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A pilot study, Stage 2

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Contents

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This project was an initiative of the former National Child Protection and Support Services data group, and received funding support from the Community and Disability Services Ministers' Advisory Council. The AIHW was commissioned to do this work in conjunction with the states and territories, under the guidance of the project Steering Committee.

The Steering Committee for Stage 2 included National Child Protection and Support Services data group representatives from the five participating states (Victoria, Queensland, Western Australia, South Australia and Tasmania) and the AIHW, and representatives from the education departments in some states.

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Abbreviations

AIHW	Australian Institute of Health and Welfare
COAG	Council of Australian Governments
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
NAPLAN	National Assessment Program—Literacy and Numeracy

Symbols

–	nil or rounded to zero
<	less than
95% CI	95% confidence interval
n	sample size
n.p.	not published (due to incomplete data)
OR_{MH}	Mantel-Haenszel odds ratios
SD	standard deviation

Summary

Background

It is well known that education is important for the overall wellbeing of children, and that literacy and numeracy levels are generally high among Australian children. However, there is limited Australian research on the educational outcomes of children placed in child protection services, and in particular, whether children's educational performances tend to improve while in the care of the state (AIHW 2007a). This report looks at this issue for children on guardianship/custody orders.

The pilot study

This pilot study looked at the academic performance of children on guardianship/custody orders across 2003 to 2006, and identified changes in their performance over this period. Where possible, the academic results of children on orders were compared with those of other children.

The study population included children in grades 3, 5 and 7 at government schools who participated in education department-based reading and numeracy tests between 2003 and 2006, and were on a guardianship/custody orders at the time of testing. Victoria, Queensland, South Australia, Western Australia and Tasmania provided data on almost 4,700 children for this report.

This report concludes a two-stage pilot study (refer to Section 1.1. for further details). The findings from Stage 1 were presented in a previous report (AIHW 2007a).

This project involved interdepartmental linkage of administrative data across multiple jurisdictions—the first Australian study in this field to have done so.

Findings

This pilot study found that a considerable proportion of children on guardianship/custody orders are not meeting the national benchmarks for reading and numeracy—these results varied considerably across states and grades between 2003 and 2006:

- For reading, the proportion of children not achieving the benchmark ranged between 56% for Grade 5 Queensland students in 2005 to 4% among Grade 3 Tasmanian students in 2003.
- Similarly, non-achievement of the numeracy benchmark ranged from 68% among Grade 7 Tasmanian students in 2006 to 7% for Grade 3 Victorian students in 2004.

The benchmarks represent the minimum standards, below which 'students will have difficulty progressing satisfactorily at school' (MCEETYA 2007:2).

Other key findings include:

- Children on guardianship/custody orders had lower levels of benchmark achievement, compared with all children, children with a language background other than English, and children living in remote areas. These patterns were consistently found across 2003 to 2006, and were statistically significant in the majority of the 120 sets of comparisons done (see Section 3.3 for further details).
- The academic performance of children on guardianship/custody orders was most similar to that of Aboriginal and Torres Strait Islander children in the general student population—similar proportions of children achieved the benchmarks in both groups (but as noted above, this was considerably lower than that for all children).

- Within the study population, Indigenous children on orders were about half as likely to achieve the reading and numeracy benchmarks as other children on orders. This suggests Indigenous children are a subgroup at increased risk of poor academic achievement among an already disadvantaged group.
- Length of time on orders was not found to be a significant factor in benchmark achievement. Further analyses using another outcome measure (for example, data from the new standardised National Assessment Program—Literacy and Numeracy) would be worthwhile to confirm this finding.
- About half of the children on guardianship/custody orders lived with foster or relative/kinship carers (ranging between 51% and 64% across 2003 to 2006), and had fairly stable living arrangements, remaining in the same out-of-home care placement over the previous 12 months (also 51–64%). These variables were not found to be consistently significant factors in benchmark achievement. Similarly, further analyses using another outcome measure would be beneficial to confirm these findings.
- Analysis of academic performance over the 4 years highlighted the diverse pathways through the educational system experienced by children on guardianship/ custody orders. The pathways of a longitudinal subgroup of children who had been on guardianship/custody orders continuously over the 4 years were examined. It was found that most of these children (97%) followed a 'typical' pathway, in that they progressed one grade each year—for example, a child may have sat the Grade 3 test in 2004, and the Grade 5 test 2 years later in 2006. Among these children:
  - about 6 in 10 children can be viewed as having positive patterns in benchmark achievement over time:
    - about 5 in 10 achieved the benchmark in both years
    - about 1 in 10 showed improved benchmark achievement over time (did not achieve the benchmark in the first test, but did in the subsequent test)
  - the remaining 4 in 10 had less desirable outcomes:
    - about 2 in 10 had declining benchmark achievement over time (achieved the benchmark in the first test, but did not in the subsequent test)
    - about 2 in 10 children did not achieve the benchmark in either year.

  The remaining 3% of the longitudinal subgroup comprised a small group of children who experienced even more complex pathways, which involved repeating or skipping grades, with various benchmark achievement outcomes along the way.

Next steps

The disparities revealed in this pilot study provide further evidence of poor academic performance among children on guardianship/custody orders. The complex academic pathways experienced by a small subgroup of these children were also illustrated. While Indigenous status is already understood to be a key factor in academic performance, the influence of other factors such as socioeconomic status, and stability of living arrangements and schooling require further exploration. These findings indicate a need for further work to identify and understand the complex factors that influence these patterns.

The release of the National Framework for the Protection of Australia's Children 2009–2020 means that the development of an ongoing national data collection in this field has recently increased in importance, and the development of mechanisms to enable regular reporting has become more urgent.

1 Introduction

In Australia, state and territory governments are responsible for the welfare of about 34,000 children who are placed in child protection services, such as care and protection orders and out-of-home care (AIHW 2010). Education is particularly important for children placed in child protection services, as it is an important gateway to future employment and life opportunities (AIHW 2007a). However, numerous international studies have found that children in the care of the state have poorer educational outcomes than other children, including: poorer school grades; lower scores on standardised tests; developmental delays; higher rates of special education placements and repeating grades; behavioural and disciplinary problems; and higher absenteeism, truancy and drop-out rates (Evans et al. 2004; Merdinger et al. 2005; Sawyer & Dubowitz 1994; Social Exclusion Unit 2003).

There is a clear lack of Australian research on the educational outcomes of children placed in child protection services (AIHW 2007a). A key question about the outcomes of these services is whether children's educational performance improves while in the care of the state. This report looks at this question.

This is the first Australian study to analyse both cross-sectional and longitudinal data on the academic performance (as assessed by reading and numeracy scores) of children on guardianship/custody orders across multiple jurisdictions. All jurisdictions were invited to participate in this pilot study—Victoria, Queensland, Western Australia, South Australia and Tasmania provided data for Stage 2 of this project.

This report is accompanied by detailed state-level data available online at <www.aihw.gov.au/publications>. It was not possible to include all these tables in this report, due to the volume of comparisons done. Refer to 'Comparison with other children' in Section 3.3 for further details.

1.1 Background

The Educational outcomes pilot project began in 2004 as part of the former Community Services Ministers' Advisory Council (now Community and Disability Services Ministers' Advisory Council) strategic agenda for the *Protection and care of children*. This project built on previous work done by the Queensland Department of Families in conjunction with Education Queensland, and the South Australian Department of Families and Communities.

This project was an initiative of the former National Child Protection and Support Services data group, and received funding support from the Community and Disability Services Ministers' Advisory Council. The AIHW was commissioned to do this work in conjunction with the states and territories.

This project was a longitudinal pilot study designed in two stages:

- Stage 1 provided a snapshot of the academic performance of children on guardianship/custody orders in 2003. These findings were presented in a previous report (AIHW 2007a), which included cross-sectional data from Victoria, Queensland, South Australia, Tasmania and the Australian Capital Territory.
- Stage 2 (the focus of this report) followed up these children 2 years later (in 2005), with the aim of identifying any change in their academic performance over time, as well as

providing a second snapshot of the educational attainment of all children on guardianship/custody orders. Following the completion of Stage 1, there were changes to the project scope (the data collection expanded to also include 2004 and 2006) and changes to the participating jurisdictions (the Australian Capital Territory did not continue, and Western Australia joined the project, also providing 2003 data).

This current report presents cross-sectional and longitudinal data for 2003 to 2006, from Victoria, Queensland, Western Australia, South Australia and Tasmania. As noted above, it is accompanied by detailed state-level data available electronically.

In Stage 2, Victoria, Queensland and Tasmania revised the 2003 data they originally provided in Stage 1, and, as such, these data differ to that included in the previous report.

1.2 Report structure

This report includes:

- a profile of the study population (Chapter 2)
- an overview of the academic performance of children on guardianship/custody orders, and associated characteristics (chapters 3 and 4, with detailed tables in Appendix B)
- discussion of the main findings, along with an overview of the 'next steps' in progressing this data collection (Chapter 5)
- detailed information on the methods (Appendix A).

The phrases 'guardianship/custody orders' and 'orders' are used interchangeably throughout the report.

2 Profile of children on guardianship or custody orders

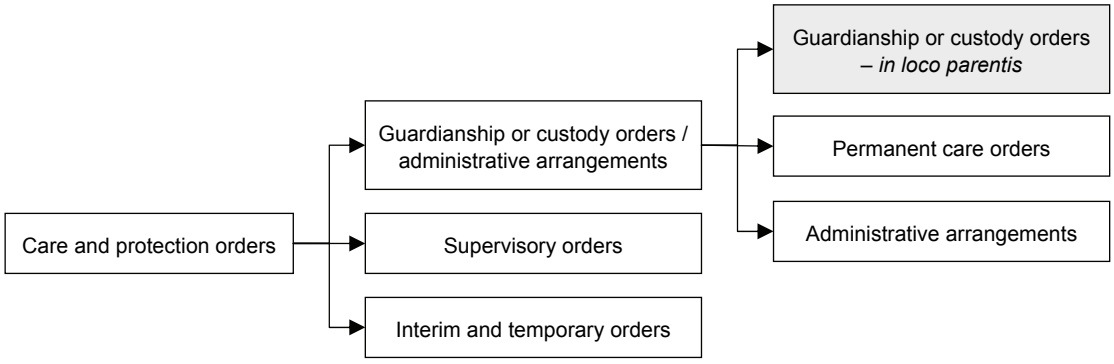
This chapter presents a brief profile of the study population, including their demographic and child protection-related characteristics. Detailed descriptions of key terms are provided in the Glossary.

Box 2.1: Study population

The study population included all children who:

- attended Grade 3, 5, or 7 at a government school†, *and*
- participated in education department reading/numeracy testing for national reporting between 2003 and 2006 (including children who sat the test or were recorded as absent/exempt/withdrawn), *and*
- were on a guardianship or custody order at the time of testing, whereby the state/territory was 'in loco parentis'.

Five states participated in this study—Victoria, Queensland, Western Australia, South Australia and Tasmania. Appendix A.1 includes a detailed description of the inclusion/exclusion criteria for the study population. The diagram below illustrates the sub-category of care and protection orders that are the focus of this study.* Further information on departmental testing is included in Chapter 3.



† Data could only be accessed for children attending government schools—as such, children on guardianship/custody orders who were attending private and other non-government schools will be excluded. See Appendix A.4 for further details.

* Guardianship/custody orders are the most common category of care and protection orders (AIHW 2007b:40). The shaded box indicates orders in scope for this pilot study—for legal and confidentiality reasons, it was not possible to access data for children on other types of orders.

2.1 Size of study population

The study population are captured in four waves of data (see Figure A2). Each wave includes cross-sectional data on all children within scope in that year. Longitudinal data are also provided, by tracking the children in each wave over the remaining waves.

Data were received for 4,673 children over the 4 years (2003 to 2006)—this includes children who participated in reading and/or numeracy testing in at least 1 of the 4 years (Table B1). The number of children in each year is listed in Table 2.1.

Education department testing for national reporting occurs each year among students in grades 3, 5 and 7 (see Section 3.1 for more details). As such, a child progressing at the usual rate would be involved in testing every 2 years—this is reflected in the proportion of children in waves 3 and 4 who were also included in waves 1 and 2 (Table 2.1). A small proportion of children did not progress at the usual rate as they repeated or skipped grades.

