Strategies for improving the target

Efforts to improve access to appropriately sized housing could focus on areas where crowding is highest, in particular the Northern Territory. Although the target was close to being met in New South Wales and Queensland, because of their large populations, the number of First Nations people living in crowded dwellings in these 2 states was still high: 30,500 and 38,200, respectively.

Efforts to improve access to appropriately sized housing could also focus on continuing to increase the number of social housing dwellings available to First Nations people.

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[7] The analyses for the housing target included an additional set of logistic regressions using the 2011–16 Australian Census Linked Dataset (ACLD), which allows the comparison of individuals' situations between the Census periods. This allowed for the inclusion of the previous crowding variable. The results section includes the findings from the analysis of the 2011–16 ACLD and the 2018–19 NATSIHS.

[8] Socio-Economic Indexes for Areas - Index of Relative Socio-economic Disadvantage

Programs such as Housing for Health (which makes safety and 'health hardware' repairs) reduce the negative impact of crowding and ensure existing dwellings are still tenantable, therefore reducing crowding by maintaining the existing social housing stock.

It is also important that the social housing stock includes dwellings that are the appropriate size for multi-family households and households with several dependent children. Cultural obligations to help kinfolk in time of need is deeply rooted in the structures of First Nations society. First Nations people also have high rates of temporary mobility, and therefore housing for First Nations people needs to be appropriately designed to facilitate the observance of cultural practices. Culturally designed housing needs to be an appropriate size, where families and visitors can live comfortably together; it should incorporate safe outdoor spaces for sleeping, cooking and gathering; additional bathrooms; and planned entryways, circulation and bedroom placements. However, there is limited availability of such housing, as most social housing dwellings have only 3 bedrooms, one main living area and a bathroom.

The policy response to crowding in First Nations households may vary depending on remoteness: in urban areas, better access to existing housing stock through improving household income or providing assistance that is specific for First Nations people is important; in regional and remote areas, additional housing stock is required. Planning is required to ensure that adequate land and infrastructure are available in remote areas to support new dwellings.

While remote housing programs have delivered improvements, the persistent high rate of overcrowding in remote areas shows there are still advances to be made. Involving communities in the design, construction and maintenance of housing can build capacity for improved housing-related health outcomes.

An example of this approach, which aligns with Priority Reform Two of the National Agreement, was when the National Aboriginal and Torres Strait Islander Housing Association (NATSIHA) led work on a Housing Sector Strengthening Plan (the Housing SSP) with the Department of Social Services, along with Aboriginal and Torres Strait Islander community-controlled organisations and representatives from jurisdictions (NIAA 2023a).

2.2 Youth engagement in employment, education or training

Target: increase the proportion of Aboriginal and Torres Strait Islander youth (aged 15–24) who are in employment, education or training to 67 per cent by 2031 from a 2016 baseline of 57 per cent.

Participation in employment, education and training is vital to improving health, social and economic outcomes for First Nations people (see the year 12 attainment and employment targets for more information and HPF measure 2.05 Education outcomes for young people). The transition to adulthood is a crucial time for young people's development and wellbeing, offering the prospect of social and economic independence.

2.2.1 Current status of the target

Nationally, the proportion of First Nations youth fully engaged in employment, education or training (EET) has increased steadily, from 48% in 2001 to 58% in 2021. However, the rate in 2021 was below the required trajectory for 2021 to meet the 2031 target.

The largest increases between 2006 and 2021 were in New South Wales (7 percentage points), Western Australia (7 percentage points) and South Australia (5 percentage points).

In 2021, the proportion of First Nations youth fully engaged in EET was highest in *Major cities* at 64% – it fell with increasing remoteness to 30% in *Very remote* areas.

The proportion of First Nations youth fully engaged in EET was highest (82%) among those living in the 10% of areas which were least socioeconomically disadvantaged and lowest (39%) among those living in the 10% of areas which were the most socioeconomically disadvantaged.

Rates of full engagement in EET for First Nations females and First Nations males aged 15 to 24 diverge from the age of 19, with rates for men gradually increasing and rates for women generally remaining relatively flat through to age 24. This gender gap emerges around the time that many First Nations women start having children.

2.2.2 Factors associated with youth engagement in employment, education or training

Findings from the literature review

The youth engagement in employment, education or training target includes an age range (15–24) that encompasses young people who are still legally required to be in formal schooling, as well as those who are closer to what is considered adulthood. Whether First Nations people are engaged in employment, education or training is affected by all the factors discussed in the year 12 completion and employment sections. Many young First Nations people may face challenges in engagement in employment, education or training, including intergenerational trauma; racism and discrimination; experience of being in out-of-home care; caring responsibilities; and, for those living in more remote areas, poorer access to educational and employment opportunities.

First Nations young people living in remote areas of Australia have limited access to secondary education within their communities – for many, the only option is to spend much of their time away from their families and communities to attend boarding school (Crawford and Schwab 2017). Many First Nations young people are the first generation in their family to attend senior secondary school, so they have limited access to family members' experience of, and knowledge about, senior secondary school and university participation (Behrendt et al. 2012).

Many First Nations young people aged 15–24 also have family responsibilities, with young children to care for. In 2021, around 20% of First Nations women aged 20–24 had children of their own to care for (ABS 2021c). First Nations women may also have caring responsibilities for children in their extended family. In Australia generally, the incidence of part-time employment for women is higher than the Organisation for Economic Co-operation and Development (OECD) average but the labour supply of mothers with young children is low (OECD 2018).

Higher EET rates among First Nations youth in metropolitan areas compared with remote areas have been attributed to factors such as greater access to educational opportunities and better developed labour markets (Crawford and Biddle 2015). Fowkes and colleagues (2018) discuss the history of the emergence of, and policy responses to, First Nations unemployment in remote areas. The changing nature of labour market programs in remote areas means that the way that the labour force status of participants is classified in the Census differs over time, 'even though to some extent they cover the same applicable population' (ABS 2023a).

Previous research has shown that level of educational attainment was positively associated with youth engagement in EET. First Nations youth with higher levels of education were less likely to experience episodes of not being engaged in education, employment or training (NEET) (Dinku 2021). The significance and nature of the association varies with remoteness – First Nations youth who leave school early in non-remote areas were around 3 times as likely to be NEET as year 12 graduates, and those in remote areas were twice as likely to be NEET as year 12 graduates (Venn and Biddle 2018).

Level of socioeconomic disadvantage of the local area was found to be relevant to youth engagement in EET or early school leaving rates in 3 studies (Apatov 2019; Crawford and Venn 2018; Dinku 2021). Young people living in higher socioeconomic areas were less likely to be NEET (Dinku 2021). A large part of the disparity between First Nations and non-Indigenous early school leaving rates is explained by neighbourhood disadvantage (Crawford and Venn 2018).

First Nations youth who lived in a household with an employed family member were less likely to experience an episode of NEET (Dinku 2021). In the Australian population generally, young people whose parents worked in a professional occupation were less likely to be economically inactive (Hillman 2005).

A large part of the disparity between First Nations and non-Indigenous early school leaving rates could be explained by parents' educational attainment (Crawford and Venn 2018). It has been shown that young people whose parents had a tertiary education were less likely to be economically inactive in the general Australian population (Hillman 2005). An OECD study found there was a strong relationship between the education of a young person's parents and the risk of becoming NEET (Carcillo et al. 2015).

Disability or health status was found relevant to youth EET engagement in a number of studies (Carcillo et al. 2015; Dinku 2021; Hillman 2005). Disability was associated with a higher probability that First Nations youth would experience one, or recurrent, episodes of NEET (Dinku 2021). Among young Australians in general, those with disability or a long-term health problem were more likely not to be in the labour force and not in full-time education than those without disability or a long-term health problem (Hillman 2005).

Other factors relevant to participation in education or employment that are discussed in the literature include:

- having caring responsibilities for people other than children, usually those with an illness, disability, or the frail and aged (Muir et al. 2015) (see HPF measure 1.14 Disability)
- having access to a vehicle or having a driver's licence, which is important to participation in education and employment (Ivers et al. 2016; Porykali et al. 2021) (see HPF measure 2.13 Transport)
- living in suitable housing – that is, housing with an adequate number of bedrooms given the household size and composition. First Nations youth were less likely to experience an episode, or recurrent episodes, of NEET if they did so (Dinku 2021) (see HPF measure 2.01 Housing)
- housing instability (Muir et al. 2015).

Barriers identified as impeding access to education, training and pathways into employment included affordability, local availability, inadequate supports and lack of cultural representation and inclusivity. School-based engagement and mentoring programs were reported to foster a culturally safe and inclusive environment to increase access to education and training opportunities for First Nations people (Australian Human Rights Commission 2020; NIAA 2023b).

Findings from the analyses

The results from the logistic regression models show that independent of other demographic and individual-level factors, the factors significantly associated with increased odds of full engagement in EET for 15–24 year olds were:

- being in the youngest age group (aged 15–17) compared with those aged 23–24. This is expected because of legal mandates for this age group around for schooling, training and employment
- living in a home that was owned or being purchased compared with those living in rental accommodation
- living in Tasmania compared with living in New South Wales
- living in areas ranked in SEIFA IRSD deciles 2–4 compared to those living in areas ranked in the 10% of most disadvantaged areas (decile 1)
- Australia (the lowest decile of the SEIFA IRSD)living in a *Major city* compared to living in a regional area.

