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## 3 Interactions across the framework

Different aspects of disadvantage are often interrelated, and there are strong links between many of the COAG targets and headline indicators, and across the strategic areas for action. Action may be needed on several fronts at once in order to make progress and, conversely, sometimes a single action can have multiple effects. The report framework therefore emphasises the need for a whole-of-government perspective, in order to close the gaps in outcomes for Indigenous people.

### 3.1 Multiple disadvantage

Different aspects of disadvantage often seem to occur together. Significant interactions between outcomes are noted in the text of each section, but the report does not attempt to map all the possible interactions across strategic areas for action or indicators.

In some areas, research has provided evidence to link certain factors — for example, between one-third and one-half of the gap in Indigenous self-assessed health status can be attributed to education and income (Booth and Carroll 2005, AIHW 2004). Similarly, between one-third and two-thirds of the gap in early childhood outcomes can be attributed to socio-economic differences between Indigenous and non-Indigenous people (Leigh and Gong 2008).

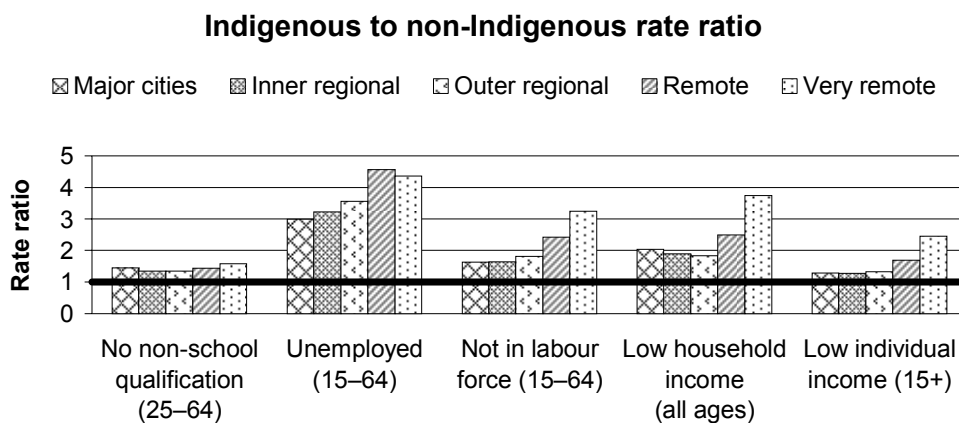
Academic research on the underlying *causal* factors behind Indigenous disadvantage is still thin, but data sources such as the 2006 ABS Census of Population and Housing allow analysis of the *association* between different aspects of disadvantage. Chapter 13 of the report uses data from the Census to identify some aspects of disadvantage that tend to occur together (box 3.1.1) and to model the effects of some particular influences in isolation (box 3.1.2). However, these analyses do not demonstrate that disadvantage in one area is the *cause* of another poor outcome.

### Box 3.1.1 Measuring multiple disadvantage

Chapter 13 examines patterns of disadvantage using proxy measures of COAG targets and other headline indicators and strategic change indicators.

In the figure below, 'relative' Indigenous disadvantage is measured by comparing the rate of Indigenous disadvantage (for example, the proportion of Indigenous people reporting they do not have a non-school qualification) with the corresponding rate for the non-Indigenous population. The 'rate ratio' is the rate for the Indigenous population divided by the rate for the non-Indigenous population. For 'negative' outcomes (such as unemployment), a rate ratio value greater than one (above the solid horizontal black line) implies that Indigenous people are disadvantaged compared to non-Indigenous people.

The figure shows that, although disadvantage tends to increase with the degree of remoteness, Indigenous people in all remoteness areas are relatively disadvantaged across measures of education, employment and income.



Source: Chapter 13, sections 13.1 and 13.2.

Chapter 13 also includes some information from a Productivity Commission research project into factors related to Indigenous labour market participation and unemployment (box 3.1.2). In this analysis, statistical techniques have been used to isolate the contribution of one factor holding other modelled factors constant. The use of this technique means that the results of this analysis are not comparable to other sections of the report.

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### **Box 3.1.2 Influences on labour market outcomes**

Using data from the ABS 2006 Census, the Productivity Commission used a technique called multiple regression analysis to identify which factors have the strongest effects on Indigenous labour force participation and unemployment. The technique allows modelled factors to be held constant, in order to isolate the effect of just one factor.

