Australian Government

Productivity Commission

# National Indigenous Reform Agreement

## Performance Assessment 2013–14

November 2015

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### Publications enquiries

Media and Publications, phone: (03) 9653 2244 or email: maps@pc.gov.au

### The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

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**Australian Government**
**Productivity Commission**

Locked Bag 2
Collins Street East
Melbourne VIC 8003
Telephone 03 9653 2100
Facsimile 03 9653 2199
www.pc.gov.au
*From the Chairman's Office*

2 November 2015

The Hon Malcolm Turnbull MP
Prime Minister
Parliament House
Canberra ACT 2600

Dear Prime Minister

On behalf of the Productivity Commission, I am pleased to submit to you our report *National Indigenous Reform Agreement Performance Assessment 2013-14*.

This is the first performance assessment report on the National Indigenous Reform Agreement prepared by the Productivity Commission (previous assessments were prepared by the COAG Reform Council). It follows a request from COAG in May 2015.

Our report shows that at the national level, progress towards COAG's Closing the Gap targets has been mixed. Good progress was made in reducing outcome gaps in child mortality and Year 12 attainment rates. The early education target was not met, however the evidence suggests a positive outcomes picture. But little progress was made in closing gaps for life expectancy and reading and numeracy, and employment gaps have increased rather than narrowed.

Our report advocates two main changes in approach — a much greater emphasis on policy evaluation (knowing more about what works and why is the key to designing policies that achieve positive outcomes for Aboriginal and Torres Strait Islander Australians) and rationalising the current extensive and overlapping reporting on Indigenous outcomes and disadvantage.

Consistent with the request from COAG, the Productivity Commission will publicly release this report in December 2015.

Yours sincerely

Peter Harris AO
Chairman

# Letter of Direction

**Australian Government**

**Department of the Prime Minister and Cabinet**

ANDREW FISHER BUILDING
ONE NATIONAL CIRCUIT
BARTON

12 May 2015

Mr Daryl Quinlivan
Head of Office
Productivity Commission
GPO Box 1428
CANBERRA ACT 2601

Dear Mr Quinlivan

I am writing to formalise National Indigenous Reform Agreement (NIRA) performance assessment arrangements, following an out-of-session decision by the Council of Australian Governments (COAG).

All parties to the NIRA have agreed the Productivity Commission (PC) will be responsible for independently assessing progress against the *Closing the Gap* targets and will report to COAG in mid- 2015. The report should assess progress at the national level and for each state and territory and cover all *Closing the Gap* targets, but be shorter than previous COAG Reform Council reports.

The PC will provide jurisdictions with a timetable for development. The Department of the Prime Minister and Cabinet (the department) will support the PC in developing the timetable.

The PC will also need to prepare a draft report for comment by jurisdictions before public release. Consultation on the draft will be through the Steering Committee for Review of Government Service Provision. Consistent with other COAG reporting, jurisdictions will have three weeks to comment on the first draft and one week to comment on the final draft. The report will be made public four weeks after it is presented to COAG.

Following completion of the 2015 report, the department will review the arrangement with state and territory governments and the PC and will present a paper to COAG Senior Officials on options for reporting progress against the targets in future years.

The department's contact for this matter is Mr Matthew James

Yours sincerely

[signed]

Josephine Laduzko
Assistant Secretary
Commonwealth-State Relations Branch
Economic Division

Postal Address: PO BOX 6500, CANBERRA ACT 2600
Telephone: +61 2 6271 5111 Fax: +61 2 6271 5414 www.pmc.gov.au ABN: 18 108 001 191

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# Acknowledgments

The Commission would like to thank the Steering Committee for the Review of Government Service Provision for their valuable comments on this report. The Steering Committee includes representatives from the Australian, State and Territory governments, the Australian Bureau of Statistics and the Australian Institute of Health and Welfare. Their contributions added to the quality of this publication and their assistance is gratefully acknowledged.

# Abbreviations

| | |
|---|---|
| AATSIHS | Australian Aboriginal and Torres Strait Islander Health Survey |
| ABS | Australian Bureau of Statistics |
| ACARA | Australian Curriculum, Assessment and Reporting Authority |
| ACER | Australian Council for Educational Research |
| ACT | Australian Capital Territory |
| AEDC | Australian Early Development Census |
| AHMAC | Australian Health Ministers Advisory Council |
| AIFS | Australian Institute of Family Studies |
| AIHW | Australian Institute of Health and Welfare |
| AQF | Australian Qualifications Framework |
| ATAR | Australian Tertiary Admissions Rank |
| BMI | Body Mass Index |
| CAEPR | Centre for Aboriginal Economic Policy Research |
| CCMS | Child Care Management System |
| CDEP | Community Development Employment Projects |
| CHC | COAG Health Council |
| COAG | Council of Australian Governments |
| CRC | COAG Reform Council |
| DEEWR | Department of Education, Employment and Workplace Relations |
| ERP | Estimated Resident Population |
| FaHCSIA | Department of Families and Housing, Community Services and Indigenous Affairs |
| FaFT | Families as First Teachers |
| GFC | Global Financial Crisis |
| HPF | Aboriginal and Torres Strait Islander Health Performance Framework |
| IER | Indigenous Expenditure Report |
| LSAC | Longitudinal Study of Australian Children |

| | |
|---|---|
| NAPLAN | National Assessment Program — Literacy and Numeracy |
| NATSIHS | National Aboriginal and Torres Strait Islander Health Survey |
| NATSISS | National Aboriginal and Torres Strait Islander Social Survey |
| NECECC | National Early Childhood Education and Care Collection |
| NHMRC | National Health and Medical Research Council |
| NIRA | National Indigenous Reform Agreement |
| NMS | National Minimum Standard |
| NSW | New South Wales |
| NT | Northern Territory |
| OECD | Organisation for Economic Co-operation and Development |
| OID | Overcoming Indigenous Disadvantage |
| PC | Productivity Commission |
| PISA | Programme for International Student Assessment |
| PM&C | Department of the Prime Minister and Cabinet |
| Qld | Queensland |
| RSAS | Remote School Attendance Strategy |
| SA | South Australia |
| SCRGSP | Steering Committee for the Review of Government Service Provision |
| SEAM | Improving School Enrolment and Attendance through Welfare Reform Measure |
| Tas | Tasmania |
| The Commission | Productivity Commission |
| WA | Western Australia |

# OVERVIEW

## Key points

- Aboriginal and Torres Strait Islander Australians experience profound economic and social disadvantage. It is manifest in many ways, affects both the young and the old, and can span generations.
- To lend impetus to the task of addressing that disadvantage, COAG has committed to a number of targets for reducing the disparity between Indigenous and non-Indigenous Australians in life expectancy, health, education and employment outcomes.
- This report is the sixth in a series of performance assessments for the Closing the Gap targets (with assessments made previously by the COAG Reform Council).
  - Like other components of the Indigenous reporting framework, the focus of this report series is on monitoring broad outcomes rather than establishing what works in bridging outcomes gaps. Much less is known about the latter.
  - As well as assessing progress against the targets, the Commission has therefore looked at how the broader reporting framework and policy evaluation efforts could be improved.
- At the national level, progress in meeting individual gap targets has been mixed.
  - Good progress has been made in reducing outcomes gaps in child mortality and Year 12 (or equivalent) attainment rates. And though the target of providing access to early childhood education for all Indigenous four year olds in remote areas by 2013 was not met, the evidence suggests a positive outcomes picture.
  - But despite considerable effort and investment, little or no progress has been made in closing gaps for life expectancy and reading and numeracy. And employment gaps have increased rather than narrowed.
  - Meeting these latter targets seems an unlikely prospect at this stage.
- Outcomes at the jurisdictional level have generally been consistent with national outcomes.
- In many areas, outcomes for Aboriginal and Torres Strait Islander Australians continue to be markedly worse in more remote areas. Even where considerable progress has been made in closing national level gaps, there is still much to do outside of the major population centres.
- Looking to the future, there is a strong case for rationalising reporting on Indigenous outcomes and disadvantage.
- While tracking progress towards an outcomes end point can inform policy making, it is not a substitute for examining the role of specific policies in reducing disadvantage, and assessing their cost effectiveness in absolute terms and relative to other approaches.
- The critical role that robust policy evaluation could, and should, play in improving outcomes for Aboriginal and Torres Strait Islander Australians is widely acknowledged.
  - Though such evaluation can be challenging, a much stronger evaluation culture in the Indigenous policy area should be promoted. It is important that such evaluations consider the effectiveness of mainstream services which account for 80 per cent of Indigenous expenditure.
- Options for invigorating evaluation include: an overarching review of policy evaluation in the Indigenous area; COAG committing to evaluating policy settings in a target area or a sub-set of policies in a particular area (say education); and adding a procedural, evaluation-focused target to the Closing the Gap initiative.

# Overview

## About this report

For many years, and with mixed success, Australian governments have sought to address the profound and persistent economic and social disadvantage experienced by Aboriginal and Torres Strait Islander Australians. To lend impetus to this task, the Council of Australian Governments (COAG) has committed to a number of targets for reducing the disparity in life expectancy, health, education and employment outcomes between Indigenous and non-Indigenous Australians. These 'Closing the Gap' targets are (with one exception) encapsulated in the National Indigenous Reform Agreement (NIRA).

To promote accountability, the NIRA provides for independent evaluation and reporting of progress made at both the national and jurisdictional level towards achieving these targets.

Until last year, responsibility for this evaluation and reporting resided with the COAG Reform Council (CRC). However, with the de-commissioning of the CRC in mid-2014, the Productivity Commission has been given reporting responsibility for 2015. As discussed later, this reporting task is only one of a suite of national-level reporting requirements that address Indigenous outcomes and disadvantage.

### The roles and limitations of targets and indicators

The process of identifying and tracking progress against targets and supporting outcome indicators can be a catalyst for necessary reforms. Amongst other things, it can be a means to:

- translate broad aspirations into more concrete, time-constrained, statements of intent
- raise awareness in the wider community about the importance of change
- energise specific policy actions
- hold government accountable for the success or otherwise of policy actions.

Disaggregating broad outcome indicators can also shine light on where policy should focus in pursuit of the overarching targets. And the very process of developing targets and indicators — and of monitoring progress towards the desired end points — provides a means to engage with those whose interests these targets are intended to promote. As noted in the NIRA, such engagement is widely recognised as critical in formulating effective policies for addressing Indigenous disadvantage.

But while tracking progress against indicators or towards an outcomes end point is an input to good policy making, it is not a substitute for it. The outcomes areas targeted by COAG are the product of a multiplicity of policy and non-policy influences. Also, binary yes/no assessments of success may significantly downplay the value of 'insufficient' but nevertheless worthwhile improvements in outcomes; or the creation of the pre-conditions for future improvements in outcomes.

As the NIRA recognises, monitoring of progress against high level targets must therefore be complemented by robust policy evaluation that focuses on the contribution made by specific policies; and which assesses their cost-effectiveness relative to other potential approaches.

### The Commission's approach

As the sixth in the series of performance assessments for the 'Closing the Gap' targets, the Commission has sought to ensure a degree of comparability with the previous CRC reports. In making its assessments, the Commission has also been aware of a range of issues that can complicate the measurement process, or the interpretation of changes in outcomes (box 1); and of limitations in the indicators in reflecting progress made in the areas concerned.

It has also been aware of the fact that, like other components of the Indigenous reporting framework, the focus of this report series has been on broad outcomes rather than on the role of policies in bridging outcomes gaps. Much less is known about the latter.

As well as assessing progress against the targets, the Commission has therefore looked at how the broader reporting framework and policy evaluation efforts could be improved.

## National level outcomes

At the national level, progress towards COAG's gap reduction targets has been mixed (figure 1). In some cases good progress has been evident. But in others, the disparity in outcomes has changed little or even widened. Meeting these latter targets seems an unlikely prospect at this stage.

## Box 1 Measurement and interpretation complications

The data that this report draws on, like all data, have limitations; or otherwise raise issues relevant to the interpretation of measured changes in outcomes gaps.

- Some of the data are not updated annually, meaning that in these cases, the Commission's assessments cover the same period — 2008 to 2012-13 — as in the CRC's final report, although with some data revisions.
- Outcomes for several of the gap targets are based on sample survey data, and are therefore subject to sampling errors. As a result, quite large changes in outcomes and outcomes gaps — especially at the State and Territory level, or in particular geographic regions — may not satisfy commonly used tests of statistical significance.
- The propensity of people to identify (or be identified) as Indigenous has been increasing. Where the characteristics of those newly identified as Indigenous are different from the rest of the Indigenous population, measured outcomes gaps will be altered.
- More specific measurement or interpretation issues arise for several of the gap target measures. For example, changes (for statistical purposes) to the labour force status of participants in Community Development Employment Projects (CDEP) have contributed to the widening gaps in employment outcomes; with interpretation of those widening gaps further complicated by business cycle and other influences on labour demand (chapter 7).
- The mathematical basis for the gap concept can sometimes lead to 'perverse' outcomes. In particular, where the gap is large, even if Indigenous outcomes improve at a faster rate than non-Indigenous outcomes, the absolute size of the outcomes gap can still sometimes increase. In a similar vein, a 'no improvement' Indigenous outcome in combination with a worsening non-Indigenous outcome will see the absolute size of the outcomes gap narrow.

Such limitations call for a common sense reporting approach that is cognisant of these sorts of issues, but not hamstrung by them, and does not see statistical uncertainty become an excuse for poor performance or policy inaction. Thus, the Commission has:

- reported relevant jurisdictional and geographic outcomes that, while not statistically significant, are consistent with corresponding national-level outcomes, or with other relevant information (such as research on the impacts of remoteness)
- provided quantitative illustrations of the potential impacts on gap outcomes of developments such as the CDEP changes and increasing Indigenous identification
- highlighted improvements in Indigenous outcomes, even where these have not led to reductions in outcomes gaps.

Ultimately, the Commission has sought to present outcomes information that can usefully inform future policy making.

Figure 1 **Progress in meeting individual gap targets has been mixed**

## Life expectancy

Reflecting a range of economic, social and other disadvantage factors, Aboriginal and Torres Strait Islander Australians can expect to die at an earlier age than their non-Indigenous counterparts. COAG is looking to close the life expectancy gap within a generation (by 2031).

In the most recent five-year period for which data are available (2005-2007 to 2010-2012), Indigenous life expectancy increased by 1.6 years for males and 0.6 years for females. Both of these increases were greater than the increase in non-Indigenous life expectancies (though in the case of Indigenous females only slightly so); leading to modest reductions in the life expectancy gap from 11.4 years to 10.6 years for males, and from 9.6 to 9.5 years for females.

Over a longer time period, trends in Indigenous mortality rates (a proxy indicator of life expectancy) between 1998 and 2013 indicate improving health outcomes for both males and females. But corresponding improvements in non-Indigenous male mortality rates means the associated mortality rate gap between Indigenous and non-Indigenous males was not significantly different over the period. In contrast, relative movements in female mortality rates has narrowed the gap appreciably.

Because of the multiple influences on life expectancy, together with mixed signals from proxy indicators and the fact that policy induced improvements in life expectancy may take many years to materialise, forecasting comparative life expectancies in 2031 is fraught with difficulty.

Nonetheless, several considerations suggest that closing the life expectancy gap by 2031 will be difficult.

- The initial rates of gap reduction have been well short of the required rate for full closure (with proxy indicators suggesting the longer term gap has widened for males).
- Some key behavioural and biomedical health risk factors — such as smoking and obesity — continue to be much higher in the Aboriginal and Torres Strait Islander population. This does not auger well for future Indigenous life expectancy; or for life quality outcomes in coming years more generally.

## Child mortality

The mortality rate for young children is a key marker of the health of the population and an important influence on life expectancy over the longer term. Accordingly, COAG has committed to halve the gap in the under-five year mortality rate by 2018.

Tracking progress in this area is complicated by a ‘small numbers’ problem and consequent considerable year to year volatility in mortality rates. And because the large

majority of child deaths occur in the first year of life, changes in the under-five mortality rate are largely determined by changes in the infant (0<1 year old) mortality rate.

For children aged 0-4, the Indigenous mortality rate declined by 31 per cent between 1998 and 2013 and the gap between Aboriginal and Torres Strait Islander and non-Indigenous children fell by 35 per cent over that period. A continuation of this rate of progress would see COAG's gap reduction target met by 2018 (or shortly thereafter).

The closing of the child mortality gap target reflects a substantial 64 per cent decrease in the Indigenous infant mortality rate between 1998 and 2013. However, the mortality gap for older children (aged 1-4) increased over the period (due to a larger relative decrease in the non-Indigenous mortality rate). Also, while disparities in some of the related risk factors narrowed somewhat (for example, the incidence of low birth weight singleton babies), for other factors, the disparities remain large (for instance, smoking rates during pregnancy). Irrespective of what happens to the child mortality rate gap in coming years, there is a need for more robust evaluation of the effectiveness of maternal and child health programs that target these various risk factors.

## Early childhood education

Early childhood education is important for school readiness, educational achievement and school completion — benefits that can be particularly pronounced for children from low socioeconomic or otherwise disadvantaged backgrounds. Reflecting this, COAG set a target of ensuring that all Aboriginal and Torres Strait Islander four year olds in remote communities had access to quality early childhood education by 2013.

This target was not met. Australia-wide, the Indigenous remote area enrolment rate in 2013 of 85 per cent fell 10 percentage points short of the universal access benchmark (defined as 95 per cent enrolment).

That said, this yes/no binary perspective conceals a considerably more diverse, and in some respects positive, outcomes picture.

- The 2013 Indigenous remote area enrolment rate was considerably higher than the estimated rates of 55 to 60 per cent in 2006 and 70 per cent in 2011 (based on Census data).[1]
- The rate was higher in remote areas than in the major cities and regional centres — in marked contrast to the usual negative effect of remoteness on Indigenous outcomes. And data from the Australian Early Development Census reveals that, between 2009 and 2012, there was a decline in the proportion of Aboriginal and Torres Strait Islander children starting school who were assessed by their teachers as developmentally vulnerable.

1 The Census estimates are not directly comparable with the 2013 administrative data estimate.

- But the Indigenous enrolment rate across Australia as a whole was markedly lower than the non-Indigenous rate. Indigenous attendance rates were also markedly lower, with a particularly pronounced enrolment-attendance gap in remote areas.

In seeking to build on recent gains, policy evaluation directed at establishing what works in terms of improving preschool attendance and school readiness of Indigenous children should be a priority.

## Literacy and numeracy

Proficiency in these key educational building blocks is pivotal to people's economic and social wellbeing, as well as to the cohesiveness of the community more generally. While the capacities of individual students vary, the gaps between overall Indigenous and non-Indigenous achievement in these key competency areas are both symptomatic of Indigenous disadvantage and a key impediment to reducing that disadvantage. COAG has therefore committed to halving the gap in reading, writing and numeracy outcomes by 2018.

The primary means for assessing performance against this target — NAPLAN test results — display an element of volatility from year to year. And where changes in the proportions of students meeting national minimum standards are small, statistical significance issues can loom large.

Nonetheless, it is clear that between 2008 and 2014 there was little overall progress made in reducing the sizeable disparities in the proportions of Aboriginal and Torres Strait Islander and non-Indigenous students meeting minimum reading and numeracy standards (typically in the order of 20 percentage points or more).[2]

- The apparent (national level) increases in the proportions of Year 3, 5, 7 and 9 Aboriginal and Torres Strait Islander students meeting minimum reading standards were not statistically significantly different from the starting levels. (Non-indigenous achievement levels were likewise little changed.)
- And for numeracy, the story for both Indigenous and non-Indigenous students was likewise one of little or no change in achievement levels.

Based on what has happened to date, there is seemingly little prospect of meeting COAG's 2018 target. The lack of progress in this area is also likely to have flow-on effects for outcomes in other areas where COAG has committed to reducing disparities, such as Year 12 attainment rates and employment outcomes. And these effects are likely to extend well beyond the timeframes of the Closing the Gap initiative.

2 Data for writing from 2011 onwards are not comparable to earlier years because of a change in the type of writing test used — between 2008 and 2010 students were assessed using a narrative task and from 2011 a persuasive task has been used.

The evidence on what strategies work to improve educational outcomes of Indigenous students is thin. More evidence on what works (and what does not) is required.

## School attendance

For most students, realising their educational potential will be contingent on regular attendance at school. In recognition of this, in 2014, COAG agreed to a new target — closing the gap in Indigenous and non-Indigenous school attendance rates within five years.

National level data on comparative attendance rates are in prospect, but not yet available. However, jurisdictional and school sector attendance data reveal the magnitude of the task at hand. Put simply, attendance rates for Aboriginal and Torres Strait Islander students tend be lower across all year levels; they decline markedly in the later years of secondary school; and for government schools have shown little improvement or even worsened since 2008.

## Year 12 attainment

Successfully completing Year 12 (or a vocational equivalent)[3] can be a stepping stone to further education and training. And for those moving straight into the workforce, it can materially improve their job prospects and lifetime earnings compared to those who leave school earlier. With these benefits in mind, COAG has committed to halving the Year 12 (or equivalent) attainment gap for those aged 20-24 by 2020.

Over the period 2008 to 2012-13, the gap declined substantially — from nearly 40 percentage points to 28 percentage points. Continuation of this rate of progress would be sufficient to achieve the 2020 target.

But there are reasons for circumspection, both about outcomes to date, and about the likelihood that COAG's gap reduction target will be met.

- Year 12 'completions' do not differentiate between those who completed Year 12 with a university entrance ranking or certificate and those who simply attended for the year. A comparative Year 12 certification measure is needed to get a more accurate picture of the extent to which educational disparity is actually being addressed.
- The lack of progress in reducing literacy and numeracy gaps raises questions about whether the past rate of gap closure for Year 12 attainment (as currently measured) can be maintained.

Also of concern are the continuing large gaps in attainment rates in more remote areas (see the section on geographic outcomes and figure 2).

[3] For the purposes of the NIRA, the vocational equivalent of Year 12 completion is an Australian Qualification Framework Certificate level II, or above.

### Employment outcomes

In various ways, employment enhances the wellbeing of both individuals and the wider community. Indeed, a key reason for COAG's focus on reducing educational disparities is to reap the economic and social benefits that would come from improving the employment prospects of Aboriginal and Torres Strait Islander Australians.

COAG has endorsed four high level measures of the gap in employment outcomes — the employment to population ratio, the labour force participation rate, the unemployment rate, and a post-school qualifications rate. (Though not a direct employment outcomes measure, having a post-school qualification will usually improve a person's employment prospects.) COAG is seeking to halve the gaps in these target measures by 2018.

As it has transpired, between 2008 and 2012-13, the Australia-wide gaps for the first three measures widened rather than narrowed, and the modest reduction in the gap in the post-school qualifications rate was not statistically significant. Accounting for factors such as the change to the labour force status (for statistical purposes) of participants in CDEP would reduce the extent of the deterioration in comparative outcomes. Even so, such 'adjustments' would not turn a bad news story into a good news one.

But perhaps the biggest omission in the assessment process in this area has been the lack of regard to influences on the demand for labour.

- Changes to the composition of labour demand — and especially generally increasing skill requirements across the jobs market — have most likely contributed to the recent deterioration in Indigenous employment outcomes.
- And Aboriginal and Torres Strait Islander Australians have almost certainly been more adversely affected by recent cyclical softness in the labour market.

The negative impacts of such demand influences — in many senses, a reflection of the employment disadvantage that the Closing the Gap initiative is seeking to address — may well render COAG's 2018 employment gap closure targets unachievable.

## Geographic and State and Territory outcomes

As noted earlier, measurement issues often complicate analysis of changes in Indigenous outcomes and outcomes gaps at the geographic or jurisdictional level. Nonetheless some high-level themes emerge from such analysis.

### The geographic perspective

With the notable exception of access to early childhood education, outcomes for Aboriginal and Torres Strait Islander Australians tend to deteriorate significantly as remoteness increases. While the same relationship is often also observed in the non-

Indigenous population, the deterioration is typically less pronounced. As a result, outcomes gaps tend to be wider in more remote regions (figure 2).

The very important message here is that even when considerable progress has been made in closing a national level gap — such as in the case of Year 12 attainment — there may still be much to do in improving outcomes away from the major population centres.

## State and Territory outcomes

As detailed in the body of the report, for the most part, State and Territory gap outcomes have been consistent with national level outcomes.

In fact, from a policy perspective, of more interest are instances where there has been material variation in these jurisdictional outcomes.

- The reason for focusing on such differences is not to give individual jurisdictions ticks or crosses for meeting or not meeting annual 'trajectory' points — sometimes no more sophisticated than points on a straight line between the starting outcomes gap and the targeted gap end point.
- Rather, material variations in jurisdictional outcomes provide a potential opportunity for policy learning — that is, to explore whether differences in policy settings have contributed to those variable outcomes.

Differences that may be worthy of examination in this context include infant mortality outcomes, and the very large increase in Indigenous Year 12 (or equivalent) attainment in the ACT.

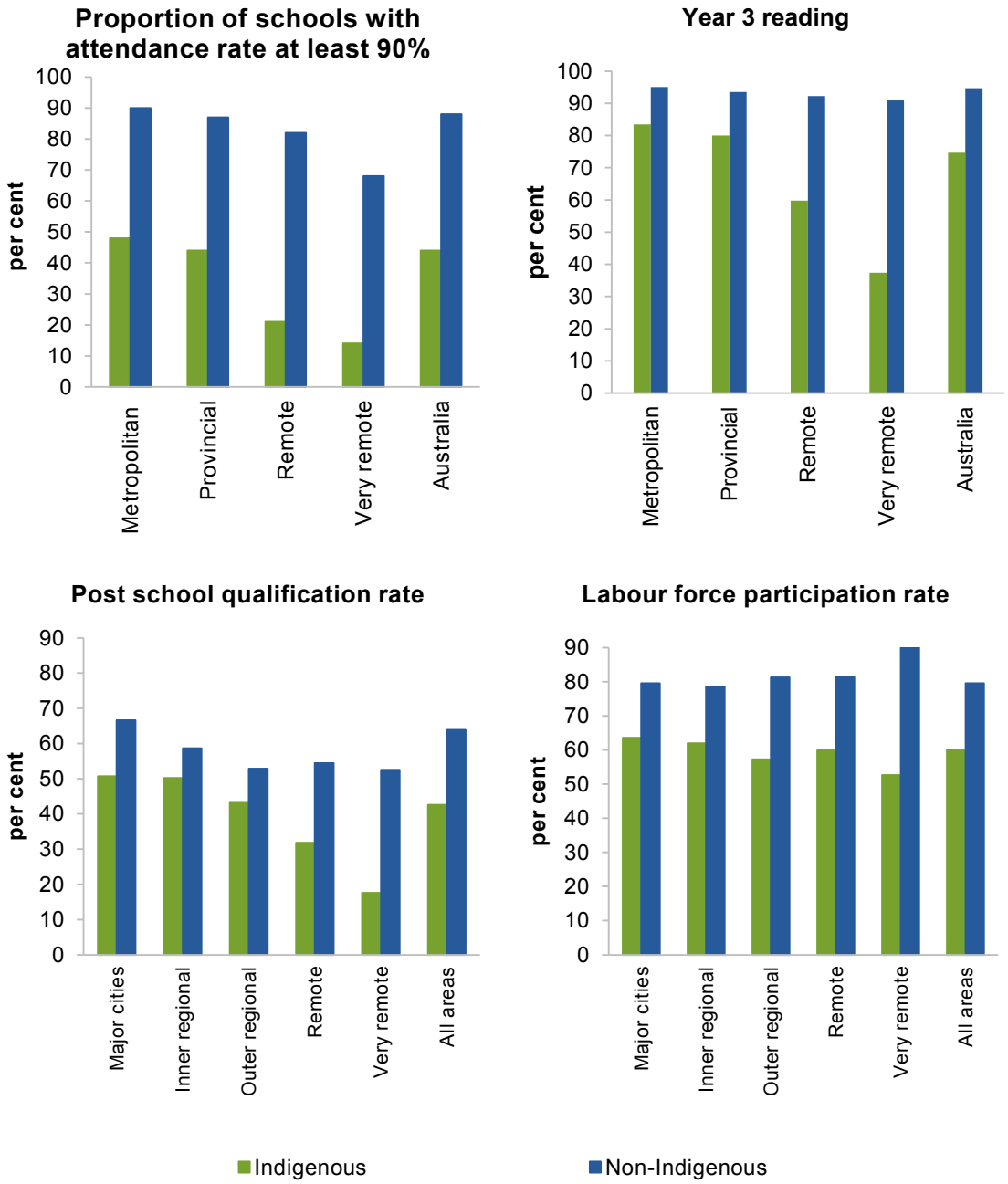
There are also divergent jurisdictional outcomes in the numeracy and literacy results.

- Significant improvements in Indigenous students results were recorded over the period 2008 to 2014 in Queensland (Year 3 and Year 5 reading and Year 3 numeracy), Western Australia (Year 7 reading and Year 9 numeracy) and South Australia (Year 7 reading).
- On the other hand, Indigenous students results deteriorated significantly in reading in the ACT (Year 7) and Tasmania (Year 9) and in numeracy in Year 3 in New South Wales and Victoria.

However, the absence of consistent differences across all learning domains and year levels suggests that factors other than policy settings may underlie the observed divergences in the results.

Figure 2 **Outcomes tend to deteriorate as remoteness increases[a,b]**

Selected education and employment indicators




**a** The data underlying many of the outcomes depicted in the figure are subject to sizeable sampling errors. **b** School attendance refers to the proportion of schools with a student attendance rate of 90 per cent or more by geolocation in 2014; Year 3 reading refers to the percentage of Year 3 students in reading achieving at or above the national minimum standard, by geolocation in 2014. The post school qualification rate and labour force participation rate refer to 2012-13.

*Data sources*: ACARA as reported by Australian Government (2015); SCRGSP (2014e, NIRA tables 11.15; 14.5-14.7; 15.2).

## Where to in the future?

As discussed earlier, reporting on broad outcomes and changes in outcomes gaps has both benefits and limitations. Getting the right reporting balance is not easy.

- While a wide array of information is available to help tell the story of Indigenous disadvantage, the nature and significance of that disadvantage is not in dispute. Hence, investment in story telling could quickly become subject to diminishing returns.
- There is also a risk that efforts to better map the disadvantage landscape, and to report more extensively on changes in high level outcomes, will deflect attention from policy evaluation — especially as the evaluation of specific policies can be much more challenging than simply reporting on the collective impact of a gamut of policy and non-policy factors.

### Rationalising the Indigenous reporting framework

Even putting the latter risk to one side, there is a strong case for rationalising the current framework for reporting on Indigenous outcomes and disadvantage (figure 3).

- The volume of published outcomes data and information has been growing steadily and is now at risk of becoming overwhelming. The Commission estimates that the total page count for the reports identified in figure 3 is close to 2000, with the equivalent of nearly 7000 pages of data available as electronic attachments.
- There is considerable overlap and duplication across the multiple reports that make up this framework. That duplication is most evident between this report and the Prime Minister's Closing the Gap report. But there is also considerable overlap between these two reports and those produced by the Australian Institute of Health and Welfare. To varying extents, the 'assessment' reports replicate data and information published in the Overcoming Indigenous Disadvantage (OID) reports. And though the latter report series is focused on providing information rather than assessment, it nonetheless contains a considerable amount of outcomes analysis.
- Some of the data used for Closing the Gap assessments — for example, on Year 12 attainment and employment outcomes — are not updated each year. Especially where outcomes change only slowly, and/or where collection costs are high, a longer time period between updates may be reasonable. But for annual Closing the Gap reports, there is little option between data updates other than to reiterate past findings.

The Commission acknowledges that the rationale for this report is to provide for an independent assessment of progress made in closing outcomes gaps, and therefore to ensure that governments are accountable for the success or otherwise of their policy initiatives in these areas. As such, some element of duplication of effort might be warranted.

Figure 3 **National reports on Aboriginal and Torres Strait Islander Australians**

**Report on Government Services Indigenous Compendium**
Requested by **COAG**
Produced by **SCRGSP**
Frequency **Annual**
**Purpose:** Performance of (mostly mainstream) government funded and/or provided services to Indigenous Australians.

**Indigenous Expenditure Report**
Requested by **COAG**
Produced by **SCRGSP**
Frequency **2-3 yearly**
**Purpose:** Assist governments to understand levels and patterns of expenditure on services that relate to Indigenous Australians.

**National Indigenous Reform Agreement Performance Report** Requested by **COAG**
Produced by **CRC/PC**[a]
Frequency **Annual**
**Purpose:** Independent assessment of Australian Government and State and Territory government progress toward the Closing the Gap targets, and associated performance indicators.

**The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples: an overview**
Requested by **AIHW**
Produced by **AIHW**
Frequency **2-3 yearly**
**Purpose:** A comprehensive statistical overview of topics important to the health and welfare of Indigenous Australians.

**Overcoming Indigenous Disadvantage**
Requested by **COAG**
Produced by **SCRGSP**
Frequency **2-3 yearly**
**Purpose**
The nationally recognised set of indicators on the wellbeing of Australia's Indigenous peoples.
**Content**
Strategic framework of outcome indicators, whole of government perspective to achievement of agreed priority outcomes.

**Aboriginal and Torres Strait Islander Health Performance Framework Report**[b]
Requested by **CHC**
Produced by **AHMAC** (summary policy report) **& AIHW** (detailed analysis)
Frequency **Biennial**
**Purpose:** Measures health outcomes, determinants of health and health system performance.

**Closing the Gap Clearinghouse Publications**[c]
Requested by **COAG**
Produced by **AIHW in collaboration with AIFS**
Frequency **Regular**
**Purpose:** The Closing the Gap Clearinghouse publications synthesise research and evaluation evidence about what works to overcome Indigenous disadvantage. The Clearinghouse provides a single point for gathering and disseminating reliable information to underpin policy development in Indigenous affairs.

**Closing the Gap – Prime Minister's Report**
Requested by **Prime Minister**
Produced by **PM&C**[d]
Frequency **Annual**
**Purpose:** Prime Minister's report to Parliament on progress against the six Closing the Gap targets and developments in Australian Government Indigenous policies and programs.

Abbreviations: **ABS** Australian Bureau of Statistics. **AHMAC** Australian Health Ministers Advisory Council. **AIFS** Australian Institute of Family Studies. **AIHW** Australian Institute of Health and Welfare. **COAG** Council of Australian Governments. **CHC** COAG Health Council. **CRC** COAG Reform Council. **FaHCSIA** Department of Families and Housing, Community Services and Indigenous Affairs. **PM&C** Department of the Prime Minister and Cabinet. **PC** Productivity Commission. **SCRGSP** Steering Committee for the Review of Government Service Provision.

[a] The CRC was responsible for producing this report until 2014. The 2015 report is being produced by the PC. [b] This report is used to monitor progress towards achieving targets for Closing the Gap, as well as the implementation of the National Aboriginal and Torres Strait Islander Health Plan. [c] Ongoing funding for the Clearing House was terminated in June 2014, though resources and publications on the website will continue to be publicly available. [d] This report was previously produced by FaHCSIA, on behalf of the Australian Government.

*Source:* Adapted from SCRGSP (2014a, box 1.1.1).

However, there is a sense in which this assessment task involves little more than joining the dots on the information presented in the OID reports. Arguably, therefore, extending the remit of the OID reporting regime to encompass the assessment task would not materially compromise the integrity of the overall process. And as well as removing the need for two separate assessment reports, given the time frame for the OID report, this rationalisation option would reduce the extent of reporting on progress when no additional information has become available.

Of course, this is not the only approach for rationalising the reporting framework and other rationalisation options should be explored. For example, another option is to have an independent body focus solely on assessment of progress against the reported targets in the OID report (this would avoid duplicating the reporting task).

Suffice to say that rationalisation of the current framework is something that should be done quickly to avoid wasting further resources on duplicative and sometimes low value reporting activity — resources that would be much more productively employed on better understanding what works in addressing outcomes gaps.

## A much greater emphasis on policy evaluation

While aspirational targets can help to catalyse much needed reform, as noted earlier, high level monitoring must be complemented by detailed evaluation of the contribution of policies in reducing disadvantage. Yet as the Commission's recent Roundtable on Indigenous policy evaluation highlighted (PC 2013), historically, evidence and evaluation have played only limited roles in this area.

Such evaluation poses considerable challenges. Paramount amongst these is separating out the effects of particular policies from all of the other influences on Indigenous outcomes. It is important to note that the majority of expenditure directed at improving the wellbeing of Aboriginal and Torres Strait Islander Australians is delivered through programs that also provide support to non-Indigenous Australians. Any assessment of what works (and what does not) must therefore encapsulate 'mainstream' as well Indigenous-specific policies and programs.

But these challenges are by no means insurmountable. At the very least, evaluation should help to identify approaches that have been largely ineffectual or very costly in terms of the improvements delivered. Robust evaluation can also help to guard against a 'baby and the bathwater' risk in the targeting approach. That is, where an outcomes target is not met, effective as well as ineffective approaches may be discarded as part of efforts to do better.

In recent years, there have been calls for an overarching review of policy evaluation in the Indigenous area. Such a review could be directed at identifying:

- systemic options for encouraging a culture of rigorous, high quality evaluation
- initiatives to improve evaluation practice and build evaluation capability

- ways to better use evaluation results to improve policy settings and decision making.

Again, however, a broad, process-focused, review is only one of several options for invigorating policy evaluation in this area.

One alternative would be for COAG to sponsor an evaluation of policy settings relevant to one gap target area — such as Indigenous employment or education; or of a sub-set of policies directed at a particular aspect of one of these broad areas — for example, school readiness or school attendance policies. As well as shedding light on the efficacy of the policies concerned, such an evaluation could serve as an exemplar of good evaluation practice and of ways to address evaluation challenges common to policies impacting on outcomes for Aboriginal and Torres Strait Islander Australians.

Yet another option would be to augment the current outcomes targets in the Closing the Gap initiative with a procedural, evaluation-focused, target that might, amongst other things, make it incumbent on governments to identify:

- policies that are directly relevant to each of the Closing the Gap outcomes targets
- those policies evaluated since the inception of the Closing the Gap initiative, or explicitly scheduled for review prior to targets expiring
- the proportion of past evaluations made publicly available
- the proportion of past evaluations showing the policies in question to have been worthwhile and cost-effective
- whether all new policy initiatives have a built in evaluation mechanism.

Some of these options could be complements rather than alternatives — recognising that whatever approach were chosen, specific evaluation exercises need to be proportionate to the resources invested in the program or policy concerned.

But the overarching message is a simple one. Setting targets and monitoring outcomes should not be the primary focus of efforts. More attention and resources need to be devoted to policy evaluation. Knowing more about what works and why is the key to designing policies that achieve positive outcomes for Aboriginal and Torres Strait Islander Australians.

# 1 About this report

## 1.1 The National Indigenous Reform Agreement

For many years, and with mixed success, Australian governments have sought to address the profound and persistent economic and social disadvantage experienced by Aboriginal and Torres Strait Islander Australians.[4]

To lend impetus to this task, in December 2007 and March 2008, the Council of Australian Governments (COAG) committed to a number of targets for reducing the disparity in life expectancy, health, education and employment outcomes between Indigenous and non-Indigenous Australians. These 'Closing the Gap' targets were subsequently encapsulated in the National Indigenous Reform Agreement (NIRA).

### Specific targets and the supporting reform architecture

There are currently six specific, and interrelated, targets in the NIRA:

- closing the life expectancy gap by 2031
- halving the gap in mortality rates for Indigenous children under five by 2018
- ensuring that all Indigenous four year olds in remote communities have access to early childhood education by 2013
- halving the gap for Indigenous students in reading, writing and numeracy by 2018
- halving the gap for Indigenous Australians aged 20-24 in Year 12 or equivalent attainment rates by 2020
- halving the gap in employment outcomes between Indigenous and non-Indigenous Australians by 2018.

In addition, in May 2014, COAG agreed to another target that has yet to be formally incorporated in the NIRA, namely:

- closing the gap between Indigenous and non-Indigenous school attendance within 5 years.

Given evidence confirming that frequent or prolonged absences from school are detrimental to student performance, this new target reinforces the already strong

4 Aboriginal and Torres Strait Islander Australians and Indigenous Australians are used interchangeably throughout the report.

educational focus in the six original targets. In fact, linked to the Year 12 attainment target, information on attendance rates has been reported since the inception of the Closing the Gap initiative.

As well as specifying targets and related performance indicators, the NIRA embodies performance improvement 'trajectories' to help keep track of whether year by year progress has been sufficiently rapid to enable the end point targets to be met. The NIRA also:

- provides links to the various COAG National Agreements and National Partnership Agreements that include elements directed at closing the gap in Indigenous disadvantage
- details a number of policy-related 'building blocks' central to addressing disadvantage
- highlights the critical role of both cultural awareness and engagement and partnership with Aboriginal and Torres Strait Islander Australians in formulating policies to close disadvantage gaps.

## 1.2 Reporting on Closing the Gap targets

To promote accountability, the NIRA provides for independent assessment and reporting of progress made at both the national and jurisdictional level towards achieving the high level targets.

Until last year, responsibility for this independent evaluation and reporting resided with the COAG Reform Council (CRC). However, with the de-commissioning of the CRC in mid-2014, the Productivity Commission has been given responsibility for the task in 2015. Evaluation arrangements after 2015 will be subject to further consideration by COAG (see the Letter of Direction). This reporting task is only one of a suite of national-level reports that address Indigenous outcomes and disadvantage (chapter 8).

## 1.3 The roles of targets and indicators

### Some important benefits

The process of identifying and tracking progress against targets and supporting outcome indicators can be a catalyst for necessary reforms — especially in cases where significant improvements in those outcomes are required. Amongst other things, targets can be a means to:

- translate broad aspirations into more concrete, time-constrained, statements of intent; and to secure commitment from governments and other relevant parties to realising those intents

- raise awareness in the wider community about the importance of change. In this case, COAG's commitment to an ambitious set of targets provides a clear signal about both the critical need to address Indigenous disadvantage and the scale of that disadvantage
- energise specific policy actions and, through reporting on progress in meeting targets, hold policy actors accountable for the success or otherwise of those policy actions.

Commenting on this last point, Altman, Biddle and Hunter (2008, p. 1) observed that the absence of a timeframe for reducing Indigenous disadvantage under the previous 'practical reconciliation' paradigm ' … was good political rhetoric but did not provide a basis for a comprehensive policy framework'.

Disaggregating broad outcome indicators can also provide insights on the extent to which factors that affect both Indigenous and non-Indigenous Australians are contributing to Indigenous disadvantage. For example, presenting outcomes by geographical region may shed light on the degree to which an element of disadvantage is common to all people living in certain (more remote) locations. Where there is commonality, general as well as Indigenous-specific policy responses may be required. Indeed, the majority of expenditure directed towards improving the wellbeing of Aboriginal and Torres Strait Islander Australians is provided through mainstream programs (SCRGSP 2014b).

More disaggregated outcome indicators may likewise shine light on where policy should focus in pursuit of the overarching targets. For instance, information on causes of Indigenous morbidity can help to guide the policy emphasis in relation to closing the gap in life expectancy.

And the very process of developing targets and indicators — and of monitoring progress towards the desired end points — provides a means to engage with those whose interests these targets are intended to promote. As the NIRA notes, such engagement is widely recognised as critical to the formulation of effective policies for addressing Indigenous disadvantage.

## But with limitations as well

Equally, targets and supporting outcome indicators are not without their shortcomings. In the first instance, the effectiveness of targets in creating impetus for necessary policy reform depends partly on the stringency of the targets. A target that is easy to meet will impose little discipline on policy makers. But no less importantly, a target that is overly ambitious may reduce commitment to the task at hand. Also, a binary yes/no assessment of success may significantly downplay the value of 'insufficient', but nevertheless worthwhile, improvements in outcomes; or the creation of the pre-conditions for future improvements in outcomes.

More broadly, while tracking progress against indicators or towards an outcomes end point is an input to good policy making, it is not a substitute for it. In an area like Indigenous

disadvantage, outcomes can be the product not only of multiple policy influences, but also of non-policy influences. Moreover, many of the policy influences lie outside the NIRA and related National Agreements and National Partnership Agreements. And a subset of these wider policy influences may detract from, rather than promote, achievement of the Closing the Gap targets. Budget repair policies driven by macroeconomic imperatives could be one such example. Accordingly, monitoring of broad outcomes and progress towards high level targets may not indicate much about the efficacy of particular policies in place to promote achievement of those targets.

As the NIRA recognises, monitoring of progress against high level targets must therefore be complemented by robust policy evaluation that focuses on the contribution made by specific policies; and which assesses their cost effectiveness relative to other potential approaches. Absent robust evaluation, and where targets are not met, there is a risk that good as well as bad policies will be abandoned as part of efforts to do better.

## Finding the information 'sweet spot' is not easy

As part of the broader reporting regime on Indigenous disadvantage, there is a large amount of information assembled on more detailed outcomes relevant to COAG's gap targets. Research bodies, such as the Centre for Aboriginal Economic Policy Research, also separately access available data sets to provide improved or additional insights on Indigenous disadvantage.

As a consequence, there is scope to paint a very detailed picture of what has been happening in relation to the high level gap reduction targets.

But given that the existence of very significant disparities in outcomes is not in dispute, efforts to improve or refine the Indigenous disadvantage story could quickly be subject to diminishing returns. And there is a risk that devoting more effort to these tasks — or undertaking detailed analysis of trajectories towards target end points — will deflect attention from the evaluation of detailed policies in place to ameliorate what, for the most part, are well known problems. As discussed in chapter 8, facilitating robust and routine evaluations of policy settings is a pressing reform priority in the Indigenous area.

In light of these considerations, the Commission's assessments of progress against each of the Closing the Gap targets encapsulate only modest enhancements to past reporting by the CRC. In the main, these enhancements focus on:

- accounting for vagaries in the statistics that impact on the size of measured gaps
- providing additional information to:
  - address what the Commission considers to be important omissions in previous CRC reporting exercises regarding the outcomes that COAG is pursuing, or

– shed light on possible reasons for some of the observed changes in gap outcomes, especially where these reasons could influence conclusions about the degree of progress made against the gap targets concerned.

## 1.4 Some general statistical and measurement issues

The data that this report draws on, like all data, have limitations; or otherwise raise issues relevant to the interpretation of the gap estimates in the following chapters.

- Some of the data collections are not updated annually. From a picture painting perspective, where year to year changes in outcomes are anticipated to be small, this should not be an issue. However, it does mean that a number of the assessments in this report rely on essentially the same data sets as the CRC's final (2014) assessment report.
- For this report, the full suite of responses to the 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) have informed relevant parts of the assessment process. In contrast, earlier reporting on 2012-13 outcomes by the CRC (2014) was based on the somewhat more limited information then available from a sub-component of the AATSIHS. As a result, some of the gap estimates for 2012-13 in this report are slightly different from the corresponding estimates reported by the CRC.
- The timing of Indigenous-specific surveys and of general population surveys used to provide non-Indigenous comparators do not always precisely align. For the most part, the timing of the relevant Indigenous-specific survey or surveys dictates the reported reference date for the comparison; with the non-Indigenous survey data used being from the survey closest to that date. Such differences in timing will usually be of little consequence from an assessment perspective.
- Measured outcomes for a number of COAG's gap targets are based on sample survey data. Because these surveys collect information from only a subset of the population, the results they deliver are subject to sampling error. These sampling errors are a particular issue for the reliability of disaggregated outcomes data. And for assessments of changes over time in comparative Indigenous and non-Indigenous outcomes — the focus of the Closing the Gap initiative — sampling errors give rise to some additional reporting conundrums. Box 1.1 elaborates on these conundrums and how the Commission has accommodated them in this report.
- Sampling errors are also one of several factors that can lead to year to year volatility in some gap outcomes or sub-outcomes. In its assessments of performance against the individual gap targets, the Commission has drawn attention to instances where volatility in outcomes calls for caution in concluding on progress to date.

Box 1.1 **Statistical reliability: some implications for gap measurement**

*Uncertainty about the magnitude of changes in outcomes gaps*

Outcomes based on survey data are subject to sampling errors. Although outcomes derived from administrative data are not subject to sampling errors they may still be subject to natural random variation especially for small counts. The data used in this report come with accompanying error estimates, including 95 per cent 'confidence intervals' — a range of values where it is very likely (95 times out of 100) that the true value falls within that range.

These confidence intervals and other error estimates in turn allow the statistical significance of a change in an outcome measure to be tested. For example, where the 95 per confidence intervals of two estimates (such as those used to measure the extent of change over time) do not overlap it can be concluded that there is a statistically significant difference between the two estimates.

*A practical way forward*

That said, such statistical uncertainties are not a reason to reject outcomes data that are consistent with other reliable data or relevant information. For instance, if there has been a statistically significant reduction in a national-level gap, it must necessarily be the case that there have been reductions in at least some jurisdictions or regions, even if some of these latter reductions do not pass formal tests for statistical significance. A degree of reporting common sense is therefore required; including to prevent statistical uncertainty becoming an excuse for poor performance or policy inaction.

With this in mind, the Commission has adopted the following reporting approach where gap outcomes are derived from surveys or some other data source subject to reliability issues.

- As in the Overcoming Indigenous Disadvantage (OID) report, the Commission has focused in the first instance on reporting statistically significant (at the 95 per cent confidence level), national level, changes in the gaps targeted by COAG.
- For these statistically significant (directional) changes, the reported magnitude of the changes is calculated using the midpoints of the starting and finishing gap ranges. This is in keeping with the practice adopted in both the OID reports and previous CRC reports.
- In various ways, and like the OID report, the Commission has supplemented these national level outcomes data with comparable jurisdictional and geographic data; recognising that many of the sub-national gap outcomes are subject to reliability concerns. These concerns are noted wherever appropriate. However, the Commission's primary screens for determining what sub-national level data to include are:
  - consistency of sub-national outcomes with (statistically significant) national level outcomes and other relevant information, such as research into the impacts of remoteness
  - the ability to add value to the outcomes story; for example, by pointing to diversity in gap outcomes across jurisdictions.

This approach provides for an appropriate balance between due regard for data reliability issues and the need to provide COAG with the sorts of sub-national perspectives that can usefully inform future policy making.

When interpreting Indigenous outcomes and progress against gap targets, two matters affecting the measured size of the Indigenous population may also be relevant.

First, the ABS (2012) estimates that the 2011 Census did not count around 17 per cent of Aboriginal and Torres Strait Islander Australians. As the latest OID report (SCRGSP 2014a, pp. 3.4-3.5) points out, it cannot be assumed that this 'missing' group

shared the same characteristics as the rest of the Aboriginal and Torres Strait Islander population — especially if the undercount was concentrated in particular geographic areas or particular age cohorts. But for this report, as it is focused on changes in comparative outcomes over time, the issue will only be of relevance if the extent or concentration of the undercount has varied significantly across time. In fact, while it appears that the concentration did change somewhat between the 2006 Census and the 2011 Census, the overall level of the undercount appears to have remained broadly the same.

Second, and as the OID report (SCRGSP 2014a, p. 3.5) also noted, the propensity of people to identify themselves (or be identified), as Aboriginal and Torres Strait Islanders has been increasing over time. Again, the precise impacts on measured disparities in outcomes will depend on the characteristics of those newly identifying as Indigenous and how they are distributed across particular groups within the Indigenous population. But if the outcomes for newly identifying Indigenous Australians were, in an overall sense, to be more in keeping with the generally better outcomes enjoyed by non-Indigenous Australians, then increasing identification could serve to reduce overall outcomes gaps.

## Gap mathematics and the potential for 'perverse' outcomes

In addition to these statistical issues, there can be interpretation issues that derive from the mathematical nature of the Closing the Gap concept itself.

Disparities in outcomes between Indigenous and non-Indigenous Australians will only be narrowed, or removed, if there is relatively greater improvement in Indigenous outcomes. That is, the Closing the Gap initiative is predicated on relative Indigenous 'outperformance'.

However, while such outperformance is a necessary condition for gap closure, it is not a sufficient one. In particular, where the gap is large, even if Indigenous outcomes improve at a faster rate than non-Indigenous outcomes, the absolute size of the outcomes gap can still sometimes increase. In a similar vein, a 'no improvement' Indigenous outcome in combination with a worsening non-Indigenous outcome will see the absolute size of the outcomes gap narrow.

As a gap reduces, the degree of outperformance in Indigenous outcomes required to further narrow the gap will likewise decline. At some point, therefore, ongoing outperformance will axiomatically see the gap start to narrow. Again, a 'no improvement' Indigenous outcome in combination with a worsening non-Indigenous outcome will see the outcomes gap narrow. Clearly, there will be little to celebrate in such a result.

The implication is that changes in gaps must always be appropriately interpreted; and that improvements in outcomes for Aboriginal and Torres Strait Islanders should be welcomed in their own right rather than considered only in terms of their impacts on outcomes gaps.

## 1.5 Geographic and State and Territory outcomes

As discussed in box 1.1, the measurement issues that often complicate analysis of changes in Indigenous outcomes and outcomes gaps at the geographic or jurisdictional level, do not preclude, or negate the value of, providing relevant information of this nature. For example, geographic delineations can reinforce the notion that even where considerable progress has been made in improving national level outcomes, there will still often be much to do in improving outcomes in more remote areas. And reporting on State and Territory progress against the gap targets has been an integral part of the Closing the Gap initiative.

That said, as the assessments in this report reveal, there has generally been a high degree of concordance between State and Territory outcomes and national level outcomes. From that perspective, the value add from extensive reporting of those State and Territory outcomes — and giving individual jurisdictions ticks or crosses for meeting or not meeting annual 'trajectory' points that are sometimes no more sophisticated than points on a straight line between the starting outcomes gap and the targeted gap end point — may not be great. Rather, of most interest are any instances of significant variations in jurisdictional outcomes. These provide a potential opportunity to explore whether differences in policy settings may have contributed to outcome differences — though such exploration is not a task for this particular exercise.

In light of the above, the body of this report does not contain extensive commentary on State and Territory outcomes. However, appendix A provides a summary assessment of each jurisdiction's performance against the various gap targets.

## 1.6 The rest of the report

This report is the sixth in the series of performance assessments for the Closing the Gap targets. In making its assessments, the Commission has therefore sought to ensure an appropriate degree of comparability with the assessments made by the CRC. However, it has also looked at how this reporting process, and the broader Indigenous disadvantage reporting framework and policy evaluation efforts, could be improved. More specifically:

- Chapters 2 to 7 present the Commission's assessment of progress towards meeting the individual gap targets. (Progress on the new attendance gap target is detailed in chapter 5 in conjunction with the assessment of the literacy and numeracy target.)
- Chapter 8 looks at the scope to rationalise the currently complex and duplicative reporting framework; as well as at the much bigger role that policy evaluation should play in improving understanding of what works in bridging outcomes gaps.

## Summary of key findings

# LIFE EXPECTANCY

Modest progress, but neither Australia nor individual jurisdictions are on track to meet the target

Indigenous mortality rates have declined considerably across most leading causes of death over the longer term

Indigenous smoking rates remain much higher than for non-Indigenous Australians and Indigenous Australians are more likely to be obese

# 2 Life expectancy

### Key points

- Life expectancy at birth is a widely used indicator of the health of a population. It measures the average number of years that a group of newborn babies would be expected to live if current death rates at each age cohort remained the same.
- Aboriginal and Torres Strait Islander Australians have considerably shorter life expectancies than the rest of the Australian population. This is especially the case for Aboriginal and Torres Strait Islander males.
- COAG has committed to closing the gap in Aboriginal and Torres Strait Islander life expectancy by 2031 and has also identified several performance indicators to measure progress against the life expectancy target. These are: mortality rate by leading cause; rates of current daily smokers; levels of risky alcohol consumption; and prevalence of overweight or obesity.
- There have been only modest reductions in the gap between Aboriginal and Torres Strait Islander and non-Indigenous life expectancy outcomes since 2005-07.
  - The starting gap for Aboriginal and Torres Strait Islander males (of 11.4 years) has declined by a modest 0.8 years and the starting gap for females (of 9.6 years) has declined by only 0.1 years as at 2010-2012.
  - Based on current progress, neither Australia nor individual jurisdictions are on track to meet the targeted gap reductions by 2031.
- There have been improvements in Aboriginal and Torres Strait Islander health over the longer term. Mortality rates have declined and the gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians narrowed considerably for females and remained stable for males between 1998 and 2013.
- Reductions in the rate of Aboriginal and Torres Strait Islander infant mortality have been the most timely influence on measured life expectancy for Aboriginal and Torres Strait Islander people as a whole.
- Tracking changes in the health of a population is inherently difficult. And it is not feasible for all aspects of Aboriginal and Torres Strait Islander health to be captured by the agreed targets and indicators.
  - Alternative indicators of Aboriginal and Torres Strait Islander health suggest that there has been progress in narrowing the relative health gap between Aboriginal and Torres Strait Islander and non-Indigenous.
  - Significant data quality issues complicate measurement of Aboriginal and Torres Strait Islander health outcomes.