Being a parent was significantly associated with lower full engagement in EET.

The results from the random forest analysis showed that the most important factors associated with full engagement in EET were:

- age
- being a parent
- household support income
- experiencing financial stress
- area-level socioeconomic status.

2.2.3 Strategies for improving the target

Coordinated strategies within and beyond schools that could support increased school attendance among First Nations youth include:

- increasing recruitment and professional development of First Nations teachers and school leaders
- fostering culturally responsive teaching
- expanding options for young people to stay engaged with school education through vocational education and training programs.

To close the gender gap, First Nations women students who are caring for children need improved access to affordable, culturally competent child care. Many women may prefer to work or study part-time while they care for their children. Others may prefer to be fully engaged in EET but are unable to access high-quality, culturally competent child care due to a lack of availability, unaffordability, or other barriers. Students with children may experience financial pressures and difficulties in accessing child care and student accommodation.

Some initiatives and programs that support successful transitions to university for First Nations youth include mentoring, university-school-community engagement, outreach programs, ‘Elders in residence’ programs, preparation and pre-orientation courses to help students with the transition, and university-wide cultural competency programs. Regional study hubs may provide more options for First Nations students to access university study while retaining their connection to their community.

Other strategies identified with potential to increase employment rates among First Nations people more generally include:

- increasing skill and education levels
- providing pre-employment assessment and training
- changing recruitment strategies to increase job opportunities for First Nations people
- providing cross-cultural training in workplaces aimed at reducing racism and discrimination against First Nations Australians
- offering flexible work arrangements to enable First Nations employees to meet family, community or cultural obligations
- providing intensive support to overcome multiple barriers, such as health issues, drug and alcohol issues, or family violence
- implementing wage subsidy programs
- setting First Nations employment goals in government programs that deliver goods or environmental or personal services.

Culturally relevant driver licensing programs may promote access to employment, education and training, and foster social inclusion more broadly among young unemployed First Nations people.

2.3 Year 12 (or equivalent) completion

Target: Increase the proportion of Aboriginal and Torres Strait Islander people aged 20–24 attaining year 12 or equivalent qualification to 96% by 2031 from a baseline of 63%.

Education is widely recognised as a key social determinant of health as well as a determinant of prospects for future socioeconomic wellbeing, including income and employment (ABS 2011; AIHW 2024a; Biddle 2007; Biddle and Cameron 2012). Year 12 completion is associated with more successful transitions to work, even among those not proceeding to further study (Ryan 2011). First Nations people who complete a year 12 qualification are more likely to be employed, work full-time and have skilled jobs (Shirodkar et al. 2018; Venn and Biddle 2018). Higher levels of education are also associated with increased health knowledge/health literacy as well as health behaviours (which may be a direct effect or an indirect effect of higher standards of living) (see HPF measures 2.05 Education outcomes for young people and 2.06 Educational participation and attainment of adults).

While schooling is the mainstream way to achieve an education, First Nations people have a long history of using informal learning methods – storytelling or yarning, observation, imitation, real-life or land-based learning (as opposed to the mainstream Western education system) – to pass on their knowledge and skills to the next generation. It is important to note that educational opportunities for First Nations people in the mainstream education system were restricted for much of colonial history.

2.3.1 Current status of the target

Nationally, in 2021, 68% of First Nations people aged 20–24 had attained year 12 or an equivalent qualification. For this target, an equivalent qualification refers to school-level qualifications equivalent to Year 12 (such as the International Baccalaureate, Higher School Certificate and matriculation), as well as non-school qualifications at Certificate level III or

higher. While the target shows improvement, it did not achieve the progress point for 2021 (74%) to be on track to meet the 2031 target.

Among First Nations people aged 20–24 (who identified as Aboriginal and/or Torres Strait Islander in the 2011 Census) who had not completed year 12 or equivalent (566) in 2011, more than one-quarter (27%) went on to do so by 2016.

In 2021, the proportion completing year 12 or equivalent among First Nations people aged 20–24 was higher for women (72%) than for men (64%).

The proportion of First Nations people aged 20–24 who had attained year 12 or equivalent ranged from 40% in the Northern Territory to 82% in the Australian Capital Territory.

Major cities had the highest proportion of year 12 attainment among First Nations people aged 20–24 (at 76%) while *Very remote* areas had the lowest (42%).

About 52% of First Nations people aged 20–24 living in the most disadvantaged areas (IRSD decile 1) completed year 12 or equivalent compared with 89% of First Nations people living in the least disadvantaged areas (IRSD decile 10).

2.3.2 Factors associated with year 12 completion

Findings from the literature review

While year 12 (or equivalent) attainment is a simple yes/no variable (completed or did not), the factors underpinning it are complex and reflect the cumulative interactions between individual, family, community, local school environment, and policy factors.

The literature suggests that First Nations students living in remote areas face challenges in attending secondary school due to the limited number of schools available in these communities, despite willingness to continue schooling by both students and parents. It is more difficult and costly to attend schools in remote areas and the facilities often have inadequate services, resources and trained teachers.

Another major obstacle to equal access to education in First Nations communities in Australia and elsewhere is ethnic and cultural discrimination. First Nations students report being discriminated against by students and teachers because of their language and cultural practice.

Students' educational aspirations are strongly linked with parental and family and community support as these have an impact on student motivation and self-efficacy. Positive First Nations cultural identity is associated with students' educational aspirations.

School environment, educational aspirations, school attendance and prior school achievement from a young age are key drivers of year 12 attainment, and have an impact on schooling outcomes into early adulthood. Some authors argue that there would be no differences by socioeconomic and cultural background if differences in early educational performance were eliminated (Mahuteau et al. 2015; McIntyre et al 1996).

Findings from the analyses

Regression analysis showed that, independent of other factors, the odds of having completed year 12 or equivalent among First Nations people aged 20–24 were statistically significantly:

- higher for those who identified with a tribe, language group or clan than for those who did not

- higher for those living in households that were not crowded than for those living in crowded households
- higher for those living in *Major cities* than for those living in *Very remote* areas
- higher for those living in the areas in the socioeconomic (SEIFA IRSD) deciles 2–4 compared to those in the lowest SEIFA decile (the most disadvantaged areas)
- lower for those living in Western Australia and South Australia than for those living in New South Wales or the Australian Capital Territory.

The results from the random forest analyses showed that the most important factors associated with year 12 completion were:

- household income
- crowded housing
- housing conditions
- remoteness
- state/territory
- area-level socioeconomic status
- English as the main language.

2.3.3 Strategies for improving the target

Interventions targeting attendance and achievement in the early and middle levels of school should be strongly considered, based on a wealth of literature that suggests that earlier years of educational attendance and achievement have a substantial direct influence on year 12 attainment. A wholistic approach that takes into consideration the broader social challenges in communities, and fosters connections with First Nations peers, mentors and communities, may be one way to improve school attendance and achievement in earlier years.

Practising cultural safety and culturally responsive teaching should be considered to be very important within the school environment, along with ensuring that activities that support connection to Country, culture and language.

Greater support should be provided for First Nations students with disability, mental health conditions or other ongoing health conditions to enable them to complete school.

Policy interventions designed to reduce household crowding among First Nations youth may improve the year 12 or equivalent attainment rate.

Improving educational resources in remote communities is likely to improve First Nations year 12 attainment outcomes.

2.4 Tertiary education

Target: increase the proportion of Aboriginal and Torres Strait Islander people aged 25–34 who have completed a tertiary qualification (Certificate III and above) to 70 per cent by 2031.

Higher education and training have substantial benefits for the health and wellbeing of First Nations students and their families and communities (Behrendt et al. 2012). As the level of education for First Nations people increases from secondary schooling to vocational education to a tertiary degree, the gap in employment between First Nations and non-

Indigenous Australians narrows. Access to higher education has also been linked to a reduction in poverty (Swail 2003; Shalley et al. 2019). See HPF measure 2.06 Educational participation and attainment of adults.

Success in higher education is generally measured by the number of students who successfully complete courses and go on to attain their degree. However, it has been noted that there are large discrepancies between First Nations enrolment and completion numbers across universities. Pechenkina and Anderson (2011) observe that while the Group of Eight (Australia's leading research-intensive) universities dominate rankings for high First Nations completion rates, none of them have high First Nations enrolment numbers.

Leaving an educational institution early without attaining a degree or higher qualification is often viewed as failure. However, Kinnane and colleagues (2014) posit that students who fail subjects in their first year may go on to do very well once they adjust to university expectations. Bennett and colleagues (2015) note that students may leave higher education for reasons other than academic performance, such as unsustainable time pressures, financial difficulties, health problems, social responsibilities or lack of engagement or motivation. Students may also leave to take up employment, caring responsibilities or other forms of study. Choosing not to attain their degree may be the consequence of choosing to prioritise other aspects of their lives (Bennett et al. 2015). However, James and Devlin (2006) argue that while some good outcomes may be achieved even when First Nations students do not complete their degree, this does not mean we should accept higher attrition rates among First Nations students.