Table 2.1: Number of children in study population[(a)], 2003–2006

	2003 (Wave 1)	2004 (Wave 2)	2005 (Wave 3)	2006 (Wave 4)
			Number of children	
Vic	408	377	377	371
Qld	775	829	807	812
WA[(b)]	156	208	166	228
SA	168	37	178	212
Tas	79	74	93	104
Total	**1,586**	**1,525**	**1,621**	**1,727**
			Percentage of total	
New entrants[(c)]		99	47	48
From previous waves[(c)]				
Participated in testing 2 years apart[(d)]			52 (from Wave 1)	50 (from Wave 2)
Participated in testing less/more than 2 years apart[(d)]		1	1	2

(a) Includes all children who participated in reading and/or numeracy testing in each year (refer to Box 3.1 for information on the categories of participation). Data were received for 4,673 children over the 4 years—as such, some children will be included across multiple years in the above table. A description of the longitudinal overlap across the four waves of data is included in Appendix A.1.

(b) Due to earlier changes to the enrolment age, Western Australia had a half year cohort in Grade 3 in 2005.

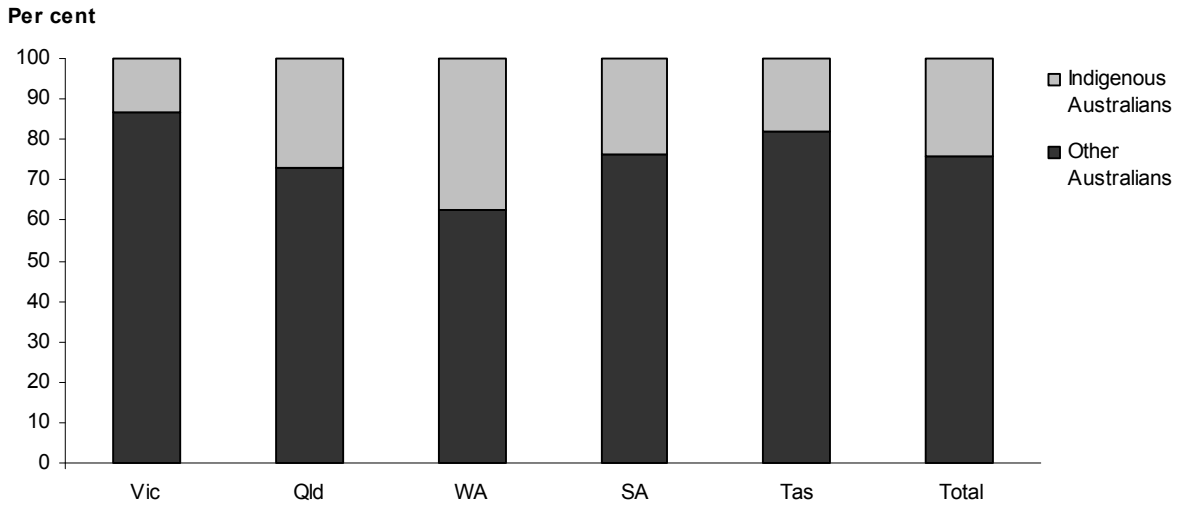
(c) Includes children who were not included in any of the previous waves.

(d) Children who 'participated in testing 2 years apart' progressed at the usual rate and were involved in testing every 2 years. Children who 'participated in testing less/more than 2 years apart' did not progress at the usual rate, as they repeated or skipped grades.

Source: AIHW Educational outcomes 2008 pilot data collection.

2.2 Demographic characteristics

- There were similar proportions of males and females in the study population (51% and 49%, respectively)—this pattern was consistent across states (Table B1).
- Similar proportions of children on guardianship/custody orders were in grades 3, 5 and 7 across 2003 to 2006 (Table B2).
- Almost one-quarter of children in the study population (24%) were Aboriginal or Torres Strait Islander. However, the proportion of Indigenous children varied across states—ranging from 38% in Western Australia, to 13% in Victoria (Figure 2.1). These patterns are similar to those found among children on all types of care and protection orders (AIHW 2007b:44).



Source: Table B1.

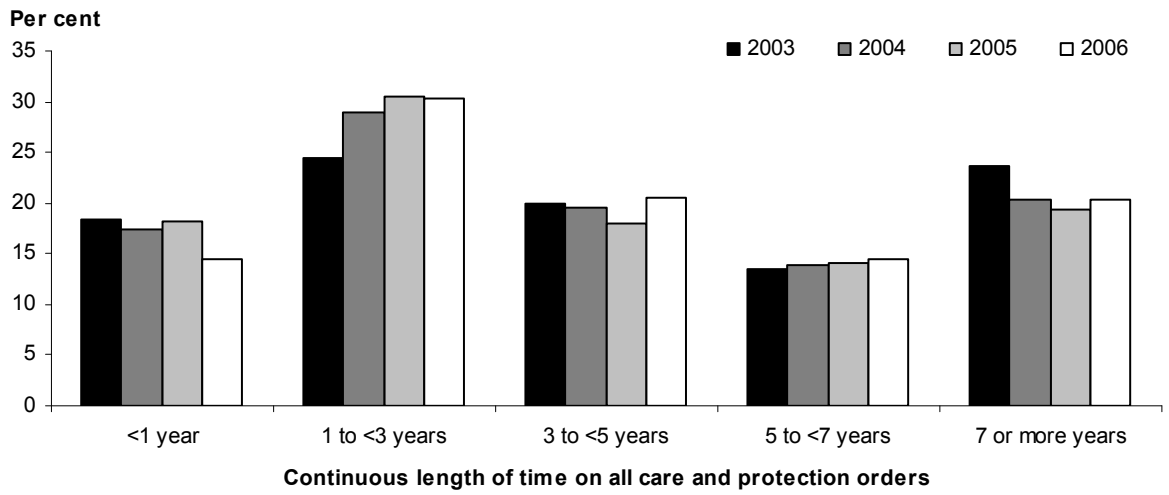
Figure 2.1: Indigenous status of children on guardianship/custody orders

2.3 Child protection-related characteristics

At any point in the child protection process, the child protection services department has the authority to apply to the relevant court to place the child on a care and protection order. Recourse to the court is usually a last resort, and is used in situations where other avenues for resolution of the situation have been exhausted (see AIHW 2007b:5 for more details). A child can be on only one care and protection order at any point; however, a child may be placed on several different types of orders consecutively over time.

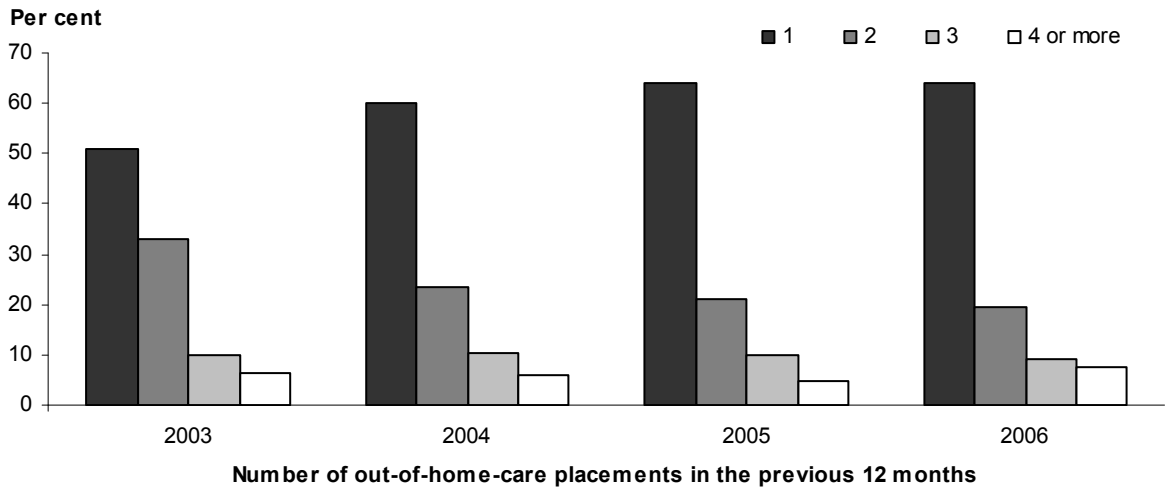
Guardianship/custody orders are one type of care and protection order (Box 2.1). These orders generally remove responsibility of the child from the parents, and transfer it to the child protection services department, or other appropriate agency or department. Part of this responsibility involves finding suitable accommodation for children and young people who are unable to live with their parents (AIHW 2007b:47).

- Among children in the study population, the median length of continuous time on all types of care and protection orders was just over 3 years. However, this varied markedly between children, with some children being on orders for less than 1 month, while others had been on orders for more than a decade (Figure 2.2; Table B3).
- The median length of time that children in this study had been on their current guardianship/custody order was about 2 years. However, the range of time on the current order was similar to that above (Table B3).
- About half of the children either lived with foster carers (35–40% across 2003 to 2006) or with relatives or kin other than their parents (16–24%) (Table B5).
- More than half of the children in out-of-home care had fairly stable living arrangements, with many only having one out-of-home care placement in the previous 12 months (51–64% across 2003 to 2006); however, 15–16% had 3 or more different placements (Figure 2.3).
- Data on stability of schooling were provided by Queensland, South Australia and Tasmania. Among children for whom data were available, most attended 1 government school in the previous 12 months (73–76% across 2003 to 2006), while 4% of children attended 3 or more different schools (Table B7).



Source: Table B4.

Figure 2.2: Length of continuous time on all care and protection orders among children on guardianship/custody orders, 2003–2006



Source: Table B6.

Figure 2.3: Number of out-of-home care placements in the previous 12 months among children on guardianship/custody orders, 2003–2006

3 Academic performance of children on guardianship or custody orders

Chapter 3 presents a detailed description of the academic performance of children on guardianship/custody orders, including participation in assessment, achievement of national benchmarks, and average test scores. Where possible, the performance of children on orders was compared with the general population of children sitting the tests. Longitudinal patterns are also explored.

This chapter compares the academic performance of children on guardianship/custody orders with the general population of children who sat the tests each year. While it would have been preferable to compare children on orders with those not on orders, this was not possible given the data available. Nonetheless, the comparative data used to assess the inequality in academic performance is more likely to underestimate, rather than overestimate, these differences.

3.1 Measures of academic performance

The educational performance of children on guardianship/custody orders was measured using the children's reading and numeracy scores from state and territory education department testing.

All jurisdictions have their own curriculum and monitoring programs; however, national minimum standards for reading and numeracy are in place for students in grades 3, 5, 7 and 9. Students who achieve the minimum standard have demonstrated at least the basic understanding required for their school grade. Although national minimum standards have been in place since 1999 the way in which these standards are assessed has changed over time.

The testing data included in this study are for 2003 to 2006. During these years, each state and territory had their own testing regime for reading and numeracy (to which national standards had been applied), and their own scaling system for these tests, so the test scores are not directly comparable across jurisdictions for these years. However, equivalent national benchmarks were established using a nationally agreed procedure that was designed to equate the state and territory tests. This allows achievement of the national benchmarks to be compared across states and territories; however, the data are somewhat limited due to their dichotomous (pass/fail) nature. The national benchmarks represent the minimum standards of performance below which 'students will have difficulty progressing satisfactorily at school' (MCEETYA 2007:2).

From 2008, standardised national testing was introduced. The National Assessment Program—Literacy and Numeracy (NAPLAN) tests allow consistent and comparable assessment of all students in grades 3, 5, 7 and 9 across Australia, and provide considerably more information about student achievement than was previously available (AIHW 2009; MCEETYA 2008).

3.2 Participation in assessment

Children in both government and non-government schools undertake reading and numeracy testing. In general, children in special schools and learning support units are not required to participate in the testing. For students attending a school that is taking part in reading and numeracy testing for national reporting, their participation can be described under three categories (see Box 3.1).