## 2.1 Introduction

Life expectancy is a widely used indicator of long-term health and wellbeing. At a single point in time, it measures how long an individual can expect to live if mortality rates across the population remain unchanged.

One limitation of life expectancy measures is that they take no account of prospective changes in mortality rates due to advances in medical science, the development of new drug treatments, technological change, trends in real public health funding, and research developments aimed at changing health behaviours. These factors can impact on both the duration and quality of Aboriginal and Torres Strait Islander and non-Indigenous life.

Life expectancy estimates also reveal little about underlying and relative improvements in the quality of life. And as the Aboriginal and Torres Strait Islander and non-Indigenous populations have markedly different age and morbidity profiles — Aboriginal and Torres Strait Islander Australians are much younger and experience much higher rates of chronic disease than non-Indigenous Australians — it is unlikely that developments in say new drug treatments will impact uniformly on each population group.[5]

Bearing these caveats in mind, measures of life expectancy reveal that Aboriginal and Torres Strait Islander Australians live considerably shorter lives than their non-Indigenous counterparts. Differences in measured life expectancy outcomes for Aboriginal and Torres Strait Islander and non-Indigenous Australians can be traced to a range of behavioural, economic, social and geographic factors, which are themselves linked to other indicators of Aboriginal and Torres Strait Islander disadvantage, including those with COAG targets.[6]

Recognising these disparities, COAG set a target to close the gap in life expectancy between Aboriginal and Torres Strait Islander and non-Indigenous Australians by 2031. The magnitude of the challenge involved in achieving this target is highlighted in a recent review of health programs in Western Australia:

> As noted at the time of the NIRA, unless a future slowing occurs in the upward trend in non-Indigenous life expectancy, for Indigenous people to catch up by 2031, it will require average national gains of not merely an extra decade of life, but rather 21 additional years in males and 16 additional years in females. Gains in life expectancy of this magnitude have taken around 60 years to achieve in the Australian population as a whole. (Holman and Joyce 2014, p. 3)

Several performance indicators were identified to measure progress against the COAG life expectancy gap target:

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5 Another aspect to differences in population age structures is the deterioration in the quality of life beyond age 65 as the prevalence of dementia and other cognitive disorders increases. Longer life expectancy for non-Indigenous Australians will be associated with a higher incidence of such disorders.

6 Poor Aboriginal and Torres Strait Islander health outcomes will also impact performance in achieving other COAG targets in areas such as employment and education. For example, higher rates of chronic disease and incidence of disability place limits on the ability to secure and maintain long term employment.

- estimated life expectancy at birth
- mortality rate by leading cause
- rates of current daily smokers
- levels of risky alcohol consumption
- prevalence of overweight or obesity (COAG 2007).

## 2.2 Starting gaps and progress to date

### Life expectancy at birth

The Australian Bureau of Statistics (ABS) currently publishes *comparable* estimates of Aboriginal and Torres Strait Islander and non-Indigenous life expectancy for two periods — 2005-2007 (the COAG baseline year) and 2010-2012.[7] According to that data, there was a substantial starting gap in Aboriginal and Torres Strait Islander life expectancy at the national level — 11.4 years for Aboriginal and Torres Strait Islander males and 9.6 years for Aboriginal and Torres Strait Islander females in 2005-2007 (table 2.1).

For those jurisdictions where reliable data were available, the starting gaps were:

- 10.5 years for males and 8.6 years for females in New South Wales
- 11.8 years for males and 10.0 years for females in Queensland
- 14.7 years for males and 12.9 years for females in Western Australia
- 14.0 years for males and 11.6 years for females in the Northern Territory.

Over the five years to 2010-2012, Aboriginal and Torres Strait Islander life expectancy increased by 1.6 years for males and 0.6 years for females, contributing to a modest reduction in the life expectancy gap. The gap narrowed from 11.4 years to 10.6 years for males, and from 9.6 years to 9.5 years for females. These small gains mean that Aboriginal and Torres Strait Islander males born in 2010-2012 can now expect to live to 69.1 years (compared to 79.7 years for non-Indigenous Australians), while Aboriginal and Torres Strait Islander females can expect to live to 73.7 years (compared to 83.1 years).

[7] The estimates are based on the average number of deaths over a three year period and the estimated resident population at the mid-point of that three year period. Using a *direct* methodology to adjust for under-identification in Aboriginal and Torres Strait Islander mortality data, the ABS produced estimates of comparative life expectancy for the 2006 and 2011 Census reference periods with the next estimates not due until the release of the 2016 Census data some time in 2017. Prior to these data points, experimental estimates of life expectancy were produced using a different *indirect* methodology to account for under-identified Aboriginal and Torres Strait Islander deaths and are not comparable to the later estimates. The lack of comparable time series data limits the strength of conclusions that can be drawn about the effectiveness of programs with a long-term objective to bridge the life expectancy gap.

While overall life expectancy for Aboriginal and Torres Strait Islander *males* improved in all jurisdictions, the relative improvement in non-Indigenous outcomes meant that the gap narrowed in New South Wales (to 9.3 years) and Queensland (10.8 years), but widened in Western Australia (15.1 years) and the Northern Territory (14.4 years).

For Aboriginal and Torres Strait Islander *females*, overall life expectancy improved in all jurisdictions except the Northern Territory. Again, the gap narrowed in New South Wales (to 8.5 years) and Queensland (8.6 years) but widened in Western Australia (13.5 years) and the Northern Territory (14.4 years).

Comparisons based on locational remoteness show a larger life expectancy gap for Aboriginal and Torres Strait Islander males in urban areas (11.9 years), while the gap for females was greatest in non-urban areas (10.2 years) in 2010-2012. However, the ABS has cautioned that due to the under-identification of Aboriginal and Torres Strait Islander deaths, remoteness estimates should only be used selectively (ABS 2013).

Table 2.1 **Indigenous and non-Indigenous life expectancy: by jurisdiction, 2005-2007 and 2010-2012[a]**
Years of life expectancy at birth

| *Jurisdiction*[b] | *Indigenous* | | *Non-Indigenous* | | *Gap* | |
|---|---|---|---|---|---|---|
| | *2005-2007 Estimates* | | | | | |
| | Males | Females | Males | Females | Males | Females |
| New South Wales | 68.3 | 74.0 | 78.8 | 82.6 | 10.5 | 8.6 |
| Queensland | 67.1 | 72.7 | 78.8 | 82.7 | 11.8 | 10.0 |
| Western Australia | 64.5 | 70.0 | 79.2 | 82.9 | 14.7 | 12.9 |
| Northern Territory | 61.5 | 69.4 | 75.5 | 81.0 | 14.0 | 11.6 |
| **Australia**[c] | **67.5** | **73.1** | **78.9** | **82.6** | **11.4** | **9.6** |
| | *2010-2012 Estimates* | | | | | |
| | Males | Females | Males | Females | Males | Females |
| New South Wales | 70.5 | 74.6 | 79.8 | 83.1 | 9.3 | 8.5 |
| Queensland | 68.7 | 74.4 | 79.4 | 83.0 | 10.8 | 8.6 |
| Western Australia | 65.0 | 70.2 | 80.1 | 83.7 | 15.1 | 13.5 |
| Northern Territory | 63.4 | 68.7 | 77.8 | 83.1 | 14.4 | 14.4 |
| **Australia**[c] | **69.1** | **73.7** | **79.7** | **83.1** | **10.6** | **9.5** |

**a** Estimates of Aboriginal and Torres Strait Islander life expectancy are not produced for Victoria, South Australia, Tasmania or the ACT due to the small number of deaths reported in these jurisdictions. **b** New South Wales, Queensland, Western Australia and the Northern Territory accounted for 82.7 per cent of the 713 600 estimated Aboriginal and Torres Strait Islander population at 30 June 2014. **c** Estimates for Australia include all states and territories and account for age-specific identification rates that could not be applied at the state and territory level. Headline estimates should not be compared to state and territory estimates.

*Source*: ABS (2013).

As measured life expectancy for Aboriginal and Torres Strait Islander people is negatively impacted by much higher mortality rates at the very start of life relative to non-Indigenous people, recent improvements in mortality rates for infants aged less than 1 year (chapter 3), may provide a reason for optimism that there will be some future reduction in the life expectancy gap. Even so, based on current progress, neither Australia nor individual jurisdictions are on track to meet the targeted gap reductions by 2031. That said, policy induced improvements in life expectancy may take many years to materialise.

## Performance indicators

### Mortality rate by leading cause

Mortality rates by leading cause were identified by COAG as one of the performance indicators for reducing the life expectancy gap.[8] As shown in table 2.2, Aboriginal and Torres Strait Islander Australians die at higher rates than non-Indigenous Australians for all but one cause (nervous system diseases). The leading causes of Aboriginal and Torres Strait Islander death for the period 2008 to 2012 were cardiovascular disease (26 per cent of Aboriginal and Torres Strait Islander deaths), cancers (20 per cent), external causes, including injury (15 per cent), diabetes (8 per cent) and respiratory diseases (8 per cent).

The main contributors to the measured overall gap between Aboriginal and Torres Strait Islander and non-Indigenous deaths over 2008-2012 were:

- *cardiovascular disease* including heart attacks and angina (24 per cent of the gap)
- *diabetes* (19 per cent of the gap)
- *respiratory diseases* (12 per cent of the gap)
- *cancer* (12 per cent of the gap)
- *external causes* with suicide rates among Aboriginal and Torres Strait Islander males in particular being much higher than non-Indigenous males (10 per cent of the gap) (AIHW 2015a, p. 114).

But underlying Aboriginal and Torres Strait Islander health has improved considerably in most areas over the longer term. Between 1998 and 2013:

- the mortality rate (after adjusting for differences in population age structures) for both Aboriginal and Torres Strait Islander and non-Indigenous peoples declined significantly by around 16 per cent. The associated rate difference between the two population cohorts narrowed by a statistically significant 15 per cent over the period.[9]

8 Mortality rates are considered a proxy measure for life expectancy and are available over a longer time period than comparable Aboriginal and Torres Strait Islander life expectancy time series data in Australia.

9 Percentage changes calculated using linear regression.

Table 2.2 **Age standardised Aboriginal and Torres Strait Islander causes of death: 2008-2012**

| | *Mortality rate per 100 000 population* | *Share of total Aboriginal and Torres Strait Islander deaths* | *Rate difference (gap)* | *Per cent of total gap* |
|---|---|---|---|---|
| **Total all causes** | **985.6** | **100.0** | **388.9** | **100.0** |
| Cardiovascular diseases | 285.7 | 25.5 | 93.9 | 24.1 |
| External causes | 75.2 | 15.2 | 37.0 | 9.5 |
| Endocrine, nutritional and metabolic diseases | 103.3 | 9.1 | 80.6 | 20.7 |
| Diabetes | 89.9 | 7.9 | 74.3 | 19.1 |
| Respiratory diseases | 96.3 | 7.6 | 46.5 | 12.0 |
| Cancers | 224.1 | 20.2 | 46.2 | 11.9 |
| Cancer of digestive organs | 62.9 | 5.8 | 15.2 | 3.9 |
| Lung cancer | 56.4 | 4.9 | 22.9 | 5.9 |
| Cervical cancer | 3.5 | 0.5 | 2.5 | 0.6 |
| Digestive diseases | 47.4 | 5.6 | 26.9 | 6.9 |
| Kidney diseases | 29.6 | 2.5 | 18.4 | 4.7 |
| Conditions originating in the perinatal period | 4.3 | 2.1 | 1.7 | 0.4 |
| Infectious and parasitic diseases | 19.4 | 2.4 | 10.2 | 2.6 |
| Nervous system diseases | 2.4 | 2.5 | -1.8 | -0.5 |
| Other causes | 76.4 | 7.4 | 29.4 | 7.6 |

*Sources*: SCRGSP (2014e, tables NIRA 2.2 and NIRA 2.12).

- there was a less pronounced but significant improvement in Aboriginal and Torres Strait Islander male health (a 14 per cent decline in deaths per 100 000 population) compared to non-Indigenous males (a 22 per cent decline in deaths per 100 000 population over that period). But the associated mortality rate gap (in terms of rate difference) was not significantly different over the period.
- for females, the Aboriginal and Torres Strait Islander mortality rate fell at a faster rate (17 per cent) than non-Indigenous female mortality (11 per cent) and the associated gap (rate difference) narrowed significantly (by 26 per cent).

In terms of the leading causes of Aboriginal and Torres Strait Islander mortality, rates of death declined markedly between 1998 and 2012 for cardiovascular disease (more than 40 per cent), respiratory disease by 26 per cent and diabetes by 9 per cent (AIHW 2015a, table S6.10). But for diseases such as cancer, Aboriginal and Torres Strait Islander death rates increased by 16 per cent over the period (AIHW 2015a, table S6.10).[10] The associated health

[10] The percentage changes reported in this section are derived using linear regression and are all statistically significant at the 0.05 level.

gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians narrowed appreciably for cardiovascular and respiratory disease and to a lesser extent for diabetes.

Longer term patterns in mortality rates by leading cause vary by gender. For Aboriginal and Torres Strait Islander males, mortality rates between 1998 and 2012 declined by around 30 per cent for *cardiovascular and respiratory disease* but increased by 15 per cent for *cancer* (AIHW 2015a, table S6.10). Non-indigenous males recorded higher relative rates of improvement for cardiovascular disease (a 42 per cent reduction in mortality) and cancer (13 per cent reduction) but lower rates for respiratory disease (19 per cent reduction, AIHW 2015a, table S6.10).

Conversely, trends in Aboriginal and Torres Strait Islander female mortality between 1998 and 2012 primarily reflect declines in *cardiovascular disease* (46 per cent), kidney disease (45 per cent) and a 25 per cent reduction in diabetes (AIHW 2015a, table S6.10). In line with the experience for Aboriginal and Torres Strait Islander males, rates of female death from *cancer* increased by 20 per cent between 1998 and 2012. Non-Indigenous female cancer rates fell (AIHW 2015a, table S6.10). But while the incidence of diabetes related deaths fell appreciably for Aboriginal and Torres Strait Islander females there was no statistically significant change for Aboriginal and Torres Strait Islander males (AIHW 2015a, table S6.10).

Jurisdictional mortality rates across all causes of death are shown in table 2.3. The gap between Aboriginal and Torres Strait Islander and non-Indigenous deaths remains much higher than the national average in the Northern Territory and Western Australia. Over time, the data show a marked deterioration in Aboriginal and Torres Strait Islander health outcomes in New South Wales, a marked improvement in Western Australia and little if any change in the other jurisdictions between 2006 and 2012.

Table 2.3 **Jurisdictional mortality rates**

Rate difference per 100 000 population over 2008-2012 and per cent change from 2006 to 2012

| | *2008-2012* | *Per cent change from 2006 to 2012*[a] |
|---|---|---|
| New South Wales | 196.1 | 40.7 |
| Queensland | 345.9 | 1.5 |
| Western Australia | 728.0 | -23.8 |
| South Australia | 195.5 | 1.0 |
| Northern Territory | 841.0 | 2.1 |
| Total | **388.9** | **-4.7** |

[a] Derived from linear regression.

*Source*: SCRGSP (2014e, tables NIRA 2.5-NIRA 2.11).

## Smoking, alcohol and overweight/obesity

The significant health gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians is explained by both social determinants as well as a range of behavioural risks. With respect to the latter, a now dated burden of disease study found that about half of the health gap is explained by eleven behavioural risk factors, with smoking and obesity together accounting for one third of the gap (Vos et al. 2007).[11] COAG identified these two lifestyle factors as performance indicators for eliminating the life expectancy gap. Alcohol consumption was also a target, but it is estimated to be a comparatively minor gap influence explaining just 7 per cent of the difference in health outcomes (Vos et al. 2007).

### *Rates of current daily smokers*

Among Aboriginal and Torres Strait Islander Australians, tobacco use is a leading risk factor, accounting for 17 per cent of the Aboriginal and Torres Strait Islander burden of disease and contributing to death through cardiovascular diseases, numerous cancers and depression (SCRGSP 2014a, p. 8.20).[12] According to the Department of Health:

> Tobacco smoking is the most preventable cause of ill health and early death among Aboriginal and Torres Strait Islander people and is responsible for around one in five deaths. (DoH 2015)

Accordingly, COAG committed to halve the daily smoking rate among Aboriginal and Torres Strait Islander adults (18 or older) from 44.8 per cent (crude rate) in 2008 to 22.4 per cent by 2018 and provided over $100 million in Aboriginal and Torres Strait Islander-specific program funding toward that goal from 2009-10 to 2012-13.[13]

After adjusting for differences in age structure of the two populations, there has been a significant 3 percentage point decline in Aboriginal and Torres Strait Islander smoking rates — from 44.8 per cent in 2008 to 42.1 per cent in 2012-13 (SCRGSP 2014a, table 8A.4.6). But the gap between Aboriginal and Torres Strait Islander and non-Indigenous smokers has remained stable at around 26 percentage points over the period.[14] And in 2012-13, Aboriginal and Torres Strait Islander Australians aged 15 years and over were still 2.6 times more likely to smoke daily than their non-Indigenous counterparts (SCRGSP 2014a, table 8A.4.6). Viewed over a longer period, the proportion of Aboriginal and Torres Strait Islander adults who smoked daily has declined significantly by 7 percentage points from 48.8 per cent in 2001 (SCRGSP 2014a, table 8A.4.6).

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11 The AIHW is currently undertaking work to update burden of disease estimates for the Aboriginal and Torres Strait Islander population with results expected to be released in mid-2016.

12 In particular, cardiovascular disease represented the largest gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians by leading cause, at 108 deaths per 100 000 population in 2012. Aboriginal and Torres Strait Islander male deaths from cardiovascular disease (at 146 per 100 000 population) were significantly higher than female deaths (at 81 per 100 000 population).

13 That funding was a component of the *Closing the Gap: Tackling Chronic Disease* initiative.

14 The data for non-Indigenous adults who smoked daily relates to 2011-12.

Of relevance to the child mortality discussion in chapter 3, around 50 per cent of Aboriginal and Torres Strait Islander mothers reported smoking during pregnancy in 2011, compared to 52.5 per cent in 2008. And in 2011, Aboriginal and Torres Strait Islander mothers were four times more likely to smoke during pregnancy than non-Indigenous mothers (SCRGSP 2014a, tables 6A.2.1, 6A.2.4).

The relative propensity of Aboriginal and Torres Strait Islander Australians' to smoke (including over time) varies across the states and territories (table 2.4). In 2012-13, the largest gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians smoking rates was recorded in New South Wales while the lowest gap was in the ACT.

Table 2.4 **Age standardised smoking rates and gap by jurisdiction: 2008 and 2012-13[a]**

Per cent of Aboriginal and Torres Strait Islander daily adult smokers and rate difference[b]

| | *2008* | | *2012-13* | |
|---|---|---|---|---|
| | *Indigenous smokers* | *Rate difference* | *Indigenous smokers* | *Rate difference* |
| New South Wales | 47.6 | 28.8 | 41.7 | 27.7 |
| Victoria | 46.6 | 29.3 | 42.0 | 25.5 |
| Queensland | 42.8 | 21.3 | 42.1 | 25.0 |
| Western Australia | 39.6 | 22.7 | 39.6 | 22.2 |
| South Australia | 47.0 | 27.0 | 41.7 | 25.4 |
| Tasmania | 44.2 | 20.7 | 39.1 | 17.9 |
| ACT | 29.8 | 13.8 | 27.6 | 15.0 |
| Northern Territory | 46.6 | 24.4 | 49.0 | 26.9 |
| **Australia** | **44.8** | **25.9** | **42.1** | **26.1** |

[a] These figures have been revised since the release of the 2012-13 NIRA report. [b] Rate difference is based on 2012-13 Aboriginal and Torres Strait Islander data and 2011-12 non-Indigenous data.

*Sources*: SCRGSP (2014a, table 8A.4.6) and SCRGSP (2014e, table NIRA 3.3).

### *Prevalence of overweight or obesity*

Obesity is a significant risk factor for many chronic health conditions including cardiovascular disease, diabetes, kidney disease and some cancers. For example, in 2012-13, obese Aboriginal and Torres Strait Islander adults were seven times more likely to have diabetes compared with individuals who were of normal weight or underweight (AIHW 2015a, p. 65). Recent evidence shows that the excess burden of overweight and obesity for Aboriginal and Torres Strait Islander Australians reduces average life expectancy by between one and three years, accounting for 9 to 17 per cent of the total life expectancy gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians (Zhao et al. 2013 cited in SCRGSP 2014a, p. 8.26). Lifestyle factors related to nutrition and physical inactivity are major contributors to obesity.

In 2012-13, around 72 per cent of Aboriginal and Torres Strait Islander Australians were classified as obese or overweight (compared to around 62 per cent of non-Indigenous Australians).[15] As a population, Aboriginal and Torres Strait Islander people were 1.6 times more likely to be obese compared to non-Indigenous Australians in 2012-13 but non-Indigenous Australians were 1.2 times more likely to be overweight (SCRGSP 2014b, table NIRA 5.3). Both Aboriginal and Torres Strait Islander males and females were significantly more likely to be obese than their non-Indigenous counterparts.

Jurisdictional comparisons reveal the rate of obesity or overweight was higher for Aboriginal and Torres Strait Islander Australians in all jurisdictions except the Northern Territory in 2012-13 (table 2.5).

Table 2.5 **Overweight or obese adults by jurisdiction: 2012-13[a,b]**
Per cent of population (age standardised)

| | *Indigenous* | *Non-Indigenous* |
|---|---|---|
| New South Wales | 76.4 | 61.0 |
| Victoria | 71.0 | 61.1 |
| Queensland | 72.4 | 64.5 |
| Western Australia | 73.7 | 65.3 |
| South Australia | 71.9 | 65.5 |
| Tasmania | 69.2 | 63.8 |
| ACT | 72.8 | 62.5 |
| Northern Territory | 61.5 | 62.1 |
| **Australia** | **72.4** | **62.6** |

**a** These figures have been revised since the release of the 2012-13 NIRA report. **b** Data is based on measured BMI.

*Source*: SCRGSP (2014e, table NIRA 5.1).

### *Levels of risky alcohol consumption*

Alcohol is considered by many to be a major risk factor affecting the health of Aboriginal and Torres Strait Islander Australians, but the impact of alcohol misuse associated with several chronic diseases including cancer, diabetes and cardiovascular disease is estimated to account for only 7 per cent of the total Aboriginal and Torres Strait Islander disease burden (Vos et al. 2007).

The National Health and Medical Research Council (NHMRC) has established (2009) guidelines for safe alcohol consumption in terms of levels that put a person at lifetime risk of harm (more than 2 standard drinks a day) and levels that put a person at risk of alcohol related injury on a single occasion (more than 4 standard drinks on a single occasion).

[15] This data is based on measured body mass index (BMI). While earlier data for the COAG baseline year 2004-05 is available it is not comparable to 2012-13 data as the earlier data is based on self-reported BMI.

Measured against these benchmarks, there has been little or no progress in reducing rates of Aboriginal and Torres Strait Islander alcohol use since the COAG baseline year.

- In terms of *lifetime risk,* the proportion of Aboriginal and Torres Strait Islander Australians aged 18 plus exceeding the guidelines was 19.2 per cent (age standardised) in 2012-13 compared to 20.3 per cent in 2004-05 but the change was not statistically significant (SCRGSP 2014a, tables 11A.1.1 and 11A.1.11). These rates were broadly similar to those reported by non-Indigenous Australians in both periods (19.5 per cent and 21.9 per cent respectively).
- In terms of *single occasion risk*, the proportion of Aboriginal and Torres Strait Islander Australians exceeding the NHMRC guidelines *at least once a week* was 18.8 per cent (age standardised) in 2012-13 (SCRGSP 2014a, tables 11A.1.1). This rate was significantly lower than the 32.3 per cent recorded for non-Indigenous Australians. There was no comparable data for 2004-05.[16]

Jurisdictional comparisons across both risk categories show the ACT and Northern Territory with a lower risk profile than the national rate, while Western Australia had a higher risk profile in 2012-13 (table 2.6).[17]

Table 2.6 **Age standardised alcohol risk levels by jurisdiction: 2012-13**
Lifetime and single occasion risk (per cent of adult population)

| | *Lifetime risk* | | *Single occasion risk* | |
|---|---|---|---|---|
| | *Indigenous* | *Non-Indigenous* | *Indigenous* | *Non-Indigenous* |
| New South Wales | 19.7 | 18.4 | 17.6 | 31.8 |
| Victoria | 19.9 | 17.7 | 16.4 | 31.6 |
| Queensland | 18.2 | 20.1 | 19.9 | 32.7 |
| Western Australia | 23.0 | 25.4 | 24.9 | 32.8 |
| South Australia | 22.1 | 18.5 | 17.4 | 33.1 |
| Tasmania | 18.1 | 23.0 | 18.6 | 34.9 |
| ACT | 15.5 | 20.9 | 15.5 | 34.9 |
| Northern Territory | 14.2 | 24.9 | 15.2 | 34.1 |
| **Australia** | **19.2** | **19.5** | **18.8** | **32.3** |

*Source*: SCRGSP (2014a, table 11A.1.5).

16 Using an earlier set of NHMRC guidelines, data for 2004-05 also indicate no statistically significant change between the results in that year and the results in 2012-13.

17 After adjusting for differences in population age structures, the Northern Territory was the only jurisdiction where there was a statistically significant difference between Aboriginal and Torres Strait Islander and non-Indigenous lifetime risk outcomes in 2012-13. Aboriginal and Torres Strait Islander lifetime risk levels in the Northern Territory were lower than non-Indigenous levels. In terms of single occasion risk, alcohol risk levels were significantly higher for non-Indigenous Australians in every jurisdiction.

## 2.3 Some cautions about the results

### Data quality issues

If COAG's agreed health measures and indicators are to reflect the true health and wellbeing of the Aboriginal and Torres Strait Islander population, they must be informed by accurate data on the size of the population, the number of Aboriginal and Torres Strait Islander births and deaths, and the occurrence of specific health conditions. While substantial resources have been devoted to improving the accuracy of Aboriginal and Torres Strait Islander data collections, some doubts remain about the extent to which official estimates reflect the actual size of the Aboriginal and Torres Strait Islander population (chapter 1) as well as capture Aboriginal and Torres Strait Islander deaths and births and the incidence of disease:[18]

- Accurate Aboriginal and Torres Strait Islander mortality data is needed to correctly estimate life expectancy figures. However, not all Aboriginal and Torres Strait Islander deaths are identified as such. The ABS adjusts the deaths data using the results of data linkage between death registrations and the Census. The 2011 Census study found that the national rate of Aboriginal and Torres Strait Islander identification in deaths was 87 per cent (ABS 2013).[19]
- Identification issues also impact on Aboriginal and Torres Strait Islander births data.
- Variable identification in hospital admissions leading to an estimated 9-11 per cent of Aboriginal and Torres Strait Islander patients incorrectly identified in Australian public hospital admission records (AHMAC 2015, p.183).

These data quality issues complicate the interpretation of the COAG gap indicators and trends in those indicators over time. Even so, the reality of significant Aboriginal and Torres Strait Islander disadvantage is not in dispute. As the Australian Institute of Health and Welfare noted:

> Although the incomplete recording of Aboriginal and Torres Strait Islander status in administrative records and the experimental nature of Aboriginal and Torres Strait Islander Australian population estimates remain barriers to the production of a true picture of Aboriginal and Torres Strait Islander health and welfare in Australia, the available evidence suggests that Aboriginal and Torres Strait Islander people continue to suffer a greater burden of ill health than the rest of the population. (AIHW 2015b)

That said, the quality and availability of Aboriginal and Torres Strait Islander health data has improved markedly over the last decade as a result of a sustained data improvement and engagement process across jurisdictions aimed at data availability and consistency. Many of these improved health data sets are not encapsulated in the National Indigenous

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18 Other COAG targets are affected by population estimates, but the issues are more significant in health.

19 A similar exercise for the 2006 Census found there was a smaller 10 per cent under-identification of Aboriginal and Torres Strait Islander deaths (AIHW 2012).

Reform Agreement (NIRA) indicators. But there are areas where further progress would be beneficial to both NIRA reporting and to policy evaluation. These include deficiencies in information relating to certain causes of Aboriginal and Torres Strait Islander deaths (such as cancer), more timely conduct of Aboriginal and Torres Strait Islander health surveys in areas where the relevant indicators change frequently (but not necessarily annually) and variability in time periods for which detailed Aboriginal and Torres Strait Islander administrative information is available (box 2.1).

**Box 2.1 Indigenous health information**

At present the Census of Population and Housing, the Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) and the National Aboriginal and Torres Strait Islander Social Survey (NATSISS) provide data related to high-level Aboriginal and Torres Strait Islander health outcomes. The health sector also has a large number of annual administrative collections that are used to monitor the health system and health outcomes including mortality, hospital, Medicare and perinatal data. The Census is conducted every five years with the next Census scheduled to be completed in 2016. This will provide the underlying Aboriginal and Torres Strait Islander population basis for 2015-2017 estimates of life expectancy (as well as population projections for an extensive range of heath indicators) to be published sometime in 2018.

One major source of Aboriginal and Torres Strait Islander health information is the AATSIHS which collects data on a wide range of health topics including health status, health-related activities and socioeconomic circumstances. There was an eight year gap between the first AATSIHS in 2004-05 and the most recent in 2012-13 but funding for the NATSIHS is only provided on an ad hoc basis and there is no funding presently allocated for a future survey.

The NATSISS collects data relevant to the social determinants of health including Aboriginal and Torres Strait Islander housing, employment, education and income. The most recent NATSISS was conducted in 2014-15 with the results due to be published in April 2016.

*Source*: ABS (personal communication).

## 2.4 Other elements of the health picture

When painting a picture of life expectancy outcomes for both Aboriginal and Torres Strait Islander and non-Indigenous Australians, it is important to also take account of other measures of health and wellbeing, such as self-assessed health status and health service access rates.

### Self-assessed health and wellbeing

Survey results of self-assessed health status point to an ongoing comparative health gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians, but mixed results in terms of Aboriginal and Torres Strait Islander health trends. While there has been a deterioration in absolute and relative Aboriginal and Torres Strait Islander health since

the COAG target was set in 2008 (table 2.7), Aboriginal and Torres Strait Islander health has improved since 2001. Surveys show that:

- in 2012-13, 39 per cent of Aboriginal and Torres Strait Islander Australians aged over 15 rated their health status as either excellent or very good, 37 per cent as good, and 24 per cent as fair or poor (SCRGSP 2014a, p. 8.5)
- compared with 2008, Aboriginal and Torres Strait Islander Australians aged over 15 were around 10 per cent less likely to rate their health as excellent or very good in 2012-13 and 9 per cent more likely to rate their health as fair or poor[20]
- results in 2008 were little changed from responses in 2004-05.

Comparisons of self-assessed health status data over a longer period shows that:

- a higher proportion of Aboriginal and Torres Strait Islander people aged 15 and over reported good health in 2012–13 (37 per cent) than in 2001 (33 per cent) (AIHW 2015a, p. 83)
- there was no significant difference in the proportion reporting very good or excellent health (40 per cent in 2001 and 39 per cent in 2012–13) or fair or poor health (26 per cent and 24 per cent) (AIHW 2015a, p. 83).

Table 2.7 **Self-assessed health status: 2008 and 2012-13**
Indigenous and non-Indigenous Australians

| | *Indigenous* | | *Non-Indigenous* | |
|---|---|---|---|---|
| | *2008* | *2012-13* | *2008* | *2012-13* |
| Excellent | 16.2 | 12.6 | 20.5 | 19.3 |
| Very good | 27.5 | 26.7 | 35.6 | 36.0 |
| *Sub-total excellent/very good* | *43.7* | *39.3* | *56.1* | *55.3* |
| Good | 34.0 | 36.5 | 28.9 | 30.2 |
| Fair | 14.9 | 17.4 | 10.9 | 10.6 |
| Poor | 7.3 | 6.9 | 4.1 | 3.9 |
| *Sub-total fair/poor* | *22.2* | *24.2* | *15.0* | *14.5* |
| **Total** | **100.0** | **100.0** | **100.0** | **100.0** |

*Source*: SCRGSP (2014a, table 8A.1.1).

Recognising that the health and wellbeing of a population is affected by more than just the presence of disease and disability, the AIHW undertook work to produce a composite health measure which combined scores for self-assessed health status, self-reported long-term health conditions and emotional wellbeing. This work used the latest available data at the time from the 2004-05 NATSIHS which indicated that Aboriginal and Torres

[20] The deterioration was similar for males and females and for people in remote and non-remote areas. Health status was also positively correlated with educational attainment and income.

Strait Islander Australians were half as likely to be in 'good health' compared to non-Indigenous Australians (AIHW 2014f, pp. 335-336).

## Access to services

Reflecting their poorer health, Aboriginal and Torres Strait Islander Australians could be expected to access health services at much higher rates than the non-Indigenous population. However, the evidence suggests that their access to health services is only marginally higher (AIHW 2014f, AHMAC 2015).

In 2008, around one quarter of Aboriginal and Torres Strait Islander Australians surveyed reported difficulty in accessing health services. Of those expressing problems accessing services, the greatest identified barriers were:

- long waiting times, or services being unavailable when required (accounting for over half the reported difficulties)
- the cost of services (around one third of the reported difficulties).

Social and cultural factors can also influence whether Aboriginal and Torres Strait Islander Australians access services and available services may not be the most suitable for Aboriginal and Torres Strait Islander Australian health needs (AIHW 2014f, p. 316).

Measures to increase use of Medicare health assessments by Aboriginal and Torres Strait Islander Australians have been associated with a threefold increase in the rate of health assessments across all Aboriginal and Torres Strait Islander age groups in the five years to June 2014 (AHMAC 2015, p. 134).[21] Reflecting the take-up of services, expenditure on health care subsidies per Aboriginal and Torres Strait Islander Australian increased by close to 130 per cent between 2008-09 and 2012-13 (SCRGSP 2014e, p. 17).

While increases in health assessments are a promising step, and service use and spending patterns give an indication of the supply of health services, these indicators do not provide information about whether services are accessible to those who need them and so do not give a complete picture of whether Aboriginal and Torres Strait Islander health needs are being met.

[21] Targeted Medicare health assessment items for Aboriginal and Torres Strait Islander Australians were introduced in 1999 (aged 55 years and over), 2004 (aged 15-54 years) and 2006 (0-14 years).

## 2.5 Where to from here?

### Looking at the bigger picture

While the performance indicators for life expectancy focus on health risk factors — such as rates of smoking, obesity and risky alcohol consumption — socioeconomic factors are also an important part of the picture.

A recent study by the AIHW found that certain socioeconomic factors (including household income, education and employment status) explained close to one third of the health gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians. By comparison, behavioural and biomedical risk factors including smoking, alcohol and BMI explained just over 10 per cent (AIHW 2015a, p. 52).

These results are consistent with a number of other Australian studies. For example:

- Booth and Carroll (2005) analysed the contribution of social determinants to the poorer health of Aboriginal and Torres Strait Islander Australians measured in terms of self-assessed health status and concluded that between one third and one half of the health gap was due to social determinants.
- Zhao and others (2013) looked at both social determinants and health behaviours in the Northern Territory and found that socioeconomic disadvantage explained between 42 per cent and 54 per cent of the gap in life expectancy (AIHW 2014f, p. 333).

Improving socioeconomic outcomes for Aboriginal and Torres Strait Islander people is an important part of the broader NIRA agreement (chapters 4-7). The interplay between socioeconomic and health outcomes underscores the importance of making progress across the full suite of Closing the Gap targets.

### Improving data and evaluation

As discussed above, accurate tracking of progress in Aboriginal and Torres Strait Islander health outcomes is impeded by Aboriginal and Torres Strait Islander identification issues, the timeliness of Aboriginal and Torres Strait Islander health surveys and certain deficiencies in administrative health data collections. Such issues are being progressively addressed through a number of different forums, and by national and state and territory data collection agencies including the ABS and AIHW.

Accurate and timely data is also an important input to robust health program evaluation. There is currently insufficient attention given to evaluating evidence from administrative data collections (as opposed to data from medical research where the evidence base is well established) on outcomes from the myriad of mainstream and Aboriginal and Torres Strait Islander-specific health programs (table 2.8).

Table 2.8 **Current and recently completed Aboriginal and Torres Strait Islander health programs by jurisdiction[a]**

Number of programs

| *Jurisdiction* | *Indigenous-specific health programs* | | | | *Mainstream health programs with Aboriginal and Torres Strait Islander component* | | | |
|---|---|---|---|---|---|---|---|---|
| | *Current programs* | *Number evaluated* | *Completed programs* | *Number evaluated* | *Current programs* | *Number evaluated* | *Completed programs* | *Number evaluated* |
| New South Wales | 153 | 9 | 55 | 12 | 35 | 2 | 6 | 1 |
| Queensland | 124 | 8 | 50 | 6 | 38 | 1 | 15 | 0 |
| Western Australia[b] | 227 | 12 | 85 | 13 | 62 | 3 | 9 | 2 |
| Victoria | 89 | 3 | 29 | 2 | 12 | 0 | 2 | 0 |
| Northern Territory | 183 | 13 | 95 | 17 | 31 | 0 | 14 | 2 |
| South Australia | 75 | 3 | 37 | 8 | 9 | 1 | 6 | 1 |
| Tasmania | 4 | 0 | 1 | 1 | 2 | 0 | 0 | 0 |
| ACT | 15 | 0 | 5 | 1 | 4 | 0 | 1 | 0 |
| National | 47 | 6 | 25 | 7 | 14 | 3 | 5 | 0 |
| **Total** | **917** | **54** | **382** | **67** | **207** | **10** | **58** | **6** |

[a] Current programs include those where no operational status was specified. Data was compiled by accessing individual Aboriginal and Torres Strait Islander health program information complied at http://www.healthinfonet.ecu.edu.au/ and recording whether the program had been listed as subject to an evaluation. Evaluation status was based on notifications of or access to publicly available evaluation reports. [b] In Western Australia, a review commissioned by the Western Australian Department of Health (*The Holman Review*) evaluated the effectiveness of 184 Aboriginal and Torres Strait Islander health programs. That review did not identify individual programs and has not been used to allocate evaluation status to the those programs covered in this table.

*Sources*: PC estimates derived from Australian Aboriginal and Torres Strait Islander Health *InfoNet* (2015), Holman and Joyce (2014).

Based on information complied by Australian Indigenous HealthInfoNet (2015), just 17 per cent of recently completed Aboriginal and Torres Strait Islander-specific health programs had been evaluated to assess their effectiveness. For mainstream programs with an Aboriginal and Torres Strait Islander component the proportion was even lower. Evaluation rates across most jurisdictions were not appreciably higher than the overall result. The only exception appears to be Western Australia where (although not reflected in table 2.8) a review commissioned by the Western Australian Department of Health evaluated the effectiveness of 184 active Aboriginal and Torres Strait Islander health programs representing more than 90 per cent of funded projects in 2014-15 (Holman and Joyce 2014). The terms of reference for that review included assessing the effectiveness of individual programs, considering evidence for program design and delivery, governance

arrangements, resourcing issues and the making of recommendations for program improvement.[22]

That said, the sheer number of programs (many of which are small) means comprehensive evaluation coverage is unlikely to be cost-effective. Given the considerable variability in resourcing levels across the programs in the Aboriginal and Torres Strait Islander health space, evaluation effort should be targeted at programs that involve the greatest resource investment.

A review of Aboriginal and Torres Strait Islander health research found that of the 54 studies assessed, most (80 per cent) had an evaluation component and 24 per cent included a cost analysis. It also found that there was a stronger emphasis on evaluation in the health area than in other areas:

> Compared with the other building blocks, health also had a relatively high proportion of quantitative studies (43%) that involved some form of comparison group, including 17 Australian studies. There were, however, only a few studies that used randomised control groups. (Closing the Gap Clearinghouse 2011, p. 25)

As discussed in chapter 8, rigorous evaluation is not without its challenges. These challenges are particularly pronounced in the Aboriginal and Torres Strait Islander health space where it is difficult to disentangle the impact of a single program in a particular Aboriginal and Torres Strait Islander location from the multitude of programs being simultaneously delivered.

But the difficulties associated with evaluating Aboriginal and Torres Strait Islander policies should be a reason for more not less effort in this area. Robust evaluation which is both methodologically sound and corresponds to accepted scientific principles is critical to improving the wellbeing of Aboriginal and Torres Strait Islander Australians in a cost-effective way (Cobb-Clark 2013, p. 86).

This should not mean that program development should be placed on hold until an evidence base emerges, but rather that evaluation is an important input to such development and policy learning. This is consistent with the position put by the authors of *What works to overcome Indigenous disadvantage* in terms of the implications of existing evidence gaps:

> The gaps in the evidence should not impede needed program development and implementation. In some cases, such as alcohol and other drugs, there was ample evidence to show what can be done to reduce harm. In others, where data gaps are more significant, the importance of ongoing learning loops is significantly increased. (Closing the Gap Clearinghouse 2011, p. 6)

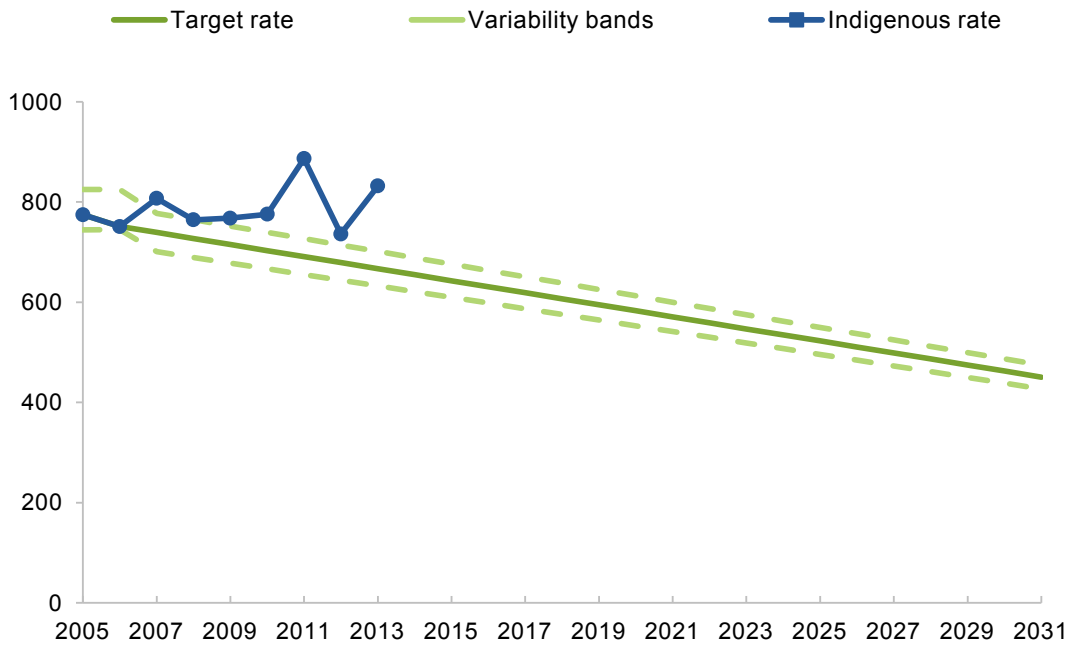
[22] The review did not specifically identify the individual programs that were evaluated and this may explain why the evaluation exercise is not captured in the data presented in table 2.8.

## Statistical attachment

The figures show progress in meeting the mortality target for each of four jurisdictions where separate data is available and combined progress across five jurisdictions. Mortality trajectory data for Western Australia is not separately available.

Figure 2.1 **Indigenous mortality rate trajectory: 2005 to 2031, New South Wales[a]**

Per 100 000 people

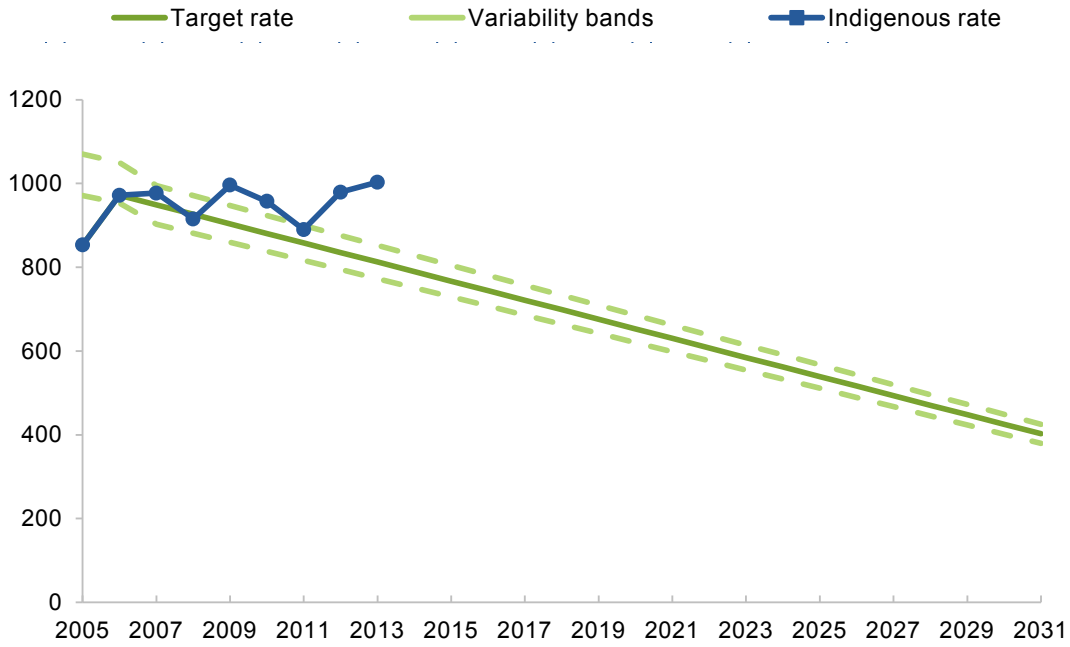



[a] To allow for timely reporting, this target is monitored using the year a death is registered rather than the year it occurred (as it takes a few years for all deaths to be captured in the data). The lag between occurrence and registration is usually fairly stable. However, in some years there is a back-log of death registrations (that is, where a death is registered after the year it occurred). This can lead to an unusual rise in the death rates in later years. The ABS advises that both annual fluctuations in the numbers of Aboriginal and Torres Strait Islander deaths in each jurisdiction and the catching up of death registrations are evident in the deaths data for recent years.

*Data sources*: ABS (2014a, basic CURF); trajectory points provided by PM&C.

Figure 2.2 **Indigenous mortality rate trajectory: 2005 to 2031, Queensland[a]**

Per 100 000 people

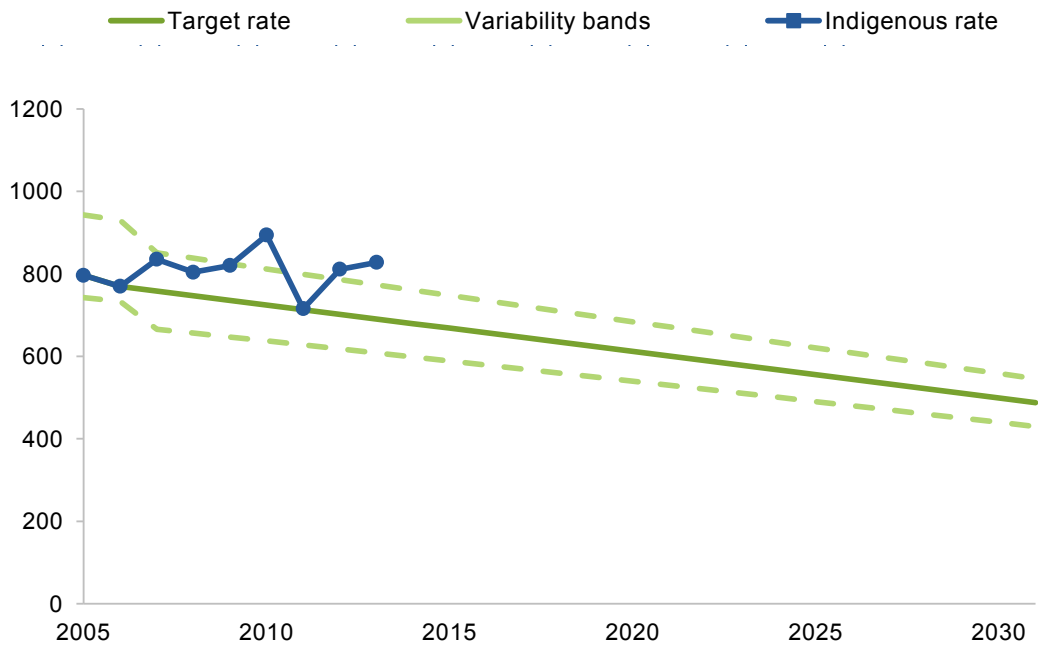



**a** To allow for timely reporting, this target is monitored using the year a death is registered rather than the year it occurred (as it takes a few years for all deaths to be captured in the data). The lag between occurrence and registration is usually fairly stable. However, in some years there is a back-log of death registrations (that is, where a death is registered after the year it occurred). This can lead to an unusual rise in the death rates in later years. The ABS advises that both annual fluctuations in the numbers of Aboriginal and Torres Strait Islander deaths in each jurisdiction and the catching up of death registrations are evident in the deaths data for recent years.

*Data sources*: ABS (2014a, basic CURF); trajectory points provided by PM&C.

Figure 2.3 **Indigenous mortality rate trajectory: 2005 to 2031, South Australia[a]**

Per 100 000 people

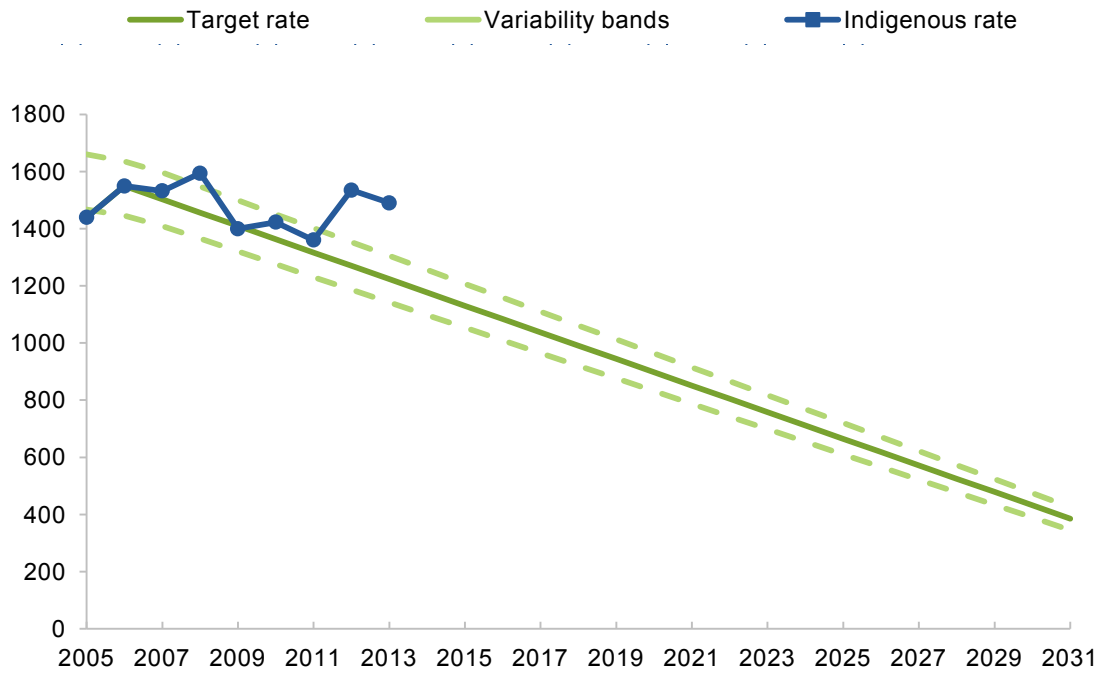



**a** To allow for timely reporting, this target is monitored using the year a death is registered rather than the year it occurred (as it takes a few years for all deaths to be captured in the data). The lag between occurrence and registration is usually fairly stable. However, in some years there is a back-log of death registrations (that is, where a death is registered after the year it occurred). This can lead to an unusual rise in the death rates in later years. The ABS advises that both annual fluctuations in the numbers of Aboriginal and Torres Strait Islander deaths in each jurisdiction and the catching up of death registrations are evident in the deaths data for recent years.

*Data sources*: ABS (2014a, basic CURF); trajectory points provided by PM&C.

Figure 2.4 **Indigenous mortality rate trajectory: 2005 to 2031, Northern Territory[a]**

Per 100 000 people

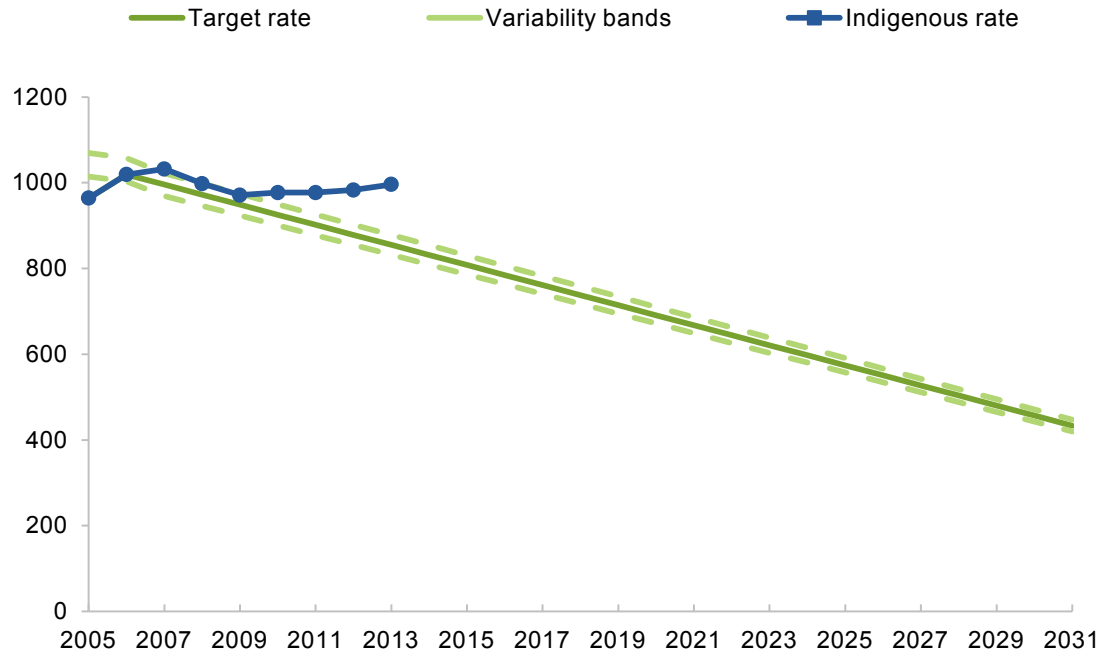



**a** To allow for timely reporting, this target is monitored using the year a death is registered rather than the year it occurred (as it takes a few years for all deaths to be captured in the data). The lag between occurrence and registration is usually fairly stable. However, in some years there is a back-log of death registrations (that is, where a death is registered after the year it occurred). This can lead to an unusual rise in the death rates in later years. The ABS advises that both annual fluctuations in the numbers of Aboriginal and Torres Strait Islander deaths in each jurisdiction and the catching up of death registrations are evident in the deaths data for recent years.