The number of university enrolments and higher education completions by First Nations people has risen over time. Despite these increases, First Nations people are still considerably under-represented in universities, comprising 1.9% of the domestic higher education student population, compared with 3.3% of the total Australian population.

2.4.1 Current status of the target

In 2021, 47% of around 108,000 First Nations people aged 25–34 had completed tertiary education (Australian Qualifications Framework Certificate III or above). This proportion has been steadily increasing over the last 2 decades. Despite the increase, this target measure is below the projected 2021 value on the trajectory to meet the target by 2031.

New South Wales, Victoria and the Australian Capital Territory not only have the highest proportion of First Nations people aged 25–34 with a tertiary education but also recorded the largest percentage point increase over time. The Northern Territory has recorded the lowest proportion and the lowest increase over time.

Major cities and socioeconomically less disadvantaged areas have rates at or above the 2021 national trajectory point. The proportion of First Nations people aged 25–34 with a tertiary education in *Remote* and *Very remote* areas – and in socioeconomically more disadvantaged areas – is still very low.

Among First Nations people aged 25–34, about 51% of women had completed a tertiary education in 2021 compared with 43% of men.

Nationally, the number and share of First Nations students among domestic students starting a Bachelor degree has increased over time, while their rate of first-year attrition has been decreasing.

The proportion of First Nations students among Vocational, Education and Training (VET) enrolments grew from 4.9% in 2016 to 6.3% in 2019 but dropped to 5.5–5.6% in the 2 years

that followed. In 2020, the number of First Nations VET enrolments was the lowest it had been in 6 years.

Between 2016 and 2019, the rate of VET completions among First Nations students was on the rise in Victoria, Western Australia, South Australia and the Northern Territory, but was falling in New South Wales and the Australian Capital Territory, despite the Australian Capital Territory's having the highest rates of completion among all states and territories between 2016 and 2018.

New South Wales, Victoria and the Australian Capital Territory have the highest proportion of First Nations people aged 25–34 with a tertiary education and have recorded the largest percentage point (pp) increase over time. The Northern Territory has the lowest proportion and smallest increase over time.

2.4.2 Factors associated with attainment of a tertiary qualification

Findings from the literature review

Tertiary qualifications are dependent upon a number of systemic and individual factors. From a life course perspective, the ability to pursue further education is associated with all the factors discussed in the year 12 completion section (such as prior experiences with formal schooling). While the target is focused on the 25–34 age group, it also reflects people's experiences once formal education is completed (usually by age 18). The years from 18 to 24 reflect the transition to adulthood and, for many people, the formation of their own families through partnering and parenthood.

The history of colonisation, trauma and transmission of intergenerational educational disadvantage – combined with differences in the value systems that inform First Nations ways of knowing and being, and those that underlie the Western education system – together with everyday institutional experiences of racism, has heavily affected educational outcomes among First Nations people (Zubrick et al 2006).

Qualitative studies suggest that experiences of racism during tertiary education are negatively associated with students' sense of a supportive learning environment and general learning outcomes, general developmental outcomes and overall satisfaction.

Among the most common reasons for considering leaving an educational institution are difficulties with study/life balance and workload; family responsibilities, such as family crises and supporting family members or younger children; and ill-health and death in extended families.

Findings from the analyses

The results of the logistic regression model show that independent of other demographic and individual-level factors, the factors statistically significantly associated with having completed a tertiary qualification among First Nations people are:

- household income
- area-level socioeconomic disadvantage
- state-level differences.

However, these results need to be interpreted with caution due to the possible presence of reverse causation between these variables and the outcome.

The results from the random forest analysis showed that the most important factors associated with the attainment of tertiary education qualifications were:

- equivalised household income
- whether they could raise $2000 in an emergency
- remoteness
- state/territory
- area-level socioeconomic status.

2.4.3 Strategies for improving the target

Institutional support has been identified as the most crucial contributor to the success of First Nations students in higher education. Support to help students to complete their degrees can take various forms, namely:

- valuing Indigeneity, particularly valuing First Nations people at the institution
- having First Nations and non-Indigenous academics who are knowledgeable about First Nations culture and history and maintaining a respectful First Nations culture throughout the university
- including First Nations culture in the curriculum
- having supportive First Nations or non-Indigenous academics and First Nations mentors
- encouraging more informal interactions with university staff; recognising the importance of family commitments and being flexible in enabling these to be met
- delivering blended courses, meaning students can pursue their studies from their home communities. However, online delivery of course material may disadvantage First Nations students if internet connections are slow and unreliable in remote areas.

Policy and initiatives aimed at improving education pathways for First Nations young adults must focus on the factors affecting the educational gap, such as the cost of higher education, non-completion of secondary or tertiary schooling, low academic achievement, access to information, educational aspirations, and state/territory level differences – as well as factors affecting retention and completion.

It is important to support First Nations youth throughout their secondary schooling for successful post-school transition to tertiary education, particularly in remote areas.

2.5 Employment

Target: increase the proportion of Aboriginal and Torres Strait Islander people aged 25–64 who are employed from 51.0% in the baseline year of 2016 to 62.0% by 2031.

Strong economic participation, through increased labour force participation and employment opportunities, contributes to many aspects of improved health and welfare at individual, family and community levels. Employment increases household and personal income, which is crucial for improving households' standards of living, financial security and resilience to unexpected shocks. Employment also enhances social inclusion and mobility, promotes investment in physical and mental health and improves self-esteem and opportunities for self-development. These lead to improved education, health, life expectancy and other outcomes linked with several Closing the Gap targets (Biddle 2013a; Gray et al. 2014; WHO 2012) (see HPF measure 2.07 Employment for more detail).

2.5.1 Current status of the target

The proportion of employed Aboriginal and Torres Strait Islander (First Nations) people aged 25–64 increased to 56% in 2021, higher than the 2021 progress point of 55% on the trajectory to meeting the 2031 target rate of 62%.

Among First Nations people aged 25–64 in 2021, 6.2% were unemployed, down from 9.0% in 2016 (baseline year) and 7.7% in 2006.

In 2021, 34% of First Nations people aged 25–64 were employed full time, 16% were employed part time and 5.6% were employed but away from work. Between 2016 and 2021, the proportion of those employed full time and part time slightly increased.

First Nations men were more likely than women to be employed in 2021. The gap in the employment rates between men and women, however, has been decreasing.

In 2021, the proportion of First Nations people aged 25–64 who were employed consistently decreased with increasing remoteness, from 62% in *Major cities* to 35% in *Very remote* areas.

In 2021, employment rates for First Nations people aged 25–64 ranged from 42% in the most disadvantaged areas (IRSD first quintile) to 81% in the least disadvantaged areas (IRSD fifth quintile). Notably, the proportion of employed First Nations adults was at or above the 2031 national target of 62% in areas across all IRSD quintiles except for the first quintile (most disadvantaged areas) in 2021.

In 2021, the Australian Capital Territory (73%), Tasmania (62%) and Victoria (62%) had rates at or above the 2031 national target of 62%, and employment rates in New South Wales and Queensland were also higher than the national average of 56%.

Between 2016 and 2021, the employment rate of First Nations people aged 25–64 increased for those who had an educational level of Certificate III/IV and higher but declined for those below that educational level.

In 2021, the employment rate among First Nations people aged 25–64 who needed assistance with core activities was 14%, compared with 62% among those who did not need assistance (AIHW 2023b).

In 2021, the proportion of First Nations people aged 25–64 who were employed increased with each level of educational attainment. For example, among First Nations people aged 25–64, 85% of those whose highest level of education was a Bachelor Degree were employed, compared with 72% of those with a Certificate III or IV level qualification, 45% of those with a secondary education at Year 10 to 12 level, and 24% of those with lower levels of qualification (Year 9 or below, or no educational attainment) (AIHW 2023b).

2.5.2 Factors associated with employment

Findings from the literature review

Whether or not someone is employed at any point in time depends upon a complex range of factors – including the upstream, midstream and downstream factors in Figure 1.1, as well as historical time and place. Understanding the impact of all these factors is challenging due to the interconnected nature of the variables, the possibility of reverse (or bi-directional) causation and the vast range of studies on different population groups and data sets. It is also possible that there are other factors that have not been measured in these studies, which may be revealed to be important if they could be measured.

Macroeconomic factors, such as the strength of local labour markets, rate of economic growth, nature of the job market (what types of jobs are available, where they are, what skill sets they require) and wage policies and regulation all affect the 'demand' for workers (Hunter 2010; Hunter and Gray 2012). Economic growth increases the activity in the economy that, in turn, increases opportunities for new jobs for First Nations people (Hunter and Gray 2012; Gray and Hunter 2016). Conversely, serious economic downturns may have larger negative impacts on the employment of those who, on average, have lower levels of education and who are working in lower-skilled occupations (Gray and Hunter 2011; Hunter et al. 2022; Gray et al. 2012).