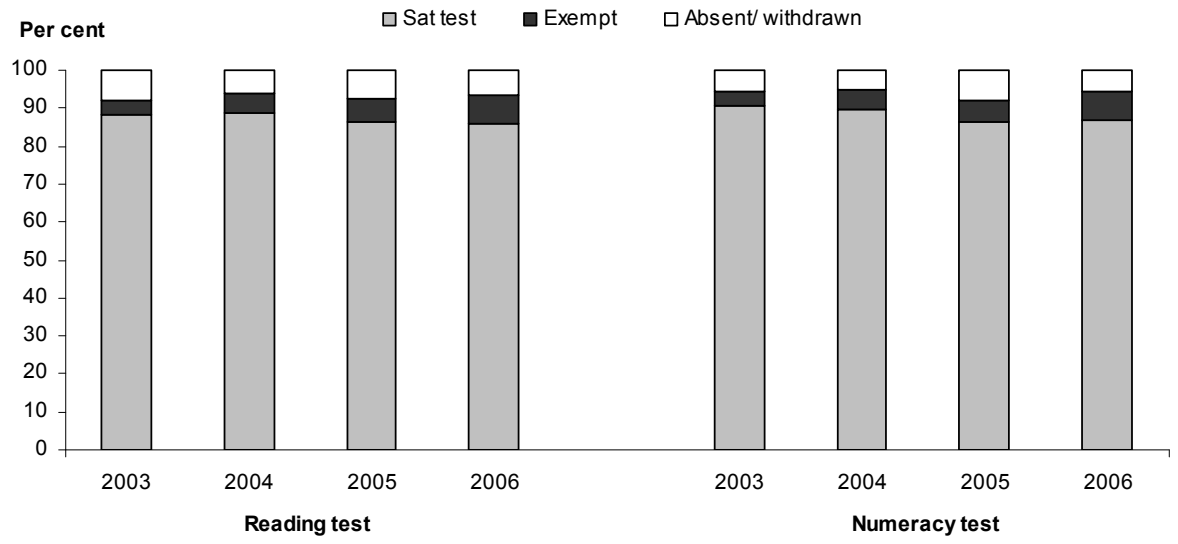
Box 3.1: Categories of participation in assessment

This report uses three categories to describe students' participation in assessment:

- **Sat test**—Includes students who sat the test and received a test score.
- **Exempt**—Formal exemptions are granted to students where testing would not be appropriate—for example, students with a disability or high-support needs, those with English language difficulties, or other exceptional circumstances. Student exemption criteria vary across states (for examples, from the 2006 testing, see MCEETYA 2007:38).
- **Absent/withdrawn**—Students may have been absent on the day of the test, or withdrawn from testing by their parents/caregivers.

A child may not necessarily have the same participation in both the reading and numeracy tests in a given year. For example, a child may have sat the reading test, but been absent/withdrawn or formally exempted from the numeracy test that year.

- A high proportion of children in this study sat the reading or numeracy tests (ranging between 86% and 91% over the 4 years). A small proportion of these children were formally exempted from testing (4–8%), with a further 5–8% reported as absent/withdrawn (Figure 3.1).
- Some children in the study population did not have the same participation in both the reading and numeracy tests each year. While a high proportion of children sat both tests each year (ranging between 84–87% over the 4 years), and 7–11% were exempt or absent/withdrawn from both tests, the remaining 5-7% sat one test, but were absent/withdrawn or exempt from the other (Table B8).
- Limited published data are available for comparison to the study population. Some published data on the general population of children attending government schools are available; however, while the proportion of these children who were absent/withdrawn can be identified, it is not possible to disaggregate the proportions sitting the test and exempt. When compared with the study population, it was found that similar proportions of the general population of children attending government schools were absent/withdrawn from testing (MCEETYA 2004, 2005, 2006, 2007).
- Changes in participation over time were also explored. Among children who were continuously on guardianship/custody orders over the 2-year period, those who were absent/withdrawn or exempt from testing in 2003 or 2004 were at least 14 times as likely to remain absent/withdrawn or exempt from testing 2 years later (OR_{MH}=13.9–33.0, $p<0.0001$) (Table B9).



Note: Includes all children in the study population (Box 2.1) for whom data on participation in testing were available. Calculations may be affected where data were not provided for all categories.

Source: Table B10.

Figure 3.1: Participation in testing by children on guardianship/custody orders, 2003–2006

3.3 Achievement of national benchmarks

Across 2003 to 2006, equivalent national benchmarks were applied to the different testing regimes in each state and territory, to allow comparison of benchmark achievement across jurisdictions. The national benchmarks represent minimum standards of performance below which 'students will have difficulty progressing satisfactorily at school' (MCEETYA 2007:2). See Section 3.1 for further details.

Box 3.2: Categories of national benchmark achievement

- **Achieved benchmark**—Includes children who sat the test and received a test score equal to or above the national benchmark for their school grade
- **Did not achieve benchmark**—Includes children who sat the test and received a test below the national benchmark for their school grade, and children who were formally exempted from testing.

Children not included in the benchmark calculation are those who were absent/ withdrawn from testing, or attending a school not participating in the testing (MCEETYA 2007). Calculations of benchmark achievement among children on guardianship/custody orders may be affected where data were not provided for all categories of 'participation in testing' (see Table B10 for further details).

This section presents the proportions of children on guardianship/custody orders achieving the reading and numeracy benchmarks. Comparisons to several subgroups of the general population of children are made, and longitudinal patterns are explored.

Children on orders

- The proportion of children on guardianship/custody orders achieving the national reading and numeracy benchmarks varied considerably across states and grades between 2003 and 2006. For reading, the results ranged between 44% for Grade 5 Queensland students in 2005 to 96% among Grade 3 Tasmanian students in 2003. Similarly, numeracy benchmark achievement ranged from 32% among Grade 7 Tasmanian students in 2006 to 93% for Grade 3 Victorian students in 2004 (tables B11–B14).
- The proportion of children on orders achieving the national benchmarks generally decreased with increasing age—Grade 5 and 7 students were generally less likely to achieve the benchmarks than those in Grade 3. This pattern was more pronounced in 2003 and 2004. However, for most states this pattern was not statistically significant—that is, the 95% confidence intervals overlapped across grades (tables B11–B14).
- While the proportion of children on guardianship/custody orders who achieved the benchmark was higher for reading than numeracy, typically this finding was not statistically significant. However, a significant pattern was found in Victoria, where a consistently higher proportion of Grade 7 children on orders achieved the reading benchmark than the numeracy benchmark across 2003 to 2006 (tables B11–B14).
- When comparing students in the same grade and state across time, no clear patterns were found. For example, the proportion of Western Australian Grade 3 students achieving the reading benchmark fluctuated between 89% in 2004 and 65% in 2005. Furthermore, any differences found were generally not statistically significant (tables B11–B14).
- A lower proportion of Aboriginal and Torres Strait Islander children on guardianship/custody orders achieved the reading and numeracy benchmarks than other children on orders (ranging from 3–30 percentage points lower than other children, across grade, state and year). This pattern was statistically significant for most grades across 2003 to 2006 (Table B15).

Comparison with other children

The published comparative benchmark data for the general population of children are presented separately by year, test, state and grade (MCEETYA 2004, 2005, 2006, 2007). As this study includes data for 4 years, two tests, five states and three grades, there are essentially 120 sets of benchmark data to compare across groups. In presenting the results below, overall patterns have been identified, and the sets are referred to as 'cases'—for example, if it is reported that 50% of cases had significantly lower benchmark achievement, this indicates that this pattern occurred in 60 of the 120 sets of comparisons.

Comparisons were made between children on guardianship/custody orders and all children in the general population, along with several 'disadvantaged' subgroups of the general population of children—Indigenous children, those with a language background other than English, and those attending schools in remote and very remote areas.

It should be noted that data for the comparison groups will include children from this study—as such, the comparisons made are not exclusively between children on guardianship/custody orders and those not on orders. However, this is likely to reduce, rather than increase, the capacity to find statistically significant differences between groups.

- Compared with the general population of children in each participating state, a consistently lower proportion of children on guardianship/custody orders achieved the national benchmarks for reading and numeracy—this pattern was statistically significant in 73% of cases (see the accompanying tables online at <www.aihw.gov.au/publications>).
- Similar results were found when comparing children on orders to other 'disadvantaged' subgroups of the general population, such as children attending schools in remote areas and those with a language background other than English—in 57% and 60% of cases, respectively, a significantly lower proportion of children on orders achieved the benchmarks (see the online tables).
- The performance of children on orders was most similar to that of the general population of Indigenous children in participating states. Similar proportions of children achieved the benchmarks in both groups. Where significant differences between these groups were found, children on orders usually had a lower proportion achieving the benchmark (27% of cases); however, in 2% of cases children on orders had higher benchmark achievement (see the online tables).
- Where possible, comparisons with children attending schools in very remote areas were also made. Due to the small number of students attending very remote schools, no data were available for Victoria and only partial data were available for Tasmania—as such, 88 sets of comparisons were possible. Similar patterns to those for the comparisons with Indigenous children were found—among cases with significant differences, children on orders usually had a lower proportion achieving the benchmark (13% of cases); however, in 1% of cases children on orders had higher benchmark achievement (see the online tables).
- Given the large number of comparisons required, it was not possible to include tables and figures on all these findings in this report; these detailed state-level data are available online at <www.aihw.gov.au/publications>. Instead, examples of these overall patterns are illustrated in Figure 3.2, which includes the proportions of children achieving the reading and numeracy benchmarks in 2006. Please note that the 'guardianship/custody orders' group is based on the total study population for the five participating states, while the comparison groups (all children, language background other than English, remote, very remote and Indigenous) use the Australian totals (that is, including all eight states/ territories).

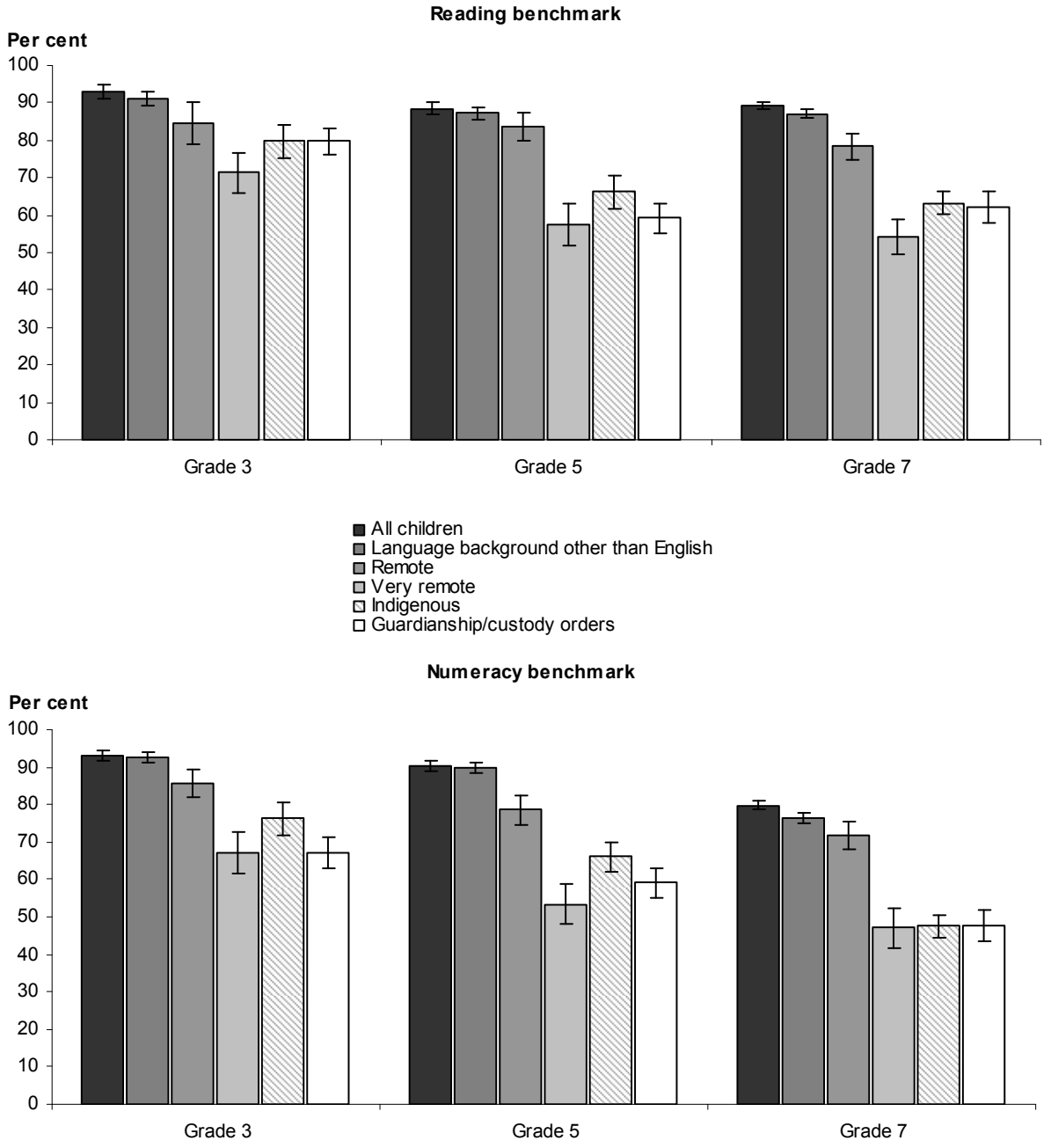
Longitudinal patterns

The longitudinal pathways of a small subgroup of children were explored. The subgroup included children in the study population who were continuously on guardianship/custody orders from 2003 to 2006, and had benchmark achievement data (that is, they sat or were exempted from testing) for at least 2 years over this period.