As expected, higher education was associated with increased labour force participation. The effect was greater for Indigenous people than for non-Indigenous people, and peaked at year 12 for Indigenous males (although there were still benefits from even higher levels of education) and at degree or higher level for Indigenous females. The subject area studied at post-school level also influenced labour market outcomes for Indigenous people more than for non-Indigenous people, holding other factors constant.

The analysis also examined the effects of some non-education factors on labour force participation, such as personal and family characteristics, relationship status and geographical location.

*Source:* Chapter 13, section 13.3.

## **3.2 Multiple causes**

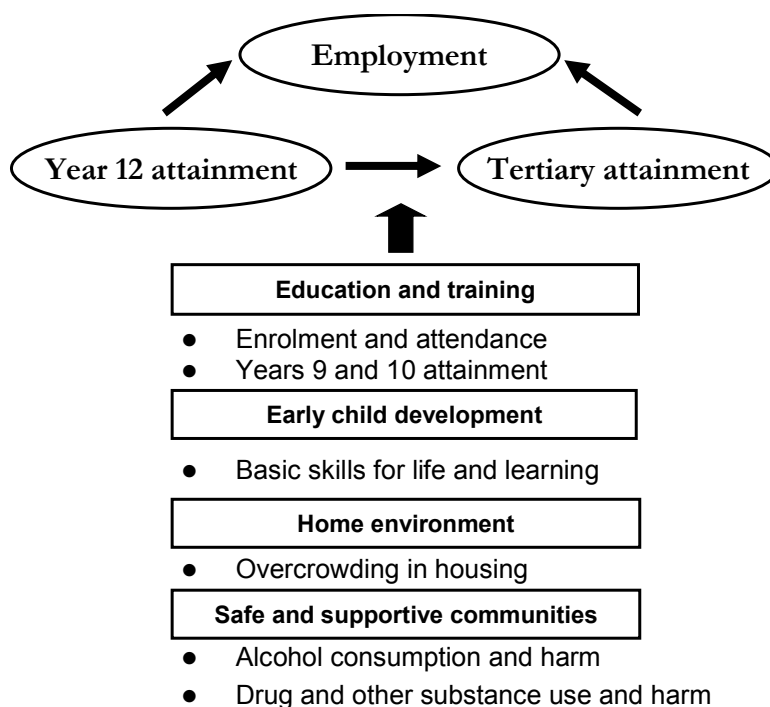
Prevention and early intervention lie at the heart of the report framework. The focus is on encouraging action in the strategic areas that, over time, will lead to improvements in the COAG targets and headline outcomes, and progress toward the priority outcomes.

The diagrams in figures 3.2.1 and 3.2.2 illustrate just some of the many linked factors that can affect outcomes. In figure 3.2.1, the COAG target of employment, the closely related COAG target of year 12 attainment and headline indicator of tertiary attainment, are influenced by outcomes across the framework. It is obvious that educational success will depend on outcomes such as enrolment, attendance and attainment in the ‘Education and training’ strategic area, which in turn depend on the achievement of basic skills for life and learning during ‘Early child development’. However, social and environmental factors, such as those in the ‘Home environment’ and ‘Safe and supportive communities’ strategic areas for action, also affect all these outcomes. Of course, these are not the only factors at work — for example, employment and education outcomes can also be influenced by the inter-generational effects of parental income, employment and education levels. The message from the framework is that, although educational services play an important role in achieving these COAG targets and headline indicators, many other services must also play a part.