Racial discrimination has both direct and indirect effects on employment. Research has shown that First Nations people may face racial discrimination in multiple stages of searching for employment and while performing a job (Biddle and Lahn 2016; Biddle and Yap 2010; Ferdinand et al. 2014; Hunter et al. 2022; Minderoo Foundation 2022; Markwick et al. 2019; Steel and Heritage 2020).

First Nations people face greater barriers to employment. While some industries have pioneered excellent initiatives to enable greater levels of First Nations employment, there continue to be barriers for many First Nations people, including a lack of access to high-quality and relevant training, limited access to supportive workplaces, inconsistent mentoring for young First Nations job seekers and few long-term job opportunities (House of Representatives Standing Committee on Indigenous Affairs 2021).

For those living in remote areas, poor access to transport also limits job opportunities. In addition to these workplace and logistical obstacles, more frequent interactions with the justice system can create additional barriers with factors like having a police record limiting employability (NIAA 2023c).

Historical exclusion and institutional racism contribute indirectly to a lower employment rate through the strong association of exclusion and racism with ill health, psychological distress and poor mental health (Gee and Walsemann 2009; Paradies 2018), and reduced participation in education, training and the national economy (Nguyen and Cairney 2013). The odds of employment for First Nations people (AIHW 2017, 2018), males (Stephens 2010; Thapa et al. 2012) and females (Stephens 2010) were all lower for those who experienced removal from natural family, notably among those aged 50–64 in 2018–19 (AIHW 2021).

Other factors associated with employment include sex, age, marital status, educational attainment, number of dependants/children, English language, caring responsibilities, housing, and contextual factors such as remoteness areas, area-level socioeconomic disadvantage, and state/territory of residence.

Findings from the analyses

The results from the logistic regression models show that independent of other demographic and individual-level factors, the factors significantly associated with increased odds of employment for First Nations people included:

- sex (males compared to females)
- post-school qualifications
- being married
- reporting better physical and mental health, not having disability
- living in adequate sized housing
- living in more socioeconomically advantaged areas

- living in *Major cities* compared with those in regional areas.

The results from the random forest analysis showed that the most important factors associated with employment status were:

- highest educational attainment was Year 12
- whether has disability.

2.5.3 Strategies for improving the target

Key drivers of change in employment among First Nations people include programs aimed at increasing educational attainment – particularly at the Certificate III and above level, which appears to be a critical threshold level of education for substantially improving employment outcomes.

Programs aimed at engaging and retaining First Nations people with disability in employment would likely meaningfully improve employment rates of First Nations people.

Policy interventions aimed at improving the health of First Nations people will likely have the additional benefit of improving First Nations employment rates.

Policy programs aimed at improving English proficiency may help with increasing employment rates among First Nations people, particularly if paired with programs that target educational attainment.

The Indigenous Skills and Employment Program was designed, in consultation with First Nations communities, and in the light of Australian and international research, to connect First Nations people with jobs, career advancement opportunities, and new training and job-ready activities. Continued effort in this area help to reach the employment target by 2031.

Employment programs and services are designed to enable First Nations people to find and keep work, and provide training and skills development. In non-remote areas, First Nations job seekers are supported by Workforce Australia Services, and those living with a disability can access Disability Employment Services. In remote Australia, First Nations job seekers have been assisted through the Community Development Program (CDP) which is being replaced with a new model which is working to support job seekers into jobs through the Remote Jobs and Economic Development (RJED) program, and a new remote employment service commencing in the second half of 2025, for job seekers who are looking for work or may need help to become job ready, and to get the skills and resources they need to take up job opportunities.

Cultural competency training for staff that addresses racism and discrimination in the workplace, and the cultural load that First Nations people are often subjected to, can improve the retention rate and career development of First Nations employees (Minderoo Foundation et al. 2022).

3 Common themes across the targets

While Chapter 2 focused on the individual targets, this chapter brings together the key themes that emerged across the targets. It begins by looking at the common factors that were associated with the targets, then focuses on the themes around the opportunities for improving the targets.

As discussed in Chapter 1, understanding the factors that underpin each target as well as how the targets affect one another is complex, especially because of the potential for reverse causality. For example, someone's current employment status may affect the type of housing they are able to access, or their housing situation may be affecting their employment status - (e.g. because of location). However, there is consistent evidence on the importance of the following factors.

3.1 Themes

3.1.1 Upstream (systemic/policy) determinants

The literature reviews for the targets highlighted how systemic and policy factors help shape the environments in which people are born, grow and live, and the opportunities that people have (or do not have). These include whether housing is available, how much it costs, whether it is appropriately sized and designed, how the educational system is structured and funded (along with whether the curriculum and teaching methods are culturally appropriate), and the types of employment opportunities available along with wages and conditions (such as whether cultural leave is included).

3.1.2 Historical and contemporary racism

The ongoing effects of colonisation, disenfranchisement, racism, and discrimination are still felt today through their long-term impacts on the social and cultural determinants of health as well as the direct consequences for people who experience racism. For example, exclusion from education (or the lack of culturally appropriate education) affects future employment opportunities, income and housing. Racism and discrimination are associated with poorer educational outcomes, housing opportunities, employment opportunities, and overall health and wellbeing.

While structural changes as discussed above are essential for reducing inequality, these will not be enough in and of themselves to improve the wellbeing of First Nations people without considering historical and contemporary racism. For example, improving access to education is not enough if that schooling is not culturally safe in terms of the content or the teaching approach.

3.1.3 People's lives are linked and interdependent

Although the targets are measured individually (that is, as the proportion of an age group who has met the target), the socioeconomic outcomes are highly affected by family, community and cultural ties. The positive effects of higher levels of parental education and employment, higher household incomes, good housing, and strong family and cultural ties were seen throughout the targets.

There was also recognition, however, that being a parent or having carer responsibilities was negatively associated with engagement in employment, education or training, and that having a higher number of dependents in the household was associated with a higher risk of living in crowded housing.

3.1.4 Social determinants are inter-related

As discussed throughout the article (and shown in Figure 1.3) there are strong relationships or associations between the socio-economic outcomes themselves. Results from the statistical analyses in AIHW (2025) showed that:

- Living in adequately sized housing was positively associated with Year 12 completion and with being employed.
- Living in a house which was owned rather than rented was positively associated with engagement in employment, education or training.
- Higher levels of educational attainment (Advanced Diploma/Diploma/Certificates III/IV or Bachelor or above) were positively associated with employment (compared with those whose highest education was year 12), while those with the equivalent of year 9 or below had lower odds of being employed.

One of the other key factors that was noted throughout the targets was the importance of health status, both as a predictor of the targets (e.g. young people with disability were less likely to be engaged in employment, education or training) or as a consequence of the target (e.g. the relationship between poor housing and poor health).

An additional insight is the recognition that there is an accumulation of factors over a lifetime – the positive effects of good experiences in early childhood and primary education have an effect on both engagement in employment, education or training, and year 12 completion.

3.1.5 Place matters

The local contexts in which people live reflect both opportunities and constraints. Housing quality and affordability, employment opportunities, access to appropriate health services, environmental conditions, transportation links, and the availability and quality of schools are only some examples of these contextual factors.

The National Agreement explicitly recognises the importance of place under Priority Reform One – Formal partnerships and shared decision-making with ‘place-based partnerships’ which are ‘partnerships based on a specific region, between government and Aboriginal and Torres Strait Islander representatives, and others by agreement, from those specific areas’ (Australian Government 2020, p. 5). The purpose of this partnership is to both identify local issues important to the community and to work on locally-based solutions.

Initial analyses for the Closing the Gap targets: key findings and implications project (AIHW 2025) included a breakdown of the targets by Indigenous Region (IREG), which showed that there was considerable variation across the country. These data are available in AIHW’s Regional Insights for Indigenous Communities (RIFIC) website (Regional Insights for Indigenous Communities - AIHW RIFIC). RIFIC also includes data on a number of other related variables.

The analyses for all 5 targets also included 2 aspects of local context: an area level measure of socioeconomic context (SEIFA) and remoteness. A detailed discussion of these is presented below in order to highlight their importance across the targets, as well as the fact

that they can be used as a flag for selecting areas that may need more supports or investments. The individual chapters in AIHW (2025) also include state/territory variations.