- It was found that most of these children (97%) followed a 'typical' pathway, in that they progressed one grade each year—for example, a child may have sat the Grade 5 test in 2004, and the Grade 7 test 2 years later in 2006 (Figure 3.3). A small number of cases (3%) had more complex pathways, which involved repeating grades, skipping grades, or having an extended gap between testing (figures B1 and B2).
- Of those children who followed a 'typical' pathway (684 for reading, 695 for numeracy) (Figure 3.3):

- about half consistently achieved the benchmark in both years (53% for reading, 48% for numeracy). It was found that children who achieved the benchmark in 2003 or 2004, were at least 5 times as likely to achieve the benchmark 2 years later (OR_{MH}=4.9–11.0, p<0.0001) (Table B16)
- a small proportion showed improved benchmark achievement over time—that is, they did not achieve the benchmark in their first test, but did so in the subsequent test (9% for reading, 7% for numeracy)
- about one-fifth had declining benchmark achievement over time—that is, they achieved the benchmark in their first test, but failed on the subsequent test (20% for reading, 18% for numeracy)
- the remainder did not achieve the benchmark in either year (18% for reading, 26% for numeracy).

It is not known whether these patterns are similar to those found among other children, as longitudinal data on the general population of children were not available for comparison.

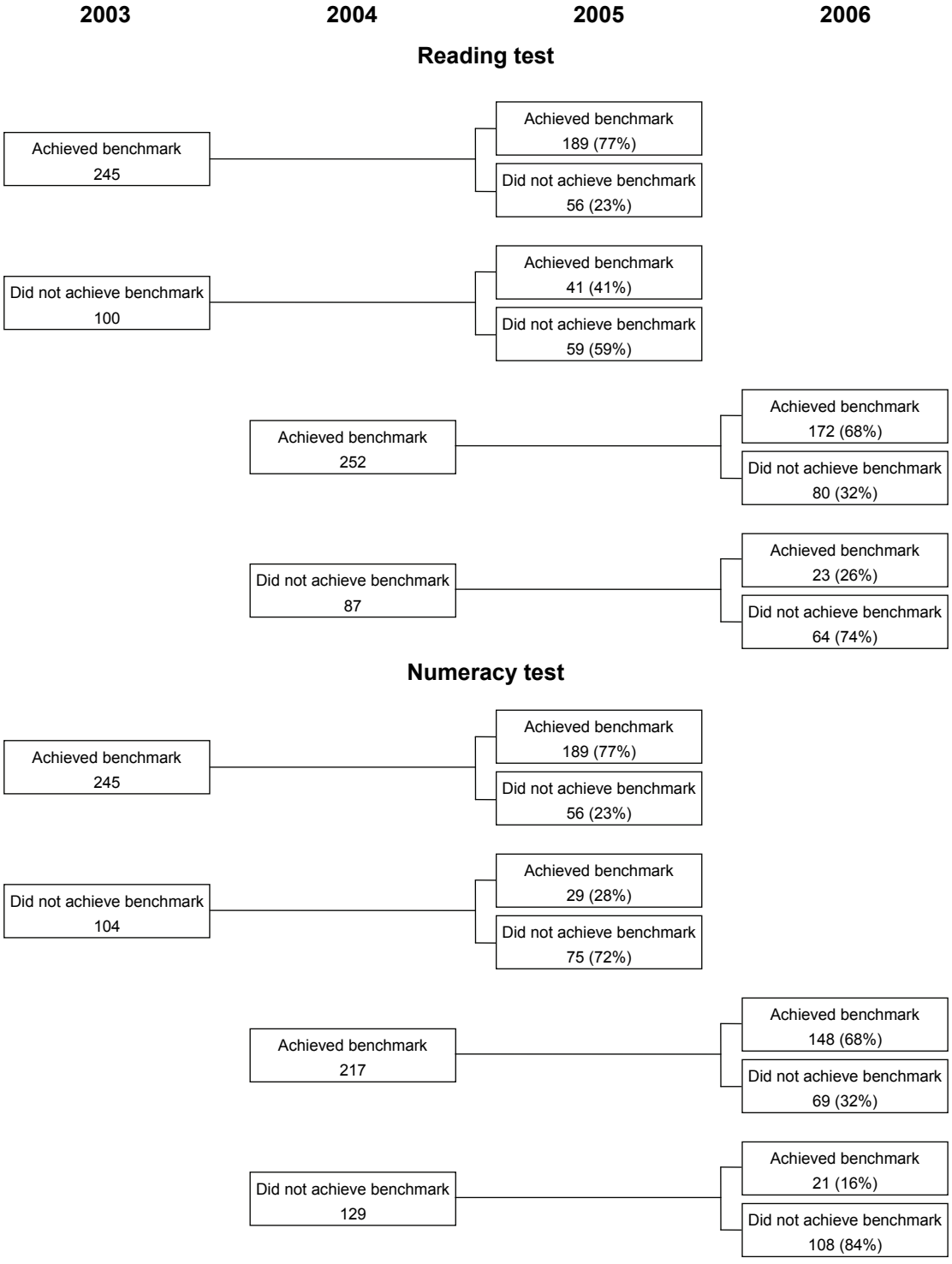


Notes

1. This figure is intended to illustrate the overall patterns found. Detailed state-level data are available online at <www.aihw.gov.au/publications>—it was not feasible to include these in this report, due to the large number of comparisons done.
2. Columns indicate the proportions of children achieving the national benchmark, while the bars at the top of each column indicate the 95% confidence intervals. The methods used to calculate the 95% confidence intervals for the 'Guardianship/custody orders' group differs to that used for the other groups (see Appendix A.6 for more details).
3. Data for the 'All children', 'Language background other than English', 'Remote', 'Very remote' and 'Indigenous' groups includes government and non-government school students in the general population of children in all eight states/territories. Data for the 'Guardianship/custody orders' group only includes children in the study population who attended government schools in the five participating states.

Sources: MCEETYA 2007; AIHW Educational outcomes 2008 pilot data collection.

Figure 3.2: Proportion of children achieving the national reading and numeracy benchmarks, 2006



Notes

1. This figure only includes children who were continuously on guardianship/custody orders from 2003 to 2006, had 2 years of benchmark achievement data, and followed a 'typical' pathway in that they progressed one grade each year. A small group of children followed more complex pathways that involved repeating and skipping grades (figures B1 and B2).
2. Percentages for 2005 and 2006 are of total from step in pathway 2 years earlier.

Source: AIHW Educational outcomes 2008 pilot data collection.

Figure 3.3: Benchmark achievement pathways, 2003–2006

3.4 Comparison of test scores

The mean and median reading and numeracy test scores of children on guardianship/ custody orders are presented in tables B17–B21. During 2003 to 2006, each state and territory had different reading and numeracy tests, and used a different scaling system, so it is not valid to directly compare test scores across jurisdictions. This, along with other issues, limited the analyses that could be done using the test score data (see 'Data issues' in Appendix A.5).

The mean and median test scores increased with school grade across all states—that is, Grade 3 students had the lowest scores, while Grade 7 students had the highest. This indicates that the Grade 7 students performed at a higher skill level that the Grade 3 students. However it provides no indication of the relative performance of children of guardianship/custody orders *within* their own grade. That is, although the Grade 7 students may have higher test scores than the Grade 3 students, they are not necessarily more likely to achieve the national benchmark for their grade. As the previous section illustrated, among the children in this study, Grade 7 students were actually found to be less likely to achieve the national benchmarks than Grade 3 students.

Changes over time at the population level were explored. When comparing the median test scores of students in the same grade across time—for example, comparing the reading test scores of Grade 3 students from Victoria across 2003 to 2006—no consistent patterns were found and there were few statistically significant differences across groups (tables B17–B21).

- Across some years, significant differences were found in the median Grade 3 reading scores for Queensland and Tasmania. In Western Australia, some differences among Grade 3 numeracy scores were observed.
- No significant differences were observed among Grade 5 students.
- Differences among Grade 7 students were only observed in Queensland.

4 Characteristics associated with academic performance

This chapter presents a description of the relationship between the demographic and child protection-related characteristics of children on guardianship/custody orders, and their academic performance.

Regression is a statistical procedure used to analyse the relationship between an outcome variable, and two or more predictor variables. Binary logistic regression is used when the outcome variable is dichotomous (that is, it has two categories, such as pass/fail). Binary logistic regression analyses were used to identify the key 'predictors' of benchmark achievement for these children, based on the data available in this pilot study.

Benchmark achievement was selected as the dependent/outcome variable, as it was the only academic performance data available that was comparable (and therefore could be aggregated) across states. All 'characteristics' variables with data available for all five participating states were included in the regression models. As such, the 'number of schools attended in the past 12 months' variables were excluded, as there were no data for Victoria or Western Australia. Further information on the methods used is included in Appendix A.6, and data issues are described in 'Data limitations' in Section 5.1.

The regression models can only identify statistical relationships or associations between benchmark achievement and other factors—causal relationships cannot be inferred on the basis of these data alone.

4.1 Benchmark achievement

The reading and numeracy benchmark data were modelled separately, as there is a significant association between these data in each of the four waves (Table B22). As such, eight separate regression models have been created (four for reading, four for numeracy).

As indicated by the R-square values, the final regression models explained only 11–15% of the variance in reading benchmark achievement, and 10–17% of variance in numeracy benchmark achievement among children on guardianship/custody orders across the 4 years (tables 4.1 and 4.2). As such, the following results should be interpreted with some caution.

- Indigenous status was the only variable found to have a consistent statistically significant effect across all 4 years for both reading and numeracy—Aboriginal and Torres Strait Islander children were significantly less likely to achieve the national benchmarks (tables 4.1 and 4.2). The regression odds ratios indicate that Indigenous children on guardianship/custody orders were about half as likely to achieve the benchmarks as other children on guardianship/ custody orders (Table B23).
- School grade was also found to have a consistently significant effect, but differed slightly across the two tests—Grade 5 students were consistently less likely to achieve their reading benchmark, while Grade 7 students were less likely to achieve their numeracy benchmark, when compared with Grade 3 students (tables 4.1 and 4.2).
- Other variables were found to be significant, but not consistently across models (tables 4.1 and 4.2). For example:

  - Males were found to be significantly less likely to achieve the reading benchmark in 2004 to 2006, but were significantly more likely to achieve the numeracy benchmark in 2004.
  - The number of different out-of-home care placements in the previous 12 months was found to have a negative effect in some models—the greater the number of placements, the less likely to achieve the reading benchmark in 2003 and 2004, and the numeracy benchmark in 2004 and 2006.
  - However, the type of placements (living arrangements) was a less consistent factor. Significant results were only found for the 2005 numeracy test, where children living with relatives/kin were less likely than those in foster care to achieve the national benchmark, and more likely to achieve it than children in other living arrangements (such as residential care and independent living).
  - Across a number of years, Victoria had higher parameter estimates than other states, suggesting that children on orders in Victoria were more likely to achieve the benchmarks. This pattern was statistically significant in some cases, indicating that benchmark achievement was higher in Victoria than in the comparison state, Queensland.
- No statistically significant results were found for either of the two length of time on orders variables (tables 4.1. and 4.2).

Table 4.1: The effects of various characteristics on reading benchmark achievement of children on guardianship/custody orders, 2003–2006[a]

		Parameter estimates[c]			
Predictor variable	**Category[b]**	**2003**	**2004**	**2005**	**2006**
Intercept		1.231 ***	1.188 ***	0.361	0.999 ***
State	*QLD*				
	Vic	0.172	0.475 *	0.439 *	0.774 **
	WA	0.269	-0.163	-0.017	-0.109
	SA	-0.169	-0.737 *	-0.067	-0.268
	Tas	0.309	0.473	-0.075	0.350
School grade	*Grade 3*				
	Grade 5	-0.268 *	-0.620 ***	-0.466 ***	-0.277 **
	Grade 7	-0.134	0.001	0.031	-0.380 ***
Sex	*Female*				
	Male	-0.032	-0.207 *	-0.250 ***	-0.168 *
Indigenous status	*Other Australians*				
	Indigenous Australians	-0.301 **	-0.251 **	-0.417 ***	-0.396 ***
Living arrangements[d]	*Relatives/kin*				
	Foster care	-0.077	0.201	0.120	-0.081
	Other	0.475	-0.299	-0.135	-0.026
Length of time on current guardianship/custody order[e]		-0.007	0.007	0.004	0.004
Continuous length of time on all care/protection orders[e]		0.010	-0.005	-0.001	-0.004
Number of different out-of-home care placements in the past 12 months[e]		-0.225 *	-0.183 *	0.054	-0.062
R-Square		0.13	0.12	0.11	0.15
Sample size (n)		777	823	914	869

(a) The outcome variable was dichotomous (pass/fail)—the outcome modelled was passing the benchmark.