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Figure 3.2.1 Multiple causes — employment

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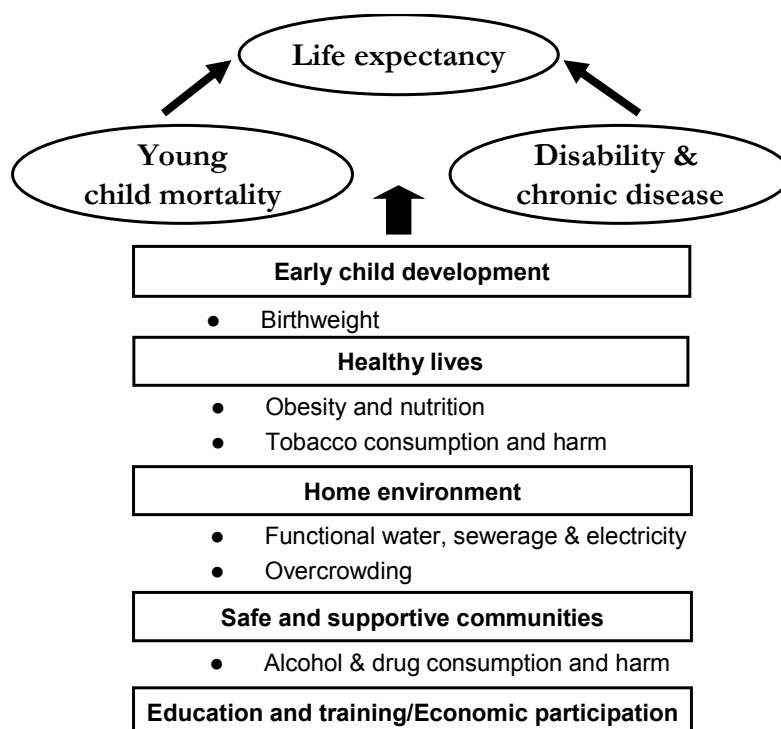
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In figure 3.2.2, the COAG target of ‘Life expectancy’ is clearly linked to the ‘Young child mortality’ target and the ‘Disability and chronic disease’ headline indicator. In turn, these outcomes will be influenced by outcomes such as ‘Birthweight’ and ‘Injury and preventable disease’ in the ‘Early child development’ strategic area for action, and ‘Obesity and nutrition’ and ‘Tobacco consumption and harm’ in the ‘Healthy lives’ strategic area. But actions in these areas must be supported by actions to address outcomes such as ‘Access to clean water and functional sewerage and electricity’ and ‘Overcrowding in housing’ in the ‘Home environment’ strategic area, and ‘Alcohol and drug consumption and harm’ under the ‘Safe and supportive communities’ strategic area. Actions must also address other social determinants of health in the education and employment areas.

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Figure 3.2.2 **Multiple causes — health**

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### 3.3 Multiple effects

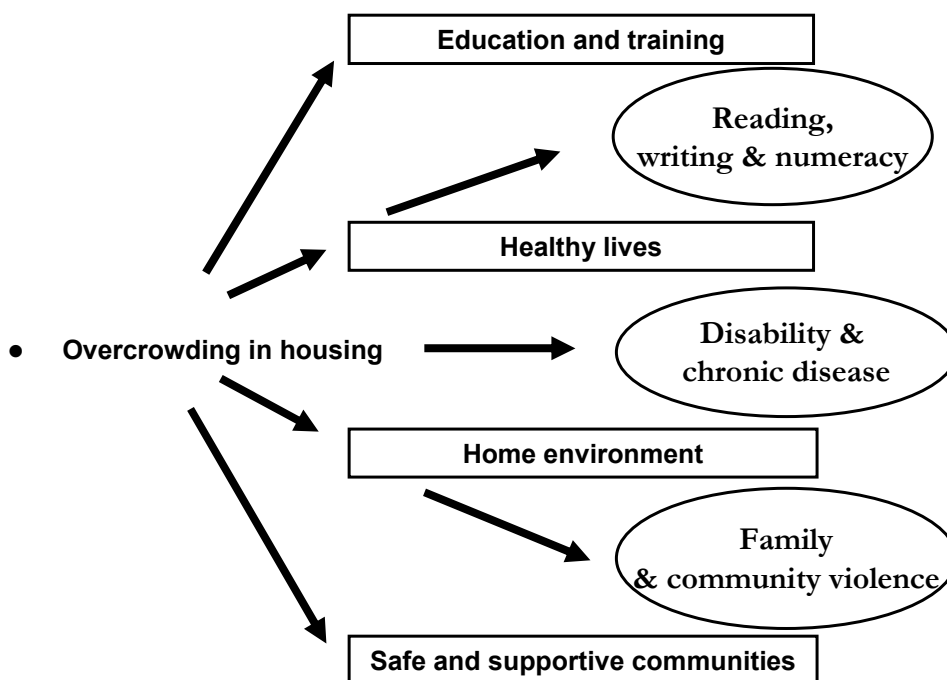
Although some high level outcomes may require actions across a range of areas, sometimes a single well-targeted action can have effects across a number of strategic areas for action and influence a range of high level outcomes. These interactions emphasise the need for a whole of government approach to assessing the costs and benefits of such actions.