*Data sources*: ABS (2014a, basic CURF); trajectory points provided by PM&C.

Figure 2.5 **Indigenous mortality rate trajectory: 2005-2031, Combined New South Wales, Queensland, South Australia, Northern Territory and Western Australia[a]**

Per 100 000 people




**a** To allow for timely reporting, this target is monitored using the year a death is registered rather than the year it occurred (as it takes a few years for all deaths to be captured in the data). The lag between occurrence and registration is usually fairly stable. However, in some years there is a back-log of death registrations (that is, where a death is registered after the year it occurred). This can lead to an unusual rise in the death rates in later years. The ABS advises that both annual fluctuations in the numbers of Aboriginal and Torres Strait Islander deaths in each jurisdiction and the catching up of death registrations are evident in the deaths data for recent years.

*Data sources*: ABS (2014a, basic CURF); trajectory points provided by PM&C.

## Summary of key findings

# CHILD MORTALITY

Substantial progress has been made. On track to halve the gap in child death rates by 2018

Smoking rates during pregnancy by Indigenous women are still three and a half times higher than non-Indigenous women

Indigenous women still receive antenatal care less frequently and later in pregnancy than non-Indigenous women

# 3 Child mortality

**Key points**

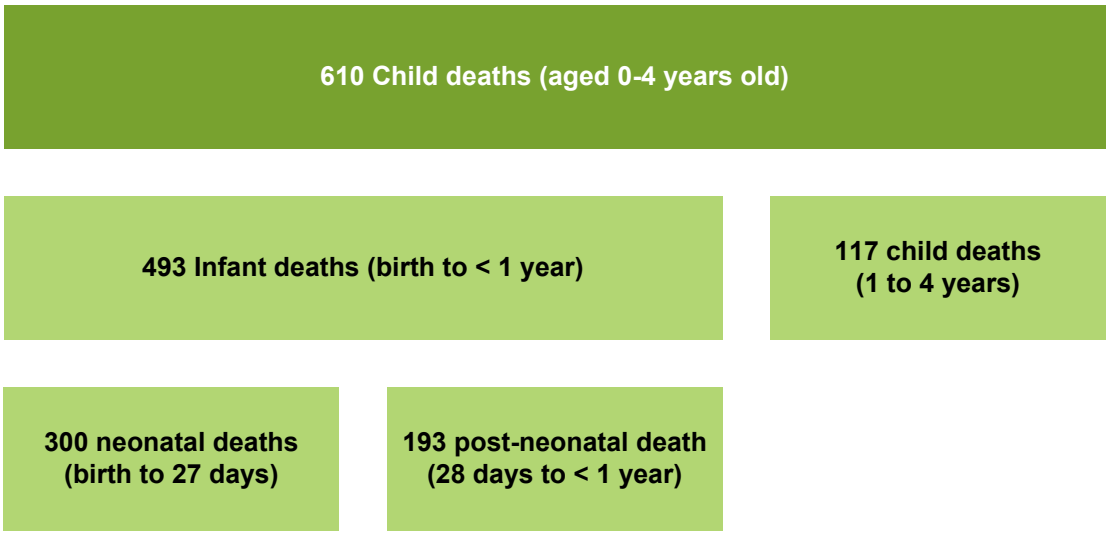
- The mortality rate for young children is a key indicator of the health of a population and an important influence on overall life expectancy.
- COAG has committed to halving the gap in mortality rates between Indigenous and non-Indigenous children aged 0-4 over the decade to 2018.
- Over 80 per cent of Indigenous and non-Indigenous child deaths occur in infancy (up to 12 months of age) and the majority of those occur in the first 28 days of life. Accordingly, reductions in child mortality rates and the gap between Indigenous and non-Indigenous child deaths are primarily driven by trends in infant mortality.
- Substantial progress has already been made toward meeting the COAG target. Over the period 1998 to 2013, there was a 65 per cent decrease in Indigenous infant mortality (mainly due to a reduction in deaths from perinatal conditions). But for older children (those aged 1-4), the mortality gap widened over the period, largely because non-Indigenous deaths fell considerably faster than Indigenous deaths.
- Were relative improvements in infant mortality rates (the dominant influence on child mortality) sustained, the overall COAG gap reduction target would likely be met by 2018, or soon thereafter.
- Determinants of infant and child mortality are complex, multifaceted and interrelated. A range of key risk factors have been identified including low birth weight and pre-term births, maternal health and behaviours, socioeconomic status and access to antenatal health services.
- In addition to setting a high-level target, COAG also identified performance indicators central to addressing the gap in child mortality, including low birth weight, smoking during pregnancy, and access to antenatal care. While relative outcomes against some performance indicators have improved, for others, outcomes have remained largely unchanged or have worsened over the same period.
- There is a need for more robust evaluation of maternal and child health programs that target these risk factors.

## 3.1 Introduction

The mortality rate for young children is a key indicator of the health of a population and an important influence on life expectancy over the longer term. As is the case with the population more broadly (chapter 2), Aboriginal and Torres Strait Islander children die at relatively higher rates than non-Indigenous children.

Over 80 per cent of childhood deaths occur in the first year of life and the majority of those occur in the first 28 days (figure 3.1). Accordingly, reductions in child mortality rates and the gap between Aboriginal and Torres Strait Islander and non-Indigenous child deaths are primarily driven by trends in infant mortality.

Figure 3.1 **Distribution of Indigenous child deaths (0-4 years)**
2008-2012 period total




Data source: AHMAC (2015, p. 67).

COAG committed to halving the gap in mortality rates between Aboriginal and Torres Strait Islander and non-Indigenous children aged 0-4 over the decade to 2018. COAG also agreed to track progress against a number of key performance indicators — the mortality rates for children aged 0-4 by leading cause; the proportion of babies born of low birth weight; tobacco smoking during pregnancy; and antenatal care (COAG 2008). Both the target and the indicators are encapsulated in the National Indigenous Reform Agreement (NIRA).

## 3.2 Starting gaps and progress to date

### Mortality rates for children aged 0-4

The overall number of Aboriginal and Torres Strait Islander child deaths each year are relatively small (figure 3.1) and appropriate care needs to be exercised in interpreting associated mortality trends (particularly when making jurisdictional comparisons (see statistical attachment)). Where appropriate, period averages are presented to smooth out year to year volatility. In addition, child mortality data of sufficient quality for reporting by

Indigenous status is only available for five jurisdictions (New South Wales, Queensland, South Australia, Western Australia and the Northern Territory). Accordingly, the data presented in this chapter are not national figures.

With these caveats in mind, there has been good progress toward meeting the COAG child mortality gap target. For children aged 0-4, the Aboriginal and Torres Strait Islander mortality rate declined significantly by 31 per cent between 1998 and 2013 and the gap between Aboriginal and Torres Strait Islander and non-Indigenous children fell by a statistically significant 35 per cent over that period.[23] Despite this progress, the mortality rate for Aboriginal and Torres Strait Islander 0-4 year olds was still 1.9 times the non-Indigenous rate in the five year period between 2009 and 2013 (SCRGSP 2014e, table NIRA 6.5).

The closing of the child mortality gap target reflects a substantial 64 per cent decrease in the Indigenous infant mortality rate (from 14.2 deaths per 1000 live births to 5.1 deaths per 1000 live births) between 1998 and 2013.[24] This decrease, combined with a much smaller improvement in non-Indigenous infant mortality, saw the infant mortality gap fall by more than 80 per cent over the period. Despite this improvement, the mortality rate for Aboriginal and Torres Strait Islander infants was 1.7 times the rate for non-Indigenous infants in the five year period 2009-2013 (SCRGSP 2014e, table NIRA 6.3).

For children aged 1-4, the mortality rate for Aboriginal and Torres Strait Islander children improved only marginally between 1998 and 2012 (by 5 per cent).[25] At the same time, the rate for non-Indigenous children fell markedly (by 46 per cent) and as a consequence the mortality gap for 1-4 year olds widened appreciably. In the five year period 2009-2013, the mortality rate for Aboriginal and Torres Strait Islander 1-4 year olds was 2.4 times the non-Indigenous rate (SCRGSP 2014e, table NIRA 6.4).

Notwithstanding the relative deterioration in the mortality rate for Aboriginal and Torres Strait Islander children aged 1-4, were relative improvements in infant mortality rates (the dominant influence on child mortality) sustained, the overall COAG gap reduction target would likely be met by 2018, or soon thereafter (see statistical attachment, figure 3.6). But as discussed below, the reason behind the relative trends in infant (and 1-4 child) mortality rates is not readily explained by trends in key mortality risk factors. Accordingly, the source of any future narrowing in the child mortality gap is unclear.

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23 Percentage changes are based on linear regression of data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory sourced from SCRGSP (2014a, table 4A.2.1) and SCRGSP (2014e, table NIRA 6.1).

24 Death rates have been estimated using linear regression. Also, the small number of infant deaths relative to the infant population means they are typically reported on a different basis (deaths per 1000 live births) to the mortality rates for other age cohorts (deaths per 100 000 population) including children aged 1-4.

25 Disaggregated mortality rate data for 1-4 year olds was not available for 2013.

## Mortality rates for children aged 0-4 by leading cause

The substantial narrowing of the gap in infant deaths is evident across all leading causes of death (table 3.1). The most frequent cause of death for both Aboriginal and Torres Strait Islander and non-Indigenous infants stems from conditions originating in the perinatal period (such as birth trauma, foetal growth disorders including low birth weight, pre-term delivery and complications of pregnancy, labour and delivery). Aboriginal and Torres Strait Islander deaths from perinatal conditions fell by 35 per cent (per 1000 live births), compared to a 24 per cent fall in non-Indigenous deaths between 2003-2007 and 2008-2012.[26] With perinatal conditions still accounting for the bulk (48 per cent) of infant deaths, further progress in this area will be critical in continuing to narrow the child mortality gap.

Table 3.1 **Causes of infant death: 2003-2007 and 2008-2012[a]**

Deaths per 1000 live births and Indigenous to non-Indigenous rate difference

| | *Indigenous deaths per 1000 live births* | | | *Rate difference* | |
|---|---|---|---|---|---|
| | *2003-2007* | *2008-2012* | *% Contribution to fall in mortality* | *2003-2007* | *2008-2012* |
| Certain conditions originating in the perinatal period | 4.6 | 3.0 | 41.0 | 2.1 | 1.1 |
| Symptoms, signs and findings of ill-defined conditions | 2.0 | 1.2 | 20.5 | 1.6 | 0.8 |
| SIDS | 0.9 | 0.6 | 7.7 | 0.6 | 0.4 |
| Congenital malformations | 1.3 | 0.9 | 10.3 | 0.3 | -0.1 |
| Respiratory diseases | 0.7 | 0.3 | 10.3 | 0.6 | 0.2 |
| External causes | 0.5 | 0.2 | 7.7 | 0.4 | 0.1 |
| Infectious and parasitic diseases | 0.2 | 0.2 | 0.0 | 0.1 | 0.1 |
| Circulatory system diseases | 0.2 | 0.1 | 2.6 | 0.1 | - |
| Other causes | 0.6 | 0.3 | 7.7 | 0.3 | 0.1 |
| **Total** | **10.1** | **6.2** | **100.0** | **5.9** | **2.5** |

**a** Perinatal conditions; signs, symptoms of ill-defined conditions (including SIDS); and congenital malformations accounted for around 80 per cent of Indigenous and 85 per cent of non-Indigenous infant causes of death in 2003-2007 and 2008-2012.

*Source*: SCRGSP (2014a, tables 4A.2.12, 4A.2.13).

Other leading causes of infant death were *signs, symptoms and findings of ill-defined conditions* (such as SIDS) which accounted for 19 per cent of Indigenous (but only 10 per

[26] Period averages rather than yearly data have been used to measure longer trends because the number of infant deaths disaggregated by leading cause in each year is small.

cent of non-Indigenous) infant deaths and *congenital malformations,* which accounted for 15 per cent of Indigenous (and 26 per cent of non-Indigenous) infant deaths in 2008-2012. In both these categories, Aboriginal and Torres Strait Islander infant death rates fell, while non-Indigenous death rates remained stable. As a result, these two causes in combination accounted for around one third of the reduction in Aboriginal and Torres Strait Islander infant mortality over the period. However, further improvements in deaths from these causes have less scope to make a significant contribution to a narrowing of the mortality gap as they now account for a much smaller share of deaths.

As noted above, while the infant mortality rate gap narrowed, the mortality rate gap among children aged 1-4 widened between 2003-2007 and 2008-2012. This was largely the consequence of Aboriginal and Torres Strait Islander children being relatively more likely than non-Indigenous children to die from *external causes* such as injury and poisoning (the leading cause of death for both populations) (table 3.2). Offsetting (at least to some extent) the increase in Aboriginal and Torres Strait Islander child mortality rates due to *external causes* was a decline in deaths due to nervous system disease — the next leading cause in 2003-2007.

Table 3.2 **Causes of child (aged 1-4) death: 2003-2007 and 2008-2012[a]**

Number of deaths per 100 000 and Indigenous to non-Indigenous rate difference

| | *Indigenous deaths per 100 000* | | *Rate difference* | |
|---|---|---|---|---|
| | 2003-2007 | 2008-2012 | 2003-2007 | 2008-2012 |
| Symptoms, signs and findings of ill-defined conditions | 3.2 | 2.4 | 1.9 | 1.5 |
| Congenital malformations | 2.9 | 2.4 | 1.0 | 0.5 |
| External causes | 18.6 | 21.2 | 9.1 | 14.8 |
| Respiratory system diseases | np | 2.7 | np | 1.7 |
| Nervous system diseases | 5.7 | 1.7 | 3.5 | 0.1 |
| Infections | np | 1.7 | np | 0.7 |
| Circulatory system diseases | 3.2 | 3.8 | 2.3 | 3.0 |
| Other causes | 6.8 | 3.4 | - | -0.1 |
| **Total** | **41.4** | **39.9** | **17.8** | **22.4** |

**a** Jurisdictional comparisons of leading causes of child mortality are not separately identified due to the small number of deaths in each jurisdiction. **np**: not published.

*Source*: SCRGSP (2014a, tables 4A.2.14, 4A.2.15).

## Other performance indicators

Child mortality rates reflect a range of influences. Some of the key risks associated with infant and child mortality include low birth weight and pre-term births; maternal health and behaviours (including smoking, alcohol consumption, nutrition during pregnancy and breastfeeding); socioeconomic status; and access to antenatal and neonatal health services (AIHW 2014a, p. 64). As noted above, COAG has also agreed to track progress against a number of key performance indicators.

### Proportion of babies born of low birth weight

Low birth weight is a commonly used public health indicator. It is associated with a range of short- and long-term adverse health outcomes, including foetal and neonatal death and morbidity, inhibited growth and cognitive development, and the development of chronic diseases later in life (AIHW 2014b, p. 1). As already discussed, most child deaths occur in the first 28 days of life, and there is a strong association between low birth weight and infant mortality (AIHW 2015a, p. 112).

Over the period 2010-2012, 10.8 per cent of live-born singleton babies born to Aboriginal and Torres Strait Islander women were underweight (less than 2.5 kilograms) — more than double the 4.5 per cent of underweight babies born to non-Indigenous women (SCRGSP 2014e, table NIRA 7.5).[27] Taking a longer term perspective, the proportion of low birth weight babies born to Aboriginal and Torres Strait Islander mothers declined by a statistically significant 11 per cent between 2000 and 2012.[28] Over the same period, there was no significant change in the proportion of low birth weight for babies born to non-Indigenous mothers. As a result of these trends, the associated gap between Aboriginal and Torres Strait Islander and non-Indigenous low birth weight outcomes narrowed by around 16 per cent.

### Tobacco smoking during pregnancy

Tobacco smoking, excessive alcohol consumption and illicit substance abuse during pregnancy can lead to miscarriage, stillbirth, foetal growth retardation, congenital abnormalities, premature birth and low birth weight (SCRGSP 2014a, p. 6.10). Of these factors, the NIRA focuses on tobacco smoking in pregnancy as an indicator of health behaviours during pregnancy. It has been estimated that reducing the rate of Aboriginal and Torres Strait Islander smoking during pregnancy, so that it aligns with the non-Indigenous rate, would lower the proportion of low birth weight Aboriginal and Torres Strait Islander babies by 19 per cent (AIHW 2014e, p. 18).

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[27] The COAG indicator relates to babies born of low birth weight excluding multiple births and stillbirths. Due to data reliability issues, the data reported here relate to New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory.

[28] Percentage changes based on linear regression of data from SCRGSP (2014a, table 6A.4.1) and SCRGSP (2014e, table NIRA 7.1).

Some progress has been made with the rate of smoking during pregnancy by Aboriginal and Torres Strait Islander women falling by 11 per cent (age standardised rate excluding Victoria) between 2005 and 2012.[29] According to the AIHW (2014b):

> This may partly reflect the impact of anti-smoking initiatives, such as those funded through the Australian Government's Indigenous Chronic Disease Package. The reduction in smoking during pregnancy among Indigenous mothers may be a contributing factor to the observed fall in the rate of low birthweight babies born to these mothers. (p. 17)

But the rate of Aboriginal and Torres Strait Islander smoking during pregnancy at 47.7 per cent in 2012 was still around three and a half times the 13.5 per cent of non-Indigenous smoking during pregnancy (SCRGSP 2014e, table NIRA 8.3). Despite smoking rates among non-Indigenous mothers falling faster than those of Indigenous mothers (by 17 per cent between 2005 and 2012), the gap between the two cohorts narrowed.

### Antenatal care

Antenatal visits enable early diagnosis, monitoring and treatment of pregnancy risk factors, as well as opportunities to modify health risk factors such as smoking and alcohol use (SCRGSP 2014a, p. 6.28). Inadequate or delayed access to quality antenatal care has been associated with poor pregnancy outcomes such as pre-term births and/or low birth weight and increased delivery intervention (AHMAC 2015, p. 128).[30] Antenatal care may be especially important for Aboriginal and Torres Strait Islander women due to a higher risk of giving birth to low birth weight babies and greater exposure to other risk factors (AHMAC 2012).

The two main measures for this indicator are the proportion of expectant mothers who attend antenatal visits in the first trimester and the proportion who attend five or more antenatal visits. Despite an increased policy focus on Indigenous antenatal attendance, Aboriginal and Torres Strait Islander women still receive antenatal care less frequently and later in pregnancy than non-Indigenous women.[31] In 2012:

- just over half (50.6 per cent age standardised) of Aboriginal and Torres Strait Islander mothers reported attending an *antenatal visit in the first trimester* (13 weeks) compared to nearly two thirds (61.5 per cent) of non-Indigenous mothers (SCRGSP 2014b, table NIRA 9.4).
- 83.3 per cent of Aboriginal and Torres Strait Islander mothers (age standardised) reported attending *five or more antenatal visits* compared to 95.9 per cent of non-Indigenous mothers (SCRGSP 2014e, table NIRA 9.10).

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[29] Percentage changes based on linear regression of data from (SCRGSP 2014a, tables 6A.2.14, 6A.2.15) and SCRGSP (20014e, table NIRA 8.3).

[30] Regardless of Indigenous status, mothers who received no antenatal care in the first trimester were three times more likely to have a have a pre-term or low birth weight baby in 2011.

[31] Improvements in the quality or effectiveness of antenatal care over time are also relevant to considering Indigenous infant health outcomes.

Comparable time series data on antenatal care are only available in select jurisdictions. The data reveal that in terms of:

- *first trimester visits* (across New South Wales, South Australia and the Northern Territory), there was an overall reduction in Aboriginal and Torres Strait Islander first trimester visits — falling from 60.9 per cent (age standardised) in 2008 to 52.2 per cent in 2012 (SCRGSP 2014e, table NIRA 9.8 and table NIRA 9.4). However, a larger fall in non-Indigenous attendance meant the gap between Aboriginal and Torres Strait Islander and non-Indigenous mothers narrowed from 17.4 to 12.1 percentage points (see statistical attachment, figure 3.5)
- *attending five or more antenatal visits* (across Queensland, South Australia and the Northern Territory), there was an overall increase in the proportion of Aboriginal and Torres Strait Islander mothers attending antenatal visits at least five times — up from 77.4 per cent (age standardised) in 2008 to 83.9 per cent in 2012 (SCRGSP 2014e, table NIRA 9.14 and table NIRA 9.10). This increase, combined with a small decline in non-Indigenous attendance, meant that the associated gap narrowed from 17.1 to 12.0 percentage points (see statistical attachment, figure 3.5).

Over a longer period, there was a statistically significant increase of 4 per cent (for jurisdictions with long-term data: NSW, SA and Qld combined) in Aboriginal and Torres Strait Islander mothers accessing antenatal care services at least once during their pregnancy between 1998 and 2011 (AHMAC 2015, p. 128).

## 3.3 Where to from here?

Based on the available data, the Commission concludes that if current progress in reducing the gap in child (0-4) mortality were maintained, COAG's gap reduction target would likely be met by 2018 or soon thereafter.

However, there is still much to be learned about what is required to achieve further, sustained reductions in the mortality gap. In particular, there is some tension between recent substantial measured reductions in the mortality gap and lesser (relative) improvements in outcomes for the identified key risk factors for child mortality. In part, this apparent discordance might be explained by reduced (relative) incidence of risk factors *other* than smoking and antenatal attendance (where the evidence base is well established) amongst Aboriginal and Torres Strait Islander mothers.

As in other gap target areas, the knowledge gap relates to the effectiveness or otherwise of particular programs and policies that seek to address *other* risk factors that contribute to higher child mortality in the Aboriginal and Torres Strait Islander population. In the absence of a greater emphasis on policy evaluation (see chapter 8), the degree of future success in lowering Aboriginal and Torres Strait Islander child mortality rates may be reduced, and/or the cost of achieving improvements inflated.

## Statistical attachment

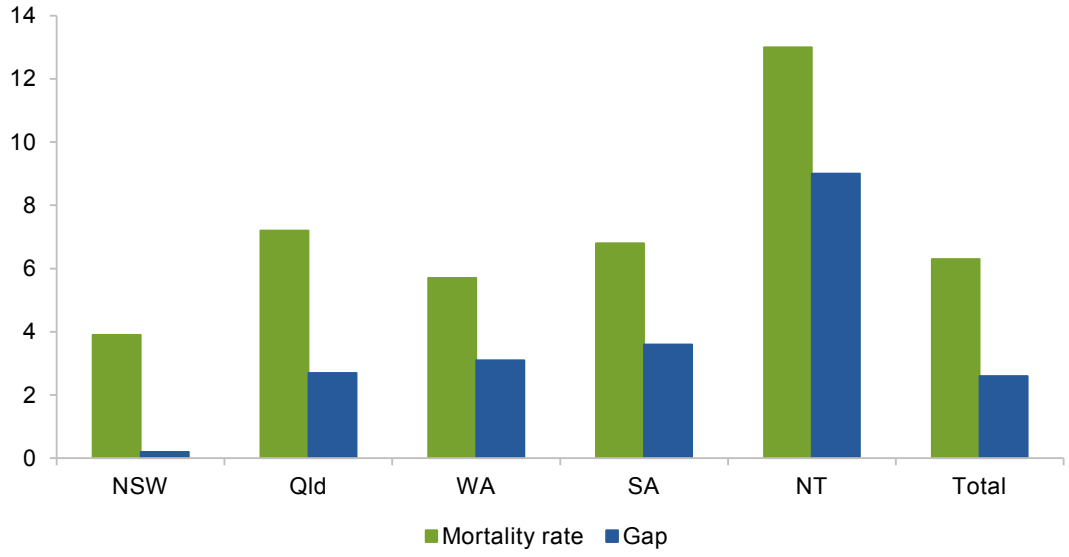
As noted at the outset of this chapter, the overall number of Aboriginal and Torres Strait Islander child deaths each year is relatively small and appropriate care needs to be exercised in interpreting associated mortality trends (especially when making jurisdictional comparisons). Trend analysis for individual jurisdictions is particularly problematic due to the small number of deaths each year. For completeness, the Commission has reported some jurisdictional breakdowns, though mainly has focused on point in time outcomes. Jurisdictional progress in closing the child mortality gap are not reported.

### Infant mortality

In the period 2009-2013, of those jurisdictions for which data is available, NSW had the lowest rate of Aboriginal and Torres Strait Islander infant mortality (3.9 deaths per 1000 live births) and the Northern Territory had the highest rate (13.0 deaths per 1000 live births). NSW also had the smallest gap between Aboriginal and Torres Strait Islander and non-Indigenous infant deaths (0.2 deaths per 1000 live births) and the Northern Territory the highest gap (9.0 deaths per 1000 live births) (figure 3.2).

Figure 3.2 **Infant mortality rate and gap between Indigenous and non-Indigenous infant mortality rate: 2009-2013 by jurisdiction[a]**

Deaths per 1000 live births




[a] Due to the small number of child deaths in each jurisdiction each year, the data has been combined over a five year period to smooth out volatility.

*Data source*: SCRGSP (2014e, table NIRA 6.3).

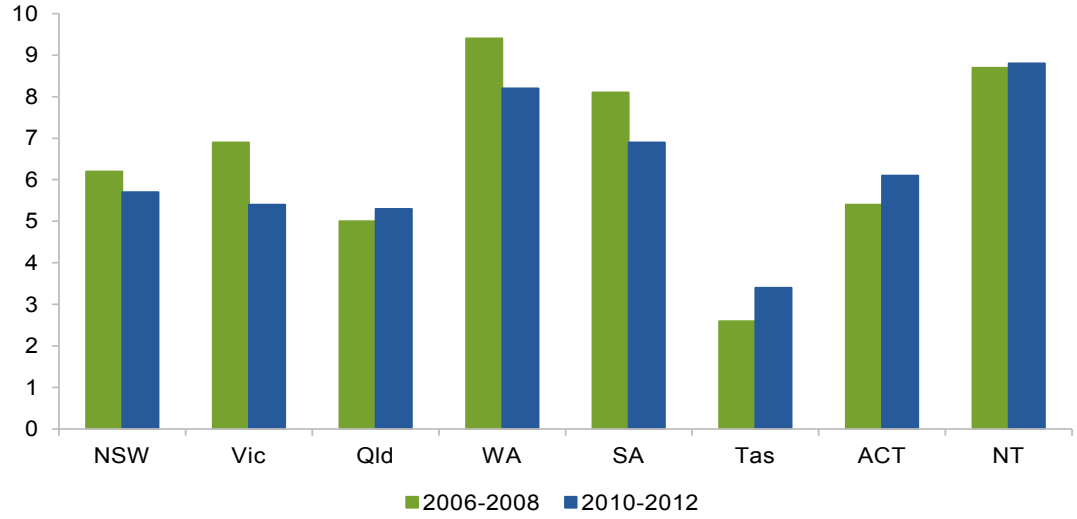
In respect of mortality rates for children aged 1-4 years, the Northern Territory and Western Australia had the highest rate of Aboriginal and Torres Strait Islander child mortality (79.3 and 61.5 deaths per 100 000 Indigenous children respectively) and the largest gaps between Indigenous and non-Indigenous children (a difference of 56.6 deaths and 44.3 per 100 000 children respectively) over the period 2009-2013. New South Wales had the lowest Indigenous child mortality rate (24.1 deaths per 100 000 children) and also the smallest gap (8.5 deaths per 100 000) (SCRGSP 2014e, table NIRA 6.4).

## Birth weight

Across jurisdictions, the highest proportion of low birth weight Indigenous babies in 2010-2012 was recorded in the Northern Territory (13.3 per cent of live-born singleton babies) and Western Australia (12.5 per cent) while the lowest proportions were in Tasmania (9.1 per cent), Queensland (9.9 per cent) and New South Wales (10.0 per cent) (SCRGSP 2014e, table NIRA 7.5). In terms of outcomes relative to non-Indigenous babies, the Northern Territory (8.8 percentage points) and Western Australia (8.2 percentage points) had the highest gaps while Tasmania (3.4 percentage points) and Queensland (5.3 percentage points) had the smallest (figure 3.3) (SCRGSP 2014e, table NIRA 7.5).[32]

Figure 3.3 **Gap in Indigenous and non-Indigenous proportion of low birth weight babies: 2006-2008 and 2010-2012 by jurisdiction[a]**

Percentage point rate difference




**a** Data for Tasmania and the ACT should be viewed with caution as the figures for these jurisdictions are based on a small number of births.

*Data sources*: SCRGSP (2014a, table 6A.4.5) and SCRGSP (2014e, table NIRA 7.5).

[32] Data for Tasmania and the ACT should be viewed with caution as the figures for these jurisdictions are based on a small number of births.

## Smoking

Aboriginal and Torres Strait Islander mothers in South Australia were the most likely to smoke during pregnancy in 2012 (57 per cent of Indigenous mothers age standardised), while Aboriginal and Torres Strait Islander mothers in Victoria were the least likely (35 per cent) (figure 3.4) (SCRGSP 2014e, table NIRA 8.3).

Figure 3.4 **Age standardised Indigenous smoking during pregnancy: 2008 and 2012 by jurisdiction[a]**

Per cent


[a] Caution should be exercised when comparing smoking data prior to 2010-11 as nationally consistent data only commenced from 2010-11. 2008 data for Victoria are not available due to data quality issues. Data for Tasmania and the ACT are not available due to data quality issues.

*Data source*: SCRGSP (2014e, table NIRA 8.3).

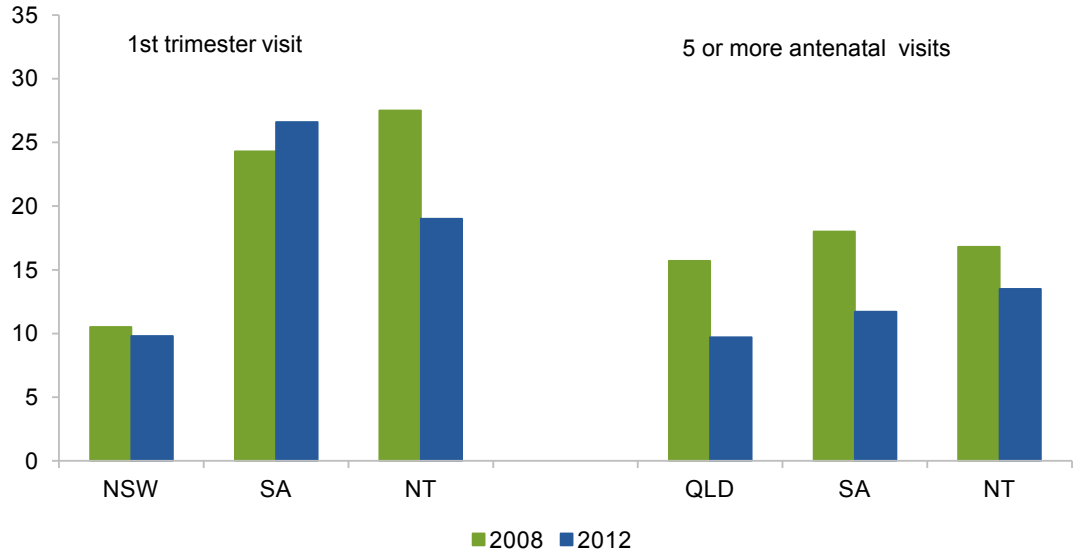
## Antenatal care

A lack of comparable data limits scope for jurisdictional comparisons. The data that are available reveal that Aboriginal and Torres Strait Islander attendance at a *first trimester antenatal visit* fell in New South Wales (from 69.2 to 51.7 per cent between 2008 and 2012 age standardised) but increased in the Northern Territory (from 47.1 per cent to 54.8 per cent) and South Australia (from 48.0 per cent to 50.2 per cent) (SCRGSP 2014e, tables NIRA 9.4 and NIRA 9.8). Trends in rates of attendance by non-Indigenous mothers meant the associated gap narrowed in New South Wales and the Northern Territory but widened in South Australia (figure 3.5). In terms of Aboriginal and Torres Strait Islander mothers who attended *five or more antenatal visits*, Queensland and South Australia recorded higher rates

of attendance over the period. Combined with lower rates of increase in non-Indigenous attendance, the associated gap narrowed markedly for Queensland and South Australia.

Figure 3.5 **Age standardised gaps in Indigenous and non-Indigenous antenatal attendance: 2008 and 2012 by jurisdiction[a]**

Percentage point rate difference




[a] Jurisdictions where comparable data was available in 2008 and 2012. Data for 5 or more antenatal visits in the Northern Territory is for 2007 and 2012.

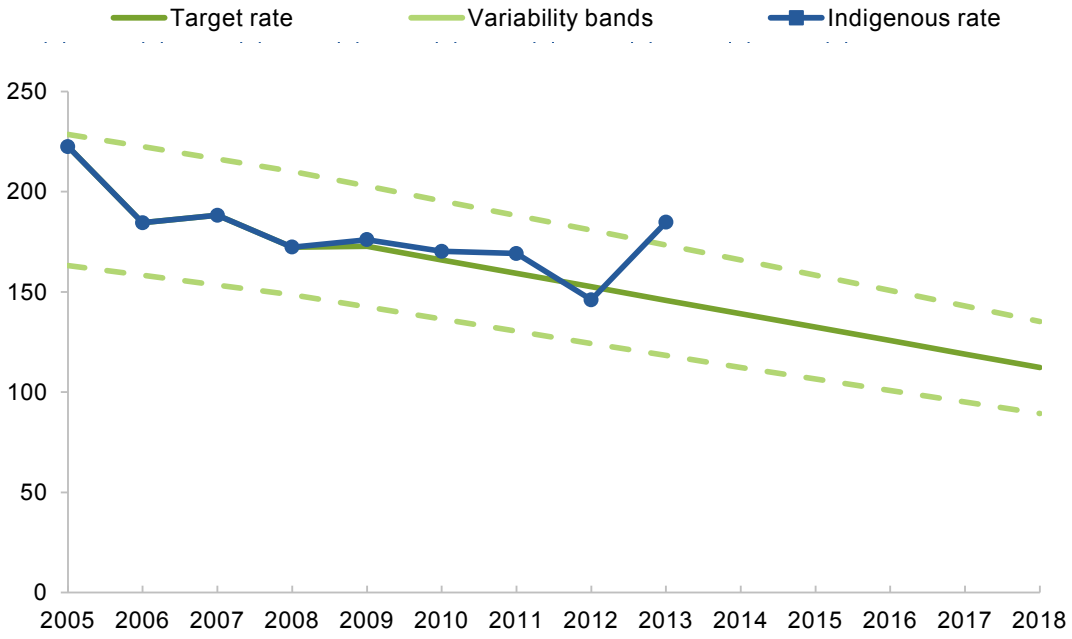
*Data source*: SCRGSP (2014e, tables NIRA 9.4, NIRA 9.8, NIRA 9.10, NIRA 9.14, NIRA 9.15).

## Child mortality trajectory

Figure 3.6 shows the annual child mortality rates for those jurisdictions where data are available. A number of Aboriginal and Torres Strait Islander infant deaths that occurred in 2012 were registered in 2013. As such, mortality rates are likely to be understated in 2012 and overstated in 2013. While the 2013 rate is outside the variability bands, the average of the 2012 and 2013 rates falls within the bands.

Figure 3.6 **Indigenous child mortality rate trajectory, 2005 to 2018, combined New South Wales, Queensland, South Australia, Northern Territory and Western Australia**

Deaths per 100 000 population




*Data source:* ABS (Deaths, Australia, 2013, Cat no. 3302.0, basic CURF); trajectory points provided by PM&C.

## Summary of key findings

# EARLY CHILDHOOD EDUCATION


In 2013, 85 per cent of 4-5 year old Indigenous children in remote areas were enrolled in preschool

The target was not met, but good progress was made


Enrolments for Indigenous children are higher in remote areas than in regional areas and major cities

# 4 Early childhood education

## Key points

- Early childhood education is important for school readiness, educational achievement and school completion. It is associated with better literacy, numeracy and problem solving skills when children start school. And the benefits of early childhood education are even more pronounced for children from socioeconomically disadvantaged backgrounds.
- Recognising the benefits of good quality early childhood education and that disadvantage can begin early, COAG set a target of ensuring that all Indigenous four year olds in remote communities had access to quality early childhood education by 2013. This was defined as 95 per cent of Indigenous children in remote communities enrolled in the year before commencing formal schooling.
- The early childhood education target was not met. In 2013, 85 per cent of Aboriginal and Torres Strait Islander children living in remote or very remote areas in Australia were enrolled in preschool. This was 10 percentage points short of the target.
- Even so, good progress was made. Preschool enrolment and attendance rates for Indigenous children in remote areas were higher than in the major cities and regional areas (noting that the share of children enrolled but not attending was also higher in remote areas).
- While the early childhood education target focused on children in remote areas, it is important that all children, regardless of where they live, have access to early childhood education. At the national level, Aboriginal and Torres Strait Islander children continue to be less likely to be enrolled in preschool than non-Indigenous children.
  - In 2013, 74 per cent were enrolled in preschool (compared to 91 per cent for non-Indigenous children).
- But it is attendance, not just enrolments, that matters for development outcomes. In 2013, nationally 70 per cent of Aboriginal and Torres Strait Islander children were attending preschool (compared to 89 per cent for non-Indigenous children).
- However, the share of children attending preschool varies (sometimes markedly) across jurisdictions. Preschool attendance rates for Aboriginal and Torres Strait Islander children were more than 95 per cent in WA, the ACT and SA in 2013.
- Development outcomes can provide insights into school readiness. Aboriginal and Torres Strait Islander children starting school are more than twice as likely to be developmentally vulnerable than non-Indigenous children. However, based on the Australian Early Development Census, between 2009 and 2012, the share of Indigenous children classified as 'on track' increased across the five domains of early childhood development.
- The focus to date has been on identifying and describing the gap in early childhood education. However, what is even more important is establishing 'what works', and as such, the focus going forward should be on evaluating policies directed at improving preschool attendance and the school readiness of Aboriginal and Torres Strait Islander children.

## 4.1 Introduction

Early childhood education is important for school readiness, educational achievement and for improving life outcomes.

Both Australian and international studies show that there are substantial benefits from high quality early childhood education, including better language, literacy, numeracy, cognitive and problem-solving skills (Conti and Heckman 2012; Heckman 2011; Gong, McNamara and Cassells 2011; Sayers et al. 2012). The Productivity Commission's (PC) *Childcare and Early Childhood Learning* inquiry report states that:

> The benefits of quality early learning for children in the year prior to starting school are largely undisputed, with evidence of immediate socialisation benefits for children, increased likelihood of a successful transition into formal schooling and improved performance in standardised test results in the early years of primary school as a result of participation in preschool programs. (2014, p. 6)

Because learning is a dynamic process, early learning sets the conditions for the next stage of learning. A study using data from the Longitudinal Study of Australian Children (LSAC) found that after controlling for socio-demographic characteristics, there was a significant positive association between attendance at preschool and Year 3 National Assessment Program — Literacy and Numeracy (NAPLAN) results (Warren and Haisken-DeNew 2013).

The evidence also shows that good quality early childhood education is particularly important for children from socioeconomically disadvantaged backgrounds, contributing significantly to providing a strong start to education and success in school (Magnuson, Ruhm and Waldfogel 2007; Sylva et al. 2008; De Bortoli and Thomson 2010; Horton 1996). De Bortoli and Thomson, for example, found that the effects of preschool were more marked for Indigenous students than for non-Indigenous students on mathematical literacy performance (based on students' performance on the Programme of International Student Assessment).

But if a child is not 'school ready', this can lead to disengagement in learning, which in turn can lead to poor educational achievement (Conti and Heckman 2012; Harrison et al. 2012). The evidence also suggests that interventions in the early years deliver a higher return on investment than remedial interventions when children are older (Heckman 2011).

### Measures for the early childhood education target

Recognising the benefits of good quality early childhood education and that disadvantage can begin early — particularly for Indigenous children living in remote communities with limited access to early childhood education services — COAG set a target of ensuring that all Indigenous four year olds in remote communities had access to quality early childhood

education by 2013. This was defined as 95 per cent of Indigenous children in remote communities enrolled in the year before commencing formal schooling.

There are two measures for this target:

- the proportion of Indigenous children aged 4 and 5 (as at 1 July of the collection) who are *enrolled* in a preschool program in the year before full time schooling, by remoteness
- the proportion of Indigenous children aged 4 and 5 years who are *attending* a preschool program in the year before full time schooling, by remoteness.

These targets are embodied in the National Indigenous Reform Agreement (NIRA) and form part of a broader set of commitments that COAG has made in respect of early childhood education (box 4.1).

## 4.2 The 2013 target and progress to date

In 2013, 2734 (or 85 per cent) of 4-5 year old Aboriginal and Torres Strait Islander children living in remote or very remotes areas were enrolled in a preschool program in the year before fulltime school (figure 4.1, SCRGSP 2014e, NIRA table 10.1).

That means that at the national level, the 2013 early childhood education target was not met — the preschool enrolment rate for Aboriginal and Torres Strait Islander children in remote areas was 10 percentage points short of the target.

While the 2013 target was not achieved at a national level, the positive story is that the proportion of Aboriginal and Torres Strait Islander children in remote areas enrolled in early childhood education increased between 2006 and 2011. While there is no comparable data to show change over time in this Closing the Gap target measure (see below), Census data indicate that in 2006 around 55-60 per cent of four year old Aboriginal and Torres Strait Islander children in remote and very remote areas were attending a preschool program, and in 2011 around 70 per cent were attending a preschool program (ABS 2006b, 2011).

Tracking progress over more recent years (in the period 2011-2013) is also made difficult by data comparability issues.

- The National Early Childhood Education and Care Collection (NECECC), which is used to report on this target, is based on administrative data. This means that there is no information on those children who are *not* participating in preschool (the number of children not enrolled or attending are calculated using information on the size of the relevant population). For preschool enrolment and attendance rates, the base year is 2011.
- Data for 2013 are reported based on the new 2011 Census-based population estimates and projections and incorporate the remoteness classification in the Australian

Statistical Geography Standard. Historical data, however, have not been revised as counts of children in preschool in the year before full time schooling have improved each year resulting in data not being comparable over time.

### Box 4.1 National Partnership Agreements — early childhood education

Governments have committed to a number of National Partnership Agreements related to early childhood education.

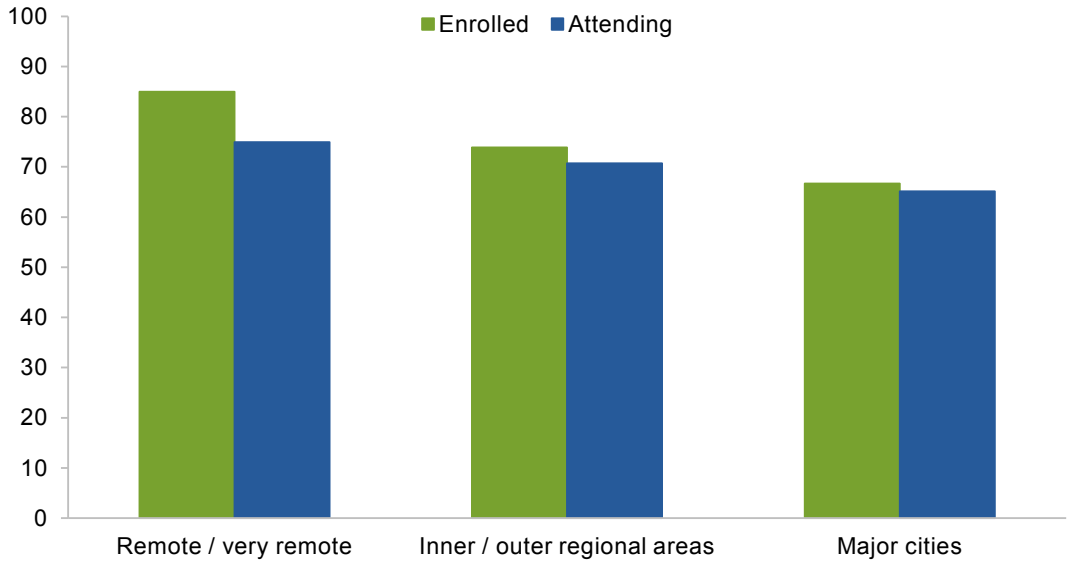
- In 2008, COAG endorsed a *National Partnership Agreement for Indigenous Early Childhood Development*. This agreement was established to improve outcomes for Indigenous children in their early years and to contribute to reducing the gap in developmental outcomes between Indigenous and non-Indigenous children (COAG 2009b).
- In 2008, the Australian Government and State and Territory governments signed the *National Partnership Agreement on Early Childhood Education*. Under this agreement a commitment was made to ensuring that by 2013 all children in the year before full-time schooling would have access to a high quality early childhood education program delivered by a degree qualified early childhood teacher for 15 hours per week, 40 weeks of the year (COAG 2009c). When the agreement expired in June 2013, a new *National Partnership Agreement on Universal Access to Early Childhood Education* was endorsed covering the period until December 2014. The new agreement supported universal access to and improved participation by children in quality early childhood education in the year before full-time schooling, with a focus on vulnerable and disadvantaged children. The *National Partnership Agreement on Universal Access to Early Childhood Education* was subsequently renewed to cover the period until December 2015. In May 2015, the Australian Government committed $840 million to extend National Partnership agreements for a further two years, until December 2017 (at the time of writing the extension was being negotiated with the States and Territories).
- The *National Partnership Agreement on the National Quality Agenda for Early Childhood Education and Care* (effective from December 2009) incorporates a National Quality Framework for Early Childhood Education and Care and a National Quality Standard to ensure high quality and consistent early childhood education and care across Australia.
- Recognising the importance of national comparable early-childhood data for understanding trends in preschool enrolment and attendance, a *National Information Agreement on Early Childhood Education and Care* was signed by relevant Australian, State and Territory authorities in 2009. An important outcome from this agreement was the development of the NECECC. The NECECC supports monitoring and reporting arrangements under the *National Partnership Agreement on Universal Access to Early Childhood Education* and the COAG reforms in early childhood, including the Closing the Gap target for Indigenous children.

## Aboriginal and Torres Strait Islander children are most likely to be at preschool in remote communities

Another positive aspect of the early childhood education story is that Aboriginal and Torres Strait Islander children living in remote areas are more likely to be enrolled in preschool than those living in regional areas and major cities. In regional areas, 74 per cent of Aboriginal and Torres Strait Islander children were enrolled in preschool in 2013. In the major cities 67 per cent were enrolled (figure 4.1).

Figure 4.1 **Proportion of Indigenous children enrolled and attending a preschool program, by remoteness: 2013[a]**

Per cent




[a] Indigenous children aged 4 and 5 years who were enrolled in a preschool program in the year before full time schooling in 2013.

*Data source*: SCRGSP (2014e, NIRA tables 10.1 and 10.2).

Preschool attendance rates for Aboriginal and Torres Strait Islander children, at 75 per cent, were also highest in remote and very remote areas. This compares with 71 per cent in regional areas and 65 per cent in major cities (figure 4.1). The difference between enrolment and attendance rates, however, is wider in remote areas (10 percentage points) than in regional areas (3 percentage points) and in major cities (2 percentage points).

Given the challenges around providing and accessing preschool services in remote and very remote areas (for example, the need for a minimum number of children to provide a stand-alone preschool program, difficulties attracting qualified staff to remote locations and the need for children to travel long distances to access early childhood services), the higher enrolment and attendance rates in remote areas are noteworthy.

It is not clear what underpins higher enrolment rates in more remote areas, including whether differences in outcomes are driven by government policy or other factors. In an article looking at preschool participation among Aboriginal and Torres Strait Islander children in Australia, Hewitt and Walter (2014) pointed to important social and cultural differences between preschools in remote areas and those in urban and regional areas that could affect the participation of Aboriginal and Torres Strait Islander children:

> For children in remote areas, preschool will be a primarily Indigenous social and cultural environment, with the majority of classmates and teachers also Aboriginal or Torres Strait Islander people. Although some Indigenous preschools exist outside remote areas, most urban and regional Indigenous children will attend preschools where they are racially, socially and culturally a minority. (p. 42)

Part of the explanation may also lie in the fact that governments provide a higher proportion of the preschool programs delivered in remote areas than those delivered in regional or city areas. The lower proportion of Aboriginal and Torres Strait Islander children enrolled in preschool in the major cities and regional areas could simply reflect under-coverage of non-government providers which is more likely to affect non-remote enrolment rates (CRC 2014, p. 43).[33]

But government policy could also have played a role. There have been a number of innovative strategies adopted for improving access to early childhood education programs in remote and very remote areas. New South Wales funds 45 Mobile Preschools and the Queensland Government provides an eKindy program (PC 2014). The Mobile Preschool Program provided by the Northern Territory Department of Education, designed to overcome barriers to providing standard preschool services in very remote Indigenous communities, has qualified preschool teachers located in central regions travelling to three or four surrounding sites/communities and providing curriculum activities, resources and professional support to local assistant teachers. While the preschool program is developed by the teacher, it is delivered on site by the locally recruited (in most cases) Indigenous assistant teacher.

The Families as First Teachers (FaFT), an early learning and parenting support program operating in 21 remote communities in the Northern Territory, has also been identified by the Steering Committee for the Review of Government Services Provision (SCRGSP 2014a) as a promising program for supporting the learning and development of children in remote areas. School readiness is addressed through this program with a focus on literacy and numeracy foundations, orientation to school programs and parent engagement initiatives. Surveys conducted in 2011 and 2012 found high levels of parent satisfaction with the program and an increase in preschool enrolments in 50 per cent of the FaFT sites surveyed.

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[33] All services approved for the purposes of Child Care Benefit are required to provide data through the Child Care Management System (CCMS). However, Long Day Care centres delivering preschool programs are not mandated to complete the preschool program component of the CCMS, and this results in under-coverage of services providing a preschool program and associated data in the CCMS data.

As Hewitt and Walker (2014) make clear, there is a need to better understand the difference in preschool enrolment rates between remote areas and urban and regional areas:

> An unanswered question in the literature is why preschool enrolments have improved so dramatically in remote areas. Is it fundamentally related to the provision of services that were not present before, or are other factors involved? We need to know what is working, and why, in remote area preschool enrolment, to establish if these strategies could be effectively translated to policy in urban and regional areas. (p. 49)

## Universal access to early childhood education

Based on the evidence that quality early childhood education is particularly beneficial for disadvantaged children in terms of preparing for school and success at school, it is crucial that all Aboriginal and Torres Strait children, regardless of where they are living, are attending preschool. Indeed, most Indigenous children aged 4 years live in major cities (34 per cent) and regional areas (47 per cent, SCRGSP 2014e, table NIRA 10.1).[34]

As Hewitt and Walter (2014) noted, disadvantage is not confined to children living in remote areas:

> The substantial group of urban and regional Indigenous children not currently participating in preschool suggests many of these already disadvantaged children will face additional educational disadvantage. (p. 43)

COAG has recognised the importance of reducing the gap in developmental outcomes between *all* Indigenous and non-Indigenous children (box 4.1). The *National Partnership Agreement on Universal Access to Early Childhood Education* has been renewed to 2015. Under the National Partnership, all jurisdictions have committed to working towards having 95 per cent of Aboriginal and Torres Strait Islander children enrolled in a quality early childhood education programme in the year before full-time school. In May 2015, the Australian Government committed $840 million to extend National Partnership arrangements for a further two years (until December 2017).[35]

The PC's inquiry on *Childcare and Early Childhood Learning* noted that the National Partnership Agreement on Universal Access to Early Childhood Education has been a major factor in boosting preschool attendance across Australia in recent years. The PC recommended that universal access to a preschool program in the year before children start school should continue to be supported by all governments as a key measure for child development and transition to school (PC 2014).

At the national level, however, Indigenous children continue to be less likely to attend preschool than non-Indigenous children. In 2013:

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34 Estimates based on ABS Estimated Resident Population (ERP).

35 At the time of writing the extension was being negotiated with the States and Territories.

- 74 per cent of Aboriginal and Torres Strait Islander children were *enrolled* in preschool nationally, compared to 91 per cent for non-Indigenous children
- 70 per cent of Aboriginal and Torres Strait Islander children were *attending* preschool, compared to 89 per cent attendance for non-Indigenous children.

These gaps are expected to contribute to different learning outcomes between Indigenous and non-Indigenous students in later years (and reflected in NAPLAN results, chapter 5).

Preschool enrolment and attendance rates vary across the states and territories (table 4.1). In a number of jurisdictions — Western Australia, the Australian Capital Territory and South Australia — preschool attendance rates for Indigenous children were more than 95 per cent in 2013.

Table 4.1 **Children aged 4 and 5 years enrolled in a preschool program in the years before full time schooling: 2013[a,b]**

Per cent

| | *NSW*[c] | *Vic* | *Qld*[d] | *WA*[d] | *SA*[e] | *Tas* | *ACT* | *NT* | *Aust* |
|---|---|---|---|---|---|---|---|---|---|
| **Enrolled** | | | | | | | | | |
| Indigenous | 60.3 | 83.6 | 64.4 | 99.3 | 99.8 | 88.0 | 93.5 | 87.0 | 73.9 |
| Non-Indigenous | 72.4 | 105.5 | 99.7 | 98.1 | 80.1 | 91.4 | 107.8 | 96.4 | 90.8 |
| **Attending** | | | | | | | | | |
| Indigenous | 57.9 | 76.3 | 62.2 | 99.3 | 95.4 | 85.0 | 95.7 | 67.1 | 69.9 |
| Non-Indigenous | 71.1 | 101.1 | 97.4 | 98.0 | 79.4 | 89.7 | 106.1 | 91.7 | 88.7 |

[a] Data by state and territory were reported for the first time in 2013. Caution should be used in making comparisons across jurisdictions as not all jurisdictions were able to align their collection methods with the standards set out in the Early Childhood Education and Care National Minimum Data Set. Also, information on children's attendance in preschool programs was subject to a level of service non-response, as the provision of this data by service providers was not mandatory. [b] Where rates exceed 100 per cent, this may reflect a higher numerator than denominator (the number of 4-5 year old children enrolled in/attending a preschool program in the year before full time schooling is divided by the ERP of Indigenous children aged 4 years old). Also, children may be enrolled/attending in a state/territory different to where they live (potentially an issue for ACT/NSW). [c] The NSW figures significantly under report enrolments and attendance due to service non-response (largely from long day care providers). [d] A small number of children in Queensland and WA were supplied as aggregate data. The use of aggregate data may result in a small overcount of children within these two states. Imputation was used for some data in Queensland to produce child level counts. Attendance data have been used as a proxy for enrolment data in WA. [e] SA preschools began transitioning to the 'Same First Day' enrolment policy in 2013. Before 2013, there were four enrolment intakes per year, which reduced to two intakes in 2013 (Term 1 and Term 2), and since January 2014 there has been only one intake per year. This change brought SA into line with other States and Territories. However, this created an anomaly in the 2013 SA data because enrolments that would normally have occurred in Terms 3 of 2013 (i.e. prior to the 2013 NECECC reference period) were delayed to 2014 which meant that a significant number of 4-year-olds in SA who would otherwise have been in scope for the annual collection were not included in the 2013 collection.

*Source*: SCRGSP (2014e, tables NIRA 10.3 and 10.4).

Differences in preschool attendance rates across jurisdictions may reflect differences in preschool arrangements across the jurisdictions, including differences in the age of entry into preschool and preschool fees. Understanding the factors that influence attendance rates between jurisdictions could provide insights into ways of improving preschool attendance of Aboriginal and Torres Strait Islander children (and non-Indigenous children).

However, attendance is not just about turning up at preschool, it is also about how many hours children are at preschool — less hours attended means less learning time. The data on preschool attendance for 2014 show that 62 per cent of Aboriginal and Torres Strait Islander children living in remote areas and attending preschool were at preschool for 15 hours or more a week (table 4.2). Similar percentages of Aboriginal and Torres Strait Islander children were attending preschool for 15 hours or more in the major cities and regional areas.