(b) An italicised entry indicates the reference category.

(c) Asterisks indicate statistical significance at the following levels: * <0.05, ** <0.01, *** <0.001.

(d) Living arrangements at 30 June. 'Relatives/kin' includes: the child's natural or adoptive parents, relatives/kin who are reimbursed by the state/territory for the care of the child, and relatives/kin who are not reimbursed. 'Other' includes: residential care, independent living, and other home-based care. Unknown living arrangements are excluded.

(e) Counted as at 1 August.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table 4.2: The effects of various characteristics on numeracy benchmark achievement of children on guardianship/custody orders, 2003–2006[a]

		Parameter estimates[c]			
Predictor variable	**Category[b]**	**2003**	**2004**	**2005**	**2006**
Intercept		0.319	0.611 **	0.415	0.579 **
State	*QLD*				
	Vic	0.527 *	0.933 ***	0.541 **	0.421
	WA	-0.043	0.008	-0.051	0.141
	SA	0.012	-0.312	0.038	0.108
	Tas	-0.267	-0.378	-0.392	-0.387
School grade	*Grade 3*				
	Grade 5	0.058	0.068	0.064	-0.054
	Grade 7	-0.546 ***	-0.582 ***	-0.480 ***	-0.378 ***
Sex	*Female*				
	Male	-0.079	0.154 *	-0.056	0.001
Indigenous status	*Other Australians*				
	Indigenous Australians	-0.422 ***	-0.402 ***	-0.310 ***	-0.529 ***
Living arrangements[d]	*Relatives/kin*				
	Foster care	0.205	-0.112	0.235 *	-0.193
	Other	-0.257	-0.048	-0.399 *	0.204
Length of time on current guardianship/custody order[e]		-0.007	-0.001	-0.003	0.003
Continuous length of time on all care/protection orders[e]		0.005	0.002	0.003	-0.005
Number of different out-of-home care placements in the past 12 months[e]		0.031	-0.212 **	-0.100	-0.155 *
R-Square		0.11	0.17	0.10	0.13
Sample size (n)		791	836	914	874

(a) The outcome variable was dichotomous (pass/fail)—the outcome modelled was passing the benchmark.

(b) An italicised entry indicates the reference category.

(c) Asterisks indicate statistical significance at the following levels: * <0.05, ** <0.01, *** <0.001.

(d) Living arrangements at 30 June. 'Relatives/kin' includes: the child's natural or adoptive parents, relatives/kin who are reimbursed by the state/territory for the care of the child, and relatives/kin who are not reimbursed. 'Other' includes: residential care, independent living, and other home-based care. Unknown living arrangements are excluded.

(e) Counted as at 1 August.

Source: AIHW Educational outcomes 2008 pilot data collection.

4.2 Longitudinal analyses

Changes in benchmark achievement over time were explored among children in the study population who followed a 'typical' pathway (that is, they progressed one grade each year, see Section 3.3). For these children, 2 years of benchmark achievement data were available for analysis (for example, 2003 and 2005).

Box 4.1: Categories of benchmark achievement over time

For the purposes of the longitudinal analyses, benchmark achievement was broken into two outcome categories:

- **Positive outcomes over time**—Achieved the benchmark in both years, or showed improved achievement over the 2 years (that is, did not achieve the benchmark in the first test, but did in the subsequent test).
- **Negative outcomes over time**—Did not achieve the benchmark in either year, or showed declining achievement over the 2 years (that is, achieved the benchmark in the first test, but did not in the subsequent test).

As with the previous models, the explanatory power of these models was somewhat limited. The R-square values indicated that these models explained 19–20% of the changes in reading benchmark achievement over time, and 11–25% of the changes in numeracy benchmark achievement over time (tables B24 and B25).

Very few characteristics were found to be statistically significant 'predictors' of benchmark achievement outcomes over time, and the findings were not consistent across the models (tables B24 and B25):

- Indigenous children were found to be significantly less likely to have positive outcomes for the reading benchmark over 2003–2005, and the numeracy benchmark over 2004–2006.
- Children progressing from Grade 5 to Grade 7 over 2003–2005 were more likely to have positive outcomes for the reading benchmark over this period, than those moving from Grade 3 to Grade 5. However, this result was not found in the other models.
- Number of different out-of-home care placements in the past 12 months was found to have a negative effect in one model—the greater the number of placements in 2006, the more likely to have negative numeracy benchmark outcomes over 2004–2006. Interestingly, while the number of placements in the follow-up year (2006) was found to be a significant factor in this model, the number of placements in the baseline year (2004) was not.

5 Discussion

Education is a crucial element in the development and wellbeing of children and young people, and is an important gateway to future employment and life opportunities. However, certain groups of Australian children are educationally disadvantaged due to their past and present environments, such as those who are in need of protection from abuse, neglect or harm.

This pilot study builds on existing research into the educational achievement of children in the care of the state, and is the first Australian study to analyse both cross-sectional and longitudinal data on the academic performance of children on guardianship/custody orders across multiple jurisdictions.

The results in this report provide further evidence about the poorer educational outcomes and the unmet educational needs of children on guardianship/custody orders, and provide the foundation for any future data development work.

5.1 Key findings

The children captured in this study are a complex and diverse group. These children vary considerably in terms of their length of time on orders, living arrangements, stability of living arrangements and stability of schooling. Their academic performance was similarly diverse.

Children on guardianship/custody orders performed worse than all children, with outcomes most similar to the general population of Indigenous children

The national reading and numeracy benchmarks represent the minimum standards of performance, below which 'students will have difficulty progressing at school' (MCEETYA 2007:2). This pilot study found that the proportion of children on guardianship/custody orders meeting the benchmarks varied considerably across states and grades between 2003 and 2006—ranging between 32–96%.

This pilot study found that a lower proportion of children on guardianship/custody orders achieved the national reading and numeracy benchmarks than all children sitting these tests—ranging between 1–49 percentage points lower than all children. This pattern was consistent in grades 3, 5 and 7 across 2003 to 2006, and statistically significant in most cases.

These findings are consistent with several Australian and overseas studies that have found that children in the care of the state have lower benchmark achievement overall, have below average literacy/numeracy skills, and perform more poorly on standardised tests than their peers (Cavanagh 1996; CREATE Foundation 2006; Eckenrode et al. 1993; Queensland Government 2003; Sawyer & Dubowitz 1994).

As noted above, children on guardianship/custody orders were found to have a lower rate of benchmark achievement when compared with all children, corroborating the existing evidence from previous studies. However, when compared with other 'disadvantaged' subgroups of the general student population, children on orders still had comparatively poorer academic performance. Lower proportions of children on guardianship/custody orders achieved the reading and numeracy benchmarks than children attending schools in remote areas and those with a language background other than English—this pattern was

statistically significant in 57–60% of the 120 sets of comparisons done for each group (see Section 3.3 for further details).

This study found that the academic performance of children on guardianship/custody orders was most similar to that of Aboriginal and Torres Strait Islander children in the general student population—similar proportions of children achieved the benchmarks in both groups (but as noted above, this was considerably lower than that for all children). Children attending schools in very remote areas were also found to have similar benchmark achievement to children on orders; however, comparative data were not available for all five participating jurisdictions due to the small number of students attending very remote schools in those states.

The proportion of children achieving the national benchmarks is affected by the number of children who are formally exempted from testing—exempt children are classed as 'not achieving the benchmark'. As there are no published data on the proportion of all children exempted from testing, it was not possible to make comparisons with the study population. However, in a previous Queensland study, it was found that a considerably higher proportion of children in care were exempt from testing—14–18% compared with 2% for the general student population (CREATE Foundation 2006).

Children on orders experienced diverse academic pathways over time

A key focus of this pilot study was to explore whether the academic performance of children changed over a period of time on guardianship/custody orders.

When tracking the academic outcomes of individual children over time, it was found that children on guardianship/custody orders have diverse pathways through the educational system. The longitudinal pathways of a subgroup of children who had been on guardianship/custody orders continuously over the 4 years were explored. It was found that most of these children (97%) followed a 'typical' pathway in that they progressed one grade each year—for example, a child may have sat the Grade 3 test in 2004, and the Grade 5 test 2 years later in 2006. Among these children:

- about 6 in 10 children can be viewed as having positive patterns in benchmark achievement over time:
  - about 5 in 10 achieved the benchmark in both years
  - about 1 in 10 showed improved benchmark achievement over time (did not achieve the benchmark in the first test, but did in the subsequent test).
- The remaining 4 in 10 had less desirable outcomes:
  - about 2 in 10 had declining benchmark achievement over time (achieved the benchmark in the first test, but did not in the subsequent test)
  - about 2 in 10 children did not achieve the benchmark in either year.

The national benchmarks represent minimum standards of performance below which 'students will have difficulty progressing satisfactorily at school' (MCEETYA 2007; refer to sections 3.1 and 3.3. for further details).

The remaining 3% of the longitudinal subgroup comprised a small group of children who experienced even more complex pathways, which involved repeating or skipping grades, with various benchmark achievement outcomes along the way. Refer to 'Longitudinal patterns' in Section 3.3 for more detailed findings.

Changes over time at the population level were also explored. When comparing the benchmark achievement of students in the same grade across time—for example, comparing the reading benchmark achievement of Grade 3 students from Victoria across 2003 to 2006—no consistent patterns were found, and there were few statistically significant differences across groups. Similar results were found when comparing median test scores. These findings suggest that, for future research with this particular study population, it is far more informative to track individual children over time rather than relying solely on population-level data.

These longitudinal findings highlight that the academic performance of children who have continuously been on orders for several years does not follow a clear-cut pathway. Just as their lives and experiences (including type and stability of living arrangements and schooling) are diverse and complex, so too are their academic outcomes. Tracking their academic performance over a longer period may allow clearer characterisation of the long-term outcomes for these children.

Indigenous children on orders were half as likely to achieve benchmarks as other children on orders

Regression analyses revealed that Indigenous children on guardianship/custody orders were about half as likely as other children on orders to achieve the reading and numeracy benchmarks. This disadvantage is in addition to the already lower benchmark achievement experienced among this study population. As such, Indigenous children are a subgroup at increased risk of poor academic performance among an already disadvantaged group. Similar findings have previously been reported in Queensland for children in the care of the state (Queensland Government 2003).

Indigenous children on orders generally had lower test scores and higher rates of exemption from testing, which contributed to the lower benchmark achievement found among this subgroup. Among children on guardianship/custody orders, Indigenous children generally had lower median test scores than other children—this pattern was statistically significant in 38% of cases. In some cases it was also found that the Indigenous median test score fell below the cut-off score used to determine benchmark achievement—given the median represents the 'middle' score among a group, this indicates that a considerable proportion of these children would be rated as not achieving the benchmark. In addition, a slightly higher proportion of Indigenous children on orders were exempted from testing each year (1–4 percentage points higher than other children on orders)—exempted children are rated as not achieving the national benchmark (AIHW Educational outcomes 2008 pilot data collection, unpublished data).

The above results are also consistent with those found for the benchmark achievement of Indigenous children overall (MCEETYA 2007). These patterns reflect the multiple disadvantages experienced in many Indigenous communities, including poor access to public services, health problems, low levels of family involvement in education, and intergenerational poverty (AIHW 2009; DEEWR 2009; Veltman & Browne 2001).

While this was a consistently significant result across the eight cross-sectional regression models, this pattern was less consistent in the longitudinal models. As such, Indigenous status was not found to be a consistently significant predictor of change in benchmark achievement over time among children on guardianship/custody orders.

Length of time on orders was not a significant factor in benchmark achievement

A key focus of this pilot study was to explore whether the academic performance of children changed over a period on guardianship/custody orders. Neither the child's length of time on their current guardianship/custody order, nor their continuous length of time on all types of care and protection orders were found to be significant predictors of benchmark achievement. This finding was consistent across the cross-sectional and longitudinal logistic regression models. However, only one outcome measure was available for inclusion in these regression analyses (see 'Data limitations' below), and as such, further analyses using a different outcome measure (for example, data from the new standardised NAPLAN testing) would be worthwhile to confirm this finding.