Area-level socioeconomic context

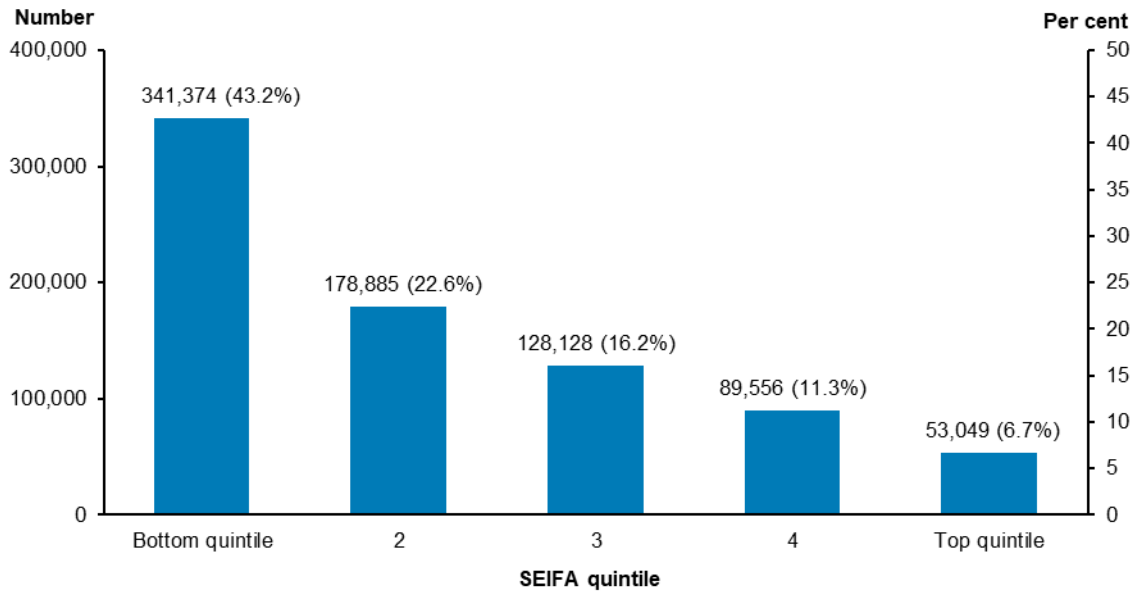
While individual-level measures of socioeconomic status (such as education, income/financial security, occupation) are strongly linked to better health, the socioeconomic context of the community in which one lives is also important as it helps shape the choices and opportunities (or lack thereof) which people have.

A socioeconomic index is a way to measure community-level inequities. SEIFA is a composite measure which takes into account a number of economic and social indicators – including income, employment, education and housing – that affect relative levels of advantage or disadvantage of communities compared with one another (see HPF measure 2.09 Socioeconomic indexes).

It is important to note that SEIFA is a summary level measure of an area. There may be individuals who are not as well off living in an area with a high SEIFA score and individuals living in areas with a low SEIFA score who have more resources than their neighbours. SEIFA scores are often grouped into deciles or quintiles (to reflect a continuum of advantage or disadvantage) rather than using the individual score.

Figure 3.1 presents the distribution of the First Nations population across the quintiles of the IRSD in 2021.

Figure 3.1: Distribution of the First Nations population across IRSD SEIFA quintiles, 2021

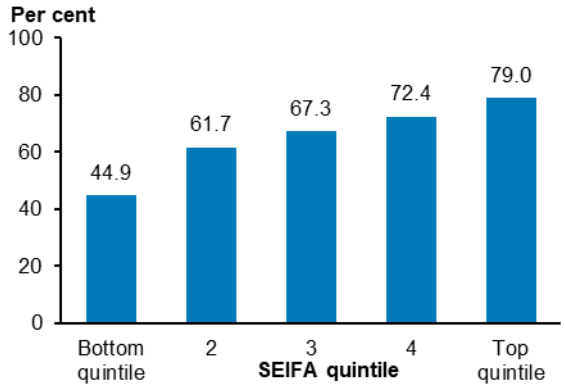


Source: AIHW 2024e.

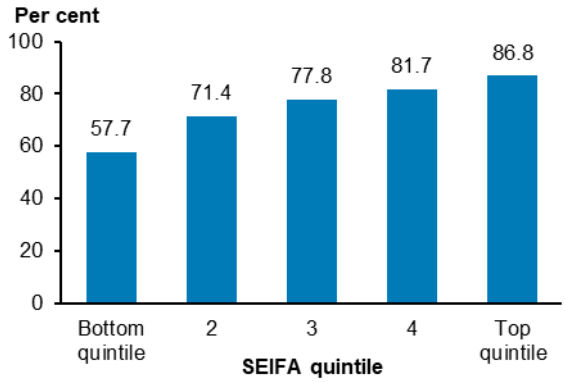
Just under 7% of First Nations people (53,000) lived in the highest ranked 20% of areas (highest quintile), while around 43% of First Nations people (341,400) lived in the lowest ranked 20% of areas (bottom quintile). The association between area-level disadvantage and the 5 included outcomes is highlighted in Figure 3.2. For all 5 targets, there is a clear pattern where those living in the most disadvantaged areas have the lowest rates and then the rates increase as advantage increases.

Figure 3.2: Distribution of the target indicators across SEIFA IRSD quintiles, First Nations people, 2021

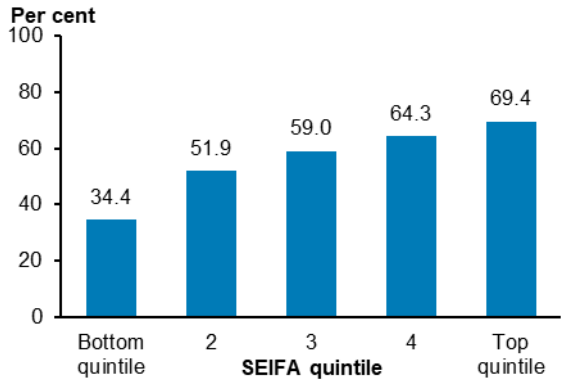
a) Engagement in EET (15–24)



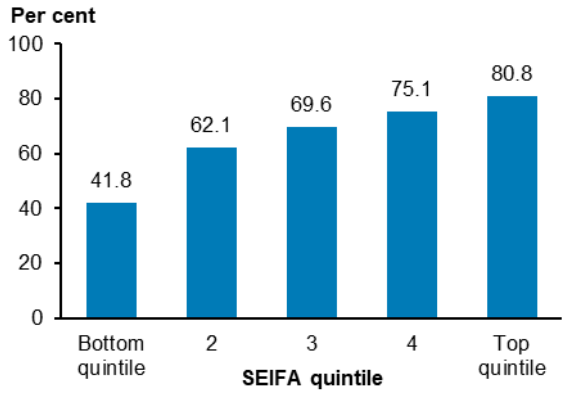
b) Year 12 attainment (20–24)



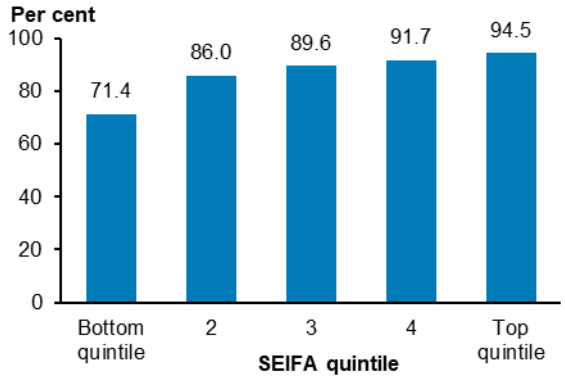
c) Tertiary qualifications (25–34)



d) Employment (25–64)



e) Appropriately sized housing



Notes for the housing target:

1. Excludes people who were not enumerated at their place of usual residence. For the 2021 Census, this was around 24,300 First Nations people.

2. Excludes Not Stated and Unable to Determine for Housing Suitability. For the 2021 Census, housing suitability was not stated for around 16,300 First Nations people and unable to be determined for around 27,900 First Nations people.

3. Appropriately sized dwellings are defined as having spare bedrooms or not requiring any additional bedrooms to adequately house the residents, using the criteria of the Canadian National Occupancy Standard (CNOS).

Source: ABS 2021 Census of Population and Housing (Productivity Commission 2025)

Because there are different age groups for each of the indicators, comparisons of the actual proportions across the SEIFA quintiles can be misleading. However, rate ratios for each outcome variable (the rates for the top quintile divided by the rates for the bottom quintile) can be used to compare the size of the differences. The rate ratios show that:

- the highest disparity is for tertiary qualifications, with those aged 25–34 living in the least disadvantaged areas twice as likely to have a tertiary qualification as those living in the most disadvantaged areas
- the lowest disparities are for living in appropriately sized housing, where the rate for those living in the least disadvantaged areas was 1.3 times as high as those living in the most disadvantaged areas.

The results from the logistic regression models using the 2018–19 NATSIHS data showed that, independent of other variables, living in more disadvantaged areas[9] was associated with lower odds of completing year 12 or equivalent among 20–24 year olds, lower odds of being engaged in employment, education or training among 15–24 year olds, lower odds of completing tertiary qualifications for 25–34 year olds, lower odds of being employed among those aged 25–64, and higher odds of living in crowded housing.

Remoteness

There are a number of aspects of remoteness that have been linked with social determinants and poorer health, including geographic isolation, lack of services, poorer infrastructure (including housing, electricity, clean water, mobile coverage), greater exposure to injuries, lower road quality, and fewer employment opportunities.

For example, First Nations students living in remote areas face challenges in attending secondary school due to the limited number of schools available in these communities, despite willingness to continue schooling by both students and parents. It is more difficult and costly to attend schools in remote areas and the facilities often have inadequate services, resources and trained teachers (Biddle 2007, Biddle and Edwards 2017).