That said, a higher proportion of Aboriginal and Torres Strait Islander children living in remote areas attended preschool for less than 10 hours a week — 21 per cent in remote areas compared to 13 per cent in major cities and 14 per cent in regional areas (table 4.2). Data are also reported by State and Territory in the statistical attachment (table 4.4).

Table 4.2 **Aboriginal and Torres Strait Islander children's preschool hours, per week, by remoteness[a]**

Per cent

| | *Major Cities* | *Inner/Outer Regional* | *Remote/Very Remote* |
|---|---|---|---|
| Less than 10 hours | 13 | 14 | 21 |
| 10-14 hours | 24 | 22 | 17 |
| 15 or more hours | 63 | 64 | 62 |
| Total | 100 | 100 | 100 |

**a** Only those Aboriginal and Torres Strait Islander children enrolled in and attending preschool are included.

*Source*: Commission estimates based on ABS (Preschool education, Australia, 2014, Cat. no. 4240.0, basic CURF).

## 4.3 What is missing from the picture?

As discussed above, high quality early childhood education programs improve children's readiness for school and a successful transition to school provides a positive start for future educational achievements (with flow-on effects for other education, employment and health Closing the Gap targets). As Sims (2011) commented:

> There is no doubt that readiness for school is a key factor in closing the gap between Indigenous and non-Indigenous Australians … (p. 3)

While transitioning to formal schooling can be challenging for some Indigenous children and their families — particularly those living in remote areas and those whose first language is not Standard Australian English — an important question to ask is do higher pre-school attendance rates for Aboriginal and Torres Strait Islander children translate into more Indigenous children being 'school ready'?

## Results from the Australian Early Development Census

Developmental outcomes can provide insights into school readiness. The Australian Early Development Census (AEDC, previously known as the Australian Early Development Index) is a national population measure of children's development as they start school. The early development instrument measures (through a teacher-completed checklist) five areas or domains of early childhood development — physical health and wellbeing, social competence, emotional maturity, language and cognitive skills (school-based), and communication skills and general knowledge.

COAG endorsed the AEDC as a national progress measure of early childhood development in Australia. The AEDC collects data every three years. Data is available for 2009 and 2012.

Key findings from the 2012 AEDC were that:

- the majority of Aboriginal and Torres Strait Islander children are developmentally 'on track' ('on track' children score in the highest 26-100$^{th}$ percentile) on all the five developmental domains (table 4.3). Between 58-65 per cent of Aboriginal and Torres Strait Islander children were 'on track' in the five AEDI domains. This compares with 76-84 per cent for non-Indigenous children.
- the smallest gap between Aboriginal and Torres Strait Islander children being classified as 'on track' and non-Indigenous children is in the area of 'emotional maturity', followed by 'physical health and wellbeing' and 'social competence' (table 4.3)
- the largest gap between Aboriginal and Torres Strait Islander and non-Indigenous children is in language and cognitive skills, followed by communication skills and general knowledge. Just under 6 per cent of non-Indigenous children were found to be developmentally vulnerable in language and cognitive skills compared to over 22 per cent of Indigenous children (table 4.3). Data are also reported by State and Territory in the statistical attachment (table 4.5).
- the proportion of Aboriginal and Torres Strait Islander children classified as 'on track' decreased in all domains as remoteness increased (SCRGSP 2014a). The proportion of Aboriginal and Torres Strait Islander children classified as 'on track' in language and cognitive skills fell from 65 per cent in the major cities to 36 per cent for those living in very remote parts of Australia (figure 4.2).

Table 4.3 **Australian Early Development Census, proportion of five year old children by domain and Indigenous status: 2012**

Per cent

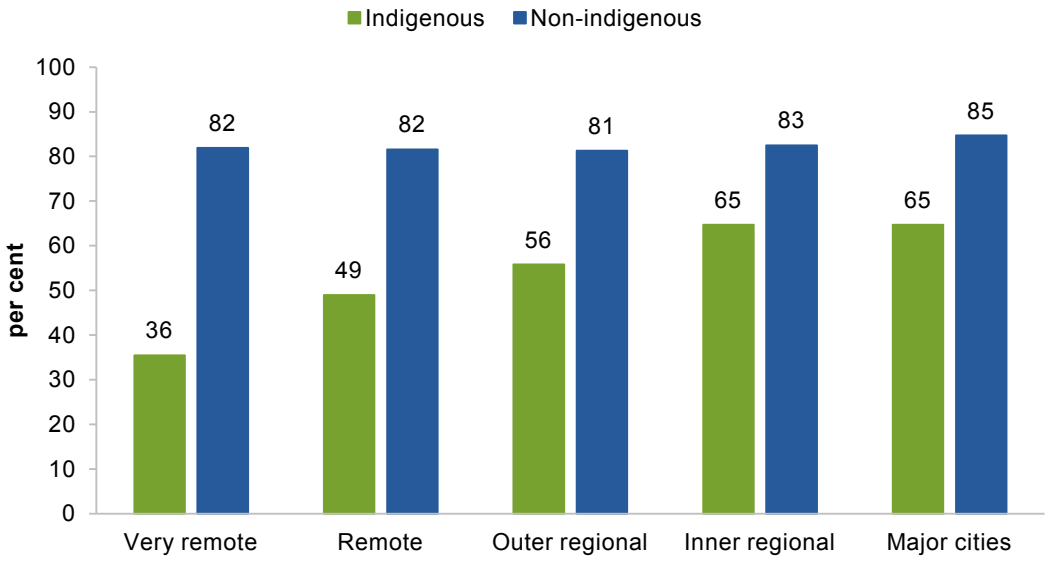
| | *Physical health and wellbeing* | *Social competence* | *Emotional maturity* | *Language and cognitive skills* | *Communication skills and general knowledge* |
|---|---|---|---|---|---|
| **Indigenous** | | | | | |
| Vulnerable[a] | 20.4 | 18.7 | 15.6 | 22.4 | 19.9 |
| At risk[b] | 17.0 | 20.7 | 19.7 | 19.5 | 22.5 |
| On track[c] | 62.6 | 60.7 | 64.6 | 58.0 | 57.6 |
| **Non-Indigenous** | | | | | |
| Vulnerable[a] | 8.7 | 8.8 | 7.2 | 5.9 | 8.4 |
| At risk[b] | 13.2 | 13.9 | 13.9 | 10.1 | 16.0 |
| On track[c] | 78.1 | 77.3 | 78.8 | 83.9 | 75.7 |

[a] Children in the 0-10th percentile. [b] Children in the 11-25th percentile. [c] Children in the 26th-100th percentile.

*Sources*: SCRGSP (2014a, table 6A.8.1), based on AEDC 2012 (unpublished), Social Research Centre.

Figure 4.2 **Australian Early Development Census, proportion of five year old children classified 'on track' in the language and cognitive skills domain: 2012[a]**

Per cent




[a] 'On track' children score in the highest 26-100th percentile of the AEDC.

*Data source*: AEDC 2012 (unpublished), Social Research Centre, SCRGSP (2014a, table 6A.8.3).

Between 2009 and 2012, the proportion of Aboriginal and Torres Strait Islander children classified as 'on track' increased across all five domains, with the gap between Aboriginal and Torres Strait Islander and non-Indigenous children narrowing between 1 and 6 percentage points. The largest percentage point increase for Aboriginal and Torres Strait Islander children was for 'language and cognitive skills' (from 48 per cent to 58 per cent); however, as discussed earlier, it is this domain that has the largest gap between Aboriginal and Torres Strait Islander and non-Indigenous children.

Forty three per cent of Aboriginal and Torres Strait Islander children were developmentally vulnerable on one or more domains in 2012, compared with 47 per cent in 2009.

The AEDC also collects data on language background other than English. In 2012, 20 per cent of Aboriginal and Torres Strait Islander children starting school spoke languages other than English at home, with 109 different traditional languages spoken. Of these, 83 traditional languages were reported as being the main language other than English spoken at home (Australian Government 2013). Most of those Aboriginal and Torres Strait Islander children whose first language was not English were living in remote or very remote areas (59 per cent).

Not speaking Standard Australian English as a first language can make transitioning to school more difficult and may, in part, explain why the proportion of Aboriginal and Torres Strait Islander children classified as 'on track' decreases as remoteness increases despite higher enrolment and attendance preschool rates in remote areas than in the major cities and regional areas. As Dreise and Thomson (2014) note:

> … the fact that many Indigenous children come from homes that do not speak Standard Australian English means that there is often an instant 'catch up' to be made in the early years of schooling. (p. 4)

The AEDC checklists completed by teachers also record children's experiences in the year before entering formal schooling. A key finding of the 2012 AEDC was that children who had attended preschool were less likely to start school developmentally vulnerable compared to children who had not attended preschool. For those children who attended a preschool program, around 19 per cent were found to be developmentally vulnerable on one or more of the domains compared with 30 per cent of children who did not attend a preschool program (Australian Government 2013).

## Other influences on development outcomes

From the research it is clear that while high quality early childhood education programs are important for children's school readiness and future academic achievements, other factors are also important. Differences in home learning environments (children having greater access to books and computers), differences in the quantity and quality of parental time investments, as well as household income and parental education are all shown to be important for children's development (McLachlan, Gilfillan and Gordon 2013, Gong,

McNamara and Cassells 2011, Wake et al. 2008, PC 2014, Dockett, Perry and Kearney 2010, Sims 2011).

A better understanding of the factors that influence school readiness of Aboriginal and Torres Strait Islander children is important for designing policies aimed at improving school readiness. As Riddle and Fogart (2015) noted:

> There are important cultural and contextual factors that need to be considered in preparing young children for the transition to the school system, especially in remote setting where school is often first experienced as foreign and culturally challenging. (p. 2)

## 4.4 Where to from here?

There are many questions that remain unanswered, but three key questions are:

- what works to improve pre-school attendance rates among Aboriginal and Torres Strait Islander children?
- what early childhood education programs are most effective in equalising educational opportunities for Aboriginal and Torres Strait Islander children?
- how important are early childhood education programs in improving school readiness relative to other factors such as home learning environments?

To date the focus has been on identifying and describing the 'gap' in early childhood inequalities. As Bowes and Grace (2014) recently said:

> Early childhood inequalities between Indigenous and non-Indigenous people in Australia are well documented. … Most Indigenous early childhood research into parenting, education and health is descriptive and tends to focus on identifying and describing 'gaps'. (p. 2)

Reporting on progress against the target of improving access to early childhood education for Indigenous children is important for driving changes and highlighting areas where action is most needed. However, what is even more important is looking beyond the target to 'outcomes' and establishing what works to improve preschool attendance, school readiness and educational outcomes of Indigenous students. Without evidence, policy makers cannot design or improve programs with any confidence that the programs will make a difference.

But the evidence base on which early childhood education programs are effective (and which are not) for Australian Indigenous children is thin.[36] For example, there is limited Australian research on how to address the challenge of low use of early learning programs by Indigenous families and there are few rigorous evaluations of early childhood programs for Indigenous children.

[36] Some examples include Liddell et al. (2011) and Robinson et al. (2009).

One way of addressing this evidence gap is to link evaluation to policy. In the context of early childhood programs, Harrison et al. (2012) identified opportunities for controlled research trials:

> Recent policy initiatives such as the National Quality Framework, the Home Interaction Program for Parents and Youngsters (HIPPY) Program, Communities for Children program and the Aboriginal Children and Family Centres provide examples of platforms where opportunities for more rigorous controlled research trials might be applied. Australian studies to determine the most effective models within the Australian context, in particular the Indigenous context, is an area of acute need. (pp. 9-10)

The Commission's view is that the focus going forward should be on evaluating policies directed at improving preschool attendance and the school readiness of Indigenous children.

The need for more research and evaluation of programs and policies is discussed further in chapter 8.

# Statistical attachment

Table 4.4 **Aboriginal and Torres Strait Islander children's preschool hours, per week, by remoteness, by State and Territory[a]**

Per cent

| | *NSW* | *Vic* | *Qld* | *SA* | *WA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| | | | | *Major Cities* | | | | |
| Less than 10 hours | 19 | 11 | 7 | 23 | 8 | - | 11 | - |
| 10-14 hours | 26 | 16 | 14 | 29 | 33 | - | 22 | - |
| 15 or more hours | 55 | 73 | 79 | 48 | 59 | - | 67 | - |
| | | | | *Inner/Outer Regional* | | | | |
| Less than 10 hours | 20 | 18 | 6 | 22 | 11 | 8 | 50 | 14 |
| 10-14 hours | 28 | 17 | 17 | 26 | 28 | 18 | 0 | 17 |
| 15 or more hours | 52 | 65 | 77 | 52 | 62 | 74 | 50 | 69 |
| | | | | *Remote/Very Remote* | | | | |
| Less than 10 hours | 18 | - | 3 | 43 | 21 | 0 | - | 33 |
| 10-14 hours | 13 | - | 7 | 28 | 26 | 0 | - | 19 |
| 15 or more hours | 69 | - | 90 | 29 | 53 | 100 | - | 48 |

**a** It is possible for States and Territories to have a zero count in a certain remoteness area class: the Northern Territory does not contain a Major City or an Inner Regional classification; Tasmania does not contain a Major City; and ACT does not contain Remote or Very Remote classifications.

*Source*: Commission estimates based on ABS (Preschool education, Australia, 2014, Cat. no. 4240.0, basic CURF).

Table 4.5 **Australian Early Development Census of five year old children, by State and Territory: 2012**

Per cent

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| *Physical health and wellbeing* | | | | | | | | |
| **Indigenous** | | | | | | | | |
| Vulnerable[a] | 17.7 | 20.7 | 19.1 | 24.2 | 27.9 | 17.6 | 19.6 | 26.0 |
| At risk[b] | 17.3 | 12.6 | 18.2 | 15.9 | 17.3 | 14.2 | 22.7 | 16.8 |
| On track[c] | 65.0 | 66.7 | 62.7 | 60.0 | 54.8 | 68.2 | 57.7 | 57.2 |
| **Non-Indigenous** | | | | | | | | |
| Vulnerable | 7.8 | 7.6 | 11.0 | 8.7 | 9.5 | 9.3 | 10.4 | 8.2 |
| At risk | 13.5 | 11.1 | 15.3 | 12.0 | 14.4 | 12.1 | 16.7 | 10.9 |
| On track | 78.8 | 81.3 | 73.7 | 79.3 | 76.1 | 78.6 | 72.8 | 80.9 |
| *Social Competence* | | | | | | | | |
| **Indigenous** | | | | | | | | |
| Vulnerable | 16.9 | 16.4 | 19.1 | 17.7 | 26.7 | 12.2 | 19.8 | 24.5 |
| At risk | 19.3 | 22.4 | 19.5 | 22.0 | 23.3 | 20.3 | 20.8 | 25.2 |
| On track | 63.8 | 61.1 | 61.4 | 60.3 | 50.0 | 67.6 | 59.4 | 50.4 |
| **Non-Indigenous** | | | | | | | | |
| Vulnerable | 8.0 | 8.0 | 11.0 | 7.7 | 10.6 | 7.9 | 8.3 | 9.0 |
| At risk | 13.2 | 13.2 | 15.3 | 14.2 | 14.8 | 14.3 | 15.8 | 14.3 |
| On track | 78.8 | 78.8 | 73.7 | 78.1 | 74.6 | 77.7 | 75.9 | 76.6 |
| *Emotional maturity* | | | | | | | | |
| **Indigenous** | | | | | | | | |
| Vulnerable | 12.9 | 14.4 | 14.8 | 16.7 | 24.2 | 12.4 | 19.6 | 23.4 |
| At risk | 17.1 | 19.3 | 19.8 | 22.0 | 22.4 | 19.3 | 9.3 | 25.6 |
| On track | 70.0 | 66.4 | 65.4 | 61.2 | 53.4 | 68.3 | 71.1 | 51.0 |
| **Non-Indigenous** | | | | | | | | |
| Vulnerable | 5.8 | 7.1 | 8.8 | 7.7 | 8.7 | 7.8 | 6.9 | 7.5 |
| At risk | 12.4 | 13.4 | 15.5 | 15.8 | 15.2 | 14.4 | 13.9 | 15.0 |
| On track | 81.9 | 79.5 | 75.7 | 76.5 | 76.2 | 77.8 | 79.2 | 77.6 |

(Continued next page)

Table 4.5 **(Continued)**

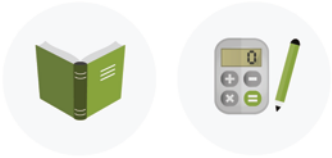
| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| *Language and cognitive* | | | | | | | | |
| **Indigenous** | | | | | | | | |
| Vulnerable[a] | 14.8 | 20.3 | 21.8 | 30.4 | 26.1 | 17.2 | 10.4 | 42.4 |
| At risk[b] | 16.6 | 17.5 | 19.2 | 24.4 | 20.6 | 17.9 | 19.8 | 24.7 |
| On track[c] | 68.6 | 62.3 | 58.9 | 45.1 | 53.3 | 64.9 | 69.8 | 32.9 |
| **Non-Indigenous** | | | | | | | | |
| Vulnerable | 4.2 | 5.9 | 8.2 | 7.0 | 6.0 | 6.3 | 3.8 | 7.4 |
| At risk | 7.6 | 9.8 | 11.8 | 15.0 | 9.9 | 11.9 | 9.3 | 12.5 |
| On track | 88.3 | 84.3 | 80.0 | 77.9 | 84.0 | 81.8 | 86.9 | 80.2 |
| *Communication skills and general knowledge* | | | | | | | | |
| **Indigenous** | | | | | | | | |
| Vulnerable | 16.5 | 17.0 | 20.8 | 23.6 | 24.1 | 11.7 | 20.6 | 26.3 |
| At risk | 23.2 | 19.4 | 22.8 | 20.4 | 25.1 | 23.9 | 13.4 | 23.2 |
| On track | 60.4 | 63.7 | 56.4 | 56.0 | 50.8 | 64.4 | 66.0 | 50.6 |
| **Non-Indigenous** | | | | | | | | |
| Vulnerable | 8.1 | 7.9 | 9.9 | 8.0 | 8.3 | 6.2 | 7.9 | 7.2 |
| At risk | 16.5 | 14.6 | 17.5 | 13.8 | 17.1 | 14.9 | 18.6 | 13.4 |
| On track | 75.5 | 77.5 | 72.5 | 78.1 | 74.6 | 78.9 | 73.6 | 79.5 |

**a** Children in the 0-10$^{th}$ percentile. **b** Children in the 11-25$^{th}$ percentile. **c** Children in the 26$^{th}$-100$^{th}$ percentile.

*Sources*: SCRGSP (2014a, table 6A.8.1), based on AEDC 2012 (unpublished), Social Research Centre.

## Summary of key findings

# LITERACY AND NUMERACY



No significant improvement in reading and numeracy nationally since 2008

Unlikely the target to halve the gap will be met

Little progress made on attendance rates

# 5 Literacy and numeracy

## Key points

- Education is pivotal to overcoming Indigenous disadvantage. Basic literacy and numeracy skills are the building blocks for further educational attainment and the skills and capabilities that students leave school with affect their job prospects. Education is also linked to a range of other benefits such as better health, lower rates of crime and increased participation in society.
- Recognising the importance of reducing education-driven disadvantage experienced by Indigenous Australians, COAG has committed to halving the gap for Indigenous students in reading, writing and numeracy within a decade (by 2018).
- At the national level, there has been no significant improvement in the overall levels of reading and numeracy achievements of Aboriginal and Torres Strait Islander students since 2008. Improvements recorded in reading in 2013 for Year 3 and Year 5 were short lived, with most of the gains dissipating in 2014.
- In line with the national results, there has been little progress at the state and territory level in reading and numeracy achievement by Aboriginal and Torres Strait Islander students since 2008. The only states to record a significant improvement were:
  - Queensland (Year 3 and Year 5 reading and Year 3 numeracy), Western Australia (Year 7 reading and Year 9 numeracy) and South Australia (Year 7 reading).
- A deterioration in achievement results for Aboriginal and Torres Strait Islander students between 2008 and 2014 was recorded in reading in the ACT (Year 7) and Tasmania (Year 9) and in numeracy in Year 3 in New South Wales and Victoria.
- National trajectories to achieve the Closing the Gap targets were only in line for Year 7 reading and Year 9 numeracy in 2014. All jurisdictions, with the exception of the Northern Territory, reached some agreed trajectory points for Indigenous reading and numeracy.
- Indigenous participation in NAPLAN at the national level declined for reading, writing and numeracy in all years between 2008 and 2014. In 2014, Indigenous students' participation in NAPLAN was highest in New South Wales, Tasmania and Queensland and lowest in the Northern Territory.
- Attendance at school is important for school outcomes. Attendance rates of Aboriginal and Torres Strait Islander students are lower than for non-Indigenous students across all years. Between 2008 and 2013, there was little evidence of progress on improving attendance rates for Aboriginal and Torres Strait Islander students in the primary years and attendance rates in government schools declined for Year 10 students in a number of jurisdictions.
- The evidence on what strategies work to improve educational outcomes and school attendance of Aboriginal and Torres Strait Islander students is thin. More evidence on what works (and what does not) is required.

## 5.1 Introduction

Education is pivotal to overcoming Indigenous disadvantage. Basic literacy and numeracy skills are the building blocks for further educational attainment, social development and employment. The skills and capabilities that students leave school with affect their job prospects. Education is also linked to better health, lower rates of crime and increased participation in society (Heckman 2011). As the OECD said:

> The student who leaves school without completing upper secondary education or without the relevant skills has fewer life prospects. This can be seen in lower initial and lifetime earnings, more difficulties in adapting to rapidly changing knowledge-based economies, and higher risks of unemployment. The same child is also less likely to take up further learning opportunities and less able to participate fully in the civic and democratic aspects of modern societies. (2012, p. 3)

Recognising the importance of reducing education-driven disadvantage experienced by Indigenous Australians, COAG has committed to halving the gap for Indigenous students in reading, writing and numeracy within a decade (by 2018).

The literacy and numeracy target is not only important in itself, but has the potential to have flow-on effects for other targets, including Year 12 attainment, employment and improved health outcomes. As the COAG Reform Council said:

> The COAG target — to halve the gap in literacy and numeracy achievement — provides the foundation for other education and employment-related gains for Indigenous Australians. (CRC 2010, p. 74)

In July 2009, COAG agreed that the states and territories should implement specific strategies to meet its Indigenous education targets in areas of concentrated Indigenous populations, and regional and local school-level strategies would be prepared and brought together in a national Indigenous Education Action Plan (COAG 2009d).

The Ministerial Council for Education, Early Childhood Development and Youth Affairs released the national *Aboriginal and Torres Strait Islander Education Action Plan 2010-2014* to assist education providers to accelerate the educational outcomes of Indigenous students. The plan identified national, systemic and local level actions in six priority areas: readiness for school; engagement and connections; attendance; literacy and numeracy; leadership, quality teaching and workforce development; and pathways to real post-school options.

### Measures for the literacy and numeracy target

There are two measures for this target. The first is the share of Indigenous and non-Indigenous students who achieve at or above the national minimum standard (NMS) for Years 3, 5, 7 and 9 in reading, writing and numeracy using the testing results from the National Assessment Program-Literacy and Numeracy (NAPLAN, box 5.1).

The NMS describes some of the skills and understandings students can generally demonstrate at their particular year of schooling in a specific subject area or domain. Students who are below the NMS are not achieving the learning outcomes expected for their year level and are at risk of being unable to progress satisfactorily at school without targeted intervention. Section 5.2 focuses on NAPLAN achievement against the NMS for reading and numeracy. Data for writing from 2011 onwards are not comparable to earlier years because of a change in the type of writing test used — between 2008 and 2010 students were assessed using a narrative task and from 2011 a persuasive task has been used. The results for writing are presented in the statistical attachment.

The second measure is NAPLAN student participation rates — the rate of student participation in the NAPLAN reading, writing and numeracy tests in Years 3, 5, 7 and 9.

### Box 5.1 About NAPLAN

National Assessment Program-Literacy and Numeracy (NAPLAN) testing was introduced in 2008 for all students across Years 3, 5, 7 and 9 in Australia. Students are assessed on the same test items each year in the assessment domains of reading, writing, language conventions and numeracy. The Australian Curriculum, Assessment and Reporting Authority (ACARA) conducts the NAPLAN tests.

NAPLAN results are available for each year since 2008 and are reported both as a mean scale score and by performance relating to the NMS. NAPLAN results are available by jurisdiction, remoteness and by parental education and occupation (a proxy for socio-economic status).

NAPLAN tests are equated so that the performance of students in literacy and numeracy can be compared within jurisdictions, between the current and previous year, and between the current and base year. Equating enables the results from NAPLAN tests in different years to be reported on the same achievement scale.

For reading and numeracy, the base year is 2008. Data for writing from 2011 onwards are not comparable to earlier years because of a change in the type of writing test used — between 2008 and 2010 students were assessed using a narrative task and from 2011 a persuasive task has been used.

NAPLAN statistics contain some degree of uncertainty and this needs to be taken into account when interpreting differences in percentages at or above the NMS. ACARA reports confidence intervals and for comparisons over time reports a 'nature of difference', which combines the outcomes of statistical significance tests with an effect size measure of the difference. This shows whether a difference is substantive (as well as statistically significant).

The statistical significance test examines whether any differences are statistically probable. The effect size measure focuses on the magnitude of any differences. The effect size is reported as:

- 'substantially above/below', which refers to a difference of greater than 0.5/less than -0.5
- 'above/below', which refers to a difference of between 0.2 and 0.5/between -0.2 and -0.5
- 'close to', which refers to a difference of less than 0.2 but greater than -0.2.

*Source*: ACARA (2014).

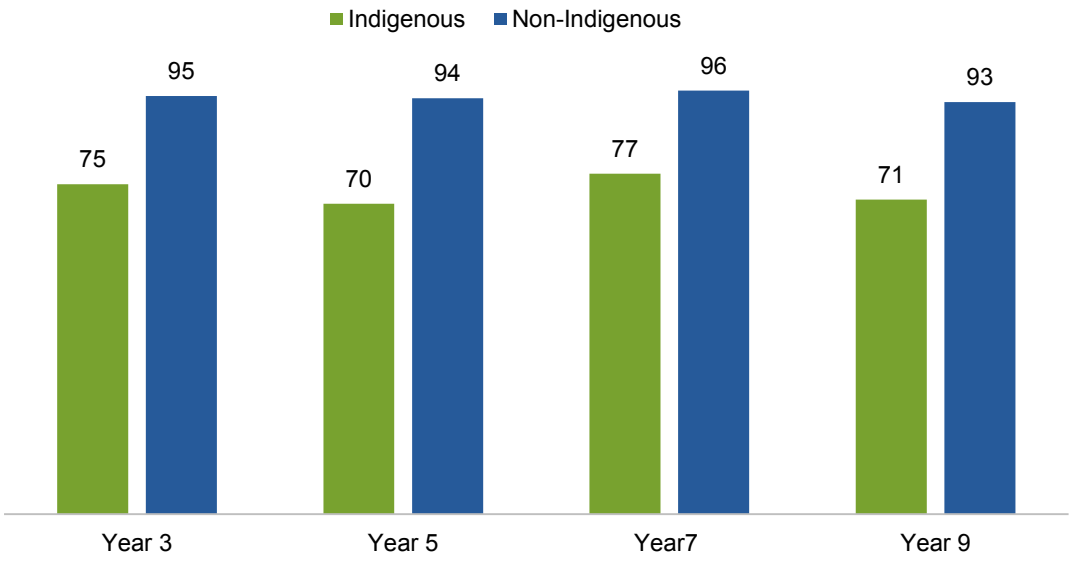
Participation rates in NAPLAN testing are typically lower for Indigenous students than for non-Indigenous students. Higher participation rates are desirable as they help to better capture the performance of the Indigenous population. Students who are exempt from testing because of their lack of proficiency in English (which is important for some Indigenous students) or because of significant intellectual and/or functional disability are included in the participation rate. Students who do not undertake the tests because they are absent or withdrawn are not included in the participation rate.

## 5.2 Starting gaps and progress to date

### Reading

In 2014, around three-quarters of Aboriginal and Torres Strait Islander students achieved at or above the NMS in reading (figure 5.1). Across the Years 3, 5, 7 and 9, the share of Aboriginal and Torres Strait Islander students achieving at or above the NMS for reading at the national level were between 19-24 percentage points lower than those for non-Indigenous students (figure 5.1 and table 5.1). The largest reading gap in 2014 was for Year 5 and the lowest was for Year 7.

Figure 5.1 **Percentage of students at or above the NMS in reading: 2014**




*Data sources:* ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3 and NIRA 11.4).

Between 2008 and 2014, none of the slight improvements recorded in the percentages of Indigenous students achieving at or above the NMS in reading at the Australia-wide level were statistically significant (table 5.1 and box 5.1).

Table 5.1 **Proportion of students achieving at or above the NMS in reading: 2008-2014[a,b]**

Per cent and percentage points

| | 2008 % | 2009 % | 2010 % | 2011 % | 2012 % | 2013 % | 2014 % | Nature of the difference: 2008 and 2014 | 2008 and 2013 | 2013 and 2014 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | | | |
| Year 3 | 68.3 | 75.1 | 75.1 | 76.3 | 74.2 | 81.5 | 74.7 | ■ | △ | ▽ |
| Year 5 | 63.4 | 66.7 | 66.2 | 66.4 | 64.7 | 83.3 | 70.3 | ■ | ▲ | ▽ |
| Year 7 | 71.9 | 73.2 | 76.6 | 77.1 | 75.4 | 73.2 | 77.1 | ■ | ■ | ■ |
| Year 9 | 70.7 | 67.0 | 64.2 | 71.9 | 67.2 | 73.9 | 71.2 | ■ | ■ | ■ |
| **Non-Indigenous** | | | | | | | | | | |
| Year 3 | 93.5 | 94.8 | 95.0 | 94.9 | 94.7 | 96.2 | 94.7 | ■ | △ | ▽ |
| Year 5 | 92.6 | 93.1 | 92.7 | 92.9 | 93.1 | 96.9 | 94.2 | ■ | ▲ | ▽ |
| Year 7 | 95.4 | 95.0 | 95.9 | 95.7 | 95.1 | 95.4 | 95.9 | ■ | ■ | ■ |
| Year 9 | 94.2 | 93.5 | 92.2 | 93.5 | 92.7 | 94.5 | 93.3 | ■ | ■ | ■ |
| **Change in gap between years** (percentage points) | | | | | | | | | | |
| Year 3 | | **-5.5** | **0.2** | **-1.3** | **1.9** | **-5.8** | **5.3** | | | |
| Year 5 | | **-2.8** | **0.1** | **0.0** | **1.9** | **-14.8** | **10.3** | | | |
| Year 7 | | **-1.7** | **-2.5** | **-0.7** | **1.1** | **2.5** | **-3.4** | | | |
| Year 9 | | **3.0** | **1.5** | **-6.4** | **3.9** | **-4.9** | **1.5** | | | |

**a** The nature of the difference refers to whether 1) the difference is statistically significant at the five per cent level and 2) the effect size of the difference is of sufficient size to be worth further consideration (box 5.1). ▲ Percentage of students at or above NMS is substantially higher than and is statistically different from the base year (or previous year). △ Percentage of students at or above NMS is higher than and is statistically significantly different from the base year (or previous year). ■ Percentage of students at or above NMS is close to or not statistically significantly different from the base year (or previous year). ▽ Percentage of students at or above NMS is lower than and is significantly different form the base year (or previous year). **b** Green shading indicates a narrowing of the gap and red shading indicates a widening of the gap relative to the previous year. The gap changes between years have not been tested for statistical significance.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

The 2013 results for reading were more positive. The COAG Reform Council (CRC 2014, page 50) reported significant improvements in Aboriginal and Torres Strait Islander students' Years 3 and 5 reading at the national level — Aboriginal and Torres Strait Islander students' reading improved nationally from 74 per cent in 2012 to 82 per cent in 2013 for Year 3 students, and from 65 per cent to 83 per cent for Year 5 students (table 5.1).

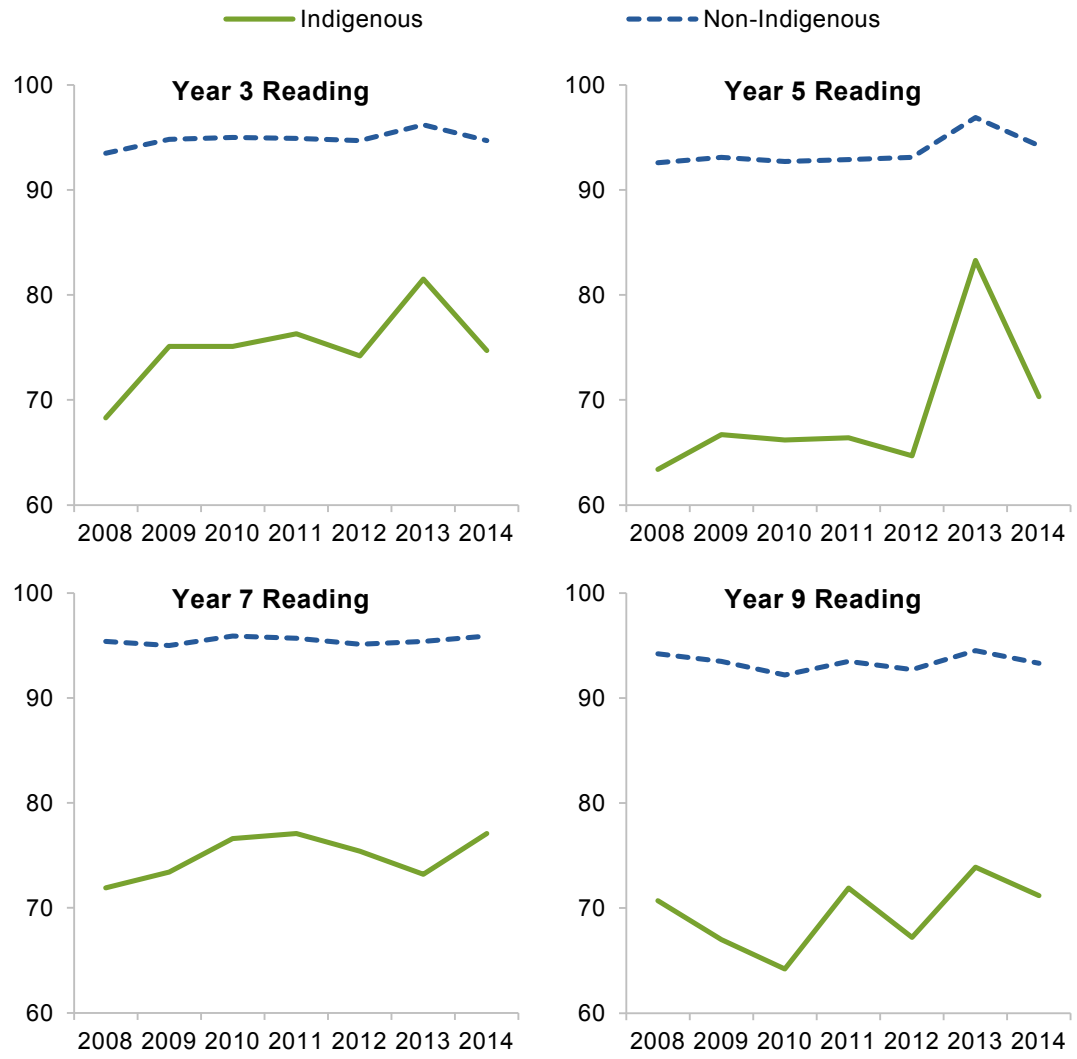
But those improvements were short lived and now appear to have been out of step with the pattern observed in earlier years. Between 2013 and 2014, the percentage of Aboriginal and Torres Strait Islander students achieving at or above the NMS for reading fell from:

- 82 per cent to 75 per cent for Year 3 students
- 83 per cent to 70 per cent for Year 5 students (table 5.1, figure 5.2).

The decline in Year 3 and 5 Aboriginal and Torres Strait Islander students' reading results between 2013 and 2014 largely undid any gains that were made between 2012 and 2013 (table 5.1, figure 5.2).

Figure 5.2 **The reading gap: 2008-2014**

Per cent at or above the NMS




*Data sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

At the national level, the gap between the shares of Aboriginal and Torres Strait Islander students and non-Indigenous students achieving at or above the NMS narrowed marginally in reading between 2008 and 2014 — by around 5 percentage points for Year 3, 5 and 7 and by around 1 percentage point for Year 9 (table 5.1, figure 5.2).[37]

[37] The results have not been tested for statistical significance.

Reading achievement for Aboriginal and Torres Strait Islander students compared to non-Indigenous students varies across the jurisdictions.

In New South Wales, Victoria, Queensland, Tasmania and the ACT, more than 80 per cent of Aboriginal and Torres Strait Islander students achieved at or above the NMS in Year 3 reading in 2014 (figure 5.3). And in all jurisdictions except Western Australia and the Northern Territory, more than 80 per cent of Aboriginal and Torres Strait Islander students were at or above the NMS in Year 7 reading in 2014 (figure 5.3).

Tasmania had the highest proportion of Aboriginal and Torres Strait Islander students achieving at the NMS for reading in 2014 — 88 per cent for Year 3 reading (a gap of just 4 percentage points when compared with non-Indigenous students) and 89 per cent for Year 7 reading (a gap of 6 percentage points). (Tasmania has a small number of Aboriginal and Torres Strait Islander students (around 6250 full-time students in 2014, ABS 2015)).

The Northern Territory had the poorest reading results (across all years),[38] followed by Western Australia and South Australia. In 2014, the highest proportion of Aboriginal and Torres Strait Islander students achieving at or above the national standard in reading in the Northern Territory were Year 7 students — 37 per cent (compared to 94 per cent of non-Indigenous Year 7 students) — a gap of 57 percentage points. In Years 3, 5 and 9, 34 per cent or less of Aboriginal and Torres Strait Islander students in the Northern Territory achieved at or above the NMS in reading in 2014 (figure 5.3). Put another way, the majority (66 per cent) of Aboriginal and Torres Strait Islander students in the Northern Territory in Years 3, 5 and 9 did not demonstrate basic skills in reading in 2014.

In line with the national results, in most states and territories there was little significant improvement between 2008 and 2014 in terms of the share of Aboriginal and Torres Strait Islander students achieving at or above the NMS in reading. The only states to record significant improvements in reading were:

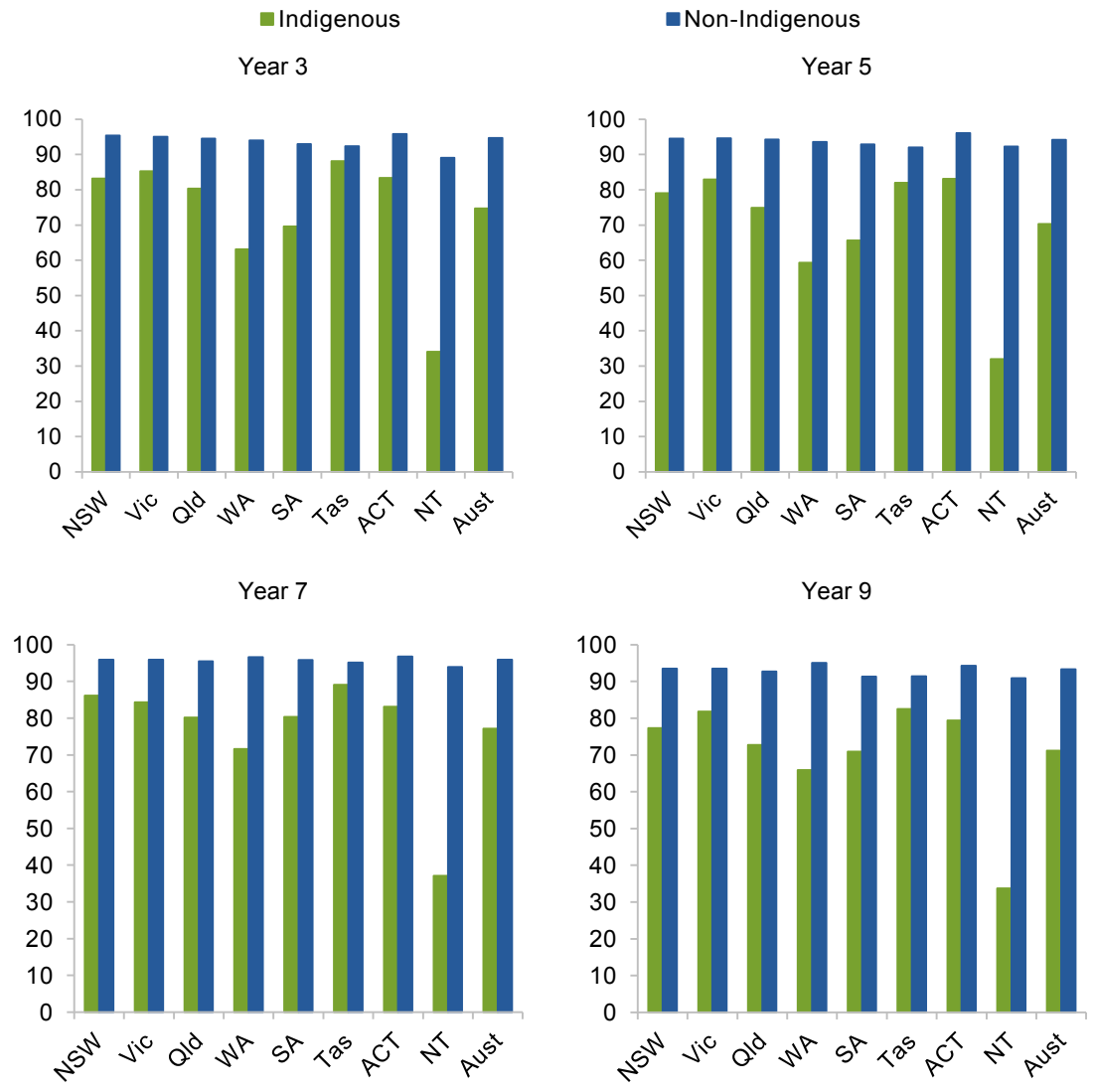
- Queensland — in Year 3 reading the percentage of Aboriginal and Torres Strait Islander students at or above the NMS increased from 66 per cent in 2008 to 80 per cent in 2014 (an improvement of over 14 percentage points) and in Year 5 reading the percentage increased from 63 per cent to 75 per cent (12 percentage points)[39]
- Western Australia — in Year 7 reading the proportion of Aboriginal and Torres Strait Islander students achieving at or above the NMS increased from 63 per cent in 2008 to 72 per cent in 2014 (an increase of 8 percentage points)
- South Australia — there was an improvement in Year 7 reading from 70 per cent to 80 per cent (table 5.2).

[38] It is important to note that the Northern Territory has a high proportion of Aboriginal and Torres Strait Islanders living in remote or very remote areas (see section 5.3).

[39] A recent reform initiative in Queensland was the introduction of Prep as the first year of school (in 2011 Year 3 students were the first full cohort who had been through Prep to sit the NAPLAN test).

Figure 5.3 **Percentage of students achieving at or above the NMS in reading: 2014, by jurisdiction[a]**

Per cent




**a** See also table 5.15 in the statistical attachment.

*Data sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

Table 5.2 **Changes in the percentage of students achieving at or above the NMS in reading: 2008-2014, by jurisdiction[a,b]**

Percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | |
| Year 3 | -0.3 ■ | -2.8 ■ | 14.1 △ | 5.8 ■ | -1.9 ■ | -0.3 ■ | -1.5 ■ | 3.7 ■ |
| Year 5 | 1.4 ■ | -0.1 ■ | 12.0 △ | 7.5 ■ | 5.0 ■ | -2.5 ■ | 2.0 ■ | 6.2 ■ |
| Year 7 | 3.7 ■ | -1.2 ■ | 5.4 ■ | 8.2 △ | 10.7 △ | 0.1 ■ | -11.2 ▼ | 4.7 ■ |
| Year 9 | -5.0 ■ | 1.9 ■ | 2.7 ■ | 3.1 ■ | 8.4 ■ | -8.2 ▽ | -4.8 ■ | -4.2 ■ |
| **Non-Indigenous** | | | | | | | | |
| Year 3 | -0.3 ■ | -0.6 ■ | 5.8 △ | 1.9 ■ | 0.5 ■ | -0.6 ■ | 1.0 ■ | 0.9 ■ |
| Year 5 | 0.1 ■ | 0.6 ■ | 5.5 △ | 1.4 ■ | 1.6 ■ | 1.3 ■ | 0.9 ■ | 3.4 ■ |
| Year 7 | -0.2 ■ | -0.2 ■ | 1.2 ■ | 1.6 △ | 1.4 ■ | 0.7 ■ | 0.4 ■ | 0.4 ■ |
| Year 9 | -1.6 ■ | -1.5 ■ | 0.7 ■ | 1.0 ■ | -2.2 ■ | -2.1 ■ | -2.6 ▽ | -1.3 ■ |

**a** The nature of the difference refers to whether 1) the difference is statistically significant at the five percent level and 2) the effect size of the difference is of sufficient size to be worth further consideration (box 5.1). △ Percentage of students at or above NMS is higher than and is statistically significantly different from the base year (or previous year). ■ Percentage of students at or above NMS is close to or not statistically significantly different from the base year (or previous year). ▽ Percentage of students at or above NMS is lower than and is significantly different form the base year (or previous year). ▼ Percentage of students at or above NMS is substantially lower than and is statistically significantly different from the base year (or previous year). **b** Green shading indicates a narrowing of the gap and red shading indicates a widening of the gap between 2008 and 2014. See also table 5.15 in the statistical attachment.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4); SCRGSP (2009a, tables NIRA 15.1, 15.4, 15.7, 15.10).

There was also some evidence of significant 'backsliding' in Aboriginal and Torres Strait Islander achievement rates in reading between 2008 and 2014 at the state and territory level:

- in Tasmania the proportion of Aboriginal and Torres Strait Islander students achieving at or above the NMS in Year 9 reading fell from 91 per cent in 2008 to 83 per cent in 2014 (Tasmania, however, still recorded the highest percentage of students achieving at or above the NMS in reading in Year 9, figure 5.3, table 5.2)
- in the ACT the proportion of Year 7 Aboriginal and Torres Strait Islander students achieving at the NMS in reading declined by 11 percentage points (from 94 per cent in 2008 to 83 per cent in 2014, figure 5.3, table 5.2).

Queensland and Western Australia narrowed the reading gap between Aboriginal and Torres Strait Islander and non-Indigenous students across all years (Years 3 to 9) between 2008 and 2014. The Northern Territory narrowed the gap for Year 3, 5 and 7 reading. The gap in Year 5 reading was also reduced in New South Wales, South Australia and the

ACT. In South Australia, the largest gap reductions in reading were in Year 7 and 9 reading (reductions of 9 and 11 percentage points respectively, table 5.3).[40]

Between 2008 and 2014, the reading gap widened in:

- Year 3 in Victoria, South Australia and the ACT
- Year 5 in Tasmania
- Year 7 in Victoria, Tasmania and the ACT
- Year 9 in New South Wales, Tasmania, the ACT and the Northern Territory (table 5.3).

Table 5.3 **The change in the reading gap: 2008-2014, by jurisdiction[a,b]**
Percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| Year 3 | **0.0** | **2.2** | **-8.3** | **-3.9** | **2.4** | **-0.3** | **2.5** | **-2.8** |
| Year 5 | **-1.3** | **0.7** | **-6.5** | **-6.1** | **-3.4** | **3.8** | **-1.1** | **-2.8** |
| Year 7 | **-3.9** | **1.0** | **-4.2** | **-6.6** | **-9.3** | **0.6** | **11.6** | **-4.3** |
| Year 9 | **3.4** | **-3.4** | **-2.0** | **-2.1** | **-10.6** | **6.1** | **2.2** | **2.9** |

[a] Results are not tested for statistical significance. [b] Green shading indicates a narrowing of the gap and red shading indicates a widening of the gap between 2008 and 2014.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4); SCRGSP (2009a, tables NIRA 15.1, NIRA 15.4, NIRA 15.7, NIRA 15.10).

## Numeracy

In 2014, the proportion of Aboriginal and Torres Strait Islander students achieving at or above the NMS for numeracy ranged from 71 per cent (Year 5) to 80 per cent (Year 7) (table 5.4, figure 5.4).

Across the four years (Years 3, 5, 7 and 9), the 2014 results for Aboriginal and Torres Strait Islander students for numeracy were between 17-24 percentage points lower than for non-Indigenous students (figure 5.4).

40 The changes in the reading gap have not been tested for statistical significance.

Table 5.4 **Proportion of students achieving at or above the NMS in numeracy: 2008-2014[a,b]**

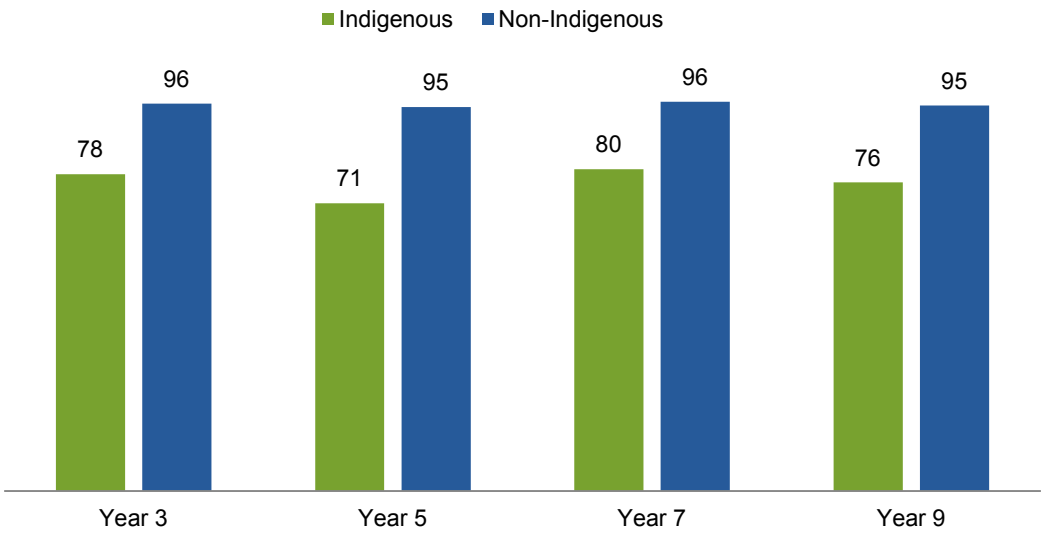
| | | | | | | | | Nature of the difference | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2008 and 2014* | *2008 and 2013* | *2013 and 2014* |
| | *%* | *%* | *%* | *%* | *%* | *%* | *%* | | | |
| **Indigenous** | | | | | | | | | | |
| Year 3 | 78.6 | 74.0 | 76.6 | 83.6 | 72.7 | 81.6 | 78.2 | ■ | ■ | ■ |
| Year 5 | 69.2 | 74.2 | 71.4 | 75.2 | 69.2 | 73.0 | 71.1 | ■ | ■ | ■ |
| Year 7 | 78.6 | 75.8 | 77.0 | 76.5 | 74.4 | 78.1 | 79.5 | ■ | ■ | ■ |
| Year 9 | 72.5 | 75.0 | 70.4 | 72.0 | 74.2 | 65.7 | 76.2 | ■ | ■ | △ |
| **Non-Indigenous** | | | | | | | | | | |
| Year 3 | 96.0 | 95.2 | 95.3 | 96.4 | 95.1 | 96.6 | 95.7 | ■ | ■ | ■ |
| Year 5 | 94.0 | 95.3 | 95.0 | 95.5 | 94.6 | 94.6 | 94.8 | ■ | ■ | ■ |
| Year 7 | 96.4 | 95.8 | 96.1 | 95.5 | 94.9 | 96.0 | 96.1 | ■ | ■ | ■ |
| Year 9 | 94.8 | 96.0 | 94.3 | 94.1 | 94.7 | 92.0 | 95.2 | ■ | ▽ | △ |
| **Change in gap between years** (percentage points) | | | | | | | | | | |
| Year 3 | | **3.8** | **-2.5** | **-5.9** | **9.6** | **-7.4** | **2.5** | | | |
| Year 5 | | **-3.7** | **2.5** | **-3.3** | **5.1** | **-3.8** | **2.1** | | | |
| Year 7 | | **2.2** | **-0.9** | **-0.1** | **1.5** | **-2.6** | **-1.3** | | | |
| Year 9 | | **-1.3** | **2.9** | **-1.8** | **-1.6** | **5.8** | **-7.3** | | | |

**a** Nature of the difference: 1) the difference is statistically significant at the 5 percent level and 2) the effect size of the difference is of sufficient size to be worth further consideration. △ Percentage of students at or above NMS is higher than and is statistically significantly different from the base year (or previous year). ■ Percentage of students at or above NMS is close to or not statistically significantly different from the base year. ▽Percentage of students at or above NMS is lower than and is significantly different form the base year. **b** Green shading indicates a narrowing of the gap and red shading indicates a widening of the gap relative to the previous year. Changes in the gap between years have not been tested for statistical significance.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, 11.2, 11.3, 11.4).

Like reading, between 2008 and 2014, there was no national statistically significant improvement in the proportion of Aboriginal and Torres Strait Islander students achieving at or above the NMS in numeracy (table 5.4).

Figure 5.4 **The percentage of students at or above the NMS for numeracy: 2014**




*Data sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

Between 2008 and 2014, the gap in the percentage of Aboriginal and Torres Strait Islander and non-Indigenous students achieving the NMS at the national level narrowed by just over 1 percentage point in Years 5 and 7 and by around 3 percentage points in Year 9 (figure 5.5).

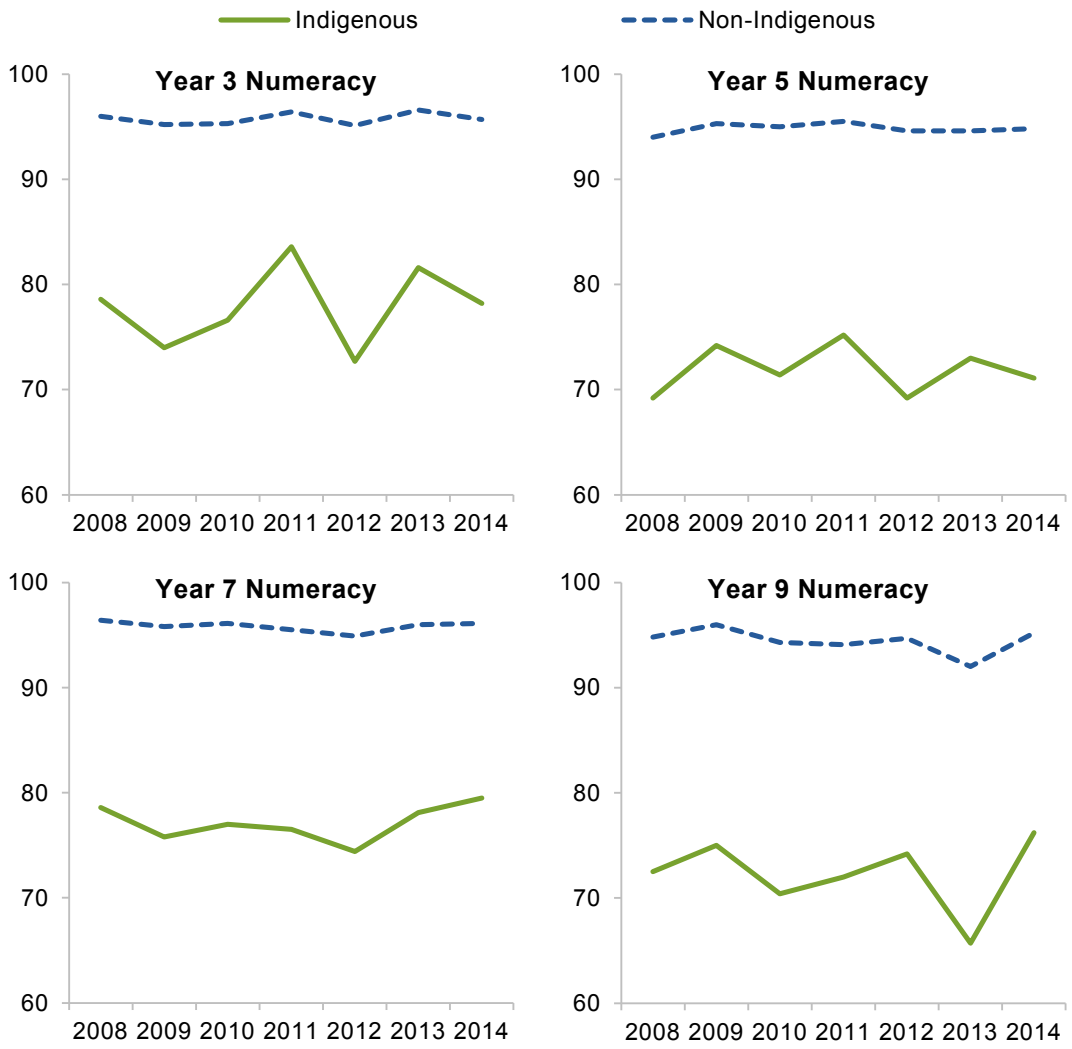
At the state and territory level, Tasmania had the highest percentage of Aboriginal and Torres Strait Islander students achieving at or above the NMS in numeracy across all years in 2014 — 93 per cent in Year 3 reading (just 2 percentage points lower than non-Indigenous students), 85 per cent in Year 5, 89 per cent in Year 7 and 86 per cent in Year 9 (table 5.5).