As noted above, the proportion of children achieving the national benchmarks generally declines with increasing school grade—this pattern is found among the general student population and a range of subgroups. This broad trend may go some way in explaining why, among children on orders, a child's current school grade was found to have a larger effect on benchmark achievement than their length of time on orders.

Older students were less likely to achieve national benchmarks

The proportion of children on guardianship/custody orders achieving the national benchmarks generally decreased with increasing age—Grade 5 and 7 students were generally less likely to achieve the benchmarks than those in Grade 3, but this pattern was not statistically significant in most cases. Similar patterns have been found among the general student population (MCEETYA 2004, 2005, 2006, 2007). Research into the reasons for this discrepancy suggests that in some states/territories, the Grade 7 numeracy benchmarks may have been set at a higher standard than those for Grades 3 and 5, resulting in comparatively fewer Year 7 students achieving their benchmark (COAG 2008:14; Cooney 2006:vi).

Regression analyses revealed that school grade was a significant predictor of benchmark achievement among children on guardianship/custody orders, when controlling for several other characteristics—Grade 5 students were significantly less likely to achieve the reading benchmark (compared with Grade 3 students), while Grade 7 students were significantly less likely to achieve the numeracy benchmark. However, this pattern was less clear in the longitudinal regression models, suggesting that school grade may play a less important role in changes in benchmark achievement over time.

No consistent findings for other characteristics

Logistic regression analyses revealed a few significant associations between benchmark achievement and sex, living arrangements, and number of different out-of-home care placements in the previous 12 months; however, these findings were not consistent across the models (refer to Section 4 for detailed findings). As such, no clear conclusion can be drawn about the relationship between benchmark achievement and these characteristics. Further analyses using a different outcome measure (for example, data from the new standardised NAPLAN testing) would be worthwhile to confirm these findings.

Data limitations

While this pilot study collected valuable information on various aspects of academic achievement, there are some limitations. The main limitations of the data and analyses for this report are presented below.

This study included data from five jurisdictions—Victoria, Queensland, Western Australia, South Australia and Tasmania. As such, the data in this report may not be nationally representative, as the jurisdictions included may differ from those excluded.

Across 2003 to 2006, each jurisdiction had different literacy and numeracy tests and scaling systems. As a result, test scores are not comparable across grades or states—this, along with several other issues (see Appendix A.5), limited the types of cross-sectional and longitudinal analyses that could be done using the test score data. As a result, benchmark achievement was the only measure of academic performance available for comparison across states in this study.

In Section 3.3, comparisons of benchmark achievement were made between children on guardianship/ custody orders and other groups of children. Data for the comparison groups will include children from this study, so the comparisons made are not exclusively between children on guardianship/custody orders and those not on orders. However, this is likely to reduce, rather than increase, the capacity to find a statistically significant difference between the groups.

While a few significant predictors of benchmark achievement were identified with the data collected in the pilot study, the logistic regression models created explained only 11–25% of the overall variance in benchmark achievement. This may reflect that the benchmark achievement data were dichotomous (pass/fail), and so may have been too 'blunt' a measure for such a complex study population. Due to the limitations encountered with the test score data (see Appendix A.5), it was not possible to compare results across multiple measures of academic achievement. Further analyses using another outcome measure (for example, data from the new standardised NAPLAN testing) would be worthwhile to confirm the regression findings in this study.

Several other factors may influence the academic performance of children on guardianship/ custody orders, but were not looked at in this report. These include socioeconomic status, stability of schooling, and non-government school attendance:

- There is currently no reliable, comparable measure of socioeconomic status for children on guardianship/custody orders—consultation with jurisdictions identified a variety of complex issues, and highlighted that this is an area that requires significant data development work (see Appendix A.4).
- Data on number of different government schools attended was provided by only three states (Queensland, South Australia, Tasmania), so were not included in the final regression models presented in this report. However, preliminary regression analyses with the available data suggested that the number of different government schools was not a significant predictor of benchmark achievement in those three states.
- As this project relied on administrative data available from the child protection and education departments, testing data were only available for children who attended government schools. This may exclude a considerable number of children on orders who attended non-government schools. The Western Australian Department of Child Protection has estimated that about 21–24% of children on guardianship/custody orders

were attending non-government schools across 2003 to 2006. Other jurisdictions participating in this study were unable to provide estimates (see Appendix A.4).

The academic achievement of children on guardianship/custody orders is likely to be affected by multiple aspects of disadvantage, including poverty, maltreatment, family dysfunction, removal from parents and instability in care—it is recognised that children often have low educational performance when entering the child protection system (CREATE Foundation 2006; Evans et al. 2004; Sawyer & Dubowitz 1994). State and territory governments are already aware that these children are at risk of poor educational outcomes, and there are a variety of policy and program initiatives to tackle this problem (AIHW 2007a:42).

5.2 Challenges and possible future directions

This section summarises the key challenges encountered with this pilot study, and highlights potential areas for future data development work.

Work on this pilot study first began in 2004, and this project built on previous work done in Queensland and South Australia. Overall, progress has been positive, and given the legal, privacy and stakeholder complexities involved in the linkage and provision of these data, this is a significant achievement.

This study tracked children on guardianship/custody orders across 2003 to 2006, and identified their academic performance (as measured by reading and numeracy test results) in grades 3, 5 and 7 over these 4 years. For most children in this study, only 2 years of testing data were available—for example, for Grade 5 in 2003 and Grade 7 in 2005—as such, caution should be taken in drawing conclusions about the longitudinal academic outcomes of children on guardianship/custody orders. However, these 4 years of data were sufficient to illustrate the very complex pathways experienced by a small subgroup of these children (figures B1 and B2).

Comparability of testing data across jurisdictions was a significant issue. As noted in the 'Data issues' section above, there were limited comparable testing data available for analysis in this pilot study. However, following the introduction of the NAPLAN in 2008, standardised national testing for grade 3, 5, 7 and 9 is now in place (that is, all jurisdictions now sit the same tests). This allows test score data to be compared directly across jurisdictions, and aggregated at a national level, improving the power to identify statistically significant differences.

If this pilot study were to progress into an ongoing data collection, it would be valuable to track children on guardianship/custody orders over grades 3, 5, 7 and 9 using the new standardised NAPLAN testing (see Section 3.1) to get a more complete picture of their longer-term academic pathways and outcomes. Additional future data development work could include developing a measure of socioeconomic status, and further exploring the availability of schooling data—including measures of stability of schooling—for children on guardianship/custody orders attending both government and non-government schools (see 'Data limitations' section above and Appendix A.4 for further details).

Development of an ongoing national data collection

The findings in this report confirm that children on guardianship/custody orders are an academically disadvantaged group, and Indigenous children on orders are even more disadvantaged. Given that there are many policy and program initiatives to tackle this problem (see AIHW 2007a:42 for examples), it would seem prudent to continue to monitor the academic progress of these children.

Further work is required to identify and understand the issues that influence these inequalities. To monitor the effectiveness of child protection interventions, data collection needs to be ongoing and longitudinal, and track changes in academic performance over time. This requires ongoing commitment from the state/territory departments responsible for child protection and education to fund and do this work.

Several national initiatives are currently under way with a focus on improving the educational outcomes of children in the child protection system. A key reform priority of the National Early Childhood Development Strategy is to better support disadvantaged and vulnerable children (including those in child protection) to reduce inequalities in school achievement (COAG 2009a).

The National Framework for the Protection of Australia's Children 2009–2020 commits Australian, state and territory governments to a variety of actions to improve the safety and wellbeing of children. The framework identifies 29 indicators to measure the impact of these actions, which are to be reported annually. Two indicators are specifically related to the educational outcomes of children in the care of the state:

- Proportion of children on guardianship and custody orders achieving national reading and numeracy benchmarks.
- School retention rates (years 10 and 12) of young people in out-of-home care or under guardianship (COAG 2009b).

Neither of these indicators currently have an ongoing data source. While data from this pilot study could be used to provide background information for the first indicator on the academic performance of children on orders across 2003 to 2006, it could not be used for reporting over the 2009–2020 lifespan of the framework—an ongoing national data collection is required to regularly report this information. So developing mechanisms to enable reporting against the education-related framework indicators has become more urgent.

5.3 The next steps

The release of the National Framework for the Protection of Australia's Children 2009–2020 means that the development of an ongoing national data collection on the educational outcomes of children in the care of the state has increased in importance and urgency.

This pilot study will provide a strong foundation for any future data development work. The lessons learned and information gathered through the course of this study can be used to guide future work and inform national discussions relating to data development issues.

The first steps towards the development of an ongoing national data collection will involve detailed consultation with the state/territory departments responsible for child protection and education about:

- the purpose, scope and frequency of the data collection
- appropriate governance for future work, to ensure a strong collaboration between sectors, as well as across relevant departments and organisations
- data collection methods (including data items, data format, linkage opportunities, etc)—use of the new standardised NAPLAN testing for grades 3, 5, 7 and 9 should be a key focus of discussion
- data development work required to deliver the agreed scope and methods
- implementation process and resources required.

There are a range of options for collecting these data, and the final data collection model will be agreed following detailed discussion. One particularly promising option is to introduce an 'education module' as part of the next phase of the national child protection unit record data collection, which the AIHW is currently developing. This could allow children's academic outcomes to be tracked alongside their history with child protection services, to provide a greater understanding of the complex interactions between these factors.

It is envisaged that the child protection Performance and Data Working Group will discuss future options at meetings during 2010. Whichever option is chosen, consultation will be required across the child protection and education sectors. Further, technical issues (for example, linkage of data from different sources) will need to be adequately resolved to ensure an efficient regular reporting mechanism can be developed.

Appendix A Methods

A.1 Study population

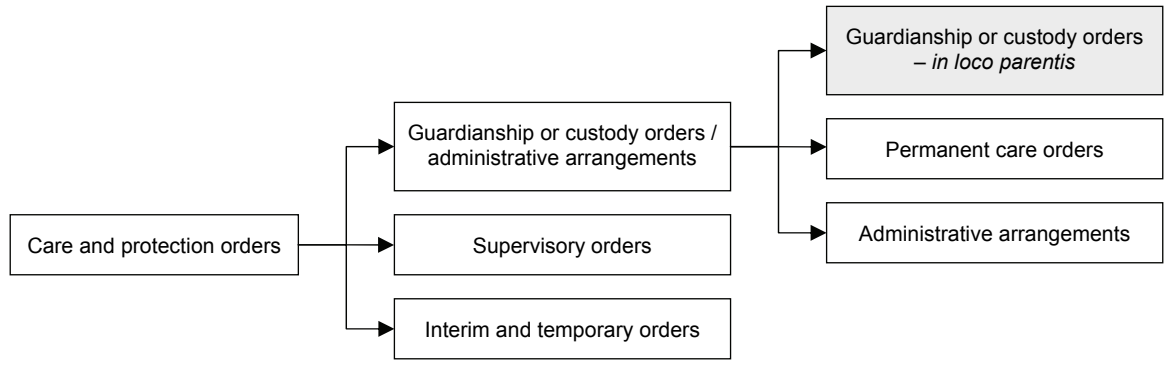
The study population included all children who:

- attended Grade 3, 5, or 7 at a government school, *and*
- participated in education department reading/numeracy testing for national reporting between 2003 and 2006 (including children who sat the test or were recorded as absent/withdrawn or exempt), *and*
- at the time of testing were on a guardianship or custody order, whereby the state/territory was *in loco parentis*.

In loco parentis, meaning 'in place of parents', refers to the legal responsibility of a person or organisation to take on some, or all, of the functions and responsibilities of a parent, including matters relating to the health and wellbeing of the child.

A guardianship/custody order was defined as an 'order sought through the court that has the impact of transferring custody or guardianship of the child'. This included orders where guardianship or custody of a child was transferred to the department responsible for child protection, or another agency or department. The following types of guardianship and custody orders were excluded (see Figure A1):

- permanent care orders
- administrative arrangements or agreements with the departments responsible for child protection, which have the same effect as a court order of transferring custody or guardianship.



Note: Guardianship/custody orders are the most common category of care and protection orders (AIHW 2007b:40). The shaded box indicates orders in scope for this pilot study— for legal and confidentiality reasons, it was not possible to access data for children on other types of orders.

Figure A1: Guardianship/custody orders operating in Australia

All eight Australian states and territories were invited to participate in this pilot study. Victoria, Queensland, Western Australia, South Australia and Tasmania provided data for Stage 2 of this project.