However, there are also potentially protective aspects for First Nations people living in remote areas, who are more likely to live on country, speak a First Nations language, and report stronger cultural ties.

In 2021, most First Nations people lived in *Major cities* (401,700 or 41% of the population), followed by regional areas. More First Nations people lived in *Very remote* (92,100 or 9.4%) than *Remote* areas (58,700 or 6.0%) (Table 3.1).

[9] The exact specifications of the variable differed between the targets. See AIHW (2025) for the results of the individual models.

Table 3.1: Distribution of First Nations population by remoteness, 2021

Remoteness area	Number	Proportion (%) of total First Nations population	Proportion (%) of total population in each area
Major cities	401,674	40.8	2.2
Inner regional	244,012	24.8	5.3
Outer regional	187,150	19.0	9.0
Remote	58,727	6.0	19.6
Very remote	92,146	9.4	47.1
Australia	**983,709**	**100.0**	**—**

Source: ABS (2023b)

Although the highest number of First Nations people live in *Major cities*, they make up less than 3% of the total population in *Major cities*. In comparison, First Nations people make up nearly 50% of the population in *Very remote* areas.

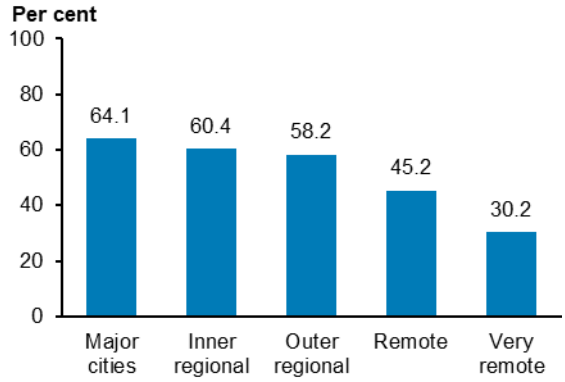
Figure 3.3 presents the distribution of the 5 targets by remoteness category. The findings show that there is an inverse relationship between remoteness and all five outcomes. Rates are always highest for those living in *Major cities*, then decline for those in regional areas (although *Inner regional* areas are always higher than *Outer regional* areas, there is not a great deal of variation between the regional areas). The rates are lower again for those in *Remote* and *Very remote* areas.

The disparity between First Nations people living in *Major cities* and *Very remote* areas was measured using rate ratios which were calculated by dividing the proportion for *Major cities* by the proportion for *Very remote* areas, and the results show that:

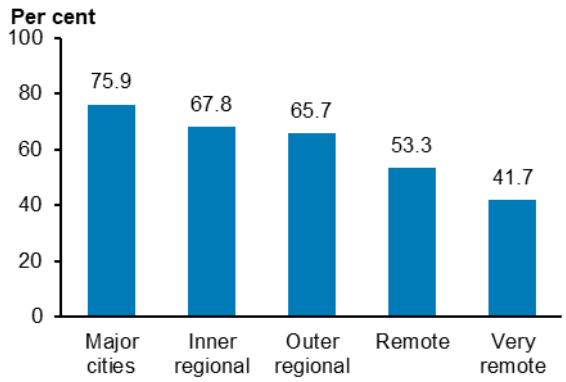
- the highest disparity is for tertiary qualifications, with those aged 25–34 in *Major cities* 3.3 times as likely as those in *Very remote* areas to have a tertiary qualification
- the lowest disparities are for year 12 attainment among 20–24 year olds and employment among 25–64 year olds, where rates are 1.8 times as high for those in *Major cities* than those in *Very remote* areas.

Figure 3.3: Distribution of the target indicators by remoteness, First Nations people, 2021

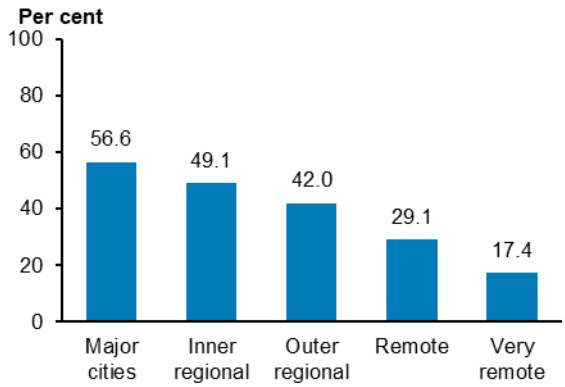
a) Engagement in EET (15–24)



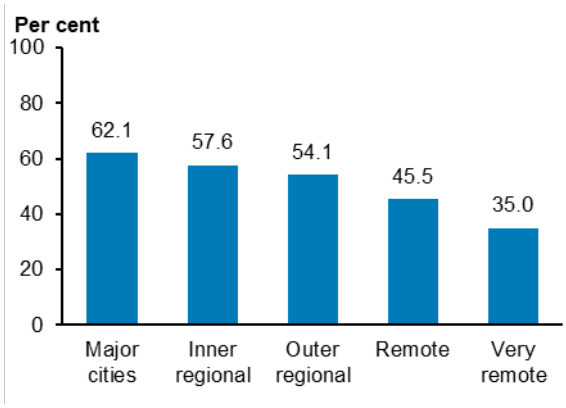
b) Year 12 attainment (20–24)



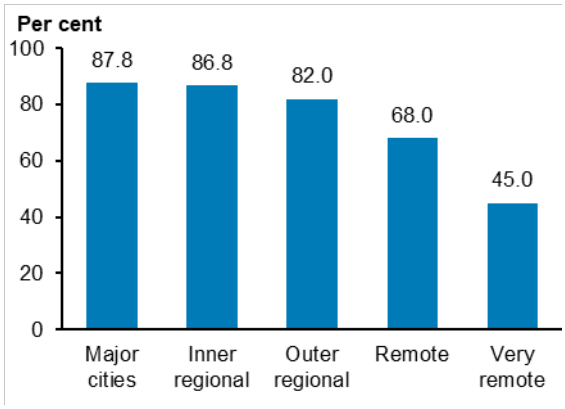
c) Tertiary qualifications (25–34)



d) Employment (25–64)



e) Appropriately sized housing



Notes for the housing target:

1. Excludes people who were not enumerated at their place of usual residence. For the 2021 Census, this was around 24,300 First Nations people.
2. Excludes Not Stated and Unable to Determine for Housing Suitability. For the 2021 Census, housing suitability was not stated for around 16,300 First Nations people and unable to be determined for around 27,900 First Nations people.
3. Appropriately sized dwellings are defined as having spare bedrooms or not requiring any additional bedrooms to adequately house the residents, using the criteria of the CNOS.

Source: ABS 2021 Census of Population and Housing (Productivity Commission 2025).

The results from the logistic regression models[10] on remoteness showed that, after controlling for other variables:

- Living in *Major cities* was associated with higher odds of completing year 12 or equivalent among 20–24 year olds, compared with living in *Very remote* areas.
- Living in *Major cities* was associated with higher odds of being engaged in employment, education or training among 15–24 year olds, compared with those living in *Inner/Outer regional* areas.
- There was no significant association between remoteness and the likelihood of completing tertiary qualifications for 25–34 year olds. This suggests that the relationship between remoteness and completing tertiary qualifications seen above can, in large part, be explained by the other factors included in the regression model, for instance area-level socioeconomic disadvantage.
- Living in *Major cities* was associated with higher odds of being employed among 25–64 year olds, compared with those living in *Inner/Outer regional* areas.
- First Nations people living in *Very remote* areas had higher odds of living in crowded housing compared with those living in *Major cities.*

3.2 Implications for improving the targets

The targets included in the National Agreement are all modifiable with appropriate policy changes, investments, and supports that are designed and led by First Nations people. The findings from this paper on the potential opportunities for improving the education, employment and housing targets in the National Agreement reinforce:

- As discussed in the literature reviews and conceptual framework, building a strong foundation in early childhood is important. People's experiences in childhood (including factors such as health, development, positive relationships, preschool engagement, early schooling experiences, school attendance) are associated with later educational attainment and employment. From a life course perspective, an accumulation of protective factors will lead to more positive outcomes in the future (see HPF measure 2.04 Literacy and numeracy).
- The challenge of overcoming inequities for First Nations people living in remote areas. A number of the opportunities for improving the targets focus on how best to address the challenges that First Nations people living in remote areas face, but it is also important to acknowledge that there is variation among remote areas (for example, a *Very remote* coastal community in far North Queensland will have very different needs and challenges to a *Very remote* desert area in the Northern Territory). Again, this highlights the need for local and place-based supports.
- The need for higher level systemic and policy changes (upstream determinants). However, it is important that any changes are made in partnership with First Nations people (for example, designing housing that is culturally appropriate and designed for the environment), and that changes build on and recognise the strengths of First Nations people and communities (see HPF measure 2.01 Housing).
- The need for changes in the educational system itself (from preschool through to tertiary education) that value and support First Nations peoples' ways of knowing and learning,

[10] The specification for each logistic regression model differed for each outcome. Full results are available in AIHW 2025.

where primary and high schools work with local communities to overcome barriers, where students are supported to pursue higher education and supported when they do so, and where there are changes to the curriculum in what is taught about First Nations history (see HPF measure 2.05 Education outcomes for young people).