New South Wales, Victoria and the ACT also recorded rates for Aboriginal and Torres Strait Islander students in numeracy at or above 80 per cent across all the years.

The Northern Territory had the lowest proportion of Aboriginal and Torres Strait Islander students achieving at or above the NMS in numeracy across all years (table 5.5).

Figure 5.5 **The numeracy gap: 2008-2014**

Per cent of students at or above the NMS




*Data sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

Table 5.5 **Percentage of students achieving at or above the NMS in numeracy: 2014, by jurisdiction**

Per cent

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* | *Aust* |
|---|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | | |
| Year 3 | 84.8 | 88.5 | 82.4 | 70.5 | 71.7 | 92.5 | 88.1 | 43.0 | 78.2 |
| Year 5 | 79.6 | 84.8 | 73.9 | 61.2 | 66.9 | 84.7 | 84.4 | 36.2 | 71.1 |
| Year 7 | 85.3 | 83.6 | 83.8 | 77.2 | 80.3 | 88.9 | 85.1 | 47.7 | 79.5 |
| Year 9 | 81.1 | 83.3 | 77.8 | 74.2 | 73.2 | 86.2 | 82.8 | 44.1 | 76.2 |
| **Non-Indigenous** | | | | | | | | | |
| Year 3 | 96.0 | 95.8 | 95.6 | 95.6 | 94.3 | 94.6 | 96.7 | 93.2 | 95.7 |
| Year 5 | 95.2 | 95.0 | 94.7 | 94.5 | 93.1 | 93.3 | 96.3 | 92.3 | 94.8 |
| Year 7 | 96.1 | 95.8 | 96.2 | 96.9 | 95.5 | 95.3 | 96.6 | 95.2 | 96.1 |
| Year 9 | 95.3 | 95.0 | 95.4 | 96.4 | 93.6 | 94.3 | 95.3 | 93.1 | 95.2 |
| **Gap** | | | | | | | | | |
| Year 3 | 11.2 | 7.3 | 13.2 | 25.1 | 22.6 | 2.1 | 8.6 | 50.2 | 17.5 |
| Year 5 | 15.6 | 10.2 | 20.8 | 33.3 | 26.2 | 8.6 | 11.9 | 56.1 | 23.7 |
| Year 7 | 10.8 | 12.2 | 12.4 | 19.7 | 15.2 | 6.4 | 11.5 | 47.5 | 16.6 |
| Year 9 | 14.2 | 11.7 | 17.6 | 22.2 | 20.4 | 8.1 | 12.5 | 49.0 | 19.0 |

*Sources*: ACARA (2014), SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

In line with the Australia-wide results for numeracy, the states and territories showed little sign of progress between 2008 and 2014. The only states to record a significant improvement were:

- Queensland — the proportion of Aboriginal and Torres Strait Islander students achieving at or above the NMS in Year 3 numeracy increased in this state from 76 per cent in 2008 to 82 per cent in 2014
- Western Australia in Year 9 numeracy — an increase from 66 per cent in 2008 to 74 per cent in 2014 (table 5.6).

In both New South Wales and Victoria, the proportion of Aboriginal and Torres Strait Islander students achieving at or above the NMS in Year 3 numeracy declined over the period 2008 to 2014 — in New South Wales from around 89 per cent to 85 per cent, and in Victoria from 93 per cent to 89 per cent.

Table 5.6 **Changes in the percentage of students achieving at or above the NMS in numeracy between: 2008-2014, by jurisdiction[a,b]**

Percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | |
| Year 3 | -3.8▽ | -4.5▽ | 6.9△ | -5.0■ | -7.5■ | -2.0■ | -0.3■ | -9.4■ |
| Year 5 | 0.7■ | 1.5■ | 4.4■ | -0.4■ | -1.6■ | -3.1■ | 2.1■ | -2.1■ |
| Year 7 | 0.8■ | -4.3■ | 2.0■ | 3.0■ | 4.4■ | -3.5■ | -5.2■ | -2.5■ |
| Year 9 | 0.8■ | 4.9■ | 4.6■ | 8.0△ | 4.5■ | -2.3■ | -1.0■ | -2.0■ |
| **Non-Indigenous** | | | | | | | | |
| Year 3 | -1.3▽ | -1.0■ | 2.3△ | -0.5■ | -0.3■ | -2.2▽ | 0.0■ | -3.3■ |
| Year 5 | 0.0■ | 0.0■ | 2.7△ | 0.8■ | 1.4■ | 0.4■ | 1.0■ | 0.7■ |
| Year 7 | -0.5■ | -1.0■ | 0.3■ | 0.4■ | 0.1■ | -0.2■ | -0.7■ | -0.4■ |
| Year 9 | -0.1■ | -0.5■ | 1.6■ | 2.1△ | -0.1■ | 1.2■ | -1.6■ | -0.5■ |

**a** The nature of the difference refers to whether 1) the difference is statistically significant at the five percent level and 2) the effect size of the difference is of sufficient size to be worth further consideration (box 5.1). ▲ Percentage of students at or above NMS is substantially higher than and is statistically different from the base year (or previous year). △ Percentage of students at or above NMS is higher than and is statistically significantly different from the base year (or previous year). ■ Percentage of students at or above NMS is close to or not statistically significantly different from the base year (or previous year). ▽Percentage of students at or above NMS is lower than and is significantly different from the base year (or previous year). ▼ Percentage of students at or above NMS is substantially lower than and is statistically significantly different from the base year (or previous year). **b** Green shading indicates a narrowing of the gap and red shading indicates a widening of the gap between 2008 and 2014.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

Consistent with the improvement in the share of students achieving at or above the NMS, Queensland narrowed the numeracy gap between Aboriginal and Torres Strait Islander and non-Indigenous students across all school years between 2008 and 2014. The Northern Territory, on the other hand, widened the numeracy gap across all years (table 5.7). Other states narrowing the numeracy gap between 2008 and 2014 included: New South Wales (Year 5, 7 and 9); Victoria (Year 5 and 9); Western Australia (Year 7 and 9); South Australia (Year 7 and 9); Tasmania (Year 3); and the ACT (Year 5 and Year 9).[41]

41 The results were not tested for statistical significance.

Table 5.7 **The change in the numeracy gap: 2008-2014, by jurisdiction[a,b]**

Percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| Year 3 | 2.5 | 3.5 | -4.6 | 4.5 | 7.2 | -0.2 | 0.3 | 6.1 |
| Year 5 | -0.7 | -1.5 | -1.7 | 1.2 | 3.0 | 3.5 | -1.1 | 2.8 |
| Year 7 | -1.3 | 3.3 | -1.7 | -2.6 | -4.3 | 3.3 | 4.5 | 2.1 |
| Year 9 | -0.9 | -5.4 | -3.0 | -5.9 | -4.6 | 3.5 | -0.6 | 1.5 |

[a] Results were not tested for statistical significance. [b] Green shading indicates a narrowing of the gap and red shading indicates a widening of the gap between 2008 to 2014.

*Sources*: ACARA (2014); SCRGSP (2014e tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4); SCRGSP (2009a, tables NIRA 15.3, NIRA 15.6, NIRA 15.9, NIRA 15.12).

## PISA results also show no improvement

The Programme for International Student Assessment (PISA), an international assessment of students' mathematical, scientific and reading literacy as students approach the end of compulsory schooling, also suggests little progress has been made on narrowing the educational disadvantage gap between Indigenous and non-Indigenous students.

The 2012 PISA results show that Indigenous 15-year-olds are approximately two-and-a-half years behind their non-Indigenous peers in school and that the gap between Indigenous and non-Indigenous students has not changed over the last decade (Thomson et al. 2013).[42]

## Progress against agreed progress points

All governments have agreed paths (known as 'trajectories') toward the target of halving the gap in reading, writing and numeracy by 2018. As such, progress in halving the gap in literacy and numeracy is also assessed by looking at actual progress against trajectories or annual markers that Australian governments have agreed to.

The NAPLAN results for 2014 show that at the national level in reading and numeracy, just two areas —Year 7 reading and Year 9 numeracy — were in line with the agreed trajectory points. In all other areas the national results were below the agreed trajectory points.

At the jurisdictional level, the confidence intervals around the Indigenous results tend to be larger than at the national level (particularly for the smaller jurisdictions), and as such there are a number of results that fall within the range of the trajectories. In 2014, the proportion

[42] Based on mean score differences between Indigenous and non-Indigenous students in mathematical, scientific and reading literacy.

of Aboriginal and Torres Strait Islander students achieving at or above the minimum standard in reading and numeracy fell within (or above) the agreed trajectory range for:

- New South Wales — Year 5 and 7 reading
- Victoria — Year 5 and 9 reading and Year 5 and 9 numeracy
- Queensland — all years and subjects except Year 3 reading and Year 3 and 5 numeracy
- Western Australia — all years and subjects except Year 3 and 5 numeracy
- South Australia — all years and subjects except Year 3 reading and Year 3 and 5 numeracy
- Tasmania — all years and subjects except Year 9 reading and Year 7 numeracy
- ACT — all years except Year 7 reading.

None of the Indigenous results for reading and numeracy for the Northern Territory were consistent with or above the trajectory.

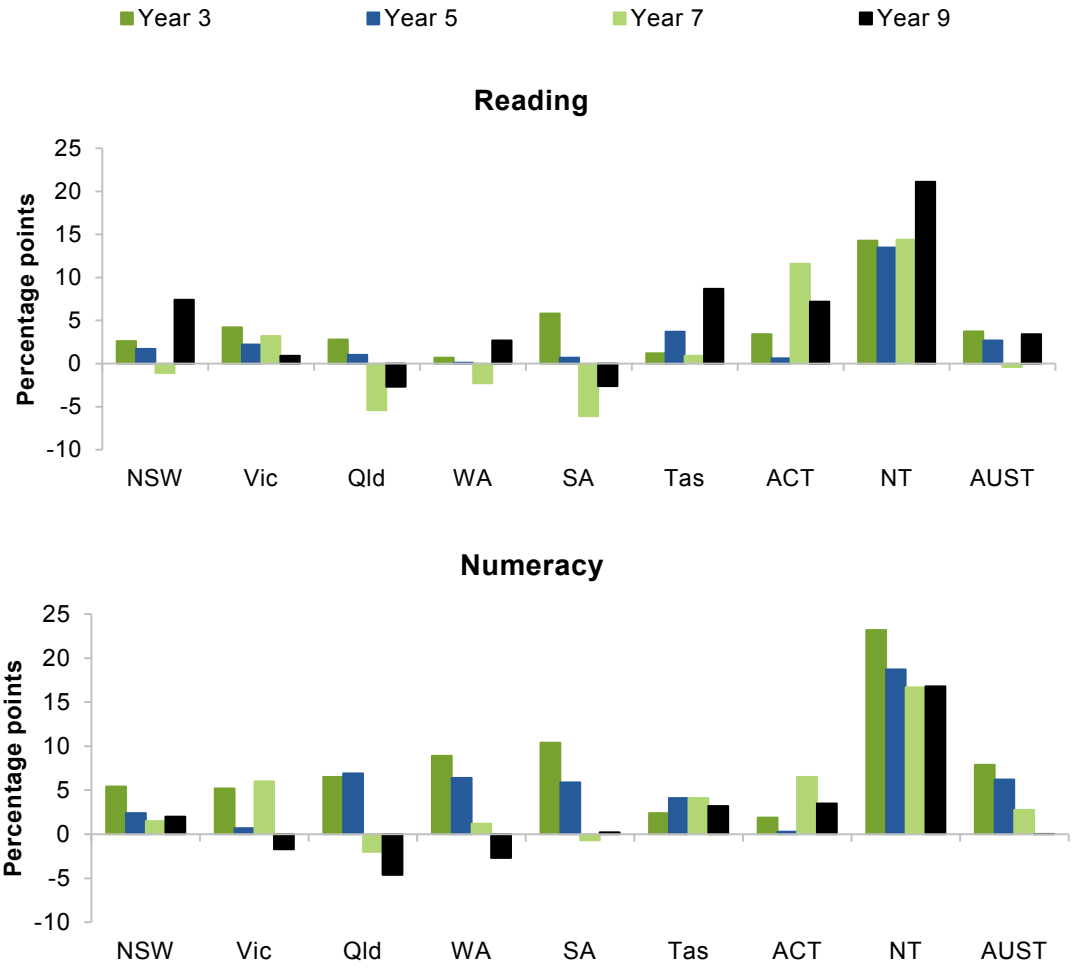
The gap between the agreed targets and outcomes for reading and numeracy in 2014 are shown in figure 5.6.

As a result of the change in the NAPLAN writing test in 2011, writing results from 2011 onwards are not comparable to the COAG writing trajectory (CRC 2014, p. 109). Progress against the trajectory points for writing are therefore not presented.

For some jurisdictions, the agreed progress points rise more quickly in future years and, as such, are expected to become more difficult to achieve. This is particularly the case for Queensland, Western Australia and the Northern Territory.

Figure 5.6 **Gap between target and outcome in 2014, by jurisdiction[a]**

Percentage of Indigenous students at or above NMS




**a** A positive gap indicates that the target for 2014 has not been met. A negative gap indicates that the target for 2014 has been exceeded.

*Data sources*: SCRGSP (2014e); trajectory points provided by PM&C.

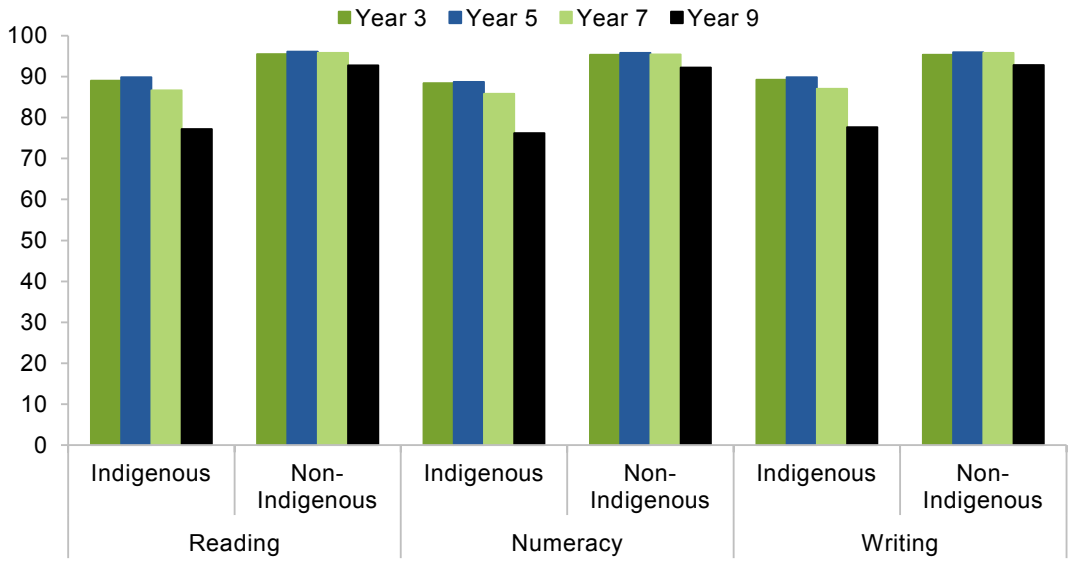
## Participation in NAPLAN testing

As discussed earlier, participation in NAPLAN testing is monitored because it can affect achievement results. In 2014, the Australia-wide NAPLAN participation rate for Aboriginal and Torres Strait Islander students was around 89 per cent for reading, writing and numeracy for Years 3 and 5. Aboriginal and Torres Strait Islander students' participation was lower for Year 7 (around 87 per cent) and lower again for Year 9 (around 77 per cent, figure 5.7 and table 5.8).

Aboriginal and Torres Strait Islander student participation in NAPLAN testing is uniformly below non-Indigenous students. The rate for non-Indigenous students was

around 95 per cent for reading, writing and numeracy for Years 3,5 and 7, decreasing to around 93 per cent for Year 9 (figure 5.7 and table 5.8).

Figure 5.7 **Australia-wide NAPLAN participation: 2014**
Per cent




*Data sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.17- NIRA 11.20).

NAPLAN participation rates at the national level were higher in metropolitan areas than remote or very remote areas. For example, for Year 3 reading, 91 per cent of Aboriginal and Torres Strait Islander students participated in NAPLAN testing in 2014 compared to 86 per cent in remote areas and 76 per cent in very remote areas (SCRGSP 2014e, table NIRA 11.17).

At the state and territory level, NAPLAN reading participation rates in 2014 for Aboriginal and Torres Strait Islander students were generally higher in New South Wales, Tasmania and Queensland than the other states and territories. Participation rates ranged from 66 per cent in Year 9 numeracy testing in South Australia and the Northern Territory, to 95 per cent in Year 3 reading in New South Wales and Tasmania (table 5.8).

Table 5.8 **Participation in NAPLAN testing: 2014, by jurisdiction**

Per cent

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* | *Aust* |
|---|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | | |
| **Year 3** | | | | | | | | | |
| Reading | 94.8 | 87.5 | 89.6 | 84.8 | 81.3 | 95.3 | 85.2 | 77.4 | 89.0 |
| Numeracy | 94.3 | 87.4 | 88.4 | 84.0 | 80.3 | 94.7 | 85.9 | 78.4 | 88.4 |
| Writing | 94.4 | 88.0 | 89.5 | 85.4 | 82.3 | 95.3 | 84.4 | 79.2 | 89.2 |
| **Year 5** | | | | | | | | | |
| Reading | 95.1 | 89.0 | 90.6 | 84.8 | 83.9 | 93.7 | 87.1 | 80.7 | 89.8 |
| Numeracy | 94.2 | 88.4 | 89.2 | 83.9 | 82.5 | 94.1 | 84.4 | 78.0 | 88.7 |
| Writing | 95.1 | 88.4 | 90.2 | 85.2 | 83.7 | 94.6 | 84.4 | 81.7 | 89.8 |
| **Year 7** | | | | | | | | | |
| Reading | 89.9 | 85.1 | 88.7 | 82.3 | 82.7 | 92.8 | 83.6 | 79.2 | 86.6 |
| Numeracy | 89.5 | 83.2 | 88.2 | 81.8 | 81.6 | 92.8 | 84.4 | 76.3 | 85.8 |
| Writing | 90.3 | 84.1 | 89.2 | 83.9 | 82.4 | 91.5 | 85.2 | 79.3 | 87.0 |
| **Year 9** | | | | | | | | | |
| Reading | 79.5 | 77.4 | 80.9 | 70.8 | 66.5 | 86.1 | 72.3 | 68.4 | 77.2 |
| Numeracy | 77.9 | 77.8 | 80.0 | 70.7 | 65.6 | 85.7 | 72.3 | 66.4 | 76.2 |
| Writing | 79.6 | 78.6 | 81.7 | 69.4 | 67.7 | 86.3 | 77.7 | 70.3 | 77.6 |
| **Non-Indigenous** | | | | | | | | | |
| **Year 3** | | | | | | | | | |
| Reading | 97.3 | 94.9 | 94.1 | 96.0 | 93.5 | 96.4 | 93.3 | 96.0 | 95.5 |
| Numeracy | 97.0 | 94.8 | 93.8 | 95.6 | 93.3 | 95.9 | 93.3 | 95.8 | 95.3 |
| Writing | 97.2 | 94.6 | 93.9 | 95.8 | 93.4 | 96.0 | 93.0 | 96.0 | 95.3 |
| **Year 5** | | | | | | | | | |
| Reading | 97.7 | 95.5 | 94.7 | 96.7 | 94.6 | 96.7 | 94.0 | 96.6 | 96.1 |
| Numeracy | 97.5 | 95.2 | 94.3 | 96.4 | 94.2 | 96.2 | 93.5 | 96.3 | 95.8 |
| Writing | 97.6 | 95.2 | 94.5 | 96.6 | 94.5 | 96.6 | 93.7 | 96.6 | 95.9 |
| **Year 7** | | | | | | | | | |
| Reading | 97.1 | 95.2 | 94.0 | 96.8 | 94.4 | 95.9 | 94.8 | 95.4 | 95.8 |
| Numeracy | 96.7 | 94.9 | 93.6 | 96.4 | 93.8 | 95.6 | 94.2 | 95.2 | 95.4 |
| Writing | 97.2 | 95.2 | 93.9 | 96.8 | 94.4 | 95.8 | 95.2 | 96.3 | 95.8 |
| **Year 9** | | | | | | | | | |
| Reading | 94.8 | 91.5 | 90.2 | 95.6 | 91.0 | 93.0 | 90.1 | 94.8 | 92.7 |
| Numeracy | 94.2 | 91.2 | 89.5 | 95.2 | 90.3 | 92.2 | 89.5 | 94.7 | 92.2 |
| Writing | 94.9 | 91.7 | 90.3 | 95.8 | 91.0 | 92.6 | 90.6 | 94.8 | 92.8 |

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.17 - NIRA 11.20).

## Changes in Indigenous participation in NAPLAN testing

Participation in reading, writing and numeracy NAPLAN testing by Indigenous students fell nationally in all year levels between 2008 to 2014 (table 5.9).[43] Nationally the largest falls were in Year 9 testing.

South Australia recorded the largest falls in NAPLAN participation across all four years (Years 3, 5, 7, and 9) of testing, followed by Queensland (table 5.9). The Northern Territory had the largest increases in NAPLAN participation in testing in every year level, with the largest increase observed in Year 7 writing (18 percentage points).

Table 5.9 **Changes in Indigenous participation in NAPLAN testing: 2008-2014, by jurisdiction**

Percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* | *Aust* |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | *Reading* | | | | |
| Year 3 | 1.2 | -2.2 | -5.4 | 0.2 | -14.3 | -1.3 | -4.5 | 6.4 | -1.2 |
| Year 5 | 2.4 | -1.2 | -4.3 | 0.7 | -12.8 | -3.4 | -4.3 | 9.2 | -0.3 |
| Year 7 | 0.4 | -0.1 | -6.0 | -4.0 | -13.0 | -0.2 | 3.1 | 16.0 | -1.3 |
| Year 9 | -0.7 | -0.3 | -6.2 | -0.6 | -23.9 | 4.5 | 2.9 | 6.6 | -2.5 |
| | | | | | *Numeracy* | | | | |
| Year 3 | 2.0 | -1.7 | -5.1 | -0.1 | -16.4 | -0.8 | -2.0 | 6.6 | -1.0 |
| Year 5 | 2.5 | -0.2 | -4.6 | 0.3 | -14.2 | -1.4 | -8.0 | 6.2 | -0.6 |
| Year 7 | 1.2 | -3.3 | -6.0 | -2.0 | -12.1 | -0.8 | 1.6 | 10.8 | -1.6 |
| Year 9 | -1.4 | -1.4 | -6.3 | -0.9 | -23.8 | 1.4 | -0.6 | 5.0 | -3.1 |
| | | | | | *Writing* | | | | |
| Year 3 | 0.7 | -1.9 | -4.7 | -0.3 | -11.0 | -1.3 | -4.4 | 9.0 | -0.7 |
| Year 5 | 2.2 | -2.7 | -4.4 | 0.6 | -11.3 | -2.5 | -8.0 | 11.3 | -0.2 |
| Year 7 | 0.3 | -0.7 | -5.3 | -2.3 | -12.0 | -1.1 | 4.7 | 18.0 | -0.7 |
| Year 9 | -0.9 | 0.1 | -5.6 | -2.9 | -21.1 | 4.7 | 7.1 | 10.5 | -2.1 |

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.17- NIRA 11.20); SCRGSP (2009a, tables NIRA 16.1 - NIRA 16.4).

The main reported reason for Aboriginal and Torres Strait Islander students missing NAPLAN testing was because they were absent from school. Northern Territory had the highest proportion of students absent from NAPLAN testing ranging from 16 per cent in Year 3 writing to 30 per cent in Year 9 numeracy (SCRGSP 2014e, table NIRA 11.22). New South Wales, Tasmania and Queensland had the lowest proportion of students absent across the years and subjects.

In 2014, the proportion of Aboriginal and Torres Strait Islander students withdrawn from NAPLAN testing was consistently higher than for non-Indigenous students. Across

[43] Based on a point-to-point comparison.

jurisdictions, withdrawal rates were highest in the ACT and lowest in Tasmania (SCRGSP 2014e, table NIRA 11.23).

## 5.3 Working towards a more complete picture

To understand why Aboriginal and Torres Strait Islander students, as a group, have poorer educational outcomes than non-Indigenous Australians (recognising that there are wide variations in student performance among Aboriginal and Torres Strait Islander students), it is important to consider broader contextual factors, including students' family backgrounds, where they live and go to school, and their attendance at school.

### Family background and socioeconomic status of schools

It is well documented that family social background has a substantial impact on students' literacy and numeracy results with students from lower socioeconomic backgrounds generally performing more poorly at school than those from higher socioeconomic backgrounds. The Review of Funding for Schooling noted that:

> An increasing body of literature examining the relationship between education and socioeconomic status demonstrates that it is a key factor shaping the educational outcomes of Australian students. (Gonski et al. 2011, p. 113)

As an example of the strong influence family social background can have on educational outcomes, the OECD's 2012 international assessment of students (PISA) found that across OECD countries, more socio-economically advantaged students scored 39 points higher in mathematics — or the equivalent of nearly one year of schooling — than less advantaged students (OECD 2014).

A meta-analysis of possible factors influencing student outcomes also found that the home environment, socioeconomic status and parents' involvement in their children's education are important factors affecting students' learning outcomes (Hattie 2009).

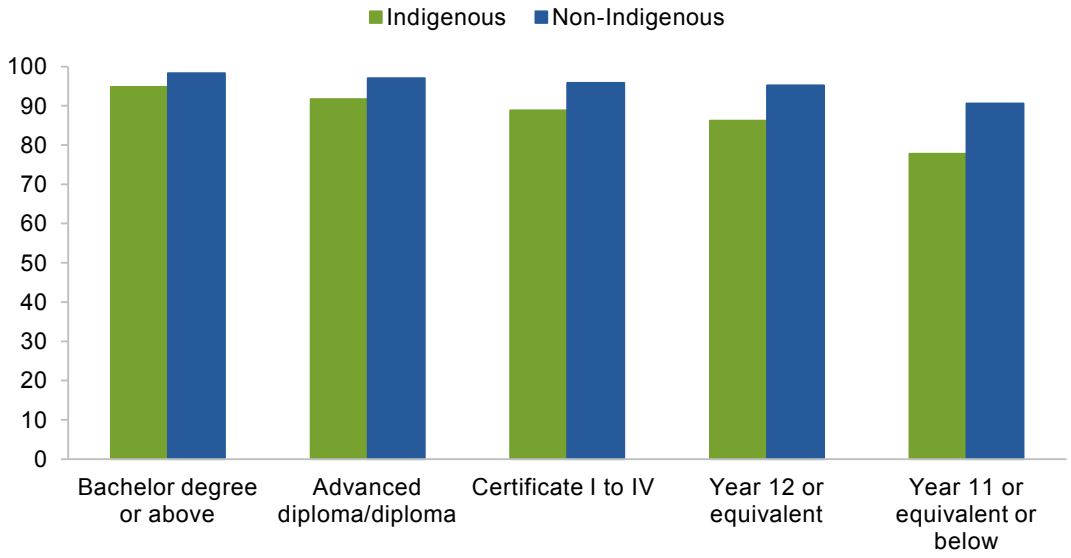
Indigenous Australians generally have poorer socioeconomic outcomes than non-Indigenous Australians. Indigenous households are more likely to earn less, live in overcrowded housing and live in lower socioeconomic areas than non-Indigenous households (SCRGSP 2014a).

Comparisons of Aboriginal and Torres Strait Islander students' literacy and numeracy results with those of non-Indigenous students should take into account the socioeconomic status of Indigenous students' families. The publication of school contextual information on *My School* is an acknowledgment that factors such as the educational attainment of parents and carers has an influence on student performance. Reporting NAPLAN data on Aboriginal and Torres Strait Islander student achievement together with parental education and occupation allows comparisons of similar student populations to be made. NAPLAN

results presented in the Overcoming Indigenous Disadvantage report (SCRGSP 2014a) show that the higher the level of education attained by parents the smaller the gap between Aboriginal and Torres Strait Islander and non-Indigenous students achieving at or above the NMS in Year 3 reading (figure 5.8).

Figure 5.8 **The proportion of year 3 students who achieved at or above the NMS for reading, by parents' educational attainment: 2013**

Per cent




*Data source*: SCRGSP (2014a, table 4A.4.1A).

Key demographic, social and educational influences on student and school performance are measured in PISA and allow detailed analysis of comparisons of Australian Indigenous and non-Indigenous students. In 2012, around half of the Indigenous students sampled for PISA were in the lowest socioeconomic quartile, while just 8 per cent were in the highest socioeconomic quartile. For non-Indigenous students the corresponding percentages were 24 per cent and 26 per cent respectively (Thomson, De Bortoli and Buckley 2013, pp. 9-10).

A comparison of the performance of Indigenous and non-Indigenous students participating in PISA over the period 2000 to 2006, also found that:

- Indigenous students reported lower levels of educational attainment for their parents than non-Indigenous students
- fewer Indigenous students compared to their non-Indigenous peers had access to a computer, Internet connection, a desk, and textbooks for study

- the socioeconomic background of Indigenous students had a narrower spread than that of non-Indigenous peers and even at the lower levels of socioeconomic background, Indigenous students had greater levels of disadvantage than did non-Indigenous students (De Bortoli and Thomson 2010).

The socioeconomic status of schools can also have an influence on learning outcomes of students. Student attainment is typically lower in schools where most of the students come from disadvantaged backgrounds. The evidence across OECD countries suggests that concentrations of disadvantage can impact on the educational outcomes of students and schools tend to reinforce students' socioeconomic inequalities. The OECD noted that:

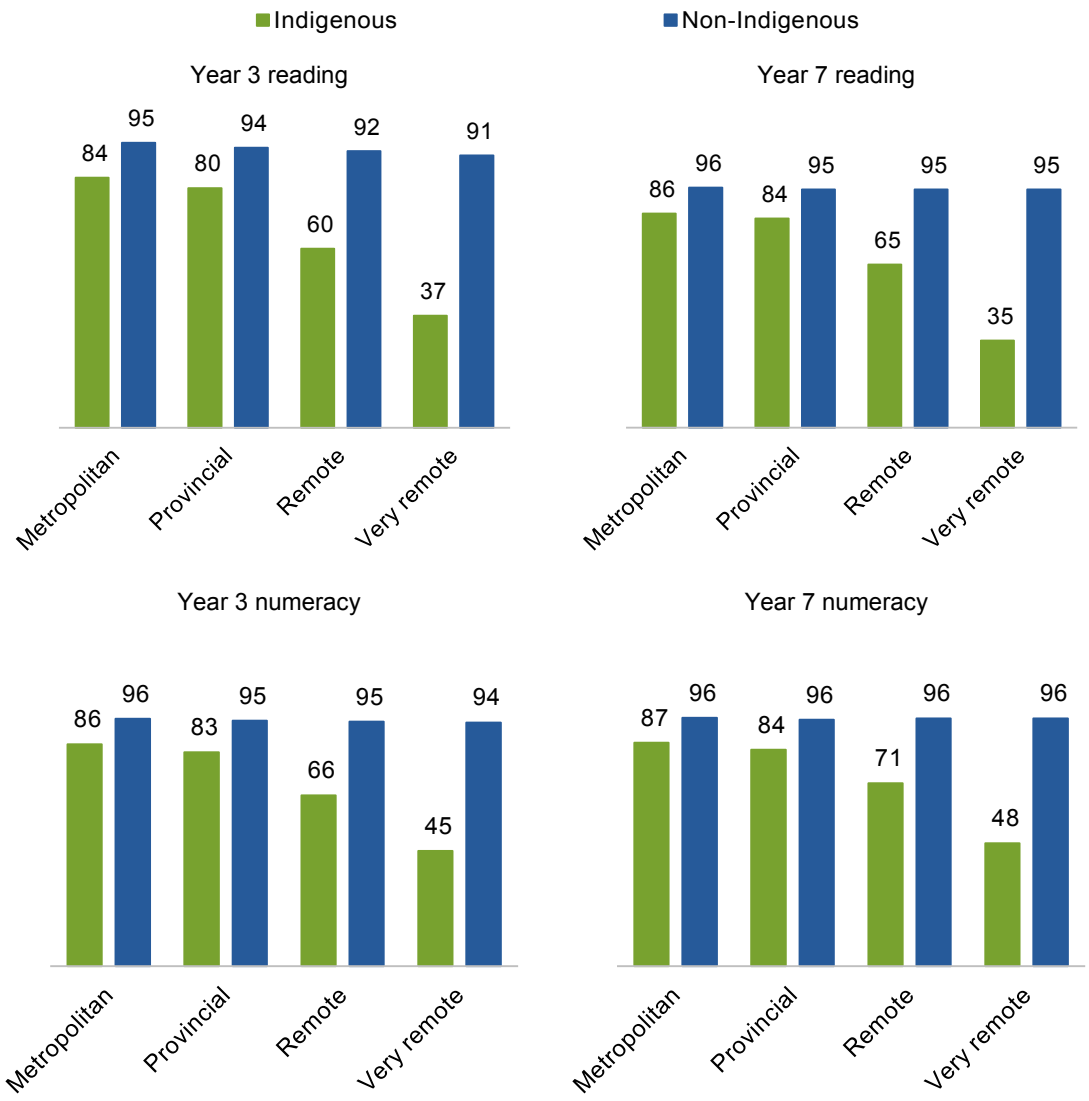
> Because advantaged families are better able to reinforce and enhance the effects of schools, because students from advantaged families attend high-quality schools, or because schools are simply better-equipped to nurture and develop young people from advantaged backgrounds, in many countries, schools tend to reproduce existing patterns of socio-economic advantage, rather than create a more equitable distribution of learning opportunities and outcomes. (OECD 2014, p. 13)

## Geographic influences

The national and state and territory NAPLAN data mask important locational differences in the educational outcomes of students.

Aboriginal and Torres Strait Islander students living in remote areas have poorer educational outcomes than those in non-remote areas. As remoteness increases, the percentage of Aboriginal and Torres Strait Islander students achieving at or above the NMS in literacy and numeracy declines (figure 5.9). And while this relationship is also true for non-Indigenous students, it is considerably less pronounced. For example, in 2014, 84 per cent of Aboriginal and Torres Strait Islander students in metropolitan areas met or exceeded the NMS for Year 3 reading compared with 37 per cent of Aboriginal and Torres Strait Islander students in very remote areas (figure 5.9). The corresponding percentages for non-Indigenous Year 3 students were 95 per cent in metropolitan areas compared with 91 per cent in very remote areas.

Figure 5.9 **Percentage of students achieving at or above the NMS: 2014, by geolocation**




*Data sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.5, NIRA 11.7, NIRA 11.11, NIRA 11.13).

The Indigenous population is more geographically dispersed than the general population in Australia. Around 21 per cent of Indigenous Australians live in remote and very remote areas compared to around 2 per cent of non-Indigenous Australians (SCRGSP 2014a, p. 9).

The 2012 PISA assessment of students found that those participating students attending remote schools were more likely to be in the lowest socioeconomic quintile (43 per cent) than those attending metropolitan schools (22 per cent) and provincial schools (32 per cent) (Thomson, De Bortoli and Buckley 2013, p. 10).

The Review of Funding for Schooling report also stated:

> The interaction between Indigeneity, low socioeconomic status and attending school in a remote or very remote location is particularly strong in Australia. While compound disadvantage is not something that is experienced exclusively by Indigenous students, research confirms that Indigenous students are over-represented in all categories of disadvantage. (Gonksi, et al. 2011, p. 123)

Indigenous languages are also more likely to be spoken in remote and very remote communities than in non-remote areas — around half of all Indigenous Australians living in remote or very remote locations speak a language other than English at home (SCRGSP 2014a). And there is some evidence to show that language barriers can disadvantage Indigenous students' achievements in literacy and numeracy (Ockenden 2014).[44] As the AMP Foundation noted, a different language spoken at home to school:

> … increases the challenges that Indigenous students face when they start (pre) school in understanding what is being taught. It inhibits communication between the teachers and their students. It limits the ability of the school and teaching staff to communicate with parents (at the most basic level, this includes the fact that some parents cannot understand school newsletters and school reports that are written in Standard Australian English). It also limits the capacity of parents to provide home-based learning support for their children. (p. 42)

Mellor and Corrigan (2004) noted that the educational experience of Indigenous students living in communities where English is spoken is expected to be more like that of non-Indigenous Australian students than those Indigenous students living in Indigenous communities where traditional languages are spoken and English is only spoken at school (typically remote and very remote communities).

A further challenge for remote areas is attracting high quality teachers. The Commission's study on Schools Workforce (PC 2012) found that schools in remote localities often have a high proportion of early-career teachers and newly-appointed principals, as well as a high staff turnover. A lack of access to professional development and qualified staff to cover staff absences poses further challenges. The low quantity and quality of housing in disadvantage areas was also found to contribute to difficulties attracting teachers in remote Indigenous schools.

Schools located in remote areas can also face the challenge of operating on a very small scale and it is likely to be more difficult and costly for students in rural and remote areas to access educational resources (Biddle 2010). Students living in remote locations will typically have access to fewer complementary resources and support services than students in less isolated areas (PC 2012).

Students living in remote areas may also need to move away from home to attend secondary school and this can make the transition from primary to secondary school

[44] NAPLAN results are reported for students with a non-English speaking background, but not coupled with Indigenous status.

difficult. Transition periods are known risk factors for student disengagement (Ockenden 2014).

## Attendance matters

It is also important to take into account school attendance. Regular attendance is important for students developing core literacy and numeracy skills and successfully completing secondary education (Purdie and Buckley 2010). As the Aboriginal and Torres Strait Islander Education Action Plan 2010-14 said:

> Attending school and engaging with learning is fundamentally important in helping young Australians to acquire the skills they need for life.
>
> Successful learning cannot be built on irregular attendance. (MCEEDYA 2011, p. 16)

The evidence shows that more regular attendance leads to greater success in learning. Using data from the Longitudinal Surveys of Australian Youth, Biddle (2014) found that both Indigenous and non-Indigenous students who missed a significant number of days in primary or secondary school had lower levels of measured maths, reading and science ability.

Another recent study looking at the attendance of students enrolled in public schools in Western Australia, found that average academic achievement on NAPLAN tests declined with any absences from school, and continued to decline as absence rates increased (Hancock et al. 2013). For more disadvantaged students, the study found that academic achievement declined rapidly with increasing levels of absence. The study also found school attendance patterns are established as early as Year 1 and were influenced by factors and events prior to school entry. The authors argued that:

> Vigorous efforts spent in considering ways to establish attendance excellence and high expectations about attendance in the commencing years of school, along with monitoring and intervention, are likely to yield benefits to onward educational and life outcomes (Hancock et al. 2013, p. viii).

Zubrick also said:

> The nature of the relationship between absence from school and achievement, across all subgroups of students, strongly suggests that every day of attendance in school contributes towards a child's learning, and that academic outcomes are enhanced by maximising attendance in school. There is no 'safe' threshold. (2013, p. 34)

Simply put, students need to attend school regularly if they are to succeed at school.

Non-attendance at school among Indigenous students has long being recognised as a factor influencing academic achievement of these students. Recently, however, there has been a renewed focus on attendance. The Prime Minister's 2014 Closing the Gap report stated that:

> Getting children to school is the Australian Government's number one priority in Indigenous Affairs. Poor attendance means that Indigenous children find it hard to perform at school.
>
> We must break the cycle of non-attendance to ensure today's kids are educated and equipped to become future leaders in their communities. (Australian Government 2014b, p. 2)

In December 2013, COAG agreed to increase transparency around school attendance. It was agreed that school attendance data was to be published twice a year by schools, split by Indigeneity. As discussed in chapter 1, in May 2014, COAG agreed to a new target to close the gap between Indigenous and non-Indigenous school attendance within 5 years (COAG 2014). This is to be accomplished by all schools achieving a minimum 90 per cent attendance rate for Indigenous students. Trajectories are yet to be developed to monitor progress on this new school attendance target.

There are currently no Australia-wide school attendance rates published for Indigenous and non-Indigenous students or overall rates for each jurisdiction. From the 2014 school year onwards, nationally comparable student attendance data were collected (that said, for 2014 and 2015, New South Wales government school data will not be comparable with the other states and territories).

While the available student attendance data cannot be directly compared across jurisdictions or school sectors (government, independent or Catholic), the data shows that in 2013:

- Indigenous students had lower attendance rates than non-Indigenous students across all the years (1-10)
- the gap between Indigenous student attendance and non-Indigenous student attendance was the widest in Year 10
- the largest attendance gaps in government schools were in the Northern Territory — ranging from 21 percentage points (Year 1) to 31 percentage points in Year 10
- attendance rates for Indigenous students declined most markedly from Years 5-6 to year 10 (table 5.10).

Between 2008 and 2013, there was little evidence of progress at the jurisdictional level on improving the attendance rates of Indigenous students in government schools in their primary years (table 5.10).

Attendance rates in government schools declined for Year 10 students in New South Wales, Victoria, the ACT and the Northern Territory (table 5.10). The largest fall in attendance was 13 percentage points for Indigenous Year 9 and 10 students in the Northern Territory. South Australia, however, improved school attendance rates for Indigenous Year 9 and 10 students (and Year 10 non-Indigenous students).

Table 5.10 **School attendance of Indigenous and non-Indigenous students in government schools: 2013 and change since 2008, by jurisdiction[a,b]**

Per cent and +/- percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | |
| Year 1 | 90 | 89 | 84 | 80 (+2) | 81 | 92 | 90 (+3) | 71 |
| Year 2 | 91 (+2) | 89 | 86 | 82 | 82 | 93 | 87 (-3) | 71 (-2) |
| Year 3 | 91 (+2) | 89 | 86 | 82 (+2) | 82 (-2) | 93 | 89 | 72 |
| Year 4 | 91 (+2) | 89 | 86 | 82 | 84 | 92 | 87 (-3) | 72 (-2) |
| Year 5 | 90 | 88 | 86 (-2) | 82 | 82 (-2) | 91 (-2) | 88 | 72 (-2) |
| Year 6 | 90 | 88 | 85 (-3) | 80 | 82 | 92 | 87 (-3) | 72 (-2) |
| Year 7 | 87 (+3) | 86 | 85 (-2) | 79 (-2) | 81 (-2) | 89 | 84 | 68 (-5) |
| Year 8 | 82 | 84 | 83 | 72 (-2) | 76 | 85 | 82 (+3) | 63 (-7) |
| Year 9 | 79 | 80 (-2) | 78 | 64 (-4) | 74 (+4) | 82 | 76 | 57 (-13) |
| Year 10 | 75 (-6) | 79 (-3) | 76 | 63 | 72 (+2) | 81 | 77 (-3) | 56 (-13) |
| **Non-Indigenous** | | | | | | | | |
| Year 1 | 95 | 93 | 92 | 94 | 93 | 93 | 94 | 92 |
| Year 2 | 95 | 93 | 93 | 94 | 93 | 94 | 94 | 93 |
| Year 3 | 95 | 94 | 93 | 94 | 93 | 94 | 94 | 93 |
| Year 4 | 95 | 93 | 93 | 94 | 93 | 94 | 94 | 93 |
| Year 5 | 95 | 93 | 93 | 94 | 93 | 94 | 94 | 93 |
| Year 6 | 94 | 93 | 93 | 94 | 93 | 94 | 93 | 93 |
| Year 7 | 94 | 93 | 92 | 93 | 92 | 92 | 92 | 92 |
| Year 8 | 92 | 91 | 92 | 91 | 91 | 90 | 91 (+2) | 89 (-2) |
| Year 9 | 90 | 90 | 89 | 89 | 88 | 89 | 89 | 89 |
| Year 10 | 89 | 90 | 88 | 87 | 88 (+2) | 87 | 89 (+2) | 87 (-2) |

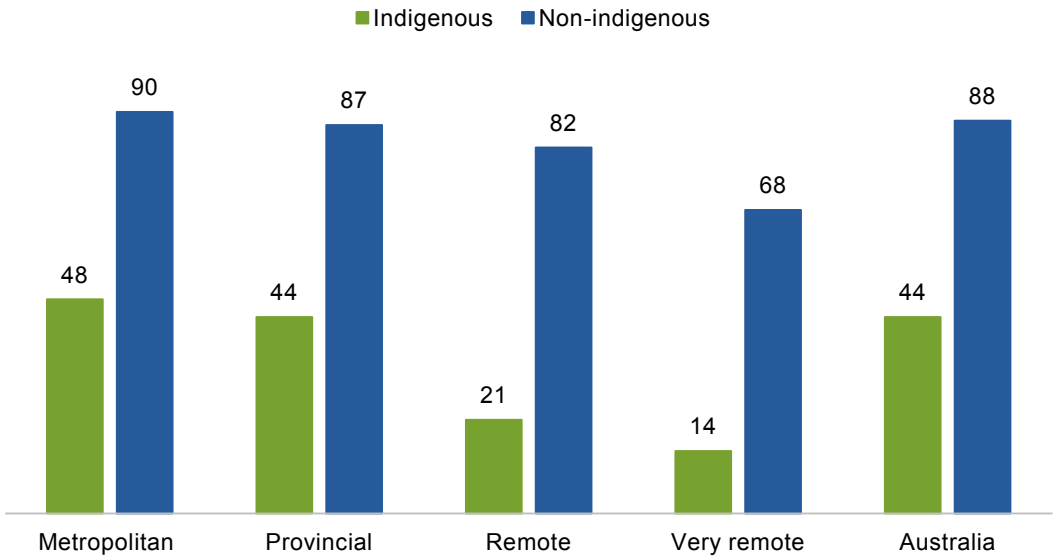
**a** The closing the gap target for school attendance has yet to be formally incorporated in the NIRA. **b** Changes are not stated where they are +/- 1 percentage point.

*Sources*: SCRGSP (2014e, table NIRA 13.1); SCRGSP (2009a, table NIRA 20.1).

Data released in December 2014 shows that Indigenous attendance was 90 per cent or more in 44 per cent of schools for which an Indigenous attendance rate was published (figure 5.10). The proportion of schools with Indigenous attendance at 90 per cent or more varies by geographical location — in 2014, 48 per cent of schools in metropolitan areas had Indigenous attendance at 90 per cent or more compared to 21 per cent in remote areas and 14 per cent in very remote areas.

Figure 5.10 **Proportion of schools with an attendance rate of 90 per cent or more: 2014, by geolocation[a]**

Per cent




[a] For privacy reasons, attendance rates were not published by Indigeneity where there were less than six Indigenous or non-Indigenous students at the school. These figures relate to school level data and so do not take into account regional variations in the size of schools and the number of Indigenous enrolments per school.

*Data source*: ACARA as reported by Australian Government (2015).

There are a number of complex factors relating to individuals, families, schools and communities that can impact on student attendance (Ockenden 2014, AIHW 2014d):

- individual factors — child's health, school readiness on entry, success at school, attachment to school and education
- family factors — family socioeconomic status, experience with education, parents' level of literacy and numeracy
- school factors — culturally appropriate curriculum, language, Indigenous staff members, school leadership
- community factors — remoteness, transport, community involvement, education experience, employment opportunities.

A Western Australian study found that Indigenous students were less likely to have lower-than-median attendance at school if their parents or carers had been educated beyond Years 10, 11 and 12 (Zubrick et al. 2006). As noted in a report produced by the Closing the Gap Clearinghouse:

> This highlights the flow-on effect and intergenerational outcomes that can result from improving the attendance, engagement and ultimately rates of school completion among young Indigenous Australians. (Ockenden 2014, p. 6)

## A range of attendance policies with limited insights on what works

There are a number of polices targeting attendance of Indigenous students, including the School Enrolment and Attendance through Welfare Reform Measure in the Northern Territory and the Remote School Attendance Strategy. Other programs have involved linking school attendance to participating in sports activities and providing scholarships for Indigenous students from regional and remote areas to attend private boarding schools (box 5.2).

### Box 5.2 Strategies to help Indigenous students attend school

Improving school attendance is one of the Australian Government's key priorities for Indigenous Affairs. There are a number of strategies in place aimed at ensuring that children attend school.

The ***Improving School Enrolment and Attendance through Welfare Reform Measure*** (SEAM) is an Australian Government initiative which recognises parent and carer responsibilities to enrol their children in school and make every effort to ensure they attend regularly.

SEAM helps identify where a child is not enrolled or attending school and offers families a range of support including the opportunity to work with a social worker. SEAM provides support for communication between the school and the family and assists parents in addressing the barriers to their child's school enrolment and attendance.

The Australian Government's ***Remote School Attendance Strategy*** (RSAS) is aimed at improving school attendance rates in remote areas. The RSAS is about working together with schools, families and community organisations to ensure all children go to school every day. RSAS is designed to be driven by the community to suit local needs. School attendance supervisors and school attendance officers (people from the local community such as mums, dads, caregivers, aunties, uncles or grandparents) work with schools to help parents and families make sure kids in the community get to school each day.

The RSAS commenced in Term 1, 2014, and is being implemented with communities and schools in locations in New South Wales, South Australia, Western Australia, Queensland and the Northern Territory.

A key feature of these programs is the potential for welfare payments for families to be affected if minimum attendance rates are not met.

***Sporting Chance*** activities under the *Indigenous Advancement Strategy* aim to improve educational outcomes for Indigenous students through school-based Sports Academies in secondary school, and Education Engagement Strategies for primary and secondary school students.

*Source*: Department of Social Services, Department of Prime Minister and Cabinet.

While the evidence base on what attendance strategies work for Indigenous students is building (box 5.3), what is missing is well-evaluated policy trials. There is a need to better understand the complex factors influencing attendance and what strategies work to improve the school attendance of Indigenous students.

Box 5.3 **Evidence on strategies to improve school attendance of Indigenous students**

An evaluation of **Sporting Chance** (box 5.2) found that more than 90 per cent of the 1012 students surveyed and interviewed as part of the evaluation reported a positive attitude toward their schooling, particularly in relation to their attitudes to school, self-identity, sense of pride in being Aboriginal and Torres Strait Islander and self-efficacy as learners (Londsdale et al. 2011). Attendance and engagement in school improved for students in school-based sports Academies and Education Engagement Strategies but the sustainability of engagement was more evident in the Academies projects. There was insufficient evidence to show a link between the projects and improved academic outcomes.

The AIHW (2014d) identified, based on the experience of schools, six key strategies for improving school attendance:

- monitor and follow up attendance
- increase students' experience with and success at school
- build good relationships with families and community
- make school a place students want to be
- reinforce the value of attendance and education
- take a holistic approach to identifying and meeting children's needs.

*Sources*: Lonsdale et al. (2011); AIHW (2014d).

Purdie and Buckley (2010), on reviewing the literature evaluating which programs work to improve attendance and retention, found that there were very few high quality evaluations. The authors noted that:

> Although it is important to continue small, contextualised investigations of participation and engagement issues, more large-scale research is needed.
>
> It is recommended that any new programs or strategies for improvement should build in monitoring and evaluation components. (p. 1)

## 5.4 Where to from here?

Despite a lot of policy action and significant funding directed towards Indigenous education, there has been no significant reduction in the gap between Indigenous and non-Indigenous literacy and numeracy outcomes since 2008.

Given progress to date, there is little prospect that the COAG target of halving the gap for Indigenous students in reading and numeracy will be met by 2018. The lack of progress on this target not only affects the educational outcomes of Indigenous students, but it is also likely to have flow-on effects for Year 12 attainment rates and employment outcomes. There are also likely to be intergenerational effects.

The educational disadvantage of Indigenous students is an area in need of attention. Isolated examples of success in some school communities have not been effectively used to inform potential strategies in other school communities. And policy makers do not have access to a rigorous evidence base. As Hughes and Hughes (2012) said:

> Although it has been evident for years that funding has not been followed by improved literacy and numeracy results, Commonwealth, state and territory governments have failed to establish evaluation criteria for Indigenous programs. (p. 44)

An Australian Council for Educational Research report on the processes used to target funding towards disadvantaged students also concluded that:

> There are insufficient data available to establish to what extent existing programs are effective because few have been evaluated, and fewer still have been evaluated with student outcomes as a focus. … The study has been unable to discern the extent to which Indigenous and Low SES programs are effective. (Rorris et al. 2011, p. 87)

That said, there are some promising developments including, for example:

- the 'What Works' educational website, which provides a hub for schools to share their experiences about successful programs targeting educational disadvantage among Indigenous students — one example is a study that identifies common characteristics of remote schools with high enrolments of Indigenous students (What Works 2012)
- the National Evaluation Strategy for the Smarter Schools National Partnerships, which requires jurisdictions to report on their policy activity towards the National Partnership and evaluation efforts.

The PC is also currently undertaking a research project on Indigenous Primary School Education Outcomes. This project will seek to answer the questions:

- what are the most important contributors to Indigenous children's primary school outcomes?
- are the most important contributors the same for Indigenous and non-Indigenous children?
- do the contributors for Indigenous children depend on where they live?

But further action is needed to build the evidence on what works for Closing the Gap in educational outcomes. Building an evaluation component into new programs or strategies is a guaranteed way of building a solid evidence base to inform policy decisions and creating a culture of ongoing evaluation.

Policy evaluation is discussed further in chapter 8.

# Statistical attachment

## Writing

Between 2008 and 2010, students' writing was assessed using a narrative task. However, since 2011, a persuasive task has been used (box 5.1). Because of this change in the NAPLAN writing test, data for 2011 to 2014 are comparable but not to the earlier years (2008 to 2010).

In 2014, 76 per cent of Indigenous students met the NMS in writing in Year 3. This declined to 63 per cent in Year 5, 59 per cent in Year 7 and 49 per cent in Year 9 (table 5.11).