New South Wales contributed data from a PhD study on a similar topic but with a different study population—that is, children in out-of-home care, rather than children on guardianship/custody orders. The data required to calculate the benchmark achievement of these children were not provided and, as such, comparable data for New South Wales were not available for inclusion in this report. Community Services is actively involved with the Educational Outcomes of Children on Guardianship or Custody Orders Project. The completion of the data match between Community Services and the NSW Department of Education and Training for the pilot project enabled the agencies to better understand the issues to be resolved for future matching exercises. In 2011, New South Wales will begin the Pathways of Care longitudinal study of children and young people in out-of-home care that will explore, among other factors, the health and educational outcomes of children in care. The study plans to source information from the educational National Assessment Program—Literacy and Numeracy, and aims to improve data matching between the relevant agencies.

Small sample sizes limited the analyses that could be validly done and presented in the Stage 1 report for the Australian Capital Territory. The territory child protection and education departments completed the data linkage for Stage 2, but preliminary exploration of the data revealed similar issues to those for Stage 1. So the Australian Capital Territory did not provide Stage 2 data to AIHW for analysis, due to concerns that the findings would not be statistically valid.

The study population for this project is captured in four waves of data (see Figure A2). Each wave includes cross-sectional data on all children falling into the study population scope in that year. Longitudinal data is also provided, by tracking the children in each wave over the remaining waves. Most children only have 2 years of testing data over the 4-year period—for example, they may have Grade 3 testing data in 2004 and Grade 5 testing data 2 years later in 2006. A small group of children have data across 3 years because they repeated or skipped grades. Between waves, children may enter or exit the study population as they fall in and out of scope.

A.2 Data linkage procedure

This pilot project involved interdepartmental linkage of administrative data across multiple jurisdictions, the first Australian study in this field to have done so. Collection of data for this project required collaboration between the education and child protection departments within each participating jurisdiction, along with the AIHW. All data linkage was done within and by the jurisdictions. Specific procedures to match data on the study population were developed between the two departments in each state.

Within each participating state, the child protection department created a unit record file for relevant children on guardianship/custody orders (aged between 6 and 14 years). A copy of this unit record file, including only those data items required for data linkage purposes (such as full name, sex and date of birth), was sent to the education department. The education department then linked the details of these children with the corresponding reading and numeracy test data. A copy of this file was then sent back to the child protection department, where the child protection data were linked using the unique identifier codes created for each child. The de-identified file was then sent to the AIHW for data analysis. This process is illustrated in Figure A3.

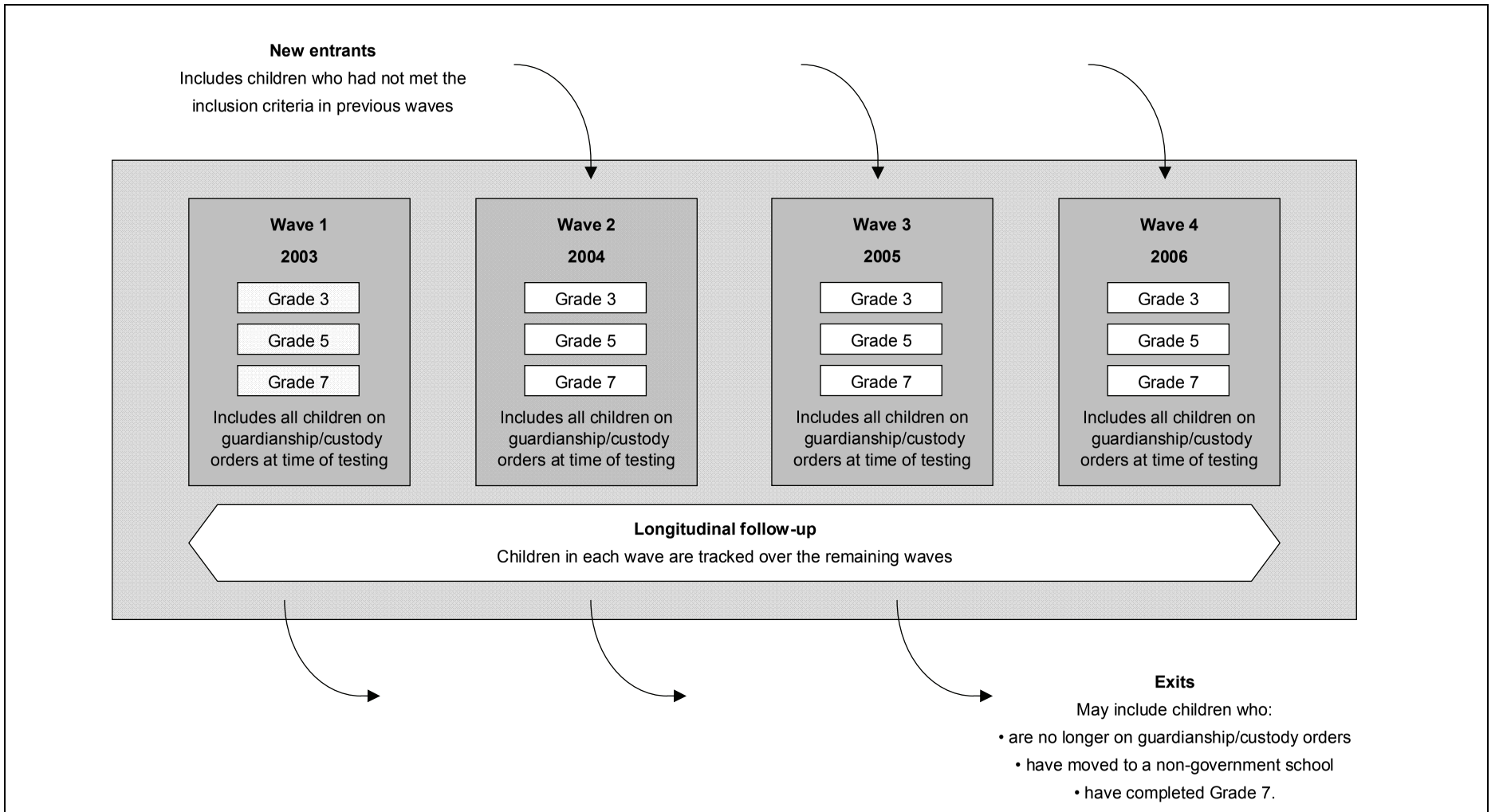
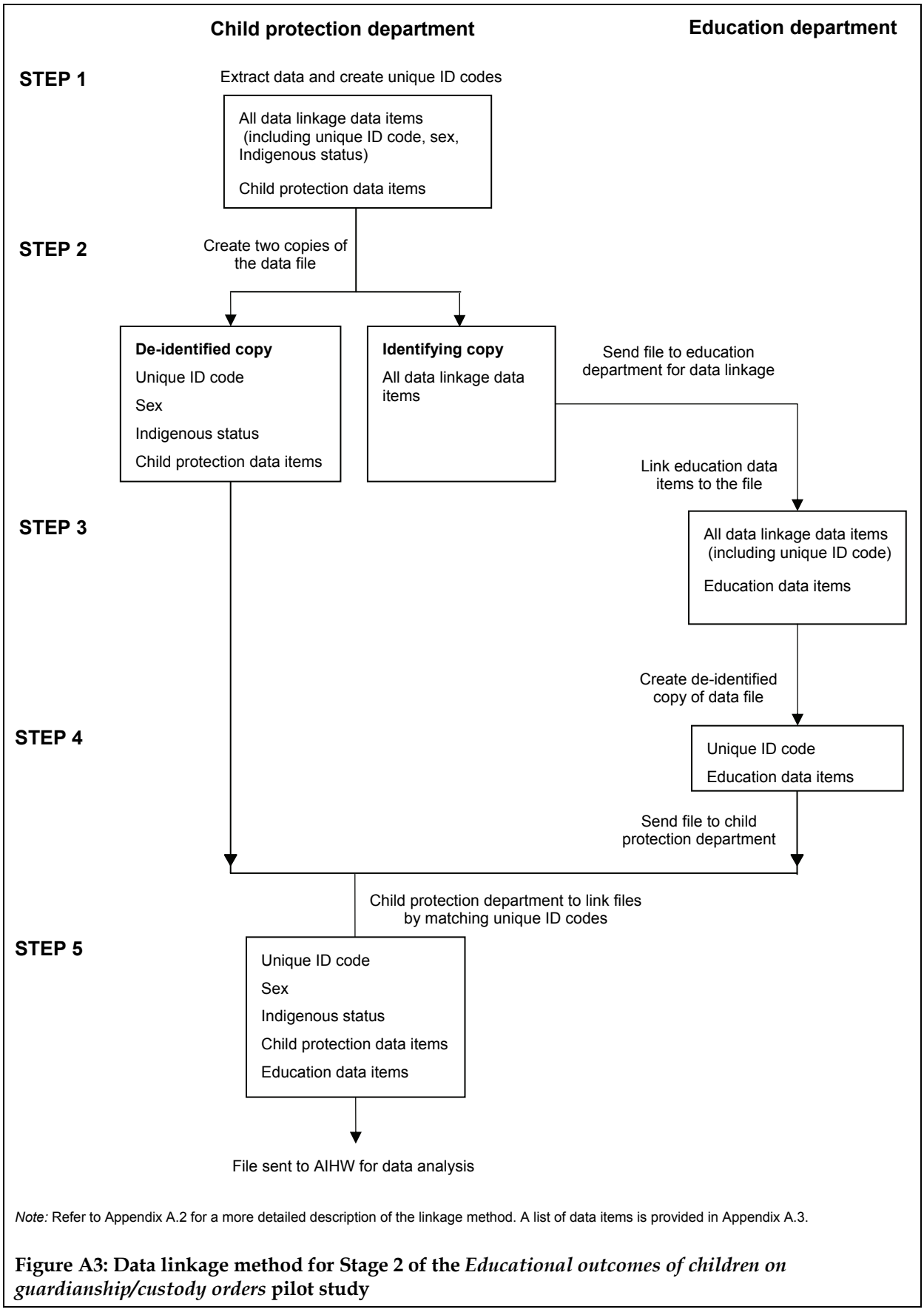


Figure A2: Study population for Stage 2 of the *Educational outcomes of children on guardianship/custody orders* pilot study



Note: Refer to Appendix A.2 for a more detailed description of the linkage method. A list of data items is provided in Appendix A.3.

Figure A3: Data linkage method for Stage 2 of the *Educational outcomes of children on guardianship/custody orders* pilot study

A.3 Data items collected

The data items provided to the AIHW for analysis (see Figure A3) are described below in Table A1. Further descriptions are included in the Glossary.

Table A1: Data items provided to the AIHW for analysis

Data item	Codes used	Years collected
Unique ID code	Codes created by child protection department in each state	Collected once
Sex	2 categories (male, female)	Collected once
Indigenous status	5 categories: 1) Aboriginal but not Torres Strait Islander origin 2) Torres Strait Islander but not Aboriginal origin 3) Aboriginal and Torres Strait Islander origin 4) Neither Aboriginal nor Torres Strait Islander origin 5) Not stated/inadequately described	Collected once
Child protection data items		
Length of time on current guardianship/custody order at 1 August (months)	Continuous data	2003, 2004, 2005, 2006
Length of time continuously on all care and protection orders at 1 August (months)	Continuous data	2003, 2004, 2005, 2006
Continuously on guardianship/custody orders between 2003 and 2005	2 categories (yes/no)	Collected once
Continuously on guardianship/custody orders between 2004 and 2006	2 categories (yes/no)	Collected once
Living arrangements at 30 June	8 categories (see Glossary)	2003, 2004, 2005, 2006
Number of different out-of-home care placements in the previous 12 months at 1 August	Continuous data	2003, 2004, 2005, 2006
Education data items		
School grade	3 categories (Grades 3, 5 and 7)	2003, 2004, 2005, 2006
Scaled reading test scores	Continuous data	2003, 2004, 2005, 2006
Absent/withdrawn/exempt from reading test	2 categories (absent/withdrawn, and exempt)	2003, 2004, 2005, 2006
Scaled numeracy test scores	Continuous data	2003, 2004, 2005, 2006
Absent/withdrawn/exempt from numeracy test	2 categories (absent/withdrawn, and exempt)	2003, 2004, 2005, 2006
Number of different government schools attended in the past 12 months at 1 August	Continuous data	2003, 2004, 2005, 2006

A.4 Other data items explored for inclusion

Socioeconomic status

Socioeconomic status was considered as a data item for inclusion in this pilot study. However, it was not included as there is currently no reliable, comparable measure of socioeconomic status available across jurisdictions. Consultation with jurisdictions identified a variety of issues with data availability, quality, comparability and appropriateness of potential socioeconomic measures—this is an area which requires significant data development work.