- The need to broaden economic opportunities for First Nations people. Economic participation (whether through employment, caring or volunteering) enhances personal and community wellbeing, but is also a key driver of socioeconomic mobility. Area level disadvantage is intrinsically linked to the economic opportunities a person has available to them, but it is a product of historical and existing inequities in access to resources and services. Addressing these inequities is therefore crucial in improving access to economic opportunity (see HPF measures 2.07 Employment and 2.09 Socioeconomic indexes).

In considering these findings, it is important to note limitations of the analysis. In particular, understanding the relative impact of factors is challenging due to the interconnected nature of the variables, and the possibility of reverse (or bi-directional) causation. This analysis also only assesses the impact of factors that can be quantified and therefore can't account for other key factors that may be associated with the Closing the Gap targets.

In the future, the use of linked assets like the Person Level Integrated Data Asset (PLIDA) and the National Health Data Hub (NHDH) would allow for a life course modelling approach where the associations of events and circumstances earlier in life with later outcomes could be estimated, building on the cross-sectional analyses undertaken for this project.

Appendix: Additional material

Table A.1: Summary of multivariate logistic regression results by outcome, NATSIHS 2018–19

		Outcome and age group									
		Crowded housing (all ages)		**Youth engagement in EET** (ages 15–24)		**Year 12 completion** (ages 20–24)		**Tertiary education** (ages 25–34)		**Employment** (ages 25–64)	
	Variables	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**
Demographic	**Age** (reference category)	30–54 55+ (0-15)	0.28* 0.29*	15–17 20–22 (23-24)	3.14** 0.40**	——		——		45–54 (55–64)	1.75**
	Sex (female)	Male	Not sig	Male	Not sig	Male	Not sig	Male	Not sig	Male	1.88**
	English proficiency (not proficient)	——		——			Not sig[a]	——		Proficient	2.28*
	Social marital status (not married)	——		——		——		——		Married	2.42**
	Parental status (not a parent)	——		Single parent Couple parent	0.21** 0.37**		Not sig[b]	——			Not sig[c]
	Number of dependants in household (0–2)	3–4 5+	2.67*** 8.93***	——		——		——		——	
Socioeconomic	**Highest level of education** (Year 12)		Not sig[d]	——		——		——		Bachelor or above Advanced Diploma/ Diploma/ Certificates III/IV Certificates I/II/year 9 and below	3.02** 1.74** 0.42**
	Labour force status (employed)	Unemployed; Not in labour force	Not sig Not sig	——		——		——		——	

(continued)

Table A.1 (continued): Summary of multivariate logistic regression results by outcome, NATSIHS 2018–19

		Outcome and age group									
		Crowded housing (all ages)		**Youth engagement in EET** (ages 15–24)		**Year 12 completion** (ages 20–24)		**Tertiary education** (ages 25–34)		**Employment** (ages 25–64)	
	Variables	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**
Socioeconomic	**Equivalised household income**	(<$300)			Not sig[e]	(Deciles 1–3)		(Deciles 1–3)		——	
		$300–649	Not sig			Deciles 4–7	Not sig	Deciles 4–7	3.23***		
		$650–999	Not sig			Deciles 8–10	Not sig	Deciles 8–10	6.58***		
		$1,000+	0.43**								
	Household financial resources/financial stress	——		Could raise $2,000 in a week	Not sig		Not sig[f]	Could raise $2,000 in a week	1.94**	——	
Housing	**Tenure type** (rent)	Owns home	Not sig	Owns home	2.59**	Owns home	Not sig	——		——	
	Crowded household (yes)	——		No	Not sig	No	2.99**	No	Not sig	No	1.84**
	No. of structural problems	(continuous)	Not sig.	——		——		——		——	
	House is of acceptable standard	Yes	Not sig	Yes	Not sig	No	Not sig	——		——	
Health	**Self-assessed health** (fair/poor)	——		Good/very good/excellent	Not sig	Good/very good/excellent	Not sig	Good/very good/excellent	Not sig	Good/very good/excellent	1.59**
	Whether currently has a diagnosed mental health condition	Yes	Not sig	Yes	Not sig	No	Not sig	No	Not sig	No	1.66**
	Disability status (Has disability)		Not sig[g]		Not sig[g]		Not sig[h]	——		No	2.89**
Cultural	**Identification with tribal group, language group or clan**	Yes	1.93***	——		Yes	2.94**	Yes	Not sig	Yes	Not sig
	Homelands	Recognises homeland	Not sig	——		Lives on homeland	Not sig	Recognises homeland	Not sig	——	
	Removal from natural family		Not sig[i]	——		Descendant of Stolen Generations	Not sig	Not removed	Not sig	Not removed	Not sig
	Experienced discrimination	——		——		——		No	Not sig		Not sig[j]

(continued)

Table A.1 (continued): Summary of multivariate logistic regression results by outcome, NATSIHS 2018–19

		Outcome and age group									
		Crowded housing (all ages)		**Youth engagement in EET** (ages 15–24)		**Year 12 completion** (ages 20–24)		**Tertiary education** (ages 25–34)		**Employment** (ages 25–64)	
	Variables	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**	**Category**	**Odds ratio**
Geographic	**SEIFA (IRSD)**	(Bottom decile)		(Bottom decile)		(Bottom decile)		(Bottom decile)		(Deciles 1–3)	
		Deciles 2–4	Not sig	Deciles 2–4	1.79*	Deciles 2–4	2.24**	Deciles 2–4	1.99**	Deciles 4–7	1.62**
		Deciles 5–10 (less disadvantaged)	0.52***	Deciles 5–10 (less disadvantaged)	Not sig	Deciles 5–10 (less disadvantaged)	Not sig	Deciles 5–10 (less disadvantaged)	2.48**	Deciles 8–10 (less disadvantaged)	2.26**
	State/territory	Northern Territory	2.40***	Tasmania	2.50*	Western Australia	0.33*	SA	0.32**	WA	0.59**
		(Queensland)		(NSW)		South Australia	0.34*	NT	0.18***	Tas	1.63*
						(NSW/ACT)		(NSW)		(NSW)	
	Remoteness	(Major cities)		Major cities	3.30**	Major cities	4.09**	(Major cities)		Major cities	1.53**
		Inner regional	0.60**	(Inner/outer regional)		Inner regional	Not sig	Inner regional	Not sig	(Inner/outer regional)	
		Outer regional	1.59*	Remote/Very remote	Not sig	Outer regional	Not sig	Outer regional	Not sig	Remote/very remote	Not sig
		Remote	1.47*			Remote	Not sig	Remote	Not sig		
		Very remote	3.96***			(Very remote)		Very remote	Not sig		

Notes: Variables not included in the model for a specific outcome are represented by —— Statistically significant variables are in the cells shaded blue. Reference categories are in parentheses. * p<.05; **p<.01; ***p<.001

(a) The variable included in this model was 'Main language spoken at home (Aboriginal/Torres Strait language or other)'.

(b) The variable included in the model was a combined parenthood/household composition variable.

(c) The variable included in the model was whether or not there were any children aged 0–14 in the household.

(d) The reference category in the model was Year 12 and above. The included variables captured those with less than a high school education.

(e) This model used a different variable – weekly equivalised *support* income, defined as the difference between household gross income and personal gross income (then equivalised). The reference category was <$225 a week and the included variables were $225 and $479 per week and $480 or more per week.

(f) This model used 2 different measures of financial stress (neither of which were significant) - Ran out of food in the last 12 months; Ran out of money for basic necessities.

(g) This model included detailed disability categories, not simply a yes/no disability variable. The categories were: schooling/employment restriction only; mild or moderate core activity limitation; severe or profound core activity. None were significant.

(h) Educational disability only (yes/no).

(i) This model used detailed categories. The reference category was Self and relatives not removed. The included variables were: Self-removed (whether or not relatives removed); Older relatives removed, self not removed; Other/not stated. None were significant.

(j) This model included two different variables: Experienced threatened or physical harm in last 12 month (yes/no); Avoided situation due to past unfair treatment in last 12 months (yes/no). Neither were significant.