Table 5.11 **Proportion of students achieving at above the NMS in persuasive writing: 2011-2014[a,b]**

| | | | | | *Nature of the difference* | |
|---|---|---|---|---|---|---|
| | *2011* | *2012* | *2013* | *2014* | *2011 and 2014* | *2013 and 2014* |
| | *%* | *%* | *%* | *%* | | |
| **Indigenous** | | | | | | |
| Year 3 | 79.9 | 78.3 | 78.9 | 75.8 | ■ | ■ |
| Year 5 | 68.9 | 66.3 | 65.8 | 63.3 | ■ | ■ |
| Year 7 | 66.9 | 63.7 | 61.4 | 59.3 | ▽ | ■ |
| Year 9 | 55.0 | 48.8 | 51.2 | 49.4 | ■ | ■ |
| **Non-Indigenous** | | | | | | |
| Year 3 | 96.2 | 96.4 | 96.0 | 94.9 | ■ | ■ |
| Year 5 | 93.9 | 93.6 | 93.3 | 91.9 | ■ | ■ |
| Year 7 | 92.6 | 91.4 | 90.9 | 90.2 | ■ | ■ |
| Year 9 | 86.4 | 83.4 | 84.4 | 83.6 | ■ | ■ |
| **Change in gap between years** (percentage points) | | | | | | |
| Year 3 | | **1.8** | **-1.0** | **2.0** | | |
| Year 5 | | **2.3** | **0.2** | **1.1** | | |
| Year 7 | | **2.0** | **1.8** | **1.4** | | |
| Year 9 | | **3.2** | **-1.4** | **1.0** | | |

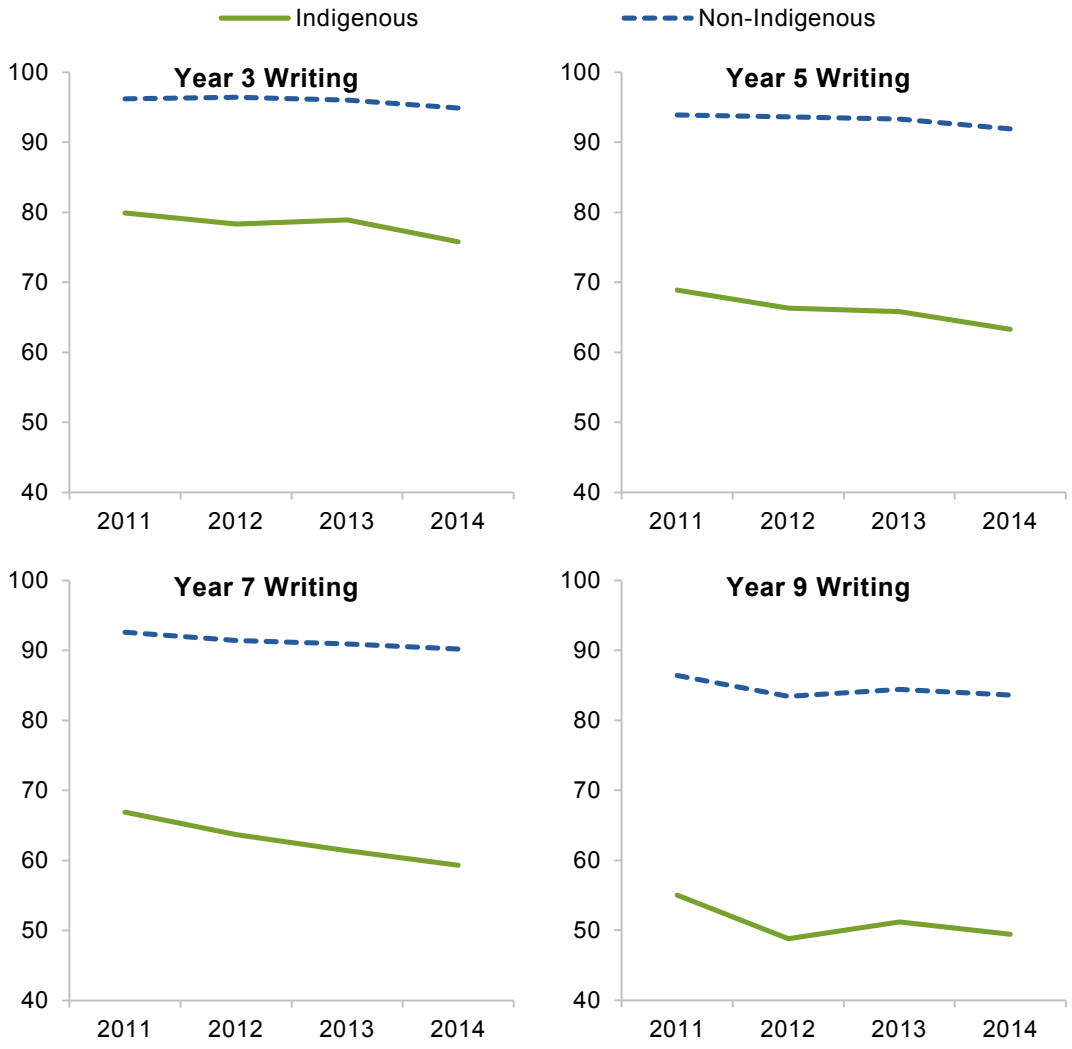
**a** The nature of the difference refers to whether 1) the difference is statistically significant at the five per cent level and 2) the effect size of the difference is of sufficient size to be worth further consideration (box 5.1). ■ Percentage of students at or above NMS is close to or not statistically significantly different from the base year (or previous year). ▽Percentage of students at or above NMS is lower than and is significantly different form the base year (or previous year). **b** Green shading indicates a narrowing of the gap and red shading indicates a widening of the gap relative to the previous year. The gap changes between years are not tested for statistical significance.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

Between 2011 to 2014, the percentage of Indigenous students achieving at or above the NMS declined marginally in all years, however, apart from the result for Year 7 students, the changes were not statistically significant (table 5.11). The proportion of Year 7 students meeting the minimum standard fell from 67 per cent in 2011 to 59 per cent in 2014.

As shown in figure 5.11, the gap between Indigenous and non-Indigenous students for writing widened slightly over the period 2011 to 2014 for all years — by 3 percentage points in Year 3; 4 percentage points in Year 5; 5 percentage points in Year 7; and 3 percentage points in Year 9.[45]

Figure 5.11 **The writing gap: 2011-2014**
Per cent of students at or above the NMS




*Data sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

45 The results have not been tested for statistical significance.

Writing results for Indigenous students vary at the state and territory level. In 2014, Tasmania recorded the highest percentage of Indigenous students achieving at the national minimum level or above in Year 3 (91 per cent and a gap of just 2 percentage points) and the Northern Territory the lowest (34 per cent and a gap of 57 percentage points).

Across all the states and territories in 2014, the share of Indigenous students achieving at the NMS declined in the later years of schooling. In Western Australia, South Australia and the Northern Territory less than half of Year 9 Indigenous students achieved the minimum standard in writing in 2014 (table 5.12).

Table 5.12 **Percentage of students achieving at or above the NMS in writing: 2014, by jurisdiction**

Per cent and percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* | *Aust* |
|---|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | | |
| Year 3 | 83.6 | 88.4 | 80.6 | 66.0 | 70.7 | 91.1 | 86.7 | 33.9 | 75.8 |
| Year 5 | 72.2 | 79.3 | 66.4 | 53.6 | 58.2 | 76.8 | 73.5 | 24.8 | 63.3 |
| Year 7 | 66.9 | 68.9 | 62.8 | 54.8 | 60.4 | 73.6 | 66.9 | 19.9 | 59.3 |
| Year 9 | 50.5 | 62.1 | 52.3 | 48.2 | 46.8 | 66.7 | 57.5 | 17.8 | 49.4 |
| **Non-Indigenous** | | | | | | | | | |
| Year 3 | 95.5 | 95.5 | 94.1 | 95.3 | 92.9 | 93.5 | 95.1 | 90.4 | 94.9 |
| Year 5 | 92.8 | 93.7 | 89.1 | 92.5 | 88.5 | 90.1 | 93.5 | 86.1 | 91.9 |
| Year 7 | 90.3 | 91.0 | 87.7 | 92.4 | 89.4 | 87.8 | 91.4 | 83.7 | 90.2 |
| Year 9 | 82.5 | 85.8 | 81.5 | 88.3 | 81.3 | 80.6 | 84.7 | 75.0 | 83.6 |
| **Gap (percentage points)** | | | | | | | | | |
| Year 3 | 11.9 | 7.1 | 13.5 | 29.3 | 22.2 | 2.4 | 8.4 | 56.5 | 19.1 |
| Year 5 | 20.6 | 14.4 | 22.7 | 38.9 | 30.3 | 13.3 | 20.0 | 61.3 | 28.6 |
| Year 7 | 23.4 | 22.1 | 24.9 | 37.6 | 29.0 | 14.2 | 24.5 | 63.8 | 30.9 |
| Year 9 | 32.0 | 23.7 | 29.2 | 40.1 | 34.5 | 13.9 | 27.2 | 57.2 | 34.2 |

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

There were no significant improvements at the state and territory level in the percentage of Indigenous students achieving at or above the minimum standard in writing between 2011 and 2014 (table 5.13). However, significant declines were recorded in — New South Wales (Year 3 and Year 5), Queensland (Year 7 and 9), Western Australia (Year 3) and the ACT (Year 5).

Table 5.13 **Changes in the percentage of students achieving at or above the NMS in writing: 2011-2014, by jurisdiction[a,b]**

*Percentage points*

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | |
| Year 3 | -4.5▽ | -2.9 ■ | -3.4■ | -8.6 ▽ | -6.8 ■ | 0.7■ | -3.8 ■ | -8.1 ■ |
| Year 5 | -9.6 ▽ | -4.0 ■ | -5.7 ■ | -2.8 ■ | -7.3 ■ | -2.8 ■ | -13.5 ▼ | -4.3 ■ |
| Year 7 | -5.6 ■ | -5.1 ■ | -11.2 ▽ | -5.9 ■ | -3.9 ■ | 4.1 ■ | -2.4 ■ | -6.1 ■ |
| Year 9 | -5.4 ■ | -4.6 ■ | -8.5 ▽ | 0.8 ■ | -1.9 ■ | 6.7■ | -5.2 ■ | -4.7 ■ |
| **Non-Indigenous** | | | | | | | | |
| Year 3 | -1.4▽ | -1.1■ | -1.2■ | -1.0■ | -2.0▽ | -2.1▽ | -1.2■ | -2.2■ |
| Year 5 | -2.9▽ | -1.0■ | -2.6■ | -0.5■ | -2.9▽ | -1.0■ | -0.4■ | -2.6■ |
| Year 7 | -2.7▽ | -1.1■ | -5.3▽ | -1.1■ | -3.0▽ | 1.7■ | -1.0■ | -1.1■ |
| Year 9 | -3.8■ | -2.2■ | -5.4▽ | 2.9■ | -2.0■ | 1.1■ | -1.4■ | -4.6■ |

[a] The nature of the difference refers to whether 1) the difference is statistically significant at the five per cent level and 2) the effect size of the difference is of sufficient size to be worth further consideration (box 5.1). ▲ Percentage of students at or above NMS is substantially higher than and is statistically different from the base year (or previous year). △ Percentage of students at or above NMS is higher than and is statistically significantly different from the base year (or previous year). ■ Percentage of students at or above NMS is close to or not statistically significantly different from the base year (or previous year). ▽Percentage of students at or above NMS is lower than and is significantly different form the base year (or previous year). ▼ Percentage of students at or above NMS is substantially lower than and is statistically significantly different from the base year (or previous year). [b] Red shading indicates a widening of the gap between 2011 and 2014.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

At the state and territory level for writing, between 2011 and 2014, the gap between Indigenous and non-Indigenous students achieving the NMS widened. The exceptions were Tasmania (where the writing gap narrowed in Years 3, 5 and 9) and South Australia (Year 9, table 5.14).[46]

Table 5.14 **The change in the writing gap: 2011-2014, by jurisdiction[a,b]**

Percentage points

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* |
|---|---|---|---|---|---|---|---|---|
| Year 3 | **3.1** | **1.8** | **2.2** | **7.6** | **4.8** | **-2.8** | **2.6** | **5.9** |
| Year 5 | **6.7** | **3.0** | **3.1** | **2.3** | **4.4** | **1.8** | **13.1** | **1.7** |
| Year 7 | **2.9** | **4.0** | **5.9** | **4.8** | **0.9** | **-2.4** | **1.4** | **5.0** |
| Year 9 | **1.6** | **2.4** | **3.1** | **2.1** | **-0.1** | **-5.6** | **3.8** | **0.1** |

[a] Results are not tested for statistical significance. [b] Green shading indicates a narrowing of the gap between 2011 to 2014 and red shading indicates a widening of the gap.

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA 11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

46 The results have not been tested for statistical significance.

## Other supporting material

Table 5.15 **Percentage of students achieving at or above the NMS in reading: 2014, by jurisdiction**

Per cent

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* | *Aust* |
|---|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | | |
| Year 3 | 83.2 | 85.3 | 80.3 | 63.1 | 69.6 | 88.1 | 83.4 | 34.1 | 74.7 |
| Year 5 | 79.0 | 82.9 | 74.9 | 59.3 | 65.6 | 82.0 | 83.1 | 32.0 | 70.3 |
| Year 7 | 86.1 | 84.3 | 80.2 | 71.6 | 80.3 | 89.1 | 83.1 | 37.1 | 77.1 |
| Year 9 | 77.3 | 81.8 | 72.7 | 65.9 | 70.9 | 82.5 | 79.4 | 33.7 | 71.2 |
| **Non-Indigenous** | | | | | | | | | |
| Year 3 | 95.4 | 95.0 | 94.5 | 94.0 | 93.0 | 92.4 | 95.8 | 89.1 | 94.7 |
| Year 5 | 94.5 | 94.6 | 94.3 | 93.6 | 92.9 | 92.0 | 96.1 | 92.3 | 94.2 |
| Year 7 | 95.9 | 95.9 | 95.5 | 96.6 | 95.8 | 95.1 | 96.8 | 93.9 | 95.9 |
| Year 9 | 93.5 | 93.5 | 92.7 | 95.0 | 91.3 | 91.4 | 94.3 | 90.9 | 93.3 |
| **Gap (percentage points)** | | | | | | | | | |
| Year 3 | 12.2 | 9.7 | 14.2 | 30.9 | 23.4 | 4.3 | 12.4 | 55.0 | 20.0 |
| Year 5 | 15.5 | 11.7 | 19.4 | 34.3 | 27.3 | 10.0 | 13.0 | 60.3 | 23.9 |
| Year 7 | 9.8 | 11.6 | 15.3 | 25.0 | 15.5 | 6.0 | 13.7 | 56.8 | 18.8 |
| Year 9 | 16.2 | 11.7 | 20.0 | 29.1 | 20.4 | 8.9 | 14.9 | 57.2 | 22.1 |

*Sources*: ACARA (2014); SCRGSP (2014e, tables NIRA11.1, NIRA 11.2, NIRA 11.3, NIRA 11.4).

## Summary of key findings

# YEAR 12 ATTAINMENT


Between 2008 and 2012-13 the gap declined to 28 percentage points.

A continuation of this rate would achieve the 2020 target

The gap in Year 12 or equivalent attainment is higher in remote regions

The proportion of Indigenous students eligible for an ATAR ranking continues to be disproportionately low

# 6 Year 12 attainment

## Key points

- A very important marker of educational achievement is successful completion of Year 12 (or a vocational equivalent). Successfully completing Year 12 can be a stepping stone to further education and training. And for those who move straight into the workforce, it can materially improve their job prospects and lifetime earnings compared to those who leave school earlier.
  - Reflecting these benefits, COAG has committed to halving the gap between Indigenous and non-Indigenous Australians aged 20-24 in Year 12 or equivalent attainment rates by 2020.
  - Given a starting (2008) gap of just under 40 percentage points, achieving this target will require a gap reduction of around 20 percentage points.
- Over the period 2008 to 2012-13, the gap declined significantly to 28 percentage points. A continuation of this rate of progress would be sufficient to achieve the 2020 target.
- However, there are reasons for some caution about outcomes to date and, more particularly, what those outcomes say about success in addressing disadvantage in this area.
  - The gap in Indigenous Year 12 (or equivalent) attainment rates continues to be highest in remote and very remote regions. It is important that the marked reduction in the gap Australia-wide does not detract from efforts to improve the still low Indigenous attainment rate in more remote parts of the country.
  - Year 12 'completions' include students who finished the year and received a Year 12 certificate; those who were also eligible for a university entrance (ATAR) ranking; and those who attended school for the year, but did not meet the certificate requirements. While no data are currently available on comparative certification rates, the proportion of Aboriginal and Torres Strait Islander students eligible for an ATAR ranking continues to be disproportionately low.
  - This latter outcome begs the question of whether a Year 12 certification measure would provide a further reason for circumspection about the degree of progress made so far.
  - Limited progress in closing reading, numeracy and attendance gaps at the secondary school level (chapter 5) suggests that despite good progress to date in reducing the gap in the Year 12 and equivalent attainment rate, halving the gap by 2020 is far from guaranteed.
  - Indeed, given limited progress in reducing gaps in key preconditions for successful completion of Year 12, any further substantive reduction in the gap in measured completion rates in the near term would raise more questions about the usefulness of this target.
- In light of the above, development of a comparative Year 12 certification sub-indicator — as envisaged in the National Indigenous Reform Agreement — would be a useful addition to the performance reporting tool-box.

As discussed in the previous chapter, education has a pivotal role to play in addressing economic and social disadvantage. Progress in closing the gap in reading and numeracy outcomes is widely recognised as central to reducing education-driven disadvantage experienced by Aboriginal and Torres Strait Islander Australians.

Another important marker of educational achievement is successful completion of Year 12 (or an equivalent vocational qualification). In the first instance, successful completion of Year 12 can be a stepping stone to a university degree or to other post-school qualifications. But even for those who move straight from school into the workforce, successful completion of Year 12 can materially improve their job prospects and lifetime earnings relative to those who leave earlier (Nous Group 2011 and Cassells et al. 2012). Reflecting such benefits, COAG has committed to:

- halving the gap between Indigenous and non-Indigenous Australians aged 20-24 in Year 12 or equivalent attainment rates by 2020.

For the purposes of this target, an equivalent attainment is an Australian Qualification Framework (AQF) certificate II level or above.

As the assessment below indicates, considerable progress has been made towards achieving this gap closure target.

However, there are reasons for some caution about the extent to which these outcomes are indicative of the 'true' rate of progress in addressing disadvantage in this area. Also, limited progress on some of the other education-related gaps targeted by COAG could make the recent rate of progress in this area difficult to sustain in the coming years.

## 6.1 Starting gap and progress to date

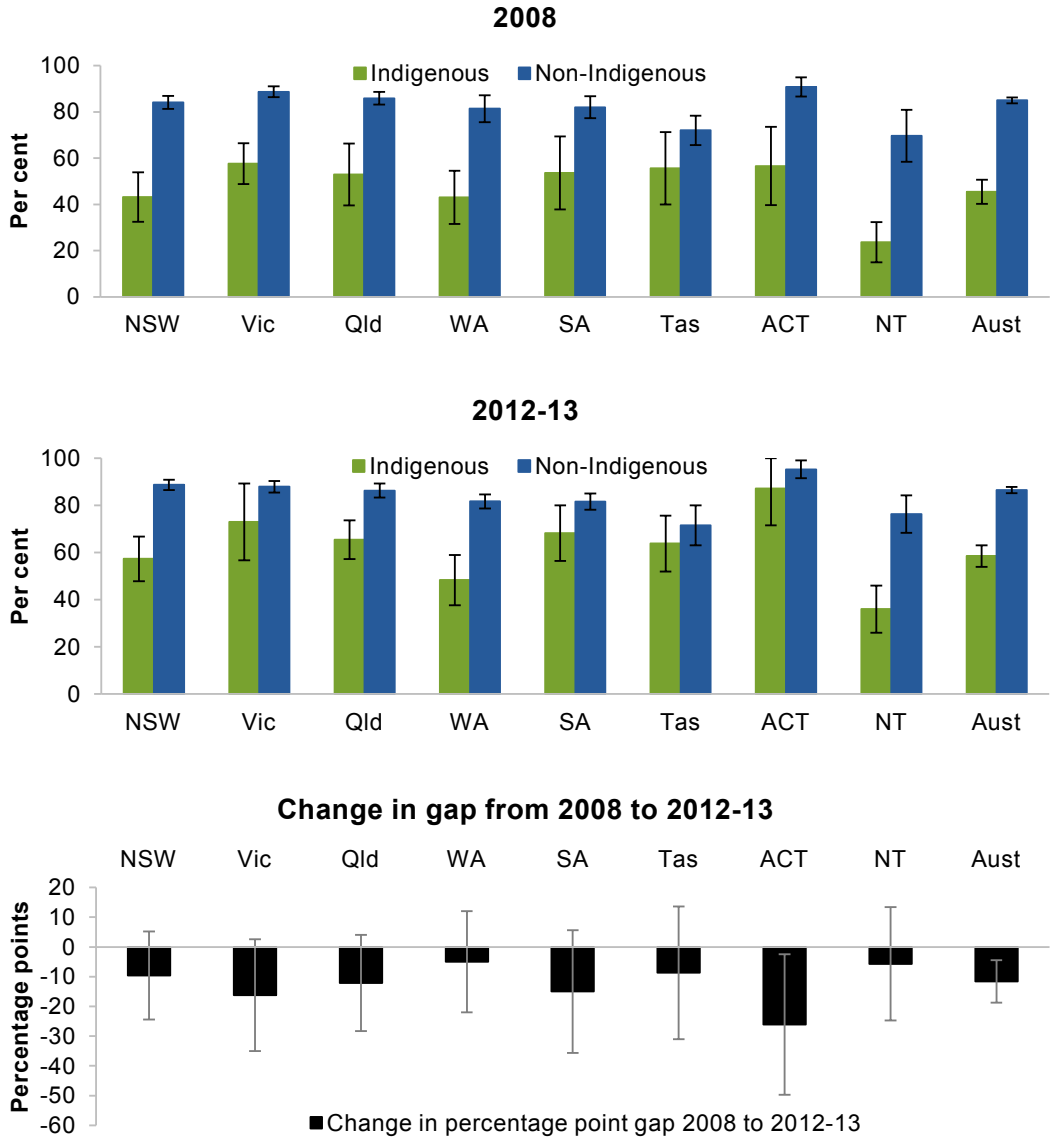
In 2008, 45.4 per cent of Aboriginal and Torres Strait Islander Australians aged 20 to 24 had completed Year 12, or obtained an AQF II level certificate or above. This compared with 85 per cent of non-Indigenous Australians in the same age cohort — a starting gap of 39.6 percentage points (figure 6.1 and table 6.1). To meet COAG's target, a reduction in the national-level gap of just under 20 percentage points by 2020 will therefore be required.[47]

[47] The Census of Population and Housing is the main data source for Indigenous Year 12 or equivalent attainment. The most recent Census data is for 2011 and the results for Year 12 attainment were presented in the COAG Reform Council (CRC) Indigenous Reform report for 2011-12. Supplementary data from the Australian Aboriginal and Torres Strait Islander Health Survey in 2012-13 is more recent (with comparative data also available for 2008 from the National Aboriginal and Torres Strait Islander Social Survey) and has been used in this report. Non-Indigenous data is sourced from the ABS Survey of Education and Work. Importantly, survey based data for the 20-24 year age cohort is subject to high relative standard errors which means that in many cases the associated gap outcomes are not statistically significant.

At a jurisdictional level, the starting gaps were widely spread (recognising that associated sampling errors were universally large). The lowest gaps were in Tasmania (16.4 percentage points) and South Australia (28.4 percentage points) and the highest in the Northern Territory (46 percentage points) and New South Wales (41 percentage points).

Figure 6.1 **State of play on Year 12 or equivalent attainment[a,b]**

Proportion of people aged 20-24




[a] Indigenous outcomes for 2012-13 are based on a more comprehensive suite of survey data from the AATSIHS than was available to the CRC (2014) when it compiled its final performance assessment report — see chapter 1. However, the consequent revisions in the Indigenous outcomes are relatively minor. Non-Indigenous outcomes are based on the ABS Survey of Education and Work. [b] While consistent with the statistically significant reduction in the national level gap, because of sizeable sampling errors, most of the reductions in the jurisdictional gaps are not statistically significant at the 95 per cent confidence level.

*Data sources*: SCRGSP (2009a, table NIRA 18.2); SCRGSP (2014e, table NIRA 12.1).

As the CRC (2014) and the Prime Minister's Closing the Gap report (Australian Government 2015) have previously reported, the measured gaps at both the national level and in most jurisdictions have since closed substantially. More specifically, between 2008 and 2012-13:

- At the national level, the proportion of 20-24 year old Aboriginal and Torres Strait Islander Australians with Year 12 or equivalent attainment rose by around 13 percentage points to 58.5 per cent.
- At the jurisdictional level, the Indigenous attainment rate increased by more than 10 percentage points in all States and Territories except Western Australia and Tasmania; with an especially large increase in the ACT of more than 30 percentage points.
- Higher levels of Indigenous attainment, in combination with generally much more stable levels of non-Indigenous attainment, saw the national-level gap decline to 28 percentage points, more than 11 percentage points lower than in 2008.
- Consistent with this gap reduction at the national level, the gap also declined in all jurisdictions, though by varying amounts. At one extreme, in the ACT, the gap fell by more than 26 percentage points. At the other, the gaps in Western Australia and the Northern Territory only declined by 5 and 5.7 percentage points, respectively.

Because of large sampling errors — particularly in the Indigenous component of the data — most of the gap reductions at the jurisdictional level are not statistically significant at the 95 per cent confidence level. But notwithstanding this element of statistical uncertainty, and the variation in the degree of improvement across jurisdictions, the take home message is that a continuation of the overall rate of progress in the period to 2012-13 would be sufficient to achieve COAG's gap reduction target by 2020 (see statistical attachment, figures 6.2 and 6.3). That is, based on outcome midpoints, over a period representing less than half of the total gap reduction timeframe, nearly 60 per cent of the gap target was realised.

## 6.2 Some cautions about these outcomes

### Significant geographic disparities remain

Over the period 2008 to 2012-13, Indigenous Year 12 or equivalent attainment rates appear to have increased across all geographic areas; with larger increases in outer regional and remote areas than in the major cities and inner regional areas (SCRGSP 2014a, table 4A.5.2). Though statistical reliability issues loom large in these geographic splits, given the generally negative correlation between remoteness and Indigenous outcomes, the apparently greater improvement in areas away from the major population centres was an encouraging development.

That said, the gap in Indigenous Year 12 attainment rates in 2012-13 remained considerably higher in remote and very remote areas (30.5 and 39.7 percentage points, respectively) than in major cities, inner regional and outer regional areas (26.2, 16.8 and 9.8 percentage points, respectively) (SCRGSP 2014e, table NIRA 12.2)[48]. As well as the adverse consequences for social wellbeing, a continuation of such disparities will make it more difficult to address the pronounced employment disadvantage evident in these areas (chapter 7). It is therefore important that the significant progress made in closing the overall gap in the Year 12 or equivalent attainment rate does not detract from efforts to improve still low Indigenous attainment rates in more remote parts of the country.

## The attainment measure aggregates different educational outcomes

In assessing the implications of the recent reduction in the gap in the Year 12 or equivalent attainment rate, it is also important to recognise that 'Year 12 or equivalent' in fact embodies a number of outcomes of varying educational achievement. This raises the possibility that if the proportions of Indigenous and non-Indigenous students in these different outcomes groups varies, then changes to the aggregated attainment rate could 'misrepresent' the extent to which disadvantage has actually been reduced.

There are two particular considerations here:

- differences in the educational achievement attaching to Year 12 completion and its vocational equivalent in the attainment measure — AQF Certificate II level
- the different dimensions of Year 12 'completion'.

The first of these does not appear to be a material consideration for the reduction in the overall attainment rate gap between 2008 and 2012-13 (box 6.1).

However, in the case of Year 12 'completions', some further data disaggregation indicates that notwithstanding the sizeable reduction in the overall Year 12 and equivalent attainment gap, there is still a long way to go in addressing disparities in end of school outcomes.

More specifically, for a student completing Year 12, there can be one of three outcomes:

- The student may have successfully met the requirements for the relevant jurisdiction's Year 12 certificate.
- The student may not only have met the certificate requirements, but may also have been eligible for an Australian Tertiary Admission Rank (ATAR). These rankings are used by university admission authorities to calibrate a student's achievement relative to other students (see further discussion below). Not all students who have qualified for a Year 12 certificate are eligible for an ATAR.

[48] Data in the Overcoming Indigenous Disadvantage report (SCRGSP 2014a, table 4A.5.2) enable estimation of geographically differentiated changes in gaps in Year 12 attainment rates between 2008 and 2012-13 (other than in very remote areas). However, when account is taken of sampling errors, these estimates do not reveal any systematic correlation between remoteness and changes in gaps over the period.

- The student may complete the year without being eligible for either a certificate or an ATAR.

### Box 6.1 Year 12 and AQF Certificate level II equivalence issues

While fostering high levels of successful Year 12 completion is a key goal of the school education policy framework in Australia, that framework recognises that staying at school until the end of Year 12 is not for every student; and that for some a vocational alternative may be preferable. Accordingly, Year 12 policy goals and metrics typically refer to Year 12 or equivalent (vocational) attainment. For the purposes of COAG's education goals, the vocational equivalent of Year 12 completion is currently an AQF Certificate level II, or above.

Given the various dimensions of Year 12 'completion' (see text) and the differences between vocational and school-based learning, the notion of equivalence is inherently problematic. Reflecting on this, Lim and Karmel (2011, p. 10) argue that:

> … vocational qualifications must be considered as an alternative rather than a literal equivalent. In this context, the term 'equivalence' becomes a useful rhetorical device rather than a precise concept.

But they go on to contend that if there is to be an 'equivalent' vocational standard, then volume of learning considerations suggest that it should be AQF Certificate level III rather than level II. Consistent with this conclusion, COAG (2009a) had previously agreed to use the higher level III equivalence standard from 2020. As well as leading to a one-off reduction in Year 12 or equivalent attainment rates, this change might also affect the measured disparity in Indigenous and non-Indigenous attainment rates.

As alluded to in the text, the Commission also considered whether differential growth in Indigenous and non-Indigenous AQF Certificate Level II attainment rates between 2008 and 2012-13 could have affected the measured change in the overall Year 12 (or equivalent) attainment rate gap over this period.

However, any effect of this nature would almost certainly have been minor. Certificate Level II numbers are only a small proportion of total Year 12 or equivalent qualification numbers. And the proportion of Year 12 Indigenous completions (SCRGSP 2014a, table 4A.5.5) has been growing at broadly the same rate as the overall Indigenous Year 12 (or equivalent) attainment rate. Hence, in interpreting the change in the overall attainment gap, this issue can be ignored.

While certification rates were listed in the NIRA as a performance indicator for the Year 12 or equivalent gap closure target, to date, various measurement issues have been seen as precluding a certification metric differentiated on the basis of Indigenous status.

But the Overcoming Indigenous Disadvantage (OID) reports do contain information on the proportions of Year 12 Indigenous and non-Indigenous students achieving ATAR scores of 50 or above — normally regarded as the minimum requirement for university study.[49] In prefacing this information, the latest OID report (SCRGSP 2014a, p. 4.34) noted research by Biddle and Cameron (2012), which found that an Aboriginal and Torres Strait Islander

[49] In practice, most tertiary institutions look beyond academic achievement when assessing entry applications from Aboriginal and Torres Strait Islander students (SCRGSP 2014a, p. 4.36).

student who receives an ATAR score is as likely as a non-Indigenous student to go to university.[50]

Significantly, there is a very large gap in this ATAR rate. In 2012-13, across Australia, more than 44 cent of the estimated potential Year 12 non-Indigenous student population achieved an ATAR ranking of 50 or above, compared to just over 7 per cent of their Aboriginal and Torres Strait Islander counterparts (SCRGSP 2014a, table 4A.5.11). Moreover, despite a more rapid increase in the proportion of Indigenous students achieving ATARs since 2008, the low starting base to which that increase has applied, in combination with the much larger starting non-Indigenous base, saw the percentage point gap widen somewhat in the period to 2012-13. (See section 1.4 for a more general discussion of some less obvious and even 'perverse' outcomes that can result from 'gap mathematics'.)

Further, Edwards and McMillan (2015) found that, for those studying at university, the course completion rate[51] for Aboriginal and Torres Strait Islander students of around 47 per cent was not only substantially lower than the all student average of nearly 74 per cent, but was also well below the rate for low Socio Economic Status students (69 per cent); students in regional areas (70 per cent); and students in remote areas (just under 60 per cent).

These are much less rosy perspectives on the extent and consequences of disparities in end of school outcomes. And they beg the question of whether a Year 12 certification measure would provide reason for further circumspection on the degree of progress that has been made in this area.

## Implications of limited progress in reducing other educational gaps

As outlined earlier, Year 12 or equivalent attainment is only one of several high level educational outcomes targeted by COAG's Closing the Gap initiative. In addition to an early childhood education target, there are targets covering achievement in reading, writing and numeracy and rates of school attendance. Success in reducing disparities in these other areas will facilitate reduced disparities in Year 12 or equivalent attainment rates — though especially in the case of early childhood education, it may take many years for such flow-on benefits to be realised. Conversely, lack of progress in these other areas will make it harder to achieve improvement in Year 12 or equivalent attainment rates.

As discussed in chapter 5, at the national level, there has been no significant improvement in overall reading and numeracy outcomes for Aboriginal and Torres Strait Islander students since 2008. Improvements recorded in reading in 2013 for Year 3 and Year 5 were short lived, with most of the gains dissipating in 2014. And the few areas of progress at the

[50] The OID report also notes a review by Behrendt et al. (2012), which noted that high performing Indigenous school students often do not go on to higher education.

[51] Measured as the proportion of students who had enrolled in a Bachelor degree in 2005 and had completed that degree by 2013.

State and Territory level in reading — Queensland (Year 3 and Year 5), Western Australia (Year 7) and South Australia (Year 7) — were offset by instances of deterioration in reading achievement in the ACT (Year 7) and Tasmania (Year 9).

Such results — and particularly the flat-lining of Indigenous outcomes at the secondary school level — do not auger well for maintaining the rate of recent progress in closing the gap in Year 12 or equivalent attainment. Indeed, taken at face value, they suggest that despite 'over-performance' in the initial gap reduction period (see earlier), halving the attainment gap by 2020 is far from guaranteed. To the extent that the attainment measure is reflecting attendance in Year 12 rather than successful completion, lack of recent progress on key preconditions for completion would not preclude further reductions in the attainment gap. However, such a reduction would likely deliver fewer benefits than further gap reductions driven by greater rates of successful Year 12 completion by Aboriginal and Torres Strait Islander students.

## 6.3 Should future reporting on this target be enhanced?

The preceding discussion is not to deny the broad-based benefits that will have ensued from the significant recent improvement in Indigenous Year 12 or equivalent attainment (and the consequent sizeable reduction in the attainment gap). Though some of that improvement may reflect greater attendance rates rather than more successful completions, the proportion of Aboriginal and Torres Strait Islander students achieving an ATAR ranking is growing (albeit from a low base); and significantly more young Aboriginal and Torres Strait Islanders are gaining vocational qualifications (see SCRGSP 2015, table 5A.84). It also seems likely that were (comparative) Year 12 certification data available, potentially significant improvements would be evident there as well.

Nonetheless, the lack of a certification sub-indicator reduces the usefulness of the higher level gap indicator in tracking progress on reducing the collective disadvantage experienced by Aboriginal and Torres Strait Islander students in their end of school outcomes. From this perspective, there is a strong case for action to overcome the difficulties that have so far precluded the development of a certification measure. In fact, the Commission understands that the Australian Curriculum, Assessment and Reporting Authority has already undertaken relevant work on this matter.[52]

[52] The sort of comparative ATAR rate data provided in the OID reports, and discussed above in the text, might usefully complement a certification indicator. But the currently very low proportion of Indigenous Year 12 students who attain an ATAR means that such a sub-indicator would not by itself be sufficient to overcome the shortcoming in the current Year 12 or equivalent attainment measure. Indeed, it is quite likely that this very low proportion will continue to grow strongly, irrespective of what is happening to the rate of successful Indigenous Year 12 completions more broadly.

# Statistical attachment

Table 6.1 **State of play on Year 12 or equivalent attainment[a]**

Per cent of people aged 20-24

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *ACT* | *NT* | *Aust* |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | | | | | | | | | |
| Indigenous | 43.1 | 57.6 | 52.9 | 43.0 | 53.6 | 55.6 | 56.6 | 23.6 | 45.4 |
| Non-Indigenous | 84.1 | 88.7 | 85.9 | 81.4 | 82.0 | 72.0 | 90.8 | 69.6 | 85.0 |
| Percentage point gap | 41.0 | 31.1 | 33.0 | 38.4 | 28.4 | 16.4 | 34.2 | 46.0 | 39.6 |
| 2012-13 | | | | | | | | | |
| Indigenous | 57.3 | 73.0 | 65.4 | 48.3 | 68.2 | 63.8 | 87.2 | 36.0 | 58.5 |
| Non-Indigenous | 88.7 | 87.9 | 86.3 | 81.7 | 81.6 | 71.5 | 95.3 | 76.3 | 86.5 |
| Percentage point gap | 31.4 | 14.9 | 20.9 | 33.4 | 13.4 | 7.7 | 8.1 | 40.3 | 28.0 |
| Change in percentage point gap 2008 to 2012-13[b] | -9.6 | -16.2 | -12.1 | -5.0 | -15.0 | -8.7 | -26.1 | -5.7 | -11.6 |

**a** The Indigenous outcomes for 2012-13 are based on a more comprehensive suite of survey data than was available to the CRC (2014) when it compiled its final performance assessment report — see chapter 1. However, as indicated in chapter 1, the consequent revisions in the Indigenous outcomes are relatively minor. **b** While consistent with the statistically significant reduction in the national level gap, because of sizeable sampling errors, most of the reductions in the jurisdictional gaps are not statistically significant at the same (95 per cent) confidence level.

*Sources*: SCRGSP (2009a, table NIRA 18.2); SCRGSP (2014e, table NIRA 12.1).

Figure 6.2 **Indigenous Year 12 attainment: 2008 and 2012–2013**

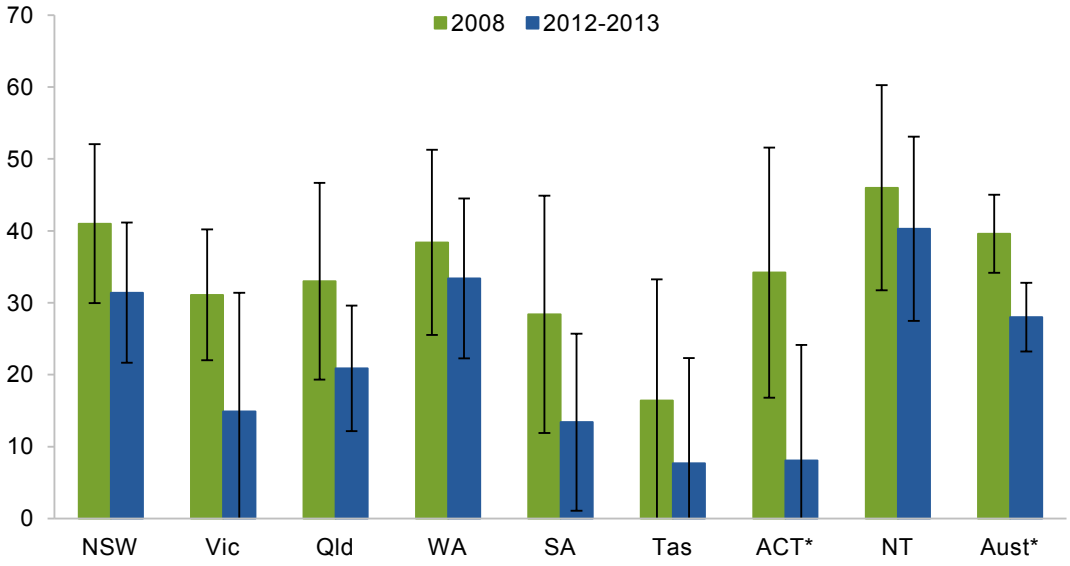
Per cent


*Asterisk denotes a significant change in year 12 attainment from 2008 to 2012-2013.

*Data sources*: SCRGSP (2009a, table NIRA 18.1); SCRGSP (2014e, table NIRA 12.1).

Figure 6.3 **Non-Indigenous to Indigenous gap in Year 12 attainment: 2008 and 2012–2013**

Percentage points difference




*Asterisk denotes a significant change in year 12 attainment gap from 2008 to 2012-2013.

*Data sources*: SCRGSP (2014a, table 4A.5.1); SCRGSP (2014e, table NIRA 12.1).

## Summary of key findings

# EMPLOYMENT OUTCOMES

Neither Australia or individual jurisdictions are on track to meet the COAG target by 2018

Between 2008 and 2012-13, the gap widened for employment, unemployment and labour force participation but improved modestly for post-school qualification rate

Negative impacts of demand influences could mean closing the employment gap is unachievable

# 7 Employment outcomes

## Key points

- Having a job can substantially improve a person's economic and social wellbeing. As part of its drive to address Indigenous disadvantage, COAG is seeking to halve the gap in employment outcomes over the period 2008 to 2018.
  - It has endorsed four high level measures of the gap in employment outcomes — the employment to population ratio, the labour force participation rate, the unemployment rate, and a 'post-school qualifications' rate.
- Based on outcomes between 2008 and 2012-13, neither Australia nor individual jurisdictions are on track to meet the targeted gap reductions for these four measures by 2018. Indeed, the Australia-wide gaps for the first three measures widened and the modest reduction in the gap in the post-school qualification rate was not statistically significant.
- However, in several ways, these employment gap measures have limitations in painting a high level picture of the Indigenous employment landscape and how it has changed.
  - Several measurement issues — including the change to the labour force status of participants in Community Development Employment Projects — have influenced the magnitudes of recent changes to outcomes gaps; though in no case would 'compensating' adjustments turn a bad news story into a good news one.
  - In assessing disadvantage in employment outcomes, it is not just disparities in employment levels that matter. Differences in rates of remuneration are also relevant. A recent estimate suggests that, in 2011, wage rates for Indigenous males and females were on average 18 per cent and 13 per cent lower than for their non-Indigenous counterparts, respectively.
- Also, the effectiveness of efforts to improve peoples' job readiness and skills — a key focus of the Indigenous reform agenda — can be reinforced or hindered by features of, or changes in, the demand for labour. Hence, even in a picture painting exercise, as distinct from a more formal 'causality' analysis, some appreciation of what has been happening on the demand side is important.
  - Aboriginal and Torres Strait Islander Australians have a greater propensity than non-Indigenous Australians to live in more remote areas where the number and range of employment opportunities are often limited.
  - Changes to the composition of labour demand — and especially generally increasing skill requirements across the jobs market — have most likely contributed to the recent deterioration in Indigenous employment outcomes.
  - And Aboriginal and Torres Strait Islander Australians have almost certainly been more adversely affected by recent cyclical softness in the labour market.
- The negative impacts of such demand factors — in many senses, a reflection of the employment disadvantage that the Closing the Gap initiative is seeking to address — may well render COAG's 2018 employment gap closure targets unachievable.

In various ways, having a job improves a person's wellbeing. It typically increases their income and therefore standard of living, with flow on benefits for health and the education of children (Gray et al. 2014). Employment also enhances self-esteem, increases opportunities for self-development, improves cohesiveness within families and communities and reduces social alienation. With these benefits in mind, COAG is seeking to halve the gap in employment outcomes between Indigenous and non-Indigenous Australians over the period 2008 to 2018.

More specifically, the National Indigenous Reform Agreement (NIRA), encapsulates four high level measures of the gap in employment outcomes[53]:

- the employment to population ratio for the working age (15-64) population
- the labour force participation rate (the proportion of people aged 15 to 64 who are in the labour force)
- the unemployment rate (the proportion of people aged 15 to 64 who are in the labour force who are actively looking for employment)
- the proportion of 20-64 year olds with, or working towards, a post-school qualification of Australian Qualification Framework Certificate III level or above.

(Though not a direct employment outcomes measure, as the Overcoming Indigenous Disadvantage report (OID, SCRGSP 2014a, p. 7.18) points out, a post-school qualification provides for a generally smoother transition from study to work, as well as the basis for often higher earnings.)

The wellbeing benefits that would stem from a halving of the gaps in these target areas would undoubtedly be significant and would build on the benefits ensuing from improvements in employment outcomes for Aboriginal and Torres Strait Islander Australians in the period prior to 2008.

However, like the gap indicators for the other COAG targets, this suite of indicators requires careful interpretation that recognises their limitations in providing an overview of progress in reducing disparities in employment outcomes.

## 7.1 Starting gaps and progress to date

Reflecting profound and longstanding disadvantage in Indigenous employment outcomes, the starting — 2008 — national-level gaps for the four employment-related measures were sizeable:

- the employment to population ratio was 53.8 per cent — 21.2 percentage points lower than the rate for non-Indigenous Australians

[53] The first three indicators (employment to population ratio, labour force participation and unemployment rate) were identified following a review in 2011 as supporting measures for the primary performance indicator *Level of workforce participation* (PI 14).

- the labour force participation rate was 64.5 per cent — 13.8 percentage points lower than the non-Indigenous rate
- the unemployment rate was 16.6 per cent — 12.4 percentage points higher than the non-Indigenous rate
- the post-school qualification rate was 34 per cent — 23.9 percentage points lower than the non-Indigenous rate (statistical attachment, table 7.1).

To meet COAG's gap reductions targets, the required Australia-wide reduction in these gaps by 2018 will therefore be 10.6, 6.9, 6.2 and 12 percentage points, respectively.

At the jurisdictional level, the starting gaps varied widely:

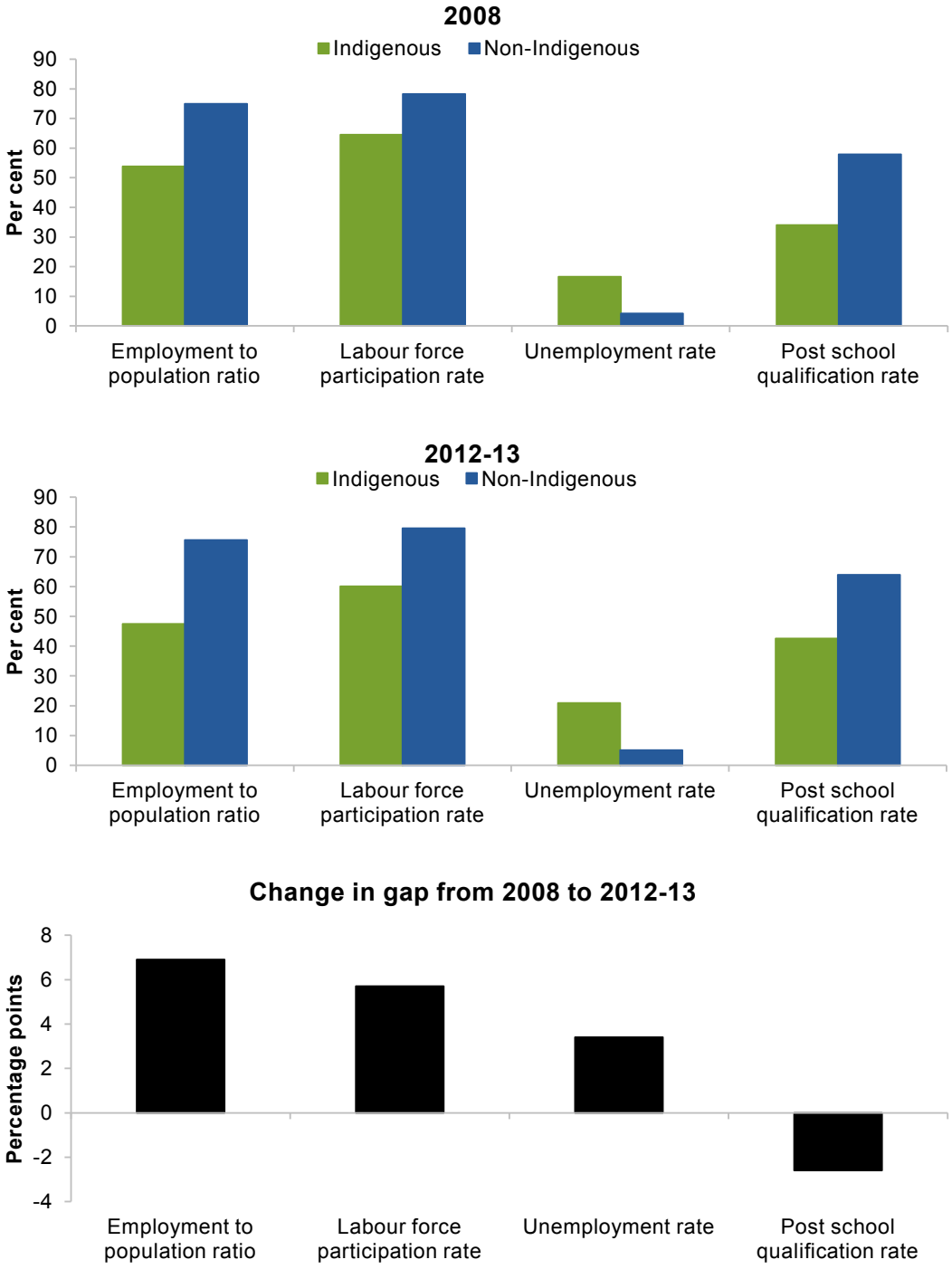
- the employment to population ratio gap ranged from 9.3 percentage points in the ACT to 34.2 percentage points in the Northern Territory
- the labour force participation rate gap varied from 3.6 percentage points in the ACT to 25.8 percentage points in the Northern Territory
- the unemployment rate gap varied from 7.1 percentage points in Tasmania to 16.2 percentage points in New South Wales
- the post-school qualification rate gap varied from 9.7 percentage points in Victoria to 35.3 percentage points in the Northern Territory.

As it has transpired, in the first half of the performance period, three of the four targeted gaps widened rather than narrowed. Between 2008 and 2012-13:

- the national-level gaps in the employment to population ratio, the labour force participation rate and the unemployment rate increased by 6.9, 5.7 and 3.4 percentage points, respectively
- these widening gaps were driven by marked declines in the Indigenous employment to population ratio and labour force participation rate and an increase in the Indigenous unemployment rate (figure 7.1 and statistical attachment, table 7.1).

Consistent with these national level outcomes, there was an almost universal deterioration in the corresponding outcomes at the jurisdictional level over the period. In all jurisdictions, the Indigenous employment to population ratio and labour force participation rate declined and the gaps with non-Indigenous outcomes widened; though because of sampling error, many of these changes were not significant at the 95 per cent confidence level. Likewise, the Indigenous unemployment rate and the unemployment gap increased in all jurisdictions bar the ACT (though again many of the increases were not statistically significant). And the apparent improvement in Indigenous unemployment outcomes in the ACT was not statistically significant at the 95 per cent confidence interval.

Figure 7.1 **State of play on employment-related outcomes[a,b]**




[a] The Indigenous data for 2012-13 are an updated version of the 2012-13 data used by the CRC (2014) in its final performance assessment report. The basis for these revisions is detailed in chapter 1. However, as that explanation indicates, the revisions are relatively minor. [b] The gap change for the post school qualification rate is not statistically significant (at the 95 per cent confidence level).

*Data sources*: SCRGSP (2009a, table NIRA 18.2); SCRGSP (2014e, table NIRA 12.1).

Aspects of the post-school qualification outcomes story over the period 2008 and 2012-13 were less bleak. In particular, there was a welcome increase of 8.6 percentage points in the overall proportion of Aboriginal and Torres Strait Islander Australians having, or working towards, a post-school qualification of Certificate level III or above — with this national level increase underpinned by substantial increases in some individual jurisdictions.

However, the corresponding proportion for non-Indigenous Australians also rose markedly. In consequence, the apparent minor reduction in the outcomes gap for this measure at the national level (figure 7.1) was not statistically significant. Indeed, New South Wales and South Australia were the only jurisdictions where a statistically significant gap reduction was evident over the period.

In the light of these outcomes, it is hard to disagree with the conclusion in the COAG Reform Council's final (CRC 2014) performance report that Australia is not on track to meet COAG's employment target. In reaching this same conclusion, the Commission acknowledges the element of 'back loading' in some jurisdictions' employment outcomes trajectories, and the implication that progress is anticipated to be faster in the second half of the performance improvement decade than in the first half. Because initiatives to improve Indigenous employment outcomes will often take time to bear fruit, non-linearity in the performance improvement trajectory is not unreasonable. But given what has transpired in the first half of the decade, meeting the employment target by 2018 would require a remarkable turnaround.

That said, the employment gap measures have limitations in painting a high level picture of the Indigenous employment landscape and how it has been changing.

- For most of them, measurement issues influence the size of the apparent outcomes gaps.
- There is no consideration of remuneration disparities — another important aspect of the Indigenous employment disadvantage story.

Also, employment outcomes will always depend on the overall strength and composition of labour demand, not just on the number and skills of people able and wishing to work. Hence, the effectiveness of efforts to improve peoples' job readiness and skills — a key focus of the Indigenous reform agenda — can be helped or hindered by cyclical and structural changes in the demand for labour. This in turn suggests that, even as part of a picture painting exercise, as distinct from a more formal 'causality' analysis, some appreciation of what has been happening on the demand side is important.

And related to the previous point, it is likewise important to put employment outcomes over the past five years into a longer term context. Because of the influence of the business cycle, viewing changes in employment outcomes over relatively short periods may provide a misleading impression of the underlying degree of progress made.

These matters are explored in the remainder of this chapter.

## 7.2 Do the measured gaps accurately reflect employment disparities?

As indicated above, several measurement issues impact on the gaps shown in figure 7.1 and, more particularly, on the changes in those gaps between 2008 and 2012-13.

However, it is important to emphasise at the outset that the collective impact is almost certainly modest in an overall sense. As such, re-calibrating the gaps to address these measurement issues would not turn a bad news story into a good news one.

### Implications of changes to CDEP

The implications of changes to the workforce status of participants in CDEP (box 7.1) for measured Indigenous employment outcomes have been canvassed by various parties, including the Steering Committee for the Review of Government Service Provision (SCRGSP 2014a, p 4.44), the CRC (2014, chapter 6), the Australian Government (2015), and the Australian Health Ministers Advisory Council (2015).

Box 7.1 **Community Development Employment Projects (CDEP)**

The original aim of CDEP, which was introduced in 1977, was to offer local employment in remote Indigenous communities where job opportunities were otherwise lacking. Though embodying a 'work for the dole' component, it was also a means to support the provision in remote areas of the sorts of municipal, health, education and community services that in other circumstances would have been provided by paid employees.

Having subsequently been extended to non-remote areas, a restructuring of the program in July 2009 saw it return to its original remote area focus; though some non-remote providers continued to operate. And in July 2013, remote area CDEP was rolled into the Australian Government's Remote Jobs and Communities Program (RJCP).

As part of the changes made in July 2009, the labour force status of CDEP participants was also altered. Until then, participants received 'wages' and, as a result, were treated by the Australian Bureau of Statistics (ABS) as employed. However, participants engaged after July 2009 have received income support payments — now provided as part of the RJCP — and are regarded for statistical purposes as unemployed. The upshot is that activity regarded as Indigenous employment in 2008 will only be regarded so now if it is performed by someone engaged prior to July 2009. As elaborated on in the text, participant turnover in the program will therefore have led to a reduction in measured Indigenous employment, even without any reductions in the level of program activity — including on 'employment-like' activities.

*Source*: Adapted from SCRGSP (2014a, box 4.6.3).

## Box 7.2 The effects of changes to CDEP on measured employment gaps

The estimated impact of the 2009 change to the workforce status of CDEP participants on measured Indigenous employment outcomes over the period 2008 to 2012-13 depends on the assumptions made about what happened to 'lost' CDEP jobs.

In 2012-13, 4.1 per cent of employed Aboriginal and Torres Strait Islander Australians were CDEP 'wage earners' compared to 10.5 per cent in 2008 (SCRGSP 2014a, table 4A.6.3). This translates into a loss of around 10 000 positions.