For example, housing typically is regarded as the responsibility of departments of housing. But as illustrated in figure 3.3.1, reducing overcrowding in housing can affect outcomes in the ‘Education and training’, ‘Healthy lives’, ‘Home environment’ and ‘Safe and supportive communities’ strategic areas for action, and can contribute to the COAG targets of ‘Reading, writing and numeracy’, ‘Disability and chronic disease’ and ‘Family and community violence’. Although other influences are also important in each of these areas, there is sufficient evidence for education, health and justice departments to be concerned about housing issues.

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Figure 3.3.1 Multiple effects — overcrowding

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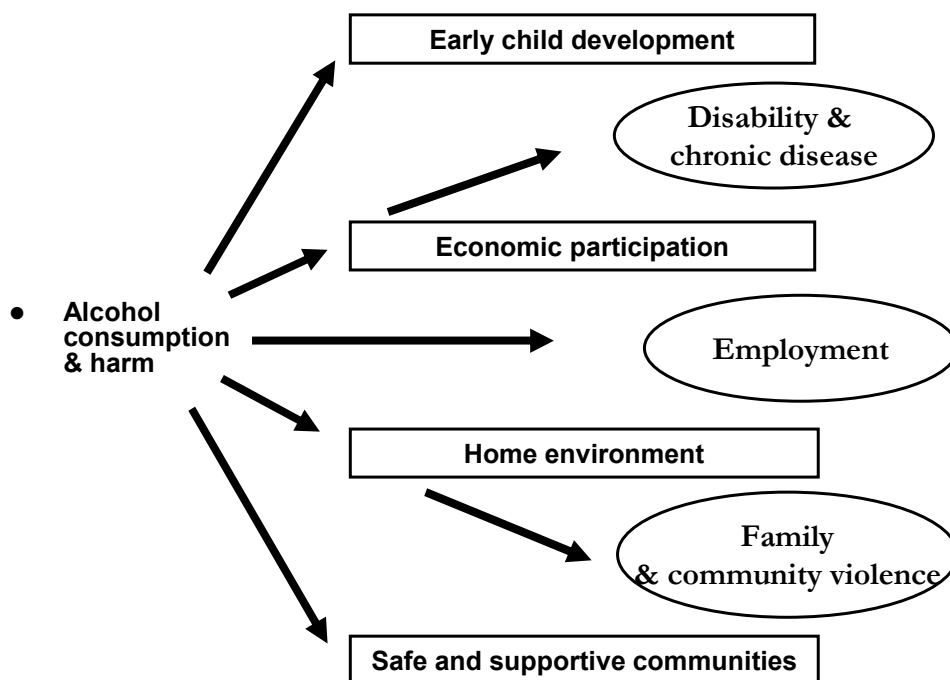
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Figure 3.3.2 illustrates similar links for actions designed to address excessive alcohol consumption and associated harm. Misuse of alcohol can affect outcomes in the ‘Early child development’, ‘Healthy lives’, ‘Economic participation’, and ‘Safe and supportive communities’ strategic areas for action, and can contribute to the COAG targets of ‘Disability and chronic disease’, ‘Employment’ and ‘Family and community violence’, among others. Although alcohol misuse is not the only influence in these areas, a range of studies have identified the significant part this risk factor can play in a broad range of outcomes (section 10.3).

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Figure 3.3.2 Multiple effects — alcohol

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### 3.4 References

AIHW (Australian Institute of Health and Welfare) 2004, *Australia's Health 2004*, Canberra.

Booth A, and Carroll N. 2005, *The Health Status of Indigenous and Non-Indigenous Australians*, IZA Discussion Paper No. 1534.

Leigh, A and Gong, X. 2008, *Estimating Cognitive Gaps Between Indigenous and Non-Indigenous Australians*, Working Paper, Research School of Social Sciences, Australian National University.