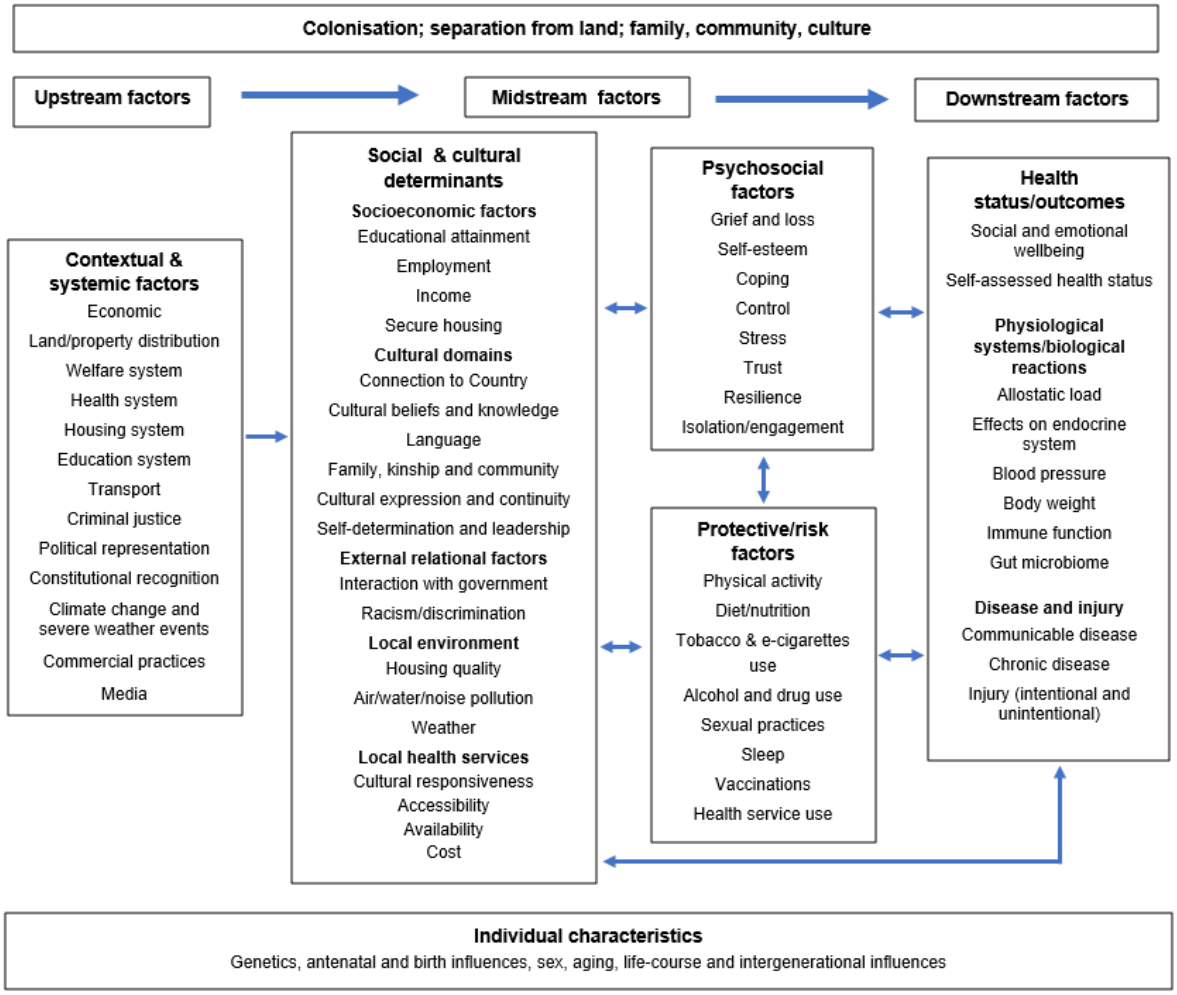
Source: AIHW analysis of 2018–19 NATSIHS.

Table A.2: Socio-economic outcomes and associated targets in the 2020 National Agreement

Socio-economic outcome	Target
1. Aboriginal and Torres Strait Islander people enjoy long and healthy lives	Close the Gap in life expectancy within a generation, by 2031.
2. Aboriginal and Torres Strait Islander children are born healthy and strong	By 2031, increase the proportion of Aboriginal and Torres Strait Islander babies with a healthy birthweight to 91%.
3. Aboriginal and Torres Strait Islander children are engaged in high quality, culturally appropriate early childhood education in their early years	By 2025, increase the proportion of Aboriginal and Torres Strait Islander children enrolled in Year Before Full time Schooling (YBFS) early childhood education to 95%.
4. Aboriginal and Torres Strait Islander children thrive in their early years	By 2031, increase the proportion of Aboriginal and Torres Strait Islander children assessed as developmentally on track in all five domains of the Australian Early Development Census (AEDC) to 55%.
5. Aboriginal and Torres Strait Islander students achieve their full learning potential	By 2031, increase the proportion of Aboriginal and Torres Strait Islander people (age 20–24) attaining year 12 or equivalent qualification to 96%.
6. Aboriginal and Torres Strait Islander students reach their full potential through further education pathways	By 2031, increase the proportion of Aboriginal and Torres Strait Islander people aged 25–34 who have completed a tertiary qualification (Certificate III and above) to 70%.
7. Aboriginal and Torres Strait Islander youth are engaged in employment or education	By 2031, increase the proportion of Aboriginal and Torres Strait Islander youth (15–24 years) who are in employment, education or training to 67%.
8. Strong economic participation and development of Aboriginal and Torres Strait Islander people and communities	By 2031, increase the proportion of Aboriginal and Torres Strait Islander people aged 25–64 who are employed to 62%.
9. Aboriginal and Torres Strait Islander people secure appropriate, affordable housing that is aligned with their priorities and need	A. By 2031, increase the proportion of Aboriginal and Torres Strait Islander people living in appropriately sized (not overcrowded) housing to 88%. B. By 2031, all Aboriginal and Torres Strait Islander households: - within discrete Aboriginal or Torres Strait Islander communities receive essential services that meet or exceed the relevant jurisdictional standard - in or near to a town receive essential services that meet or exceed the same standard as applies generally within the town (including if the household might be classified for other purposes as a part of a discrete settlement such as a ‘town camp’ or ‘town based reserve’).
10. Aboriginal and Torres Strait Islander adults are not overrepresented in the criminal justice system	By 2031, reduce the rate of Aboriginal and Torres Strait Islander adults held in incarceration by at least 15%.
11. Aboriginal and Torres Strait Islander young people are not overrepresented in the criminal justice system	By 2031, reduce the rate of Aboriginal and Torres Strait Islander young people (10–17 years) in detention by at least 30%.
12. Aboriginal and Torres Strait Islander children are not overrepresented in the child protection system	By 2031, reduce the rate of overrepresentation of Aboriginal and Torres Strait Islander children (0–17 years old) in out-of-home care by 45%.
13. Aboriginal and Torres Strait Islander families and households are safe	By 2031, the rate of all forms of family violence and abuse against Aboriginal and Torres Strait Islander women and children is reduced at least by 50%, as progress towards zero.
14. Aboriginal and Torres Strait Islander people enjoy high levels of social and emotional wellbeing	Significant and sustained reduction in suicide of Aboriginal and Torres Strait Islander people towards zero.
15. Aboriginal and Torres Strait Islander people maintain a distinctive cultural, spiritual, physical and economic relationship with their land and waters	A: By 2030, a 15% increase in Australia’s land mass subject to Aboriginal and Torres Strait Islander people’s legal rights or interests. B. By 2030, a 15% increase in areas covered by Aboriginal and Torres Strait Islander people’s legal rights or interests in the sea.
16. Aboriginal and Torres Strait Islander cultures and languages are strong, supported and flourishing	By 2031, there is a sustained increase in number and strength of Aboriginal and Torres Strait Islander languages being spoken.
17. Aboriginal and Torres Strait Islander people have access to information and services enabling participation in informed decision-making regarding their own lives	By 2026, Aboriginal and Torres Strait Islander people have equal levels of digital inclusion.

Source: Australian Government (2020).

Figure A.1: Full contextual framework: social and cultural determinants of health for First Nations people



Adapted from AIHW (2024d); Osbourne et al. (2013); BARHII (2014); Lovett et al (2020). Cultural domains from the Mayi Kuwayu Study conceptual model, Lovett et al. (2020). The examples within each domain are not an exhaustive list.

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Abbreviations

CNOS	Canadian National Occupancy Standard
COAG	Council of Australian Governments
EET	Employment, education or training
IRSD	Index of Relative Socio-economic Disadvantage
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NEET	Not in employment, education or training
NIAA	National Indigenous Australians Agency
SEIFA	Socio-Economic Indexes for Areas

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Related publications

This feature article is the second in a series being produced for the Aboriginal and Torres Strait Islander Health Performance Framework (HPF) website, available from https://www.indigenoushpf.gov.au/.

Information about education, employment and housing is updated regularly on the Aboriginal and Torres Strait Islander HPF website at the following links:

- Measure 2.01 Housing https://www.indigenoushpf.gov.au/measures/2-01-housing
- Measure 2.02 Access to functional housing with utilities https://www.indigenoushpf.gov.au/measures/2-02-access-to-functional-housing-with-utilities
- Measure 2.05 Education outcomes for young people https://www.indigenoushpf.gov.au/measures/2-05-education-outcomes-for-young-people
- Measure 2.06 Educational participation and attainment of adults https://www.indigenoushpf.gov.au/measures/2-06-educational-participation
- Measure 2.07 Employment https://www.indigenoushpf.gov.au/measures/2-07-employment

This feature article outlines the key factors associated with the Closing the Gap targets on education, employment and housing. It identifies common themes and strategies for improvement. The article draws on the findings from a larger AIHW project in which key factors associated with the targets were identified by reviewing Australian and international literature and analysed using a range of data sources.

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