To maximise the effects on the employment to population ratio and the unemployment rate, assume that none of these 'lost' 10 000 jobs were transformed into conventional jobs that continued to be counted in the employment data; or reflected discontinuation of the activities concerned. In other words, the change in the statistical treatment of CDEP participants simply saw the occupants of 10 000 CDEP positions reclassified from employed to unemployed. Making a numerically equivalent adjustment to the 2012-13 employment and unemployment numbers to restore 'parity' with the workforce classification of CDEP participants in 2008, would:

- increase the 2012-13 Indigenous employment to population ratio by 2.6 percentage points (from 47.5 per cent to 50.1 per cent); and reduce the magnitude of the gap increase since 2008 from 6.9 percentage points to 4.3 percentage points
- reduce the 2012-13 Indigenous unemployment rate by 4.3 percentage points (from 20.9 per cent to 16.6 per cent); thereby turning an increase in the gap since 2008 of 3.4 percentage points, into a reduction of 0.9 percentage points.

Notably, the Commission's estimated impacts of the CDEP classification change are somewhat smaller than an estimate reported by the Australian Government (2015).

- The 2.6 percentage point effect on the Indigenous employment to population ratio estimated by the Commission accounts for 41 per cent of the 6.3 percentage point decline in that ratio between 2008 and 2012-13.
- This compares to the Australian Government's estimate of a 60 per cent contribution.

The main reason for this difference is that the Australian Government's (2014a) methodology makes no assumptions about what would have happened if the CDEP policy change had not occurred but simply reports what actually happened to the employment to population ratio. As such, the observed fall of 3.7 percentage points in the CDEP employment to population ratio represented 60 cent of the 6.3 percentage point observed fall in the overall Indigenous employment to population ratio.

However, whatever the magnitude of the maximum effect, it is important to recognise that changing the assumptions about what happened to the 'lost' CDEP jobs could lead to significantly lower estimated effects from the classification change. For example:

- An assumption that 25 per cent of the 'lost' jobs were transformed into conventional jobs captured in the 2012-13 employment data would reduce the estimated effects of the classification change on both the employment and unemployment gaps by the same percentage.
- And assuming that another 25 per cent of the lost 'jobs' reflected discontinuation of the activities concerned, rather than reclassification, would reduce the employment gap effect by a further 25 per cent (though it would have no implications for the unemployment gap).

In sum, while the 2009 change to the labour force status of those in CDEP positions has affected the employment gap numbers, it does not alter the overall message that between 2008 and 2012-13 the disparity between Indigenous and non-Indigenous employment outcomes worsened rather than improved.

Either explicitly or implicitly, all have recognised that the change in July 2009 to classify new participants in CDEP as on income support and therefore unemployed, rather than on 'wages' and therefore employed as was previously the case, will have exacerbated the widening measured gaps in employment outcomes for Aboriginal and Torres Strait Islander Australians since 2008.[54] And some have noted that this effect will be particularly relevant in jurisdictions that have had larger numbers of CDEP participants, such as Western Australia and the Northern Territory. However, as detailed in box 7.2 only the Australian Government has sought to put an order of magnitude on the effect.

As the box explains, this magnitude will depend on assumptions made about such things as:

- the extent to which services delivered through CDEP in 2008 were delivered in 2012-13 through standard employment arrangements, such that the jobs involved continued to be included in the employment numbers
- of the remaining 'lost' positions, the number that were discontinued as opposed to reclassified.

But even under assumptions designed to maximise the impacts of the changes to the labour force status of CDEP participants on the employment and unemployment gaps, the recalibrations would not alter the high level conclusion that employment outcomes for Aboriginal and Torres Strait Islander Australians have gone backwards rather than forwards since 2008. For instance, the Commission estimates that the maximum reduction in the 2012-13 Indigenous employment to population ratio consequent upon the CDEP classification change would have been 2.6 percentage points. And though attributing a somewhat larger part of the deterioration in that ratio to the classification change (box 7.2), the Prime Minister's most recent Closing the Gap report nonetheless concluded that:

> It is clear that since 2008, no progress has been made against the target to halve the gap in employment outcomes within a decade (by 2018). (Australian Government 2015, p. 18)

Or put another way, while the change to the labour force status of CDEP participants has made some of the employment gap reduction targets set by COAG harder to achieve, absent a very significant turnaround in Indigenous employment outcomes in the period to 2018, the issue will be of little consequence for the final assessments of performance in this area.

## Greater Indigenous participation in education and training

Another factor that needs to be considered when interpreting the data on Indigenous employment and labour force participation is the increased propensity of Aboriginal and Torres Strait Islander Australians to participate in education and training. Though this may reduce employment and labour force participation in the short term, as the COAG reform agenda recognises, greater involvement in education and training is central to improving

[54] Some previous CDEP participants would have moved into non-CDEP employment and would therefore not be classified as being unemployed. Similarly, previous CDEP participants who are not employed or looking for work would not be classified as being unemployed.

Indigenous employment outcomes over the longer term. Likewise, Gray, Hunter and Lohoar argue that:

> In the longer term, increasing educational attainment is likely to be one of the most important ways in which the difference in employment rates of Indigenous and non-Indigenous Australians can be narrowed. (2012, p. 20)

In the light of this relationship, the question arises as to whether a part of the widening gap in the employment to population ratio and the labour force participation rate between 2008 and 2012-13 might not have been deleterious; but rather could have been a statistical byproduct of positive developments in Indigenous education and training. In this regard, the most recent OID report (SCRGSP 2014a, p. 4.45) notes that, in recent years, there has been both a large decline in the employment to population ratio and the labour force participation rate for Indigenous males aged 15-17, and a substantial increase in the proportion of Indigenous 15- 17 year olds attending secondary school.

Because the 15-17 age cohort is quite small relative to the entire working age (15-64) population, the effect of greater participation in education and training by those in this particular cohort on the overall employment to population ratio could never be quantitatively large. Hence, the Commission estimates that, at most, it would have accounted for little more than 1 percentage point of the decline in the Indigenous employment to population ratio and the increase in the employment gap over the period 2008 to 2012-13.

Nonetheless, there is most probably a good news education and training story in the 15-17 age cohort (and perhaps others) that is hidden within COAG's high level employment outcomes measures. And the more general message about the need to be mindful of links between education and training outcomes and employment outcomes is an important one.

## Greater Indigenous identification

While the measurement issues related to CDEP and participation in education and training are likely to have exacerbated the apparent deterioration in Aboriginal and Torres Strait Islander employment outcomes between 2008 and 2012-13, it is conceivable that the increasing propensity of people to identify (or be identified) as Indigenous worked in the opposite direction. That is, if the employment outcomes of those newly identified as Indigenous are more in keeping with the generally better employment outcomes enjoyed by non-Indigenous Australians, then greater Indigenous identification could reduce overall employment gaps.

The Commission stresses that it has no hard evidence on the existence and magnitude of such a difference in employment outcomes. It has merely sought to identify how big identification-related effects could potentially be. Importantly, even under assumptions designed to generate maximum effects, the 'identification' driven increase in the Indigenous

employment to population ratio over the period 2008 to 2012-13 would have been small — at most of the order of 1 percentage point.

## 7.3 Missing elements from the employment picture

When painting a picture of workforce outcomes for both Indigenous and non-Indigenous Australians, discouragement effects, involvement in productive activities not captured by standard employment measures, and disguised underemployment are potentially relevant considerations. And to the extent that their incidence varies across the Indigenous and non-Indigenous populations, the gaps in 'true' employment outcomes may be greater or smaller than those depicted in figure 7.1.

But for the reasons set out in box 7.3, even were data available to allow for any such differences in incidence to be quantified, it seems highly unlikely that the effects would be statistically material in a Closing the Gap context. In other words, at least as far as reporting on changes in gaps in employment outcomes are concerned, these do not appear to be particularly fruitful areas for investment of greater investigative effort.

In contrast, the lack of consideration in the current reporting framework of disparities in levels of remuneration across the Indigenous and non-Indigenous populations is a potentially more significant omission.

### Remuneration levels

As noted at the outset of the chapter, having a job can give rise to a variety of social and personal esteem benefits. However, the economic benefit derived by a person from participation in paid employment depends, in large part, on the level of remuneration.

As explained in Howlett, Gray and Hunter (2015), until very recently, the available data has not enabled an explicit comparison of employment-related remuneration for Indigenous and non-Indigenous Australians.

But consequent on sampling changes in the 2011 wave of the Household Income and Labour Dynamics in Australia (HILDA) survey, some such comparisons are now possible.[55] Specifically, a top-up sample increased the number of Indigenous respondents by an amount sufficient to allow for high level comparisons of wage rates and earnings across the Indigenous and non-Indigenous populations, except in remote areas.

[55] Howlett, Gray and Hunter (2015, p. 2) note that although the HILDA sample size is large enough to allow a broad analysis of the Indigenous population, the ability to use the HILDA data to look at subgroups (e.g. by location, education and occupation) is limited. Accordingly, no account has been taken of the impact of industry or occupation on the wage disparities reported here.

## Box 7.3 Some cautions about numerical employment measures

### Discouraged jobseeker effects and unmeasured productive activity

As various commentators (for example, Savvas, Boulton and Jepsen 2011) have pointed out, 'discouraged jobseeker' effects can complicate interpretation of employment-related data. Those who believe that their skills and qualifications are unsuited to any jobs available in their area (or that the costs of job search are too high) may cease to actively look for work and, as a result, be excluded from the labour force in the statistical collections. Other things being equal, the upshot is that the true level of unemployment — and particularly long term unemployment — is likely to be underestimated. A somewhat different caution is that some people who are not formally employed or actively seeking paid employment — and who are therefore treated in the statistics as outside the labour force — are nonetheless engaged in productive activities.

These cautions may well be relevant to differences in measured employment outcomes for Indigenous and non-Indigenous Australians. For example, lower Indigenous participation rates in remote areas might partly reflect:

- discouragement effects due to the limited numbers of suitable jobs in some of these areas (see section 7.4)
- the fact that some Aboriginal and Torres Strait Islander Australians in these areas are engaged in activities such as the production of art which may generate income, but which are not always regarded as employment (SCRGSP 2014a, p. 4.43).

That said, the importance of these considerations for this gap reporting exercise is unclear. To be relevant in this context, the relative degree of discouragement across the Indigenous and non-Indigenous populations — or the relative size of the cohorts involved in unmeasured productive activity — would need to have changed in a material way over the period 2008 to 2012-13. Available evidence indicates the proportion of Indigenous Australians not in the labour force increased between 2008 and 2012-13 (from 35.5 to 39.9 per cent) while there was no significant change in the non-Indigenous proportion. This could indicate that cyclical softness in the labour market since 2008 (see section 7.4) may have been somewhat more pronounced in the Indigenous population but the influence of other factors cannot be discounted.

### Disguised underemployment

In recent decades, part time work has become a more important feature of the Australian working environment (and that in many other countries). For many workers, the growth in part time work opportunities has been welcome — for example, for those with parenting or caring responsibilities or seeking to transition to retirement. But for others, it has raised the spectre of underemployment — that is, working fewer hours than they would prefer.

The full time to part time ratio has traditionally been lower for Indigenous Australians than their non-Indigenous counterparts, leading the OID report (SCRGSP 2014a, p. 4.43) to caution that the degree of disguised underemployment in the Aboriginal and Torres Strait Islander population could be correspondingly higher. Yet as that report (p. 9.6) also adds, the Indigenous full time to part time ratio increased substantially between 2002 and 2012-13, driving a marked decline in the corresponding Indigenous–non-Indigenous gap.

However, the lion's share of the increase in the Indigenous full time to part time employment ratio occurred prior to 2008. Hence, possible reductions in levels of disguised Indigenous underemployment are highly unlikely to have been a material qualification to the pronounced deterioration in overall Indigenous employment outcomes between 2008 and 2012-13.

Using this data, Howlett, Gray and Hunter found that in 2011:

- average hourly wage rates were consistently lower for Aboriginal and Torres Strait Islander Australians. For men, the average gap was 18 per cent and for women 13 per cent[56]
- for Indigenous men, the gap was broadly the same for those in full and part time employment. In contrast, for women, the gap was minimal (4 per cent) for those in full time employment, but much larger (22 per cent) for those in part time employment.[57] (Howlett, Gray and Hunter suggest that a possible explanation for this is that because women are generally more likely to work part time than men, there is a larger proportion of higher income non-Indigenous women working part time.)

As Howlett, Gray and Hunter (p. 6) observe, 'given the well-known disparities in level of education and other human capital between Indigenous and non-Indigenous people, [the] difference in wage rate at the aggregate level is not surprising'. Even so, lower average wage rates sit alongside other aspects of Indigenous disadvantage in the employment area, including a greater likelihood of being unemployed and more difficult and lengthy transitions back into employment.[58]

## 7.4 Some demand-side context

While the assessments in this report indicate the degree of progress made in reducing disparities in key outcome areas targeted by COAG, the report is not intended to be a vehicle for providing a detailed analysis of why outcomes gaps may have narrowed or widened. Nor is it a vehicle for evaluating the role played by specific programs and policies. The latter is a separate and very important task (chapter 8).

Nonetheless, against the backdrop of a reform agenda that seeks to improve Indigenous employment prospects primarily through investment in education and training and other supply-side initiatives, some commentary on how demand-side factors may have operated to reinforce or frustrate those supply-side initiatives seems important. Of particular interest is whether, even with generally effective supply-side policies, certain demand factors could still see employment outcomes deteriorate, especially over shorter time frames.

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56 In terms of actual wage disparities, employed Indigenous males had an hourly wage rate of $23.30 compared to $28.30 for non-Indigenous males while employed Indigenous females had an hourly wage of $22.60 compared to $26.10 for non-Indigenous females.

57 Hourly wages of full-time employed Indigenous and non-Indigenous females were $25.30 and $26.30 respectively, while for Indigenous and non-Indigenous females working part-time the comparative wage levels were $20.00 and $25.80 respectively.

58 To get a quantitative handle on these interactions, Howlett, Gray and Hunter (2015, pp. 7-8) also look at disparities in average annual income from employment.

## Geographic influences

The geographic demand dimension to Indigenous employment disadvantage has long been recognised. Just as remoteness increases the challenge of providing high quality health, education and other services, so too can it diminish the number and range of available employment opportunities.

For working age non-Indigenous Australians living in remote areas, employment rates have, somewhat counterintuitively, tended to be higher than in the major population centres. One possible explanation is that for many non-Indigenous Australians, living in a remote area is contingent on them accessing specific job opportunities.[59]

However, for Aboriginal and Torres Strait Islander Australians, living in remote areas can be very important from a cultural perspective. In this regard, the ABS reported that:

> Indigenous people living in Remote Areas are more likely to report higher levels of attachment to their culture as measured by their language spoken, participation in cultural events and identification with clan, tribe or language group. (2010b, p. 2)

Together with the often limited number and range of job opportunities in more remote areas, the result has been that Indigenous employment outcomes have tended to deteriorate as remoteness increases.

Though delineations of the employment data for different regions are subject to significant sampling errors, such a delineation for 2012-13 (figure 7.2) is nonetheless consistent with the preceding observations.

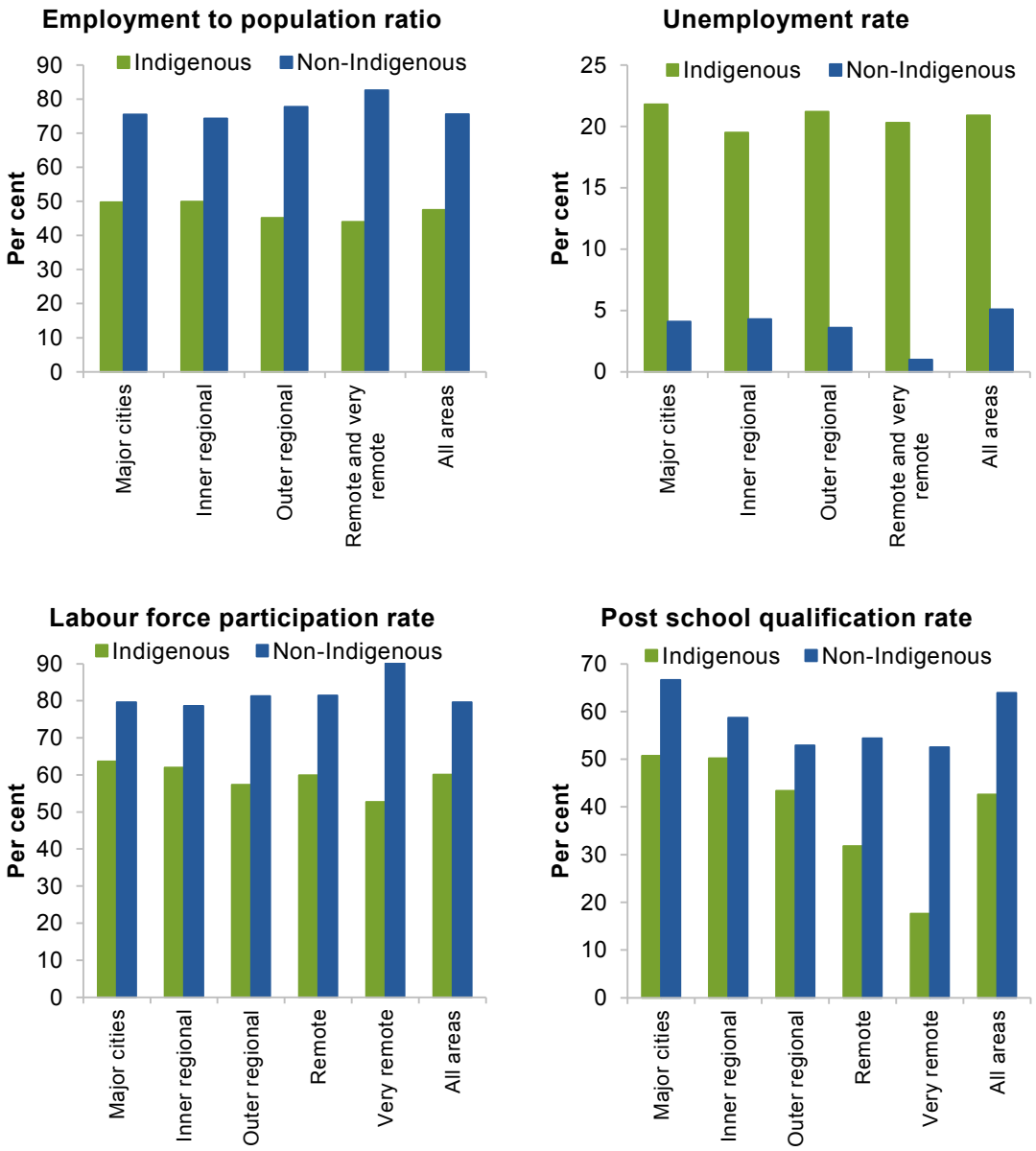
- The Indigenous employment to population ratio and labour force participation rate were lower in outer regional and remote areas than in major cities and inner regional areas. For non-Indigenous Australians, the relationship was reversed.
- While Indigenous unemployment rates were slightly lower in more remote areas (possibly in part because of discouragement effects and greater engagement in unmeasured productive activity), non-Indigenous unemployment rates declined much more markedly as remoteness increased.

In combination, these outcomes led to a widening in gaps for the three employment outcomes measures as remoteness increased. For example, the gap in the employment to population ratio in remote and very remote areas was more than 38 percentage points, compared to 28 percentage points across the populations as a whole. The unemployment rate gap in remote and very remote areas was more than 3 percentage points higher than the overall gap. And in the case of labour force participation, the gap in very remote areas

[59] As such, non-Indigenous Australians generally move to more remote locations specifically for employment and/or will only stay in remote areas if they have ongoing employment opportunities.

of more than 37 percentage points was double the overall gap (statistical attachment, table 7.2).[60]

Figure 7.2 **Employment outcomes: 2012-13, by remoteness[a,b]**




**a** The data underlying many of the outcomes depicted in the figure are subject to sizeable sampling errors.
**b** Note that the figures use a different scale on the vertical axis.

*Data source*: SCRGSP (2014e, NIRA tables 14.5-14.7; 15.2).

60 Data in the OID report (SCRGSP 2014a, tables 4A.6.2, 4A.6.7 and 4A.6.13) enable estimation of geographically differentiated changes in gaps between 2008 and 2012-13 for these measures (other than in very remote areas). However, these estimates do not (immediately) suggest any correlation between remoteness and changes in gaps over the period.

A lack of employment opportunities in more remote areas might likewise discourage investment in work-related training, compounding the additional challenges of delivering training in these areas. Notably, while the post-school qualification rate for both Indigenous and non-Indigenous Australians declines as remoteness increases, that decline is particularly pronounced for the Indigenous cohort (figure 7.2)[61]. Moreover, as the CRC (2014, p. 71) observed, although Indigenous post-school qualification rates increased significantly in most parts of Australia between 2008 and 2012-13, in very remote areas, they did not change significantly over this period.

Such outcomes highlight that employment disadvantage in more remote areas will not be solved simply by increasing the employability of those living there.

## Structural employment changes

As the structure of the economy evolves, the composition of employment will correspondingly change. Such structural changes in the demand for labour may well affect sub-groups within the community differently.

A detailed exploration of the differential effects of this sort of structural change on Indigenous and non-Indigenous Australians is beyond the scope of this assessment exercise. Indeed, separating the effects of structural changes from those attributable to shorter term fluctuations in the business cycle (see below) can be far from easy. Nonetheless, several longer trends in labour demand that are discussed in a recent Productivity Commission Staff Working Paper (Shomos, Turner and Will 2013) are relevant to this discussion.

- Employment growth over the past decade or so has favoured more highly skilled workers, and especially those equipped to take on managerial and professional roles. Despite generally improving skill levels, Aboriginal and Torres Strait Islander Australians remain significantly underrepresented in managerial and professional occupations. According to SCRGSP (2014a, p. 9.7), in 2011, around 20 per cent of employed Aboriginal and Torres Strait Islander Australians were in such occupations, compared to nearly 35 per cent of their non-Indigenous counterparts (though the gap has narrowed slightly since 2001).
- Growth has been slower for lower-skilled jobs in the machinery operator and driver and labouring occupational areas — areas of the employment market where Aboriginal and Torres Strait Islander Australians are overrepresented. In 2011, these two occupational areas collectively accounted for 28 per cent of Indigenous employment, compared to 16 per cent of non-Indigenous employment; with the difference in the percentages engaged

61 This difference may partly reflect the aforementioned migration of qualified non-Indigenous people to remote areas to take up job opportunities. To that extent, the experience of Aboriginal and Torres Strait Islander Australians will be a better marker of the negative impacts of remoteness on the incentives and opportunities to participate in work-related training.

in labouring being particularly pronounced (18 per cent and 9 per cent, respectively) (SCRGSP 2014a, table 9A.1.14).

- Public sector employment has been growing more slowly than private sector employment. Relatively more Aboriginal and Torres Strait Islander Australians work in the public sector — 23 per cent in 2011, compared to 16 per cent of their non-Indigenous counterparts (SCRGSP 2014a, p. 9.7).

If initiatives intended to close the gap in Indigenous health, education and training outcomes bear fruit, Aboriginal and Torres Strait Islander Australians should in future be less exposed to these sorts of structural changes in the labour market. Nevertheless, it seems highly likely that such changes will have increased the degree of performance improvement required to meet the employment-related Closing the Gap targets — and, more concretely, contributed to the increase in most of these gaps since 2008.

A further implication is that, in framing education and training policies — including those focussed on Aboriginal and Torres Strait Islander Australians — policy makers need to be aware of longer term trends in the composition of employment demand. Where learning and skills development is not attuned to these trends, its worth in advancing employment prospects is likely to be diminished.

## The effect of the business cycle

The starting point for the closing the gap initiative roughly coincided with the onset of the Global Financial Crisis (GFC). Since that time, demand across the labour market as a whole has generally been softer. Also, the commodity price boom contributed to a very significant appreciation in the value of the Australian dollar, with implications for employment growth across both industries and sectors, and across states and territories. Only relatively recently has the value of the currency fallen to levels more in keeping with historical norms.

As several commentators have recognised, like longer term structural changes in labour demand, cyclically softer demand since 2008 has most probably had a disproportionately negative effect on the Aboriginal and Torres Strait Islander workforce. For example, Biddle comments that:

> Although Australia wasn't affected anywhere near as much [by the GFC] as other countries, it may have been the case that certain segments of the labour market (such as Indigenous Australians) were more affected than others. (2012, p. 1)

More generally, Altman, Biddle and Hunter argue that:

> Low-skilled workers with little experience — a group that includes most Indigenous people — tend to be the last workers hired in a period of macroeconomic growth and the first workers shed in an economic downturn …

> The crucial point is that … relative Indigenous outcomes are likely to improve during sustained periods of economic growth, but all else being equal, relative outcomes tend to stagnate or worsen in recessionary periods of the cycle. (2008, pp. 2-3)

As noted earlier, such cyclical influences may also affect participation in education and training. That is, in cyclically weaker labour markets, incentives to participate in work-related training may be greater than at times of the business cycle when even those with low skills can find a job relatively easily.

Again, a detailed analysis of business cycle effects is beyond the focus of this high level assessment exercise. In raising the issue, the Commission's primary intention has simply been to acknowledge that the macroeconomic environment in the period since the Closing the Gap targets were implemented has not been particularly helpful in progressing towards the desired employment end points. That said, like the greater exposure of Indigenous employment to negative impacts from structural labour market changes, greater sensitivity of outcomes to business cycle effects can equally be viewed as a reflection of the employment disadvantage that the Closing the Gap initiative is seeking to address.

## 7.5 Recent changes in a longer term context

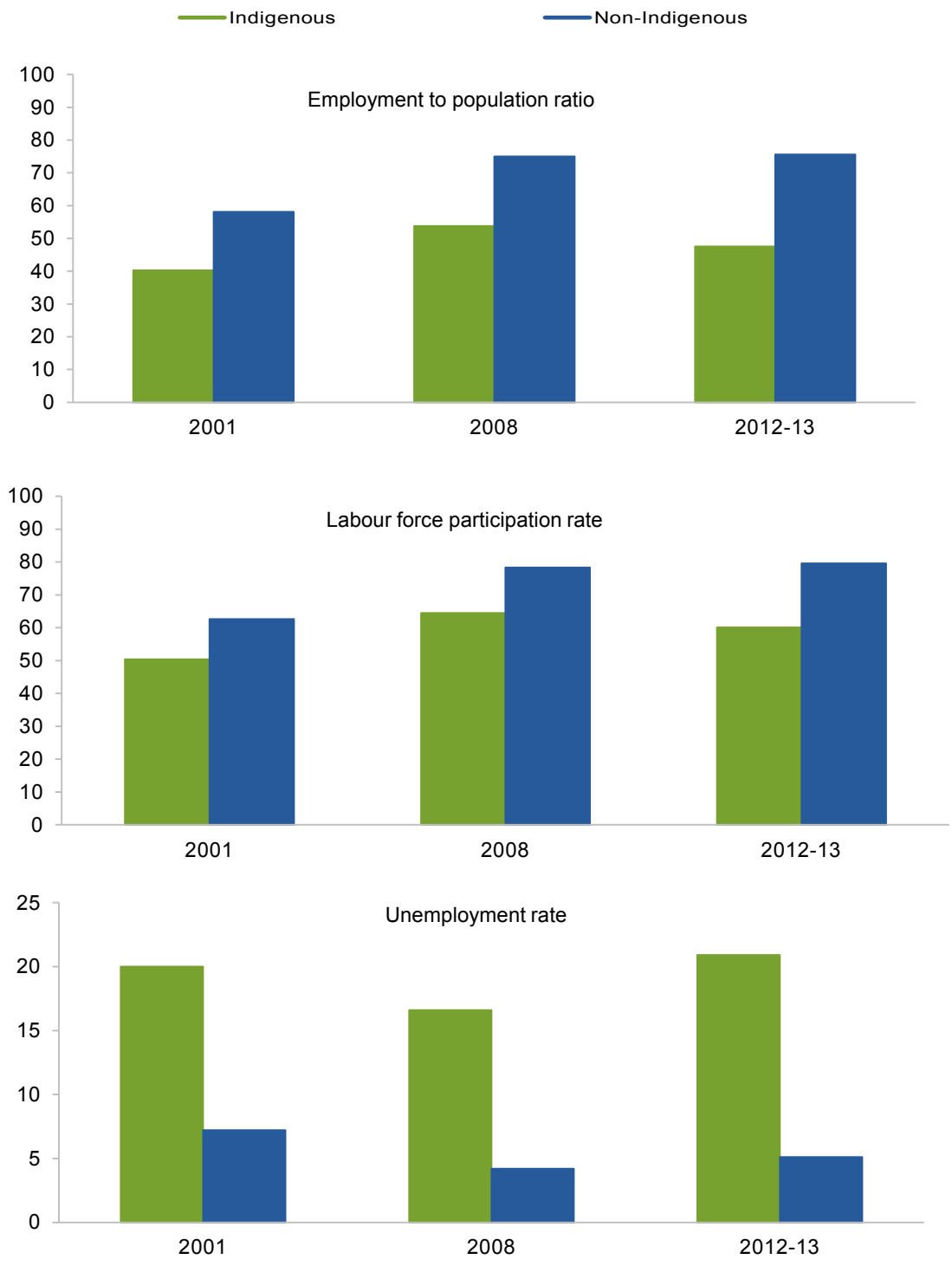
The cyclical dimension to disparities in Indigenous employment outcomes also suggests that the recent deterioration in those outcomes should be put into longer term context.

Such context reveals that, from an employment perspective, the period 2008 to 2012-13 was different in several respects from the period preceding it (figure 7.3 and statistical attachment, table 7.3).

- Between 2001 and 2008, the Indigenous employment to population ratio and labour force participation rate both grew strongly, building on smaller improvements since 1994.[62] (For example, the employment to population ratio which stood at just under 54 per cent in 2008, was less than 38 per cent in 1994 (SCRGSP 2014a, p. 44). Likewise, the Indigenous unemployment rate fell significantly over the 2001 to 2008 period.
- These outcomes were in stark contrast to the decline in the Indigenous employment to population ratio and labour force participation rate, and a worsening in the Indigenous unemployment rate, between 2008 and 2012-13.

[62] 2001 data are from the ABS Population Census and are not strictly comparable to the later year data which is sourced from survey data collections.

Figure 7.3 **A longer term perspective on employment outcomes**[a]
Per cent




**a** 2001 data are from the ABS Population Census and are not strictly comparable to the later year data which is sourced from survey data.

*Data sources*: Adapted from SCRGSP (2003, 2014a).

Because of even greater increases between 2001 and 2008 in the non-Indigenous employment to population ratio and the labour force participation rate, driven especially by greater workforce engagement of women, the gaps in Indigenous and non-Indigenous outcomes for these two measures in fact widened over that period. And the unemployment gap only narrowed marginally. However, for Aboriginal and Torres Strait Islander Australians, the outcomes in this period were still clearly better than those over the period between 2008 and 2012-13.

Equally, the reversals over this latter period were not of sufficient magnitude to eliminate the earlier gains. Hence, in 2012-13, both the Indigenous employment to population ratio and labour force participation rate remained well above the ratio/rates in 2001.

A longer term perspective will also be important in future assessments of Indigenous employment outcomes in the period to 2018. Even when growth picks up again, it may still be some time before there is a significant improvement in the employment prospects of relatively low skilled workers. Given that many of the initiatives intended to improve the skills of the Indigenous labour force are likely to take time to bear fruit, the state of the business cycle over the period 2008 to 2018 may, by itself, render COAG's employment-related gap targets unachievable. Yet those same initiatives may provide the platform for significantly improved employment outcomes over the longer term. Here again the implication is that assessment of performance against high level targets must be supplemented by more sophisticated analysis and, in particular, the evaluation of the effectiveness of specific policies designed to improve the employment prospects of Aboriginal and Torres Strait Islander Australians.

# Statistical attachment

## Table 7.1 State of play on employment-related outcomes

| | 2008 (%) | | 2012-13 (%) | | Percentage point gap 2008 | Percentage point gap 2012-13 | Change in gap |
|---|---|---|---|---|---|---|---|
| | Indigenous | Non-Indigenous[a] | Indigenous | Non-Indigenous | | | |
| Employment to population ratio | 53.8 | 75.0 | 47.5 | 75.6 | 21.2 | 28.1 | +6.9 |
| Labour force participation rate | 64.5 | 78.3 | 60.1 | 79.6 | 13.8 | 19.5 | +5.7 |
| Unemployment rate | 16.6 | 4.2 | 20.9 | 5.1 | 12.4 | 15.8 | +3.4 |
| Post-school qualification rate | 34.0 | 57.9 | 42.6 | 63.9 | 23.9 | 21.3 | -2.6 |

**a** Data for non-Indigenous employment outcomes differ slightly from those appearing in AHMAC (2012) due to different underlying sources being used. The data shown in this table are sourced from the ABS Survey of Education and Work (in line with the agreed methodology for NIRA reporting) while AHMAC (2012) data is based on the ABS National Health Survey.

*Sources*: SCRGSP (2009a, tables NIRA 21.1, 22.1, 23.1; 27.2); SCRGSP (2014e, tables NIRA 14.1, 14.3, 14.4 and 15.1).

## Table 7.2 Employment outcomes 2012-13: by remoteness

| | Employment to population ratio (%) | | Unemployment rate (%) | | Labour force participation rate (%) | | Post-school qualification rate (%) | |
|---|---|---|---|---|---|---|---|---|
| | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous |
| Major cities | 49.7 | 75.5 | 21.8 | 4.1 | 63.6 | 79.6 | 50.7 | 66.6 |
| Inner regional | 49.9 | 74.3 | 19.5 | 4.3 | 62.0 | 78.6 | 50.2 | 58.7 |
| Outer regional | 45.1 | 77.7 | 21.2 | 3.6 | 57.3 | 81.3 | 43.4 | 52.9 |
| Remote | 47.5 | 80.3 | 20.8 | 1.1 | 59.9 | 81.4 | 31.8 | 54.4 |
| Very remote | 42.2 | nsi | 20.0 | nsi | 52.7 | 90.1 | 17.6 | 52.5 |
| Remote & very remote | 44.0 | 82.6 | 20.3 | 1.0 | 55.2 | 83.6 | nsi | nsi |
| Total | 47.5 | 75.6 | 20.9 | 5.1 | 60.1 | 79.6 | 42.6 | 63.9 |

**nsi**: not separately identified in the source data.

*Source:* SCRGSP (2014e, tables NIRA 14.5-14.7; 15.2).

## Table 7.3 A longer term perspective on Indigenous employment outcomes

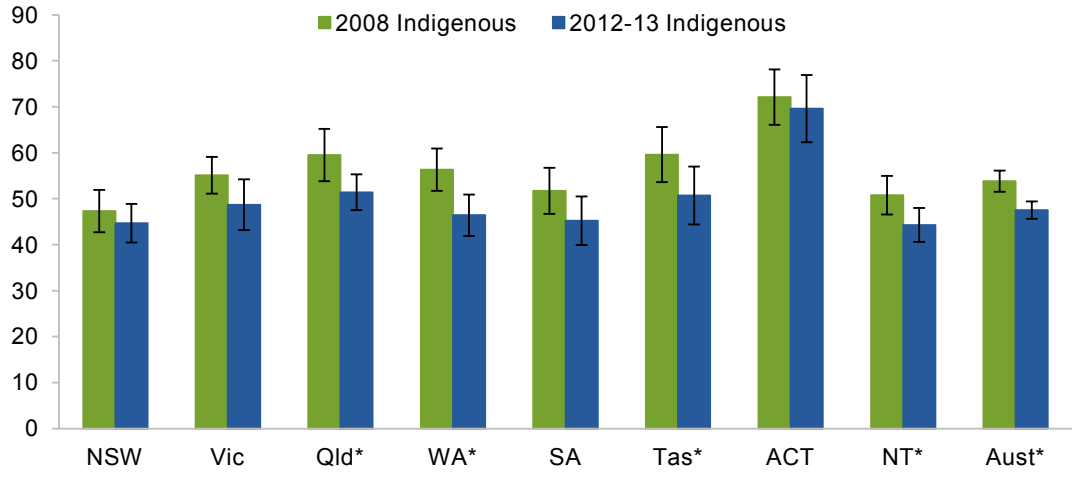
| | | | | | | | Change in gap | |
|---|---|---|---|---|---|---|---|---|
| | 2001[a] | | 2008[b] | | 2012-13[b,c] | | 2008 to 2012-13 | 2001 to 2012-13 |
| | *Indigenous* | *Non-Indigenous* | *Indigenous* | *Non-Indigenous* | *Indigenous* | *Non-Indigenous* | | |
| Employment to population ratio (%) | 40.3 | 58.1 | 53.8 | 75.0 | 47.5 | 75.6 | +6.9 | +10.3 |
| Labour force participation rate (%) | 50.4 | 62.6 | 64.5 | 78.3 | 60.1 | 79.6 | +5.7 | +7.3 |
| Unemployment rate (%) | 20.0 | 7.2 | 16.6 | 4.2 | 20.9 | 5.1 | +3.4 | +3.0 |

[a] 2001 data are from the ABS Population Census and are not strictly comparable to later years which is from survey data. [b] Non-Indigenous employment data differs from Aboriginal and Torres Strait Islander Health Performance Framework (HPF) 2012 Report due to different sources. Data shown here is from the ABS Survey of Education and Work (in line with the agreed methodology for NIRA reporting) while the 2012 HPF report data is from the ABS National Health Survey. [c] Non-indigenous data refer to 2011-12.

*Sources*: Adapted from SCRGSP (2003, 2014a).

## Figure 7.4 Indigenous change in employment to population ratio: 2008 and 2012–13

Per cent

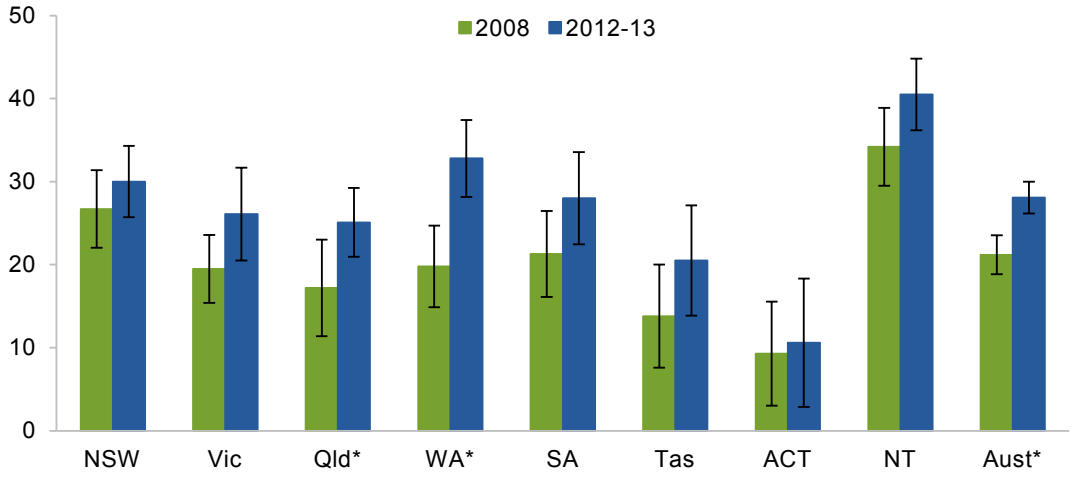



*Asterisk denotes significant change in the level of employment to population ratio from 2008 to 2012-13.

*Data sources*: SCRGSP (2009, table NIRA 21.1); SCRGSP (2014e, table NIRA 14.1).

Figure 7.5 **Change in non-Indigenous to Indigenous gap in employment to population ratio: 2008 and 2012–13**

Percentage points difference

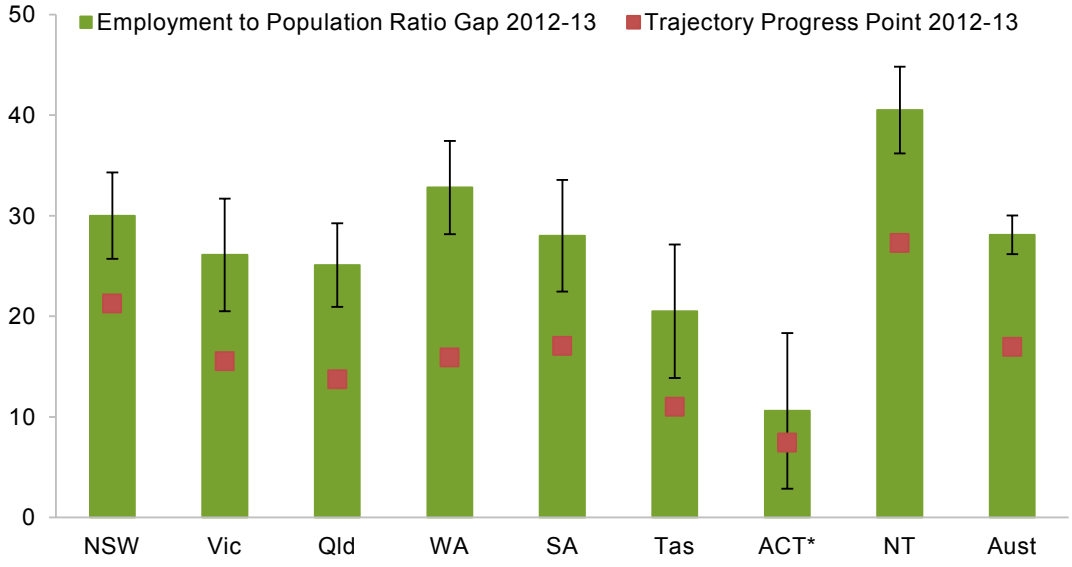



*Asterisk denotes significant change in the non-Indigenous to Indigenous employment to population ratio gap from 2008 to 2012-13.

*Data sources*: SCRGSP (2009a, table NIRA 21.1); SCRGSP (2014e, table NIRA 14.1).

Figure 7.6 **Closing the gap, actual versus trajectory: 2012-13**

Percentage points




*Asterisk denotes statistically that they are on track on closing the gap.

*Data sources*: SCRGSP (2014e, table NIRA 14.1); trajectory points provided by PM&C.

## Improving performance reporting:
# WHERE TO FROM HERE?

There is extensive reporting on the extent of Indigenous disadvantage

The Indigenous reporting framework needs to be rationalised

There needs to be a greater emphasis on policy evaluation

# 8 Improving performance reporting: where to from here?

**Key points**

- There is extensive reporting on the extent of Indigenous disadvantage and on progress (or not) against the Closing the Gap targets. In addition to this performance report, there are six other national reports on Indigenous outcomes and disadvantage.
- The Commission estimates that the total page count for the other national reports is close to 2000 pages, with the equivalent of almost 7000 pages of data available as electronic attachments. There is considerable overlap and duplication across the various reports. And some of the data used for the assessments are not updated each year, which means for annual Closing the Gap reports there is little option between data updates than to reiterate past findings. There is a strong case for rationalising the Indigenous reporting framework.
- An important rationale for this report is an *independent* assessment of progress. Some element of duplication of reporting might therefore be warranted. That said, this assessment task involves little more than joining the dots on the information presented in the Overcoming Indigenous Disadvantage (OID) reports. As such, it is unlikely that extending the remit of the OID reporting regime to include this assessment task would compromise the integrity of the process. Also, given that the OID report will now be undertaken every 2-3 years, rationalising this way would avoid reporting on progress when no additional information has become available and it would reduce cross-report duplication.
- But this is just one of the options COAG might consider. Another option is to have an independent body provide a separate assessment of progress against the reported targets in the OID report. What is important is that rationalising the reporting framework is done quickly to avoid wasting further resources on duplicative, and often low value reporting.
- While there has been much focus on monitoring broad outcomes, little is known about what works in bridging outcomes gaps.
  - 80 per cent of the current effort and investment is channelled through mainstream programs. Assessing their effectiveness from an Indigenous disadvantage perspective is therefore critical.
  - And inadequate evaluation of Indigenous-specific programs must be rectified.
  - While evaluating the impacts of policies on Indigenous outcomes can be challenging, these challenges are not insurmountable.
- Options for invigorating evaluation include: an overarching review of policy evaluation in the Indigenous area; COAG committing to evaluating policy settings in a target area or a sub-set of policies in a particular area (say education); and adding a procedural, evaluation-focused target to the Closing the Gap initiative.

## 8.1 Reporting, reporting and more reporting

A coherent and well configured public report card on progress in overcoming Indigenous disadvantage keeps governments, the community and policy makers informed about the nature and extent of Indigenous disadvantage and provides 'insights' into areas where policies (or other factors) are making a difference to outcomes over time. A key benefit of public reporting is that it makes governments more accountable and this can generate momentum for further reform (particularly where there is no progress or there is a widening in the gap between Indigenous and non-Indigenous Australians).

There is extensive reporting of the extent of Indigenous disadvantage and on progress (or not) against the Closing the Gap targets. As shown in box 8.1, in addition to this performance report on the National Indigenous Reform Agreement (which the COAG Reform Council was responsible for until 2014), there are six other national reports reporting on Indigenous outcomes and disadvantage:

- the Overcoming Indigenous Disadvantage (OID) report (SCRGSP 2014a)
- the Report on Government Services: Indigenous Compendium (SCRGSP 2015)
- the Prime Minister's Closing the Gap report (Australian Government 2015)
- the Health and Welfare of Australia's Aboriginal and Torres Strait Islander peoples Overview, produced by the Australian Institute of Health and Welfare (AIHW 2015)
- the Aboriginal and Torres Strait Islander Health Performance Framework Report produced by the Australian Health Ministers Advisory Council (AHMAC 2015)
- the Indigenous Expenditure Report (IER, SCRGSP 2014b)[63].

Box 8.2 provides further details on these reports.

The Commission estimates that the total page count for the national reports identified in box 8.1 is close to 2000, with an equivalent of almost 7000 pages of data available as electronic attachments. This does not include any of the papers collated by the (now defunded) Closing the Gap Clearinghouse.[64]

There is considerable overlap and duplication across the reports that make up the current framework for reporting on Indigenous outcomes and disadvantage (box 8.1).

[63] While the IER focuses on expenditure data, not on Closing the Gap targets, estimates of government expenditure are mapped to the COAG National Indigenous Reform Agreement building blocks. There is no overlap between the IER and the other national reports.

[64] The Closing the Gap Clearinghouse pulled together the available information on what works to overcome Indigenous disadvantage. The collated research and evaluations is not a statistical report.

## Box 8.1 National reports on Aboriginal and Torres Strait Islander Australians

**Report on Government Services Indigenous Compendium**

Requested by **COAG**

Produced by **SCRGSP**

Frequency **Annual**

**Purpose:** Performance of (mostly mainstream) government funded and/or provided services to Indigenous Australians.

**Indigenous Expenditure Report**

Requested by **COAG**

Produced by **SCRGSP**

Frequency **2-3 yearly**

**Purpose:** Assist governments to understand levels and patterns of expenditure on services that relate to Indigenous Australians.

**National Indigenous Reform Agreement Performance Report** Requested by **COAG**

Produced by **CRC/PC**[a]

Frequency **Annual**

**Purpose:** Independent assessment of Australian Government and State and Territory government progress toward the Closing the Gap targets, and associated performance indicators.

**The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples: an overview**

Requested by **AIHW**

Produced by **AIHW**

Frequency **2-3 yearly**

**Purpose:** A comprehensive statistical overview of topics important to the health and welfare of Indigenous Australians.

**Overcoming Indigenous Disadvantage**

Requested by **COAG**

Produced by **SCRGSP**

Frequency **2-3 yearly**

**Purpose**

The nationally recognised set of indicators on the wellbeing of Australia's Indigenous peoples.

**Content**

Strategic framework of outcome indicators, whole of government perspective to achievement of agreed priority outcomes.

**Aboriginal and Torres Strait Islander Health Performance Framework Report**[b]

Requested by **CHC**

Produced by **AHMAC** (summary policy report) **& AIHW** (detailed analysis)

Frequency **Biennial**

**Purpose:** Measures health outcomes, determinants of health and health system performance.

**Closing the Gap Clearinghouse Publications**[c]

Requested by **COAG**

Produced by **AIHW in collaboration with AIFS**

Frequency **Regular**

**Purpose:** The Closing the Gap Clearinghouse publications synthesise research and evaluation evidence about what works to overcome Indigenous disadvantage. The Clearinghouse provides a single point for gathering and disseminating reliable information to underpin policy development in Indigenous affairs.

**Closing the Gap – Prime Minister's Report**

Requested by **Prime Minister**

Produced by **PM&C**[d]

Frequency **Annual**

**Purpose:** Prime Minister's report to Parliament on progress against the six Closing the Gap targets and developments in Australian Government Indigenous policies and programs.

*Abbreviations*: **ABS** Australian Bureau of Statistics. **AHMAC** Australian Health Ministers Advisory Council. **AIFS** Australian Institute of Family Studies. **AIHW** Australian Institute of Health and Welfare. **COAG** Council of Australian Governments. **CHC** COAG Health Council. **CRC** COAG Reform Council. **FaHCSIA** Department of Families and Housing, Community Services and Indigenous Affairs. **PM&C** Department of the Prime Minister and Cabinet. **PC** Productivity Commission. **SCRGSP** Steering Committee for the Review of Government Service Provision.

[a] The CRC was responsible for producing this report until 2014. The 2015 report is being produced by the PC. [b] This report is used to monitor progress towards achieving targets for Closing the Gap, as well as the implementation of the National Aboriginal and Torres Strait Islander Health Plan. [c] Ongoing funding for the Clearing House was terminated in June 2014, though resources and publications on the website will continue to be publicly available. [d] This report was previously produced by FaHCSIA, on behalf of the Australian Government.

*Source:* Adapted from SCRGSP (2014a, box 1.1.1).

## Box 8.2 More detail on the national reports

### *Overcoming Indigenous Disadvantage Report (OID)*

In April 2002, the Council of Australian Governments (COAG) commissioned the Steering Committee for the Review of Government Service Provision (SCRGSP) to produce a regular report against key indicators of Indigenous disadvantage. In 2009, the report's terms of reference was updated to take account of the targets for Closing the Gap in Indigenous disadvantage. The OID report measures the wellbeing of Australia's Indigenous peoples and examines whether policies and programs are achieving positive outcomes for Indigenous Australians. The report provides information about outcomes across a range of strategic areas such as early child development, education and training, healthy lives, economic participation, home environment, and safe and supportive communities.

### *Report on Government Services: Indigenous Compendium*

The Indigenous Compendium is a compilation of data for Aboriginal and Torres Strait Islander Australians from the Report on Government Services and is a product of the Review of Government Service Provision. Service areas covered include: childcare, education and training; justice; emergency management; health; community services; housing and homelessness. The final Indigenous Compendium was released in April 2015 (data will still be available within the Report on Government Services).

### *Closing the Gap – Prime Minister's Report*

The Prime Minister's Closing the Gap report, produced annually, is a report to Parliament. It provides an aggregate picture of outcomes for Aboriginal and Torres Strait Islander Australians against the 'Closing the Gap' targets. There have been seven Closing the Gap reports since the targets were set in 2008.

### *Health and Welfare of Australia's Aboriginal and Torres Strait Islander peoples*

This report provides an overview of topics important to the health and welfare of Indigenous Australians. The report format varies over time from statistical summaries to thematic papers.

### *Aboriginal and Torres Strait Islander Health Performance Framework (HPF) Report*

The HPF monitors progress in Indigenous Australian health outcomes, health system performance and broader determinants of health. The report presents a high level summary of data and policy analysis for 68 performance measures across the three areas. Evidence from the report is used to monitor progress towards achieving targets for Closing the Gap, as well as the implementation of the National Aboriginal and Torres Strait Islander Health Plan.

### *Indigenous Expenditure Report (IER)*

In December 2007, COAG committed to reporting on expenditure on services to Indigenous Australians to provide a better understanding of the level and patterns of expenditure. The first IER report was published in 2010, and in 2011, COAG transferred responsibility for future reports to the SCRGSP. The IER collates the relevant data, which provides the basis for estimates of expenditure by the Australian Government and State and Territory governments on Indigenous-specific services and the estimated Indigenous share of mainstream services. Estimates of government expenditure are mapped to the COAG National Indigenous Reform Agreement building blocks.

*Sources:* Australian Government (2015); AHMAC (2015); AIHW (2011); SCRGSP (2015, 2014a,b).

The Prime Minister's Closing the Gap report and this report both report progress against the Closing the Gap targets at the national level. There is also overlap between these two reports and those produced by the AIHW and AHMAC. And while the focus of the OID reports is on providing information rather than an assessment of progress against the Closing the Gap targets, the OID reports also contain a considerable amount of outcomes analysis.

In addition to the duplication across reports, because *some* of the outcomes data is not updated every year (such as in the case of Year 12 attainment and employment data)[65], the two annual Closing the Gap assessment reports — the Prime Minister's Closing the Gap report and this report — have little option, between data updates, than to replicate past findings.

Already some reporting rationalisation is in train with recent decisions made by the Steering Committee for the Review of Government Service Provision to:

- reduce the frequency of the OID and IER reports to 2-3 yearly and to review these reports
- cease producing the Indigenous Compendium (the data will continue to be available within the Report on Government Services).

But the Commission sees gains from going further.

An important rationale for the NIRA performance report is an *independent* assessment of progress made in closing Indigenous outcomes gaps and making governments accountable for the impact that policy initiatives aimed at addressing Indigenous disadvantage have on the Closing the Gap targets. Because of this, some duplication of reporting might be warranted. However, the value of duplicate, albeit independent, reporting needs to be weighed against the value that could be delivered from using the resources in other areas, including for policy evaluation (section 8.2).

There is also a sense in which the assessment task that the COAG Reform Council undertook, and the Commission was given in 2015, involves little more than joining the dots on the information presented in the OID reports. As such, it seems unlikely that extending the remit of the OID reporting regime to include the assessment task would compromise the integrity of the overall process. And given the time frame for the OID report, this rationalisation option would reduce the extent of reporting on progress when no additional information has become available.

However, extending the remit of the OID report is not the only approach for rationalising the Indigenous reporting framework and other rationalisation options should be explored. For example, another option that could be explored is to have an independent body focus solely on assessment of progress against the reported targets in the OID report (this would

65 Infrequent updates of outcomes data need not be a problem, particularly where changes in outcomes over time are likely to be small.

avoid duplicating the reporting task). Different options could be considered in the review of the OID report.

Rationalisation of the current framework should be done quickly to avoid wasting further resources on duplicative and sometimes low value reporting activity. Rationalising the reporting framework would also be a way of freeing up resources that could be redirected to the pressing task of policy evaluation.

## 8.2 A lack of evidence about what works

As discussed in a number of chapters in this report, there has been a strong focus on monitoring and critiquing progress in meeting targets. While such exercises can be important for generating momentum for reform, they do not shed light on the effectiveness of specific policies and programs aimed at overcoming Indigenous disadvantage.

There has also been a large body of research covering Indigenous policy in Australia (box 8.3). However, a lot of this research is very general, often does not provide the basis for differentiating between policies that comply with some high level principles, and typically pays no regard to cost-effectiveness issues.

Indeed, formal rigorous evaluations of Indigenous programs (mainstream and Indigenous-specific) that set the benefits of particular policies for reducing disadvantage against the costs are relatively scarce. This was one of the conclusions of a Productivity Commission (PC) Roundtable on the role of evaluation in improving outcomes for Aboriginal and Torres Strait Islander Australians. A summary of the Roundtable discussion stated that:

> There was general agreement that a lot of data are being produced about Indigenous Australians. However, there is a tension between the political imperative to develop and report data to measure achievement of the COAG targets (which focus on a limited range of social indicators) and the broader need to inform policy and program evaluations. (PC 2013, p. 3)

A review of Commonwealth Indigenous programs by the Department of Finance and Deregulation also concluded that:

> Robust evidence is lacking on the performance and effectiveness of many Indigenous programs. Program evaluation activity in this area has been patchy at best, and many of the evaluations which have been conducted have lacked a suitable measure of rigour and independence. Evaluation efforts should be concentrated on those key policy measures … and major programs in which significant resources are invested, and which have the potential to contribute materially to the achievement of the *Closing the Gap* targets. (DoFD 2009, p. 12)

More recently the Forrest Review noted that:

> All Australian governments are committed to improving the lives of their first Australians. What is lacking is the published, regular, robust measurement of performance and effectiveness of policies and their implementation. (Forrest 2014, p. 17)

## Box 8.3 The role of research — identifying factors that underpin successful Indigenous programs[a]

There is a large body of research (as opposed to evaluation) covering Indigenous policy in Australia. The Closing the Gap Clearinghouse has pulled together the available information on what works to overcome Indigenous disadvantage. The OID report also includes examples of 'things that work', or case studies of actions that are making a difference for Aboriginal and Torres Strait Islander Australians.

The Closing the Gap Clearinghouse identified the following high level factors that underpin successful Indigenous programs:

- flexibility in design and delivery so that local needs and contexts can be taken into account
- community involvement and engagement in both the development and delivery of programs
- trusting relationship
- a well-trained and well-resourced workforce, with an emphasis on retention of staff
- continuity and coordination of services.

The SCRGSP also identified the following success factors:

- cooperative approaches between Aboriginal and Torres Strait Islander Australians and government — often with the non-profit and private sectors as well
- community involvement in program design and decision-making — a 'bottom-up' rather than 'top-down' approach
- good governance — at organisation, community and government levels
- ongoing government support — including human, financial and physical resources.

The SCRGSP concluded that government alone is unable to overcome Indigenous disadvantage and that meaningful change also requires continuing involvement and action by Aboriginal and Torres Strait Islander Australians themselves, with support from the private and non-profit sectors and the general community.

**a** COAG established the Closing the Gap Clearinghouse to collate evidence on what works to overcome Indigenous disadvantage. While ongoing funding for the Clearinghouse ceased in June 2014, resources and publications on the website will continue to be publicly available.

*Source*: SCRGSP (2014a).

The Closing the Gap Clearinghouse has identified a number of areas where rigorous evaluations are simply not available. For example, a paper on actions addressing the social and economic determinants of Indigenous health stated that:

> Across all of the key determinant areas, there is a lack of high quality, publicly available evaluation data regarding programs and interventions, which limits the ability to identify success associated with such programs. (Osborne, Baum and Brown 2013, p. 3)

And in the context of early childhood parenting, education and health interventions, it was noted that:

> Without more funding for rigorous research and evaluation designs, much of the evidence base will continue to be of generally low quality. (Bowes and Grace 2014, p. 3)

A richer evidence base is needed to answer questions about the effectiveness of programs and policies aimed at improving Indigenous outcomes and how to close the gap between Indigenous and non-Indigenous Australians in life expectancy, health, education and employment outcomes.

Evaluation is the key to designing policies that achieve positive outcomes for Indigenous Australians.

## But there are some unique challenges in Indigenous program evaluation

Evaluation of policies intended to improve Indigenous outcomes, as in other areas of social policy, poses considerable challenges.

In the first instance, as the IER shows, the majority (80 per cent) of government services to the Indigenous community are through mainstream programs. So, any assessment of what works (and what does not) should also take into account mainstream programs.

More specifically, as outlined in a paper by Cobb-Clark, there are a number of unique challenges associated with evaluating the impacts of programs (mainstream or otherwise) on Indigenous Australians.

- Many data sources are unsuitable for Indigenous program evaluation because they do not have sufficient numbers of Indigenous respondents. Even when quantitative analysis is possible, small sample sizes can drastically limit statistical power.
- It is sometimes suggested that Indigenous communities are considered unique and as such cannot be meaningfully compared to one another. To the extent that this true, it can be difficult to define a control group against which to measure program impacts.
- Indigenous-specific policies are often targeted at communities and the Indigenous population is characterised by fluid, extended family structures and cultural norms for resource sharing. As such, it can be difficult to estimate the effect of a program on individuals (because of spill-over effects to extended family or community members).
- Because Indigenous-specific programs are often community-based and need the approval and support of community elders, there is little sense of random selection for programs or interventions.
- It can be difficult to evaluate any single program in a particular Indigenous community because there are a myriad of interventions affecting the Indigenous population. And if another Indigenous community is used as a counterfactual, it will almost certainly be the case that the control group is also 'treated' — just with a different set of policies and programs. Standard evaluation techniques can therefore only provide an estimate of the marginal difference between one set of interventions and another set (PC 2013, Cobb-Clark 2013).

But these challenges are not insurmountable. Indeed, the difficulties associated with evaluating Indigenous policies should be a reason for more effort in this area. As Gary Banks said:

> Social policy is notoriously difficult to design and evaluate, and Indigenous policy is as difficult as any. But that should be a reason for making more effort, not less. And if there is inherently greater uncertainty 'up front' about whether a policy's outcomes will accord with its objectives, this places even greater importance on ensuring that arrangements are in place for their monitoring and evaluation. (PC 2013, p. 18)

Price, McCoy and Mafi also noted that:

> While it is very difficult to develop a specific framework that would be applicable to Aboriginal evaluations right across Australia due to different local cultures and contexts, we believe those engaged in the evaluation sector need to engage continually in reflexive practices and give thought to how we can synthesize these learnings into a discussion about how to carry out appropriate and valuable evaluations while engaging and working with, and among, Aboriginal people. (2012, p. 36)

One of the longstanding challenges for assessing the impacts of policies is inadequate data. As the SCRGSP commented:

> At the Indigenous program level, across all governments, many 'pilots' and 'trials' are commissioned, implemented, run their course and then cease, with no formal, public evaluation. Opportunities to learn from experience are lost. Often, monitoring and evaluation are hampered by inadequate data collections and poor performance information systems. (2009b, p. 11.21)

Building in evaluation plans (and funding for program evaluations) in the design of programs and policies at their inception is one way of generating the data needed to evaluate programs and build the evidence about what works and what does not work. Emphasising the importance of such 'forward planning' and data collection, one participant at the PC's Roundtable argued that:

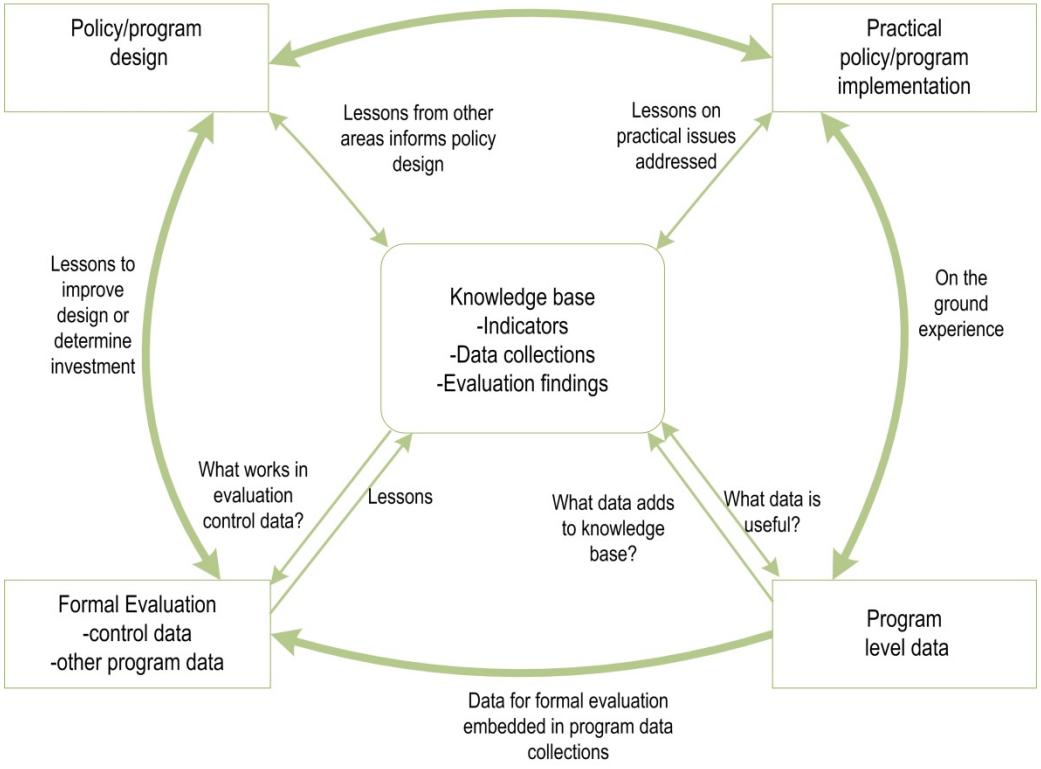
> If evaluation and monitoring are not built into the policy development process some types of evaluation will not be possible and important data may not be collected. (PC 2013, p. 117)

Uncertainty up front about policy outcomes also suggests that a premium should be placed on collecting data and monitoring and evaluating outcomes during the implementation stage. It is also important to have feedback loops in place so evidence can inform policy improvements, facilitate continuous learning and subsequent policies. Ideally, an evidence-based approach to policy will involve input of evidence at each stage of policy development so that policies can be modified if they do not work (figure 8.1). As the NSW Government stated:

> Evaluation can and should take place across the lifecycle of a program, from design and piloting through to implementation and ongoing mainstream delivery. (2013, p. 6)

Findings about what works, and lessons about what data is useful to collect, should also feed into a general knowledge base (figure 8.1). The Closing the Gap Clearinghouse has a knowledge base that future evaluation work could build on.

Figure 8.1 **A system for building evidence**




While embedding evaluations into the design of programs and policies could raise concerns about revealing 'ineffective' programs, valuable lessons can be learnt from what does not work. At the very least, evidence on policies that are ineffectual or very costly in terms of improvements delivered will help ensure ineffective policies are not recycled by governments. As the Prime Minister's 2014 Closing the Gap report said, spending money on programs does not guarantee a difference to outcomes.

> We should not equate spending money with getting results. Spending more money on Indigenous Australians is not a sign of success and is not something that should be celebrated for its own sake. (Australian Government 2014b, p. 4)

An analysis undertaken by the Closing the Gap Clearinghouse (2011) of the evidence relating to the COAG targets and building blocks found that there was little cost-benefit and cost-effectiveness analysis. The IER, which provides estimates of government expenditure on both Indigenous-specific and mainstream services to Aboriginal and Torres Strait Islander Australians, is an important resource, together with data from other sources, for the evaluation of the cost-effectiveness of government interventions. The review of the

IER (noted earlier) should consider the appropriateness of the expenditure data collected in light of the need for a greater focus on evaluation and cost-effectiveness analysis.

Also, as discussed in chapter 1, without robust evaluations that focus on the contribution of specific policies, there is a risk that effective as well as ineffective policies could be discarded as part of efforts to do better. Robust evaluations (and the building of a knowledge base, figure 8.1) are critical for guarding against throwing the baby out with the bathwater.

Transparency of evaluation evidence is also important. Under current arrangements, the outcomes of policy evaluations (when they are undertaken), are not always made public. One of the challenges for the Closing the Gap Clearinghouse was ensuring that government departments provided the register with relevant research and evaluations (PC 2013, p. 148). Publishing the findings of policy evaluations not only builds the generally available evidence base, but also increases the rigour in the evaluation process.

## Options for invigorating policy evaluation

There are a number of options for reinvigorating evaluation of policies designed to Close the Gap in Indigenous disadvantage.

One option is to undertake an overarching review of policy evaluations in the Indigenous area directed at identifying:

- systemic options for encouraging a culture of rigorous, high quality evaluation
- initiatives to improve evaluation practice and build evaluation capability
- ways to better use evaluation results to improve policy settings and decision making.

The Department of Finance and Deregulation (DoFD 2009) recommended such a review as a means of improving the quality of evaluations and program performance. Participants of the Commission's Roundtable also noted the need to develop a coherent framework for evaluating Indigenous policies and programs (PC 2013).

The second option is for COAG to agree to an evaluation in one of the gap target areas (possibly as part of a rolling evaluation process). Given that the evidence base on what works to overcome Indigenous disadvantage is stronger in the area of health than education (Closing the Gap Clearinghouse 2011, chapter 2)[66], COAG could agree, in the first instance, to focus on the area of education. Education also covers three of the Closing the Gap targets and has important flow-on effects for employment. Another option is to focus

66 The Closing the Gap Clearinghouse publication '*What works to overcome Indigenous disadvantage: Key learnings and gaps in the evidence, 2009-10*', found that evidence in the health building block was more robust than in other areas. Compared with other building blocks identified by COAG, health had a relatively high proportion of quantitative studies that involved some form of comparison group. See also Holman and Joyce (2014).

on a sub-set of policies directed at a particular aspect of one of the education areas — for example, school readiness or school attendance policies.

As well as shedding light on the efficacy of the policies concerned, focussing on specific areas could serve as an exemplar of good evaluation practice and of ways to address evaluation challenges common to policies impacting on Indigenous outcomes.

The third option is to augment the current Closing the Gap targets with a procedural, evaluation-focused, target. This would involve governments being required to provide information on:

- policies that are directly relevant to each of the Closing the Gap outcomes targets
- those policies evaluated since the inception of the Closing the Gap initiative, or explicitly scheduled for review prior to the targets expiring
- the proportion of past evaluations made publicly available
- the proportion of past evaluations that had shown that the policies in question were worthwhile and cost-effective
- whether all new policy initiatives have a built-in review mechanism.

Some of these options could be complements rather than alternatives.

In advocating much greater evaluation effort, the Commission emphasises that for each particular program, evaluation effort must be proportionate to the resources invested in the program or policy.

The Commission is seeking to encourage a much stronger evaluation culture. Without such a change, and without more resources devoted to evaluation, policy makers will continue to flounder. When thinking about the question 'where to from here', the answer lies in paying more attention, and devoting more resources, to policy evaluation. The answer to *how* to Close the Gap lies in knowing more about what works and why.

# Appendix A — Comparing performance across jurisdictions

To promote accountability, the National Indigenous Reform Agreement (NIRA) provides for independent assessment and reporting of progress made towards achieving the Closing the Gap targets at both the national and jurisdictional level. And to support this assessment process, NIRA also includes trajectories — agreed to by governments — which are intended to serve as a guide to whether observed progress at the jurisdictional as well as the national level is on track to meet the targets and timeframes set by COAG.

As the assessments in this report show, for all of the targets, there is a high degree of concordance between national level and State and Territory outcomes. Also, the statistical reliability concerns that arise in relation to some of the data sets used in the assessment process (chapter 1) tend to be much more pronounced at the jurisdictional level than at the national level. Accordingly, the assessments in the body of the report generally focus on national level outcomes.

In a State and Territory context, what is of most interest are instances where outcomes in particular jurisdictions have diverged significantly from outcomes elsewhere. Such divergences provide a potential opportunity to explore whether differences in jurisdictional policy approaches may have contributed to outcome variations — though such exploration is not a task for this report.

This appendix provides one page snapshots of results for each jurisdiction against the various gap targets. The snapshots of results align with those in the COAG Reform Council's final assessment report.

Figure A.1 **Snapshot of results: New South Wales**

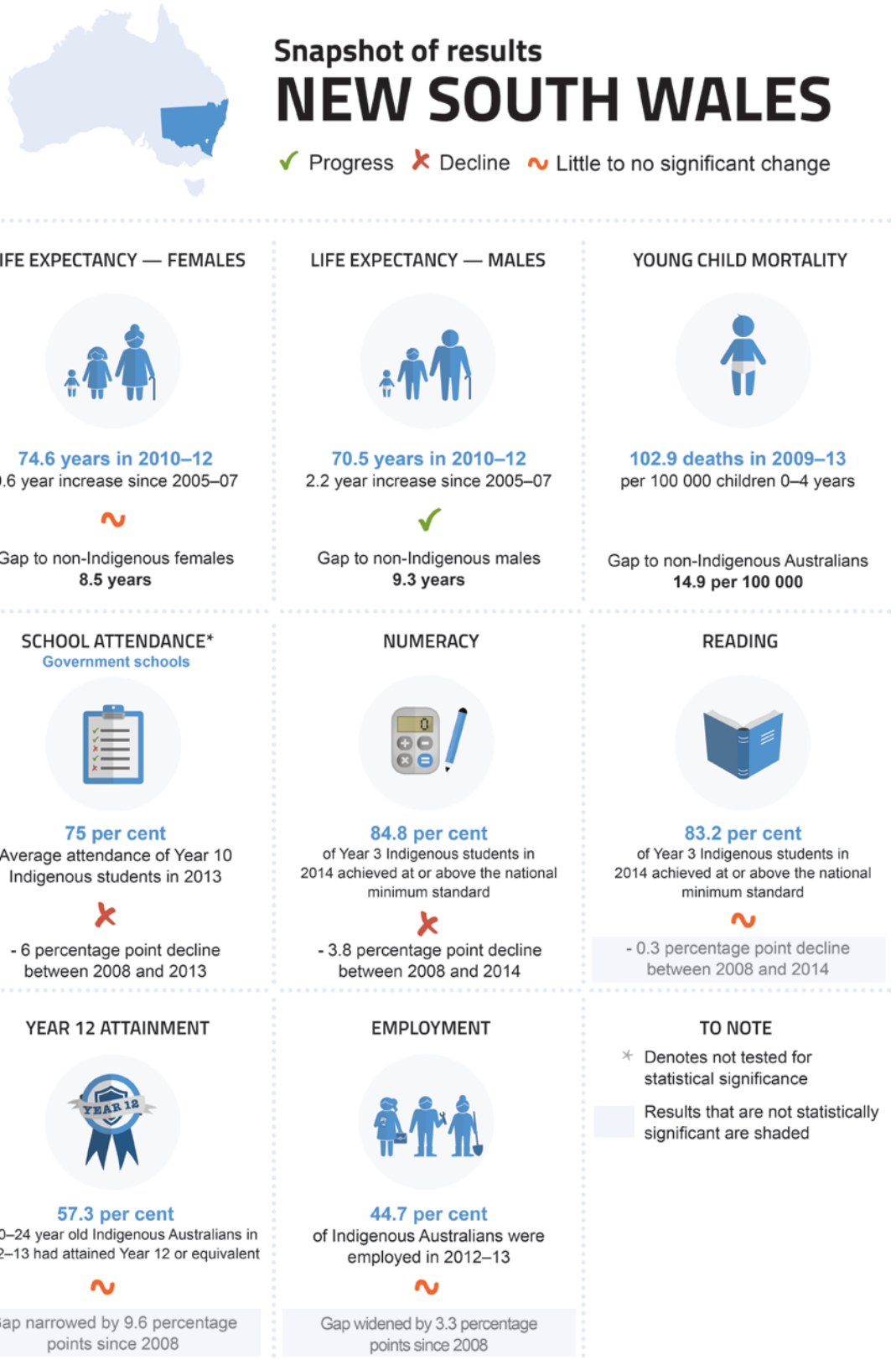


Figure A.2 **Snapshot of results: Victoria**

Figure A.3 **Snapshot of results: Queensland**

## Snapshot of results
# QUEENSLAND

✓ Progress ✗ Decline ~ Little to no significant change

### LIFE EXPECTANCY — FEMALES

**74.4 years in 2010–12**
1.7 year increase since 2005–07

✓

Gap to non-Indigenous females
**8.6 years**

### LIFE EXPECTANCY — MALES

**68.7 years in 2010–12**
1.6 year increase since 2005–07

✓

Gap to non-Indigenous males
**10.8 years**

### YOUNG CHILD MORTALITY

**182.5 deaths in 2009–13**
per 100 000 children 0–4 years

Gap to non-Indigenous Australians
**75.6 per 100 000**

### SCHOOL ATTENDANCE*
**Government schools**

**76 per cent**
Average attendance of Year 10 Indigenous students in 2013

~

No change

### NUMERACY

**82.4 per cent**
of Year 3 Indigenous students in 2014 achieved at or above the national minimum standard

✓

6.9 percentage point increase between 2008 and 2014

### READING[a]

**80.3 per cent**
of Year 3 Indigenous students in 2014 achieved at or above the national minimum standard

✓

14.1 percentage point increase between 2008 and 2014

### YEAR 12 ATTAINMENT

**65.4 per cent**
of 20–24 year old Indigenous Australians in 2012–13 had attained Year 12 or equivalent

~

Gap narrowed by 12.1 percentage points since 2008–2012-13

### EMPLOYMENT

**51.4 per cent**
of Indigenous Australians were employed in 2012–13

✗

Gap widened by 7.9 percentage points since 2008

### TO NOTE

* Denotes not tested for statistical significance

Results that are not statistically significant are shaded

[a] Queensland also recorded a significant improvement in Year 5 reading of 12 percentage points for Indigenous students

Figure A.4 **Snapshot of results: Western Australia**

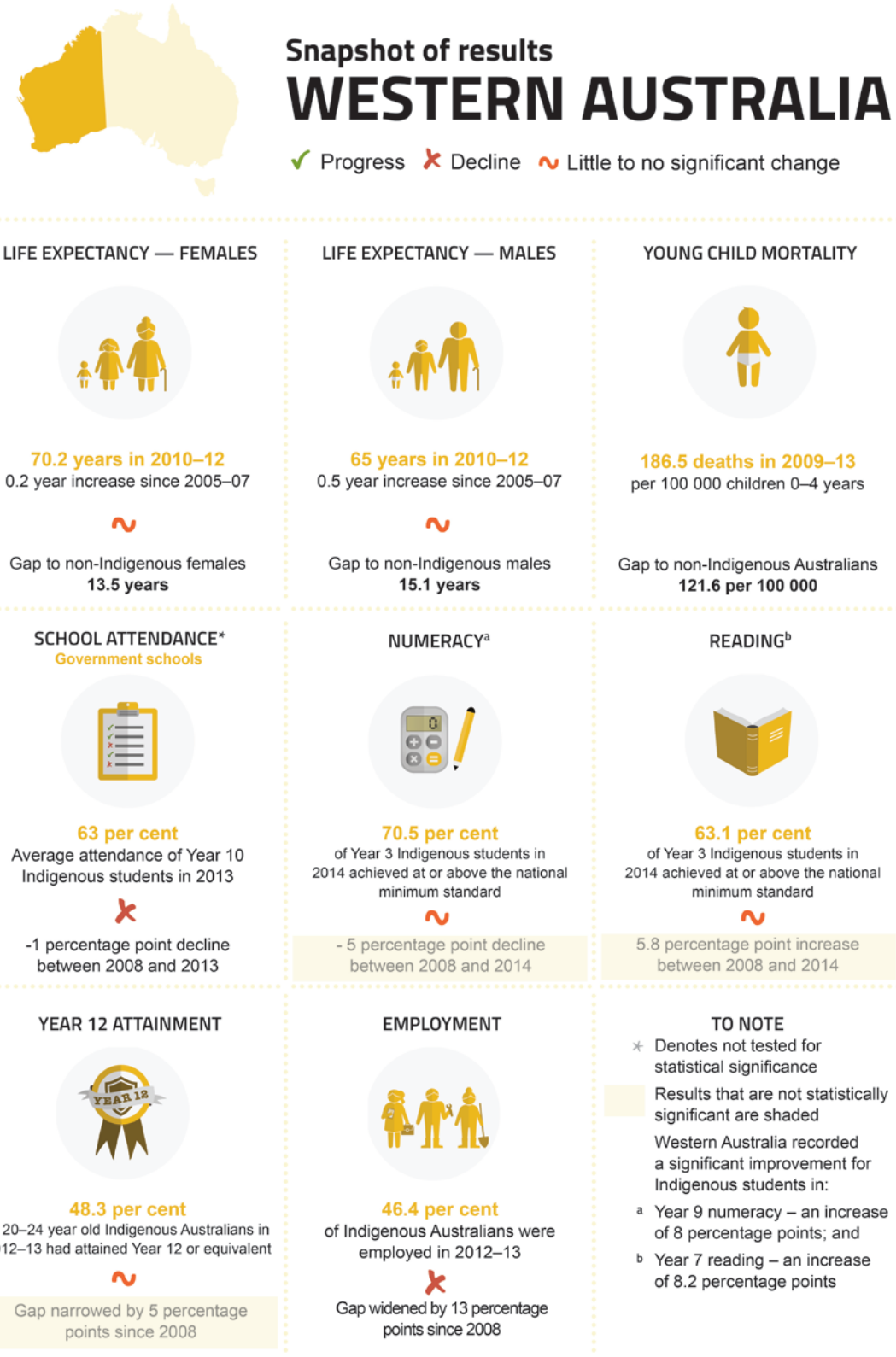


Figure A.5 **Snapshot of results: South Australia**

Figure A.6 **Snapshot of results: Tasmania**

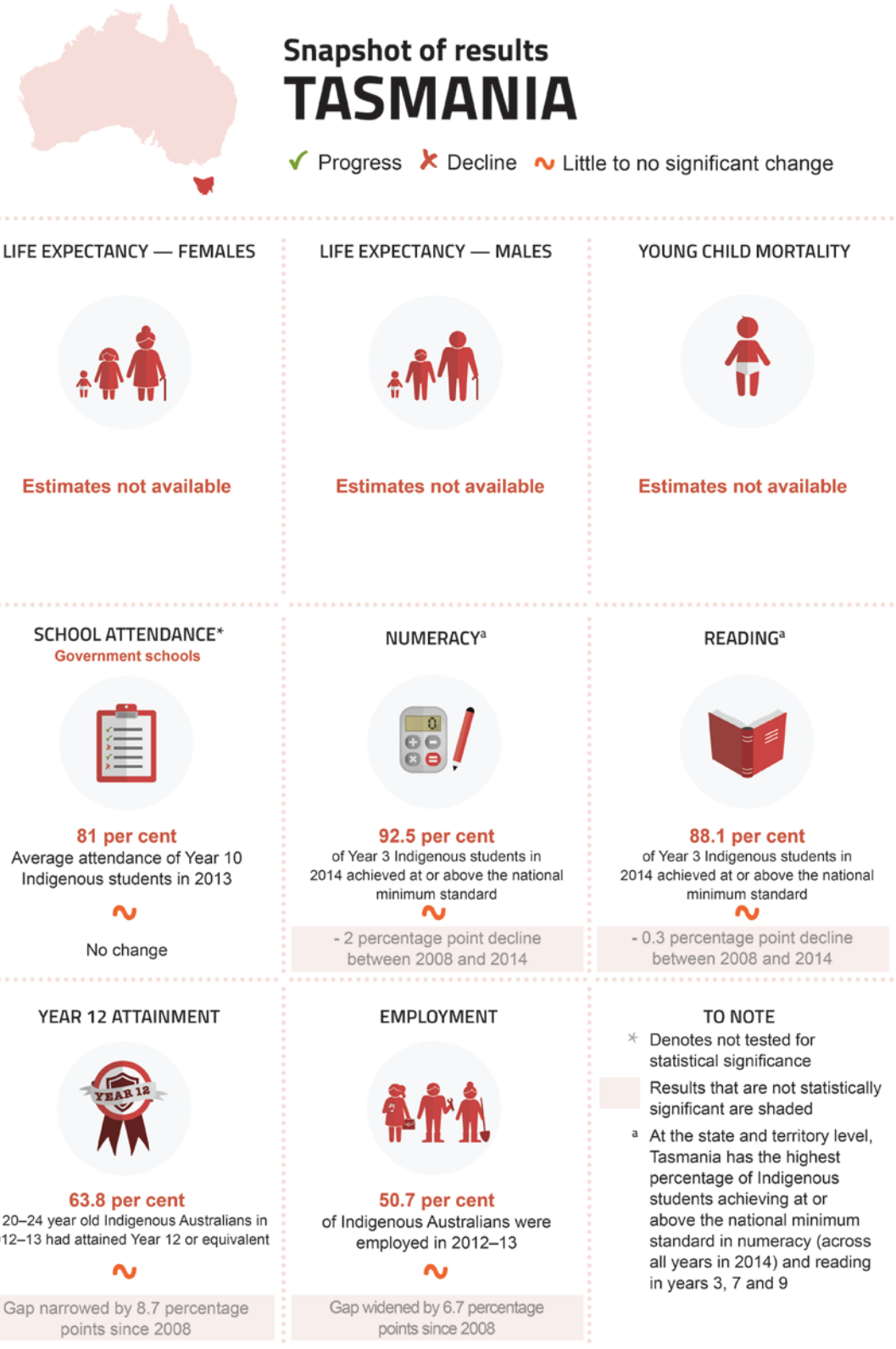


Figure A.7 **Snapshot of results: Australian Capital Territory**

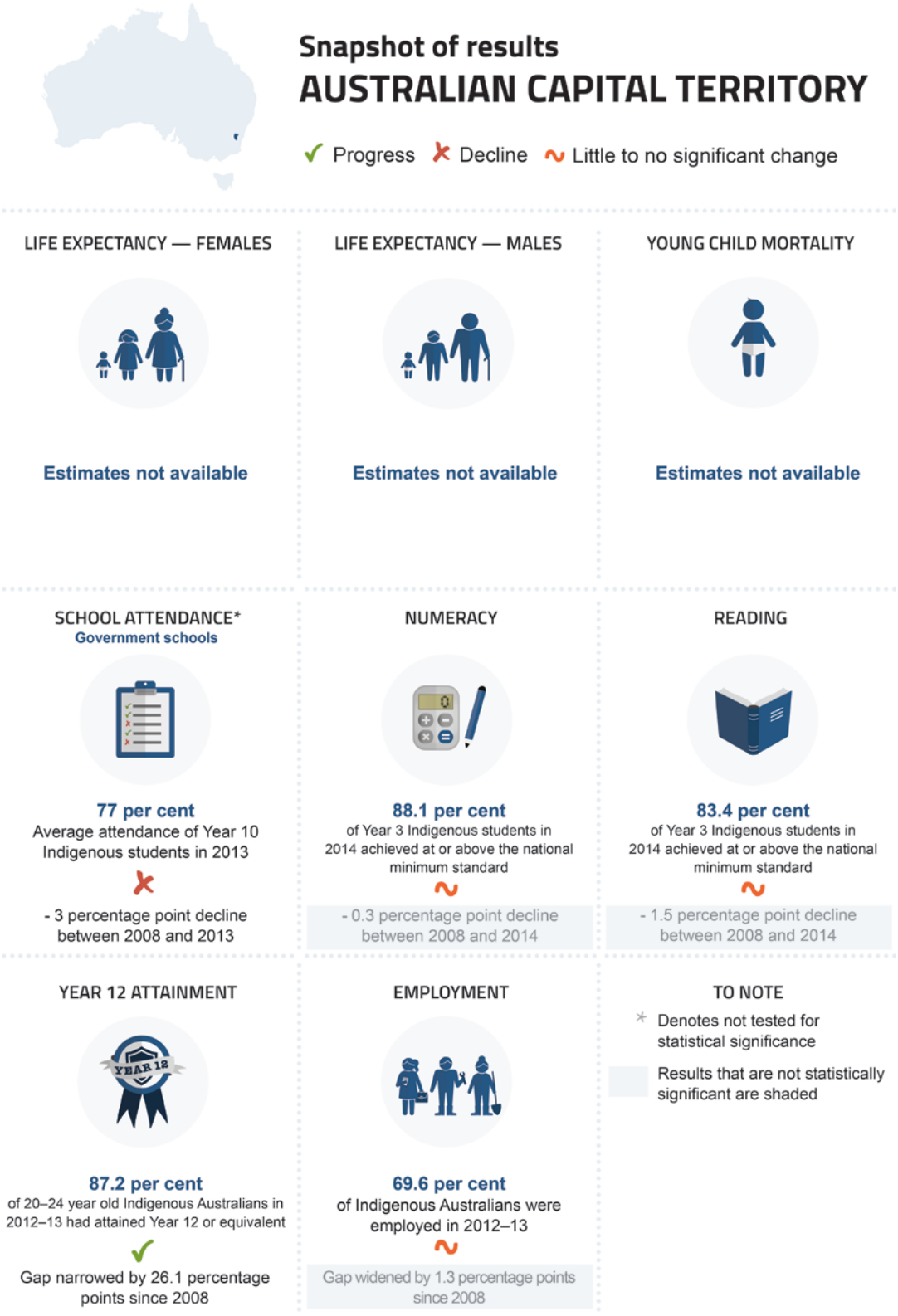
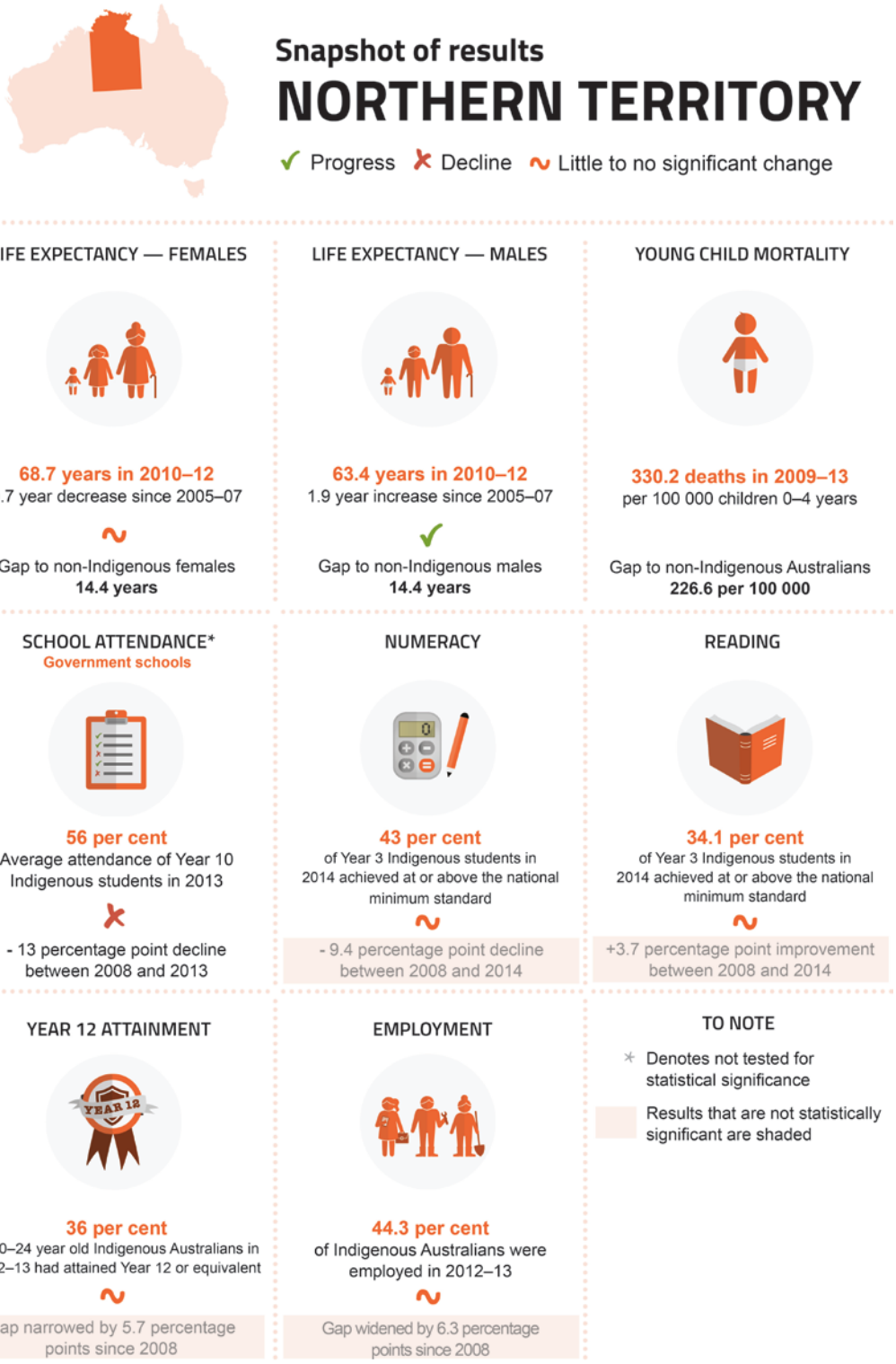


Figure A.8 **Snapshot of results: Northern Territory**



# References


ABS (Australian Bureau of Statistics) 2006a, *Assessment of Methods for Developing Life Tables for Aboriginal and Torres Strait Islander Australians*, Cat. no. 3302.0.55.002, Canberra.

—— 2006b, *Population Characteristics, Aboriginal and Torres Strait Islander Australians*, Cat.No. 4713.0, Canberra.

—— 2010a, *Deaths Australia 2009*, Cat. no. 3302.0, Canberra.

—— 2010b, *The city and the bush: Indigenous wellbeing across remoteness areas, Australian Social Trends September*, Cat. no. 4102.

—— 2011, data extracted September 2014 using Tablebuilder Pro, 2011, Cat. no. 2073.0.

—— 2012, *Census of Population and Housing — Details of Undercount, 2011*, Cat. no. 2940.0.

—— 2013, *Life Tables for Aboriginal and Torres Strait Islander Australians, 2010-12*, Cat. no. 3302.0.55.003, Canberra.

—— 2014a, *Deaths Australia 2013*, Cat. no. 3302.0, Canberra.

—— 2014b, *Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–13*, Cat no. 4727.0.55.006, Canberra.

—— 2015, *Schools Australia 2014*, Cat. no. 4221.0.

ACARA (Australian Curriculum, Assessment and Reporting Authority) 2014, *NAPLAN Achievement in Reading, Persuasive Writing, Language Conventions and Numeracy*, National Report for 2014, Sydney.

AHMAC (Australian Health Ministers' Advisory Council) 2012, *Aboriginal and Torres Strait Islander Health Performance Framework 2012 Report*, Canberra.

—— 2015, *Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report*, Canberra.

AIHW (Australian Institute of Health and Welfare) 2011, *National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data: strategic plan 2011-2015*, Cat no. IHW 57, Canberra.

—— 2011, *The health and welfare of Australia's Aboriginal and Torres Strait Islander people, an overview*, Cat. no. IHW 42, Canberra.

—— 2012, *An enhanced mortality database for estimating Indigenous life expectancy: A feasibility study*. Cat. no. IHW 75, Canberra.

—— 2014a, *Australian Institute of Health and Welfare Annual Report 2013–14*. Cat. no. AUS 185, Canberra.

—— 2014b, *Birthweight of babies born to indigenous mothers*. Cat. no. IHW 138, Canberra.

—— 2014c, *New Directions: Mothers and Babies Services — assessment of the program using nKPI data—December 2012 to December 2013*. Cat. no. IHW 145, Canberra.

—— 2014d, *SCSEEC successful school attendance strategies evidence-based project, Final Report*, Canberra.

—— 2014e, *Timing impact assessment of COAG Closing the Gap targets: Child mortality*, Cat. no. IHW 124, Canberra.

—— 2014f, *Australia's health 2014*, Australia's health series no. 14. Cat. no. AUS 178, Canberra.

—— 2015a, *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015*, Cat. no. IHW 147, Canberra.

—— 2015b, *Indigenous Australians Data*, available at http://www.aihw.gov.au/indigenous-data/, (accessed 25 September 2015).

Altman, J., Biddle N. and Hunter, B. 2008, *How Realistic are the Prospects for 'Closing the Gaps' in Socioeconomic Outcomes for Indigenous Australians?*, Discussion Paper No. 287/2008, Centre for Aboriginal Economic Policy Research.

AMP Foundation, Effective Philanthropy, Social Ventures Australia, *Our children, Our Future — Achieving Improved Primary and Secondary Outcomes for Indigenous Students*.

Australian Government 2013, *A Snapshot of Early Childhood Development in Australia 2012* — AEDI National Report, Re-issued November 2013, Canberra.

—— 2014a, *Indigenous employment rates, 2008 and 2012/13*, http://web.archive.org/web/20140417194122/http:/www.indigenous.gov.au/economic-participation/indigenous-employment-rates-2008-and-201213/, (accessed 10 August 2015).

—— 2014b, *Closing the Gap, Prime Ministers Report 2014*.

—— 2015, *Closing the Gap, Prime Ministers Report 2015.*

Australian Health Ministers' Advisory Council 2015*, Aboriginal and Torres Strait Islander Health Performance Framework, 2014* Report, Canberra.

Australian Indigenous HealthInfoNet 2015, *Overview of Australian Indigenous health status, 2014*, http://www.healthinfonet.ecu.edu.au/health-facts/overviews. (accessed 24 June 2015).

Behrendt, L., Larkin, S., Griew, R. and Kelly, P. 2012, *Review of higher education access and outcomes for Aboriginal and Torres Strait Islander Peopl*e, Final report, Canberra.

Biddle, N. 2010, *A Human Capital Approach to the Educational Marginalisation of Indigenous Australians*, Centre for Aboriginal Economic Policy Research ANU, Working Paper No. 67/2010.

—— 2012, *Closing the Gap on Indigenous Employment? Not Quite, The Conversatio*n, 2 November, http://www.probonoaustralia.com.au/news/2012/11/closing-gap-indigenous-employment-not-quite (accessed 12 August 2015).

—— and Cameron, T. 2012, *Potential Factors Influencing Indigenous Education Participation and Achievement*, Research Report, National Centre for Vocational Education and Training, Adelaide.

Biddle, N. 2014, *Developing a Behavioural Model of School Attendance: Policy Implications for Indigenous children and young*, Centre for Aboriginal Economic Policy Research Working Paper No. 94/2014.

Booth, A. and Carroll, N. 2005. *The health status of Indigenous and non-Indigenous Australians*, Centre for Economic Policy Research Discussion Paper no. 486, Australian National University, Canberra.

Bowes, J. and Grace, R. 2014, *Review of early childhood parenting, education and health intervention programs for Indigenous children and families in Australia*, Issues paper no. 8, Produced for the Closing the Gap Clearinghouse, Canberra: Australian Institute of Health and Welfare and Melbourne: Australian Institute of Family Studies.

Cassells, R., Duncan, A., Abello, A., D'Souza, G. and Nepal, B. 2012, *Smart Australians: Education and Innovation in Australia*, AMP NATSEM Income and Wealth Report, Issue 32, Melbourne.

Closing the Gap Clearinghouse 2011, *What works to overcome Indigenous disadvantage: Key learnings and gaps in the evidence*, Produced for the Closing the Gap Clearinghouse, Canberra: Australian Institute of Health and Welfare and Australian Institute of Family Studies.

COAG (Council of Australian Governments) 2007, *National Indigenous Reform Agreement Closing the Gap*, Canberra.

—— 2008, *National Partnership Agreement on Closing the Gap in Indigenous Health Outcomes*, Canberra.

—— 2009a, *COAG Meeting Communique*, Hobart, 30 April.

—— 2009b, *National Partnership Agreement between the Commonwealth of Australia and the State and Territory Governments regarding Indigenous Early Childhood Development*.

—— 2009c, *National Partnership Agreement on Early Childhood Education*.

—— 2009d, *Communique*, 2 July.

—— 2014, *Communique*, 2 May.

Cobb-Clark, D. 2013, *The Case for Making Public Policy Evaluations Public*, Melbourne Institute Policy Briefs Series, Policy Brief No. 1/13.

Conti, G. and Heckman, J. 2012, 'The Economics of Child Well-Being', *National Bureau of Economic Research*, Working Paper no. 18466.

CRC (COAG Reform Council) 2010, *National Indigenous Reform Agreement: Baseline performance report for 2008-09*.

—— 2014, *Indigenous Reform 2012-13: Five years of performance*, 30 April 2014.

Cunningham J., Rumbold AR., Zhang X., & Condon JR., 2008. 'Incidence, aetiology, and outcomes of cancer in Indigenous peoples in Australia', *The lancet oncology* 9:585–95.

De Bortoli, L. and Thomson, S. 2010, *Contextual factors that influence the achievement of Australia's Indigenous Students: Results from 2000-2006*.

Department of Social Services, *Improving School Enrolment and Attendance through Welfare Reform Measure*, https://www.dss.gov.au/our-responsibilities/families-and-children/programs-services/welfare-payments-reform/improving-school-enrolment-and-attendance-through-welfare-reform-measure-seam, (accessed August 10, 2015).

Department of the Prime Minister and Cabinet, *Remote School Attendance Strategy*, http://www.dpmc.gov.au/indigenous-affairs/about/children-and-schooling-programme/remote-school-attendance-strategy, (accessed August 10, 2015).

Dockett, S., Perry, B. and Kearney, E. 2010, *School readiness: what does it mean for Indigenous children, families, schools and communities?* Issues paper no. 2, Closing the Gap Clearinghouse.

DoFD (Department of Finance and Deregulation) 2009, *Strategic Review of Indigenous Expenditure*, Canberra.

DoH (Department of Health) 2015, *Request for Tender for the Provision of the national best Practice Unit for tackling Indigenous Smoking*, Canberra.

Dreise, T and Thomson, S. 2014, 'Unfinished business: PISA shows Indigenous youth are being left behind', *ACER Occasional Essays*, February.

Edwards D. and McMillan J. 2015, 'Completing University in Australia: A cohort analysis exploring equity group outcomes', *Australian Council for Educational Research*, Research briefing, vol. 3.

Forrest, A. 2014, *The Forrest Review*, *Creating Parity,* Canberra.

Gong, H., McNamara, J. and Cassells, R. 2011, *Little Australians: Differences in early childhood developme*nt, AMP.NATSEM Income and Wealth Report, Issue 28, Canberra.

Gonski, D., Boston, K., Greiner, K., Lawrence, C., Scales, B. and Tannock, P. 2011, *Review of Funding for Schooling, Final Report*, Australian Government, Canberra.

Gray M., Hunter B. and Biddle N. 2014, *The economic and social benefits of increasing Indigenous employment 2014*, Centre for Aboriginal Economic Policy Research, Topical Issue no. 1/2014.

—— and Lohoar S. 2012, *Increasing Indigenous employment rates*, Issues Paper no. 3, Australian Institute of Health and Welfare and Australian Institute of Family Studies, Canberra.

Hancock, K., Shephard, C., Lawrence, D. and Zubrick, S. 2013, *Student Attendance and Educational Outcomes: Every Day Counts*, Canberra.

Harrison, L., Goldfeld, S., Metcalfe, E. and Moore, T. 2012, *Early learning programs that promote children's developmental and educational outcomes*, Resource sheet no. 15, Closing the Gap Clearinghouse, August.

Hattie, J. 2009, *Visible Learning, A Synthesis of Over 800 Meta-Analyses Relating to Achievement*, London, Routledge.

Heckman, J. 2011, 'The Economics of Inequality, The Value of Early Childhood Education', *American Educator*, vol. 1, pp. 31-35.

Hewitt, B. and Walter, M. 2014, 'Preschool participation among Indigenous children in Australia', *Family Matters*, Issue No. 95.

Holman, C. and Joyce, S. 2014, *A Promising Future: WA Aboriginal Health Programs. Review of performance with recommendations for consolidation and advance*. Department of Health Western Australia, Perth.

Horton, D. 1996, *The effectiveness of preschool attendance on reading and mathematics achievement*, Office of Educational Research and Improvement.

Howlett, M., Gray, M. and Hunter B. 2015, *Unpacking the Income of Indigenous and non-Indigenous Australians: wages, government payments and other income*, ANU Centre for Aboriginal Economic Policy Research, Working Paper, no. 99/2015.

Hughes, H. and Hughes, M. 2012, *Indigenous Education 2012*, The Centre for Independent Studies, NSW.

KPMG 2014, *National Monitoring and Evaluation of the Indigenous Chronic Disease Package*, Final Report, Canberra.

Liddell, M., Barnett, T., Roost, F. and McEachran, J. 2011, *Investing in our future: an evaluation of the national rollout of the Home Interaction Program for Parents and Youngsters (HIPPY),* Final report to the Department of Education, Employment and Workplace Relations, Melbourne.

Lim, P. and Karmel, T. 2011, *The vocational equivalent to Year 12*, Longitudinal Surveys of Australian Youth, Research Report 58, National Centre for Vocational Education Research, Adelaide.

Lonsdale, M., Wilkinson, J., Armstrong, S., McLay, D., Clerek, S., Cook, J., Wano, K., Simons, R., Milgate, G. and Bramich, M. 2011, *Evaluation of the Sporting Chance Program*, Australian Council for Educational Research.

Magnuson, K., Ruhm, C. and Waldfogel, J. 2007, 'Does Prekindergarten improve school preparation and performance?', *Economics of Education Review*, vol. 26, no. 1, pp. 33-51.

MCEECDYA (Ministerial Council for Education, Early Childhood Development and Youth Affairs) 2011, *Aboriginal and Torres Strait Islander Education Action Plan, 2010-2014*.

McLachlan, R., Gilfillan, G. and Gordon, J. 2013, *Deep and Persistent Disadvantage in Australia*, Staff Working Paper, Productivity Commission, Canberra.

Mellor, S. and Corrigan, M. 2004, *The Case for Change: A Review of Contemporary Research of Indigenous Education Outcomes*, Australian Council for Educational Research.

NHMRC (National Health and Medical Research Council) 2009, *Australian guidelines to reduce health risk from alcohol*, Canberra.

Nous Group 2011, *Schooling Challenges and Opportunities*, *A Report for the Review of Funding for Schooling Panel*, Melbourne Graduate School of Education, Melbourne.

NSW Government 2013, *NSW Government Evaluation Framework, August 2013*.

Ockenden, L. 2014, *Positive Learning Environments for Indigenous children and young people*, Resource sheet no. 33, Produced by the Closing the Gap Clearinghouse. Canberra: Australian Institute of Health and Welfare and Melbourne: Australian Institute of Family Studies.

OECD (Organisation for Economic Co-operation and Development) 2012, *Equity and Quality in Education, Supporting Disadvantaged Students and Schools*, OECD Publishing, Paris.

—— 2014, *PISA 2012 Results in Focus, What 15-year-olds know and what they can do with what they know,* http://www.voced.edu.au/content/ngv%3A59795, (accessed 12/8/2015).

Osborne, K., Baum, F. and Brown, L. 2013, *What works? A review of actions addressing the social and economic determinants of Indigenous health*, Issues Paper no. 7, Produced for the Closing the Gap Clearinghouse. Canberra: Australian Institute of Health and Welfare and Melbourne: Australian Institute of Family Studies.

PC (Productivity Commission) 2012, *Schools Workforce*, Research Report, Canberra.

—— 2013*, Better Indigenous Policies: The Role of Evaluation, Roundtable Proceedings*, 22-23 October 2012, Canberra.

—— 2014, *Childcare and Early Childhood Learning*, Inquiry Report No. 73, Canberra.

Price, M., McCoy, B. and Mafi, S. 2012, 'Progressing the dialogue about a framework for Aboriginal evaluations: sharing methods and key learnings', *Evaluation Journal of Australasia,* Vol. 12, No. 1, pp. 32-37.

Purdie, N. and Buckley, S. 2010, *School attendance and retention of Indigenous Australian Students*, Issues Paper No. 1, Closing the Gap Clearinghouse.

Riddle, S. and Fogart, B., 2015, 'Closing the Gap in education report card: needs improvement', *The Conversation*, http://theconversation.com/closing-the-gap-in-education-report-card-needs-improvement-37455.

Robinson, G., Zubrick, S., Silburn, S., Tyler, W., Jones, Y., D'Aprano, A., McGuinness, K., Cubillo, C., Bell, M. and Stock, C., 2009, *Let's Start: Exploring Together. An early intervention program for Northern Territory children and families*, Final Evaluation Report, Darwin: School for Social and Policy Research, Institute of Advanced Studies, Charles Darwin University.

Rorris, A., Weldon, P., Beavis, A., McKinzie, P., Bramich, M., Deery, A., 2011, *Assessment of current process for targeting of school funding to disadvantaged students, A report prepared for the Review of Funding for Schooling Panel*, Australian Council for Educational Research.

Savvas, A., Boulton, C. and Jepsen, E. 2011, *Influences on Indigenous Labour Market Outcomes*, Productivity Commission Staff Working Paper, Melbourne.

Sayers, M., West, S., Lorains, J., Laidlaw, B., Moore, T. and Robinson, R. 2012, 'Starting school: A pivotal life transition for children and their families', *Family Matters*, Issue No. 90.

SCRGSP (Steering Committee for the Review of Government Service Provision) 2003, *Overcoming Indigenous Disadvantage: Key Indicators 2003*, Productivity Commission, Canberra.

—— 2009a, *National Agreement performance information 2008-09, National Indigenous Reform Agreement*, December.

—— 2009b, *Overcoming Indigenous Disadvantage: Key Indicators 2009*, Productivity Commission, Canberra.

—— 2012, *National Agreement Performance Information 2011-12*.

—— 2013, *National Agreement Performance Information 2012-13*.

—— 2014a, *Overcoming Indigenous Disadvantage: Key Indicators 2014*, Productivity Commission, Canberra.

—— 2014b, *Indigenous Expenditure Report*, Productivity Commission, Canberra.

—— 2014c, *Indigenous Expenditure Report*, *Fact Sheet Healthy Lives*, Productivity Commission, Canberra.

—— 2014d, *Indigenous Expenditure Report, Fact Sheet Description of Expenditure Categories*, Productivity Commission, Canberra.

—— 2014e, *National Agreement Performance Information 2013-14*.

—— 2014f, *Report on Government Services 2014: Indigenous Compendium*, http://www.pc.gov.au/__data/ assets/pdf_file/0008/135746/indigenous-compendium-2014.pdf (accessed 3 September 2014).

—— 2015, *Report on Government Services 2015: Indigenous Compendium,* Productivity Commission, Canberra.

Shomos, A., Turner, E. and Will, L. 2013, *Forms of Work in Australia*, Staff Working Paper, Productivity Commission, Canberra.

Sims, M. 2011, *Early childhood and education services for Indigenous children prior to starting school*, Resource sheet no. 7, Produced for the Closing the Gap Clearinghouse. Canberra: Australian Institute of Health and Welfare and Melbourne: Australian Institute of Family Studies.

Statistics Canada 2005, *Projections of the Aboriginal populations, Canada, provinces and territories*, 2001 to 2017, http://www.stats.govt.nz/browse_for_stats/health/life_expectancy/NZLifeTables_HOTP12-14.aspx (accessed 21 May 2015).

Statistics New Zealand 2015, *New Zealand Period Life Tables 2012-14*, http://www.stats.govt.nz/browse_for_stats/health/life_expectancy/NZLifeTables_HOTP12-14.aspx (accessed 19 May 2015).

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I and Taggart, B. 2008*, Effective Pre-school and Primary Education 3-11 Project (EPPE 3 11)*, Final report from the primary phase: pre-school, school and family influences on children's development during Key Stage 2 (age 7-11), Nottingham: DCSF Publications.

Thomson, S., De Bortoli, L. and Buckley, S. 2013, *PISA 2012: How Australia measures up,* The PISA 2012 assessment of students' mathematical, scientific and reading literacy*,* Australian Council for Educational Research.

Vos, T., Barker, B. C., Stanley, L. and Lopez, A.D. 2007, *The burden of disease and injury in Aboriginal and Torres Strait Islander peoples 2003,* Brisbane: School of Population Health, University of Queensland.

Wake, M., Sanson, A., Berthelsen, D., Hardy, P., Misson, S., Smith, K., Ungerer, J., and the LSAC Research Consortium, 2008, 'How well are Australian infants and children aged 4 to 5 years doing? Findings from the Longitudinal Study of Australian Children Wave 1', *Social Policy Research Paper No.36*, Department of Families, Housing, Community Services and Indigenous Affairs.

Warren, D. and Haisken-DeNew, J. 2013, *Early Bird Catches the Worm: The Causal Impact of Pre-school Participation and Teacher Qualifications on Year 3 National NAPLAN Cognitive Tests*, Melbourne Institute, University of Melbourne.

What Works: The Works Program 2012, *Success in remote schools: a research study of eleven improving remote schools*: Melbourne: National Curriculum Services.

WHO (World Health Organization) 2014, *The determinants of health.* Geneva.

Zubrick, S. 2013, *School Attendance: Equities and Inequities in Growth Trajectories of Academic Performance*, Research Conference 2014.

—— , Silburn, S., De Maio, J., Shephard, C., Griffin, J., Dalby, R., et al, 2006, *The Western Australian Aboriginal Child Health Survey: Improving the educational experiences of Aboriginal children and young people*, Vol. 3, Perth, Curtin University of Technology and Telethon Institute for Child Health Research.