Socioeconomic status has been identified as an important factor in both academic achievement and in child welfare. Maltreated children are more likely to come from families with a lower socioeconomic status, and low socioeconomic status is itself correlated with poorer educational outcomes (Brownell et al. 2004; Social Exclusion Unit 2003; Veltman & Browne 2001). However, some studies have found that maltreated children and those in state care have poorer academic performance even when compared with other children of similar disadvantaged backgrounds (Kendall-Tackett & Eckenrode 1996; Social Exclusion Unit 2003).

Although there is research documenting the link between socioeconomic status, academic outcomes and abuse/neglect of children, there is no consistently used and accepted measure of socioeconomic status. Common measures used in studies exploring the educational outcomes of children who were involved in child protection services include:

- parental income, education and occupation (de Lemos 1997; Kurtz et al. 1993; Zolotor et al. 1999)
- family structure (Cashmore & Paxman 1996; de Lemos 1997; Quinn & Leahy 2005)
- family participation in low-income assistance programs (Eckenrode et al. 1993; Leiter & Johnsen 1994; Zolotor et al. 1999)
- address of school or home (Eckenrode et al. 1993; Queensland Government 2003; Sirin 2005).

While some of the broad measures used are similar, the methods used to collect these data varied. For example, some studies measured the socioeconomic status of the child's birth parents, while others measured the current caregiver's socioeconomic status. Some collected this information using surveys with the current caregiver, while others used administrative data from schools/state departments. Some studies collected multiple measures of socioeconomic status, while others relied on a single measure.

In assessing the feasibility of including a measure of socioeconomic status in this pilot project, the child protection and education departments in participating states were consulted to discuss what administrative data they held that may be used. It was concluded that there is currently no robust, comparable measure of socioeconomic status available across jurisdictions. In addition to specific issues with data availability, quality and comparability, some broader issues regarding the appropriateness of various measures of socioeconomic status were also raised:

- Time relevance—As the study population is a rather unique group in that subjects tend to have multiple changes in homes/schools, there are several issues regarding the time-relevance of the data. For example, data on the child's current socioeconomic

circumstances may not be particularly informative if the child has recently changed their school, home address, etc.

- Representativeness—A 'group' measure (for example, a measure linked to the school or neighbourhood) may not be representative of the individual child. For example, a child may have recently been placed in a school with a higher socioeconomic status than what would be representative of the child's past experience.

Non-government schools

This pilot project relies on administrative data from the child protection and education departments in participating states. Detailed testing data are only available for children attending government schools. The availability of data on the total number of children on guardianship/custody orders attending non-government schools was explored; however, it was found that these data were not available from departmental administrative data systems.

A.5 Data quality and comparability

This pilot study included data from five states: Victoria, Queensland, Western Australia, South Australia and Tasmania. As such, the data in this report may not be nationally representative, as the characteristics of children in the jurisdictions included may differ from those excluded (that is, New South Wales, the Northern Territory and the Australian Capital Territory).

In this report, comparisons of benchmark achievement were made between children on guardianship/custody orders and several other groups of children—specifically, all children, Indigenous children, those with a language background other than English and those attending schools in remote and very remote areas. Data on these comparison groups were sourced from the annual publication *National report on schooling in Australia* (MCEETYA 2004, 2005, 2006, 2007). Several issues should be taken into account when interpreting the data:

- Data for the comparison groups will include children from this study. As such, the comparisons made are not exclusively between children on guardianship/custody orders and those not on orders. However, this is likely to reduce, rather than increase, the capacity to find a statistically significant difference between the groups.
- Benchmark calculations for children on guardianship/custody orders include only government school students, whereas calculations for the comparison groups include government and non-government students (separate breakdowns were not provided in the published data).
- The method used for calculating the 95% confidence intervals of children on guardianship/custody orders achieving the national reading and numeracy benchmarks differ slightly to the method used for other children (see Appendix A.6 for further details).

Between 2003 and 2006, each state and territory had different reading and numeracy tests and scaling systems. So the mean test scores presented in this report are different and are not comparable across states. For these reasons, the test scores in each jurisdiction could not be aggregated to produce quasi-national means of test scores for children on guardianship/ custody orders. Furthermore, it was not appropriate to standardise these test scores, as the

sample (children on orders) and population (all children) data for some jurisdictions were not normally distributed. These issues, along with the small sample sizes in some jurisdictions, limited the types of cross-sectional and longitudinal analyses that could be done using the test score data.

As with many other administrative data collections, the identification of Aboriginal and Torres Strait Islander children may not be complete in the child protection and education departments' databases. The under-identification of Indigenous children may affect the calculation of benchmark achievement and mean test scores, and may underestimate the extent of the disparity.

A.6 Statistical methods

Odds ratios

Mantel-Haenszel odds ratios were used to explore associations between 'participation in testing' and 'benchmark achievement' outcomes over time—for example, are children at greater odds of achieving the national reading benchmark if they achieved the benchmark 2 years earlier? The Mantel-Haenszel estimate of the common odds ratio is calculated as (Daniel 1999):

$$OR_{MH} = \frac{\sum_{i=1}^{k}\left(a_i d_i / n_i\right)}{\sum_{i=1}^{k}\left(b_i c_i / n_i\right)}$$

The 'benchmark achievement' variables were already dichotomous (achieved/didn't achieve). The 'participation in testing' variables were recoded into dichotomous variables before analysis (sat test/didn't sit test).

Confidence intervals for national benchmarks

Confidence intervals were used to determine whether the proportion of children on orders achieving the national benchmarks is significantly different from the proportions for other comparison groups—specifically, all children, Indigenous children, those with a language background other than English, and those attending schools in remote and very remote areas.

Confidence intervals have been calculated for children on guardianship/custody orders using the exact 95% confidence limits, which have been approximated to an F distribution. The exact tests have been used, as the data set is relatively small and the mean scores are not normally distributed. The formulas used to calculate the lower and upper confidence intervals are below (Armitage et al. 2002):

$$\pi_L = \frac{r}{r + (n - r + 1)F_{0.025,\, 2n-2r+2,\, 2r}}$$

$$\pi_U = \frac{r+1}{r+1+(n-r)F^{-1}_{0.025,\,2r+2,\,2n-2r}}$$

For the comparison groups, the method used for calculating the 95% confidence intervals differs from that described above. The methods used by MCEETYA for calculating confidence intervals involve specifically developed software, accounting for some sources of error in the measurement and estimation process, and are reliant on having data for large cohorts of students. These processes were not available for calculating confidence intervals for children on guardianship/custody orders given the small size of the cohorts of students in each state and territory.

Where the confidence intervals for children on guardianship/custody orders do not overlap with the comparison group confidence intervals, the proportion of children achieving the national benchmarks are considered to be statistically significantly different from one another at the 95% level.

Binary logistic regression

Regression is a statistical procedure used to analyse the relationship between an outcome variable, and two or more predictor variables. Binary logistic regression is used when the outcome variable is dichotomous (that is, it has two categories, such as pass/fail). Binary logistic regression analyses were used to identify the key 'predictors' of benchmark achievement for children on guardianship/custody orders, based on the data available in this pilot study.

Benchmark achievement was selected as the dependent/outcome variable, as it was the only academic performance data available that was comparable (and so could be aggregated) across states. Chi-square tests were used to explore the relationship between the reading and numeracy benchmark achievement data. These data were found to have a significant association (Table B22), so were not included as predictor variables in the regression models, but were modelled separately as dependent variables.

All 'characteristics' variables with data available for all five participating states were included in the regression models as predictor/independent variables. Due to the small number of variables, all variables were included in the final models regardless of whether they were statistically significant. 'Number of schools attended in the previous 12 months' was excluded as there were no data for Victoria or Western Australia for these variables. Queensland was chosen as the reference category for the 'state' variable as it has the largest sample size.

Two sets of regression models were carried out:

- **Cross-sectional**

  Eight separate regression models were created for the cross-sectional data across 2003 to 2006 (four for reading, four for numeracy). Each model included the benchmark achievement and characteristics data for the current year being modelled.

- **Longitudinal**

  Predictors of benchmark achievement changes over time were explored. The regression models included children who followed the 'typical' pathway, in that they progressed

one grade each year (see Section 3.3). The outcome/dependent variables were dichotomised in 'positive' and 'negative' outcomes:

- Positive—achieved benchmark in both years, or showed improved performance over the 2 years (did not achieve benchmark in first test, but did in subsequent test).
- Negative—did not achieve benchmark in either year, or showed declining performance over the 2 years (achieved benchmark in first test, but did not in the subsequent test).

The final models included characteristics data for both the baseline and follow-up years (for example, 2003 and 2005).

Comparison of median test scores

It was of interest to compare the test scores of students in the same grade across time—for example, comparing the reading test scores of Grade 3 students from Victoria across 2003 to 2006.

As noted in Appendix A.5, the test score data for some jurisdictions were not normally distributed, so it was not appropriate to compare mean scores across time. Instead, non-parametric tests were used to compare the median test scores. Kruskal-Wallis tests were used to identify significant differences in test scores across the 4 years. Post-hoc procedures for significant Kruskal-Wallis results entailed conducting pair-wise Mann-Whitney U tests, with a Bonferroni correction of the significance level, to ensure the Type 1 errors did not build up to more than 0.05 (Field 2005). After applying the Bonferroni correction, the post-hoc tests required a p-value of less than 0.0083 to be considered statistically significant.

Appendix B Detailed tables and figures

Table B1: Indigenous status of children on guardianship/custody orders

	Indigenous Australians			Other Australians			Total		
	Male	**Female**	**Persons**	**Male**	**Female**	**Persons**	**Male**	**Female**	**Persons**
					Number				
Vic	70	85	155	521	491	1,012	591	576	1,167
Qld	307	288	595	850	758	1,608	1,157	1046	2,203
WA	106	111	217	158	202	360	264	313	577
SA	62	55	117	188	185	373	250	240	490
Tas	24	18	42	104	90	194	128	108	236
Total	**569**	**557**	**1,126**	**1,821**	**1,726**	**3,547**	**2,390**	**2,283**	**4,673**
					Per cent				
Vic	45.2	54.8	100.0	51.5	48.5	100.0	50.6	49.4	100.0
Qld	51.6	48.4	100.0	52.9	47.1	100.0	52.5	47.5	100.0
WA	48.8	51.2	100.0	43.9	56.1	100.0	45.8	54.2	100.0
SA	53.0	47.0	100.0	50.4	49.6	100.0	51.0	49.0	100.0
Tas	57.1	42.9	100.0	53.6	46.4	100.0	54.2	45.8	100.0
Total	**50.5**	**49.5**	**100.0**	**51.3**	**48.7**	**100.0**	**51.1**	**48.9**	**100.0**

Notes

1. Includes all children in the study population (see Box 2.1) who had test score data (that is, sat test, absent/withdrawn or exempt) for at least one test in at least 1 year across 2003 to 2006.
2. Children with unknown Indigenous status are included under 'Other Australians'.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B2: Children on guardianship/custody orders, by school grade, 2003–2006

Grade	2003	2004	2005	2006
			Number	
Grade 3	504	535	496	524
Grade 5	540	518	540	610
Grade 7	542	472	585	593
Total	**1,586**	**1,525**	**1,621**	**1,727**
			Per cent	
Grade 3	31.8	35.1	30.6	30.3
Grade 5	34.0	34.0	33.3	35.3
Grade 7	34.2	31.0	36.1	34.3
Total	**100.0**	**100.0**	**100.0**	**100.0**

Note: Includes all children in the study population (see Box 2.1) who had test score data (that is, sat test, absent/withdrawn or exempt) for reading and/or numeracy in each year.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B3: Children on guardianship/custody orders, by length of time on orders, 2003–2006

	2003	2004	2005	2006
Length of time on current guardianship/custody order (months)				
Median	25.5	25.5	23.5	26.5
Minimum	<1	<1	<1	<1
Maximum	167	152	155	163
Sample size (n)	968	1,031	1,210	1,308
Unknown	618	494	411	419
Continuous length of time on all types of care and protection orders (months)				
Median	43.5	38.9	38.4	41.5
Minimum	<1	<1	<1	<1
Maximum	167	162	155	163
Sample size (n)	1,012	1,130	1,355	1,485
Unknown	574	395	266	242

Notes

1. Sample size includes all children in the study population (see Box 2.1) who had test score data (that is, sat test, absent/withdrawn or exempt) for reading and/or numeracy in each year, and for whom data on length of time on orders were available. Victoria and Queensland had comparatively high proportions of children in 'unknown'.
2. Data were collected at 1 August in each year. Testing occurs during August each year, so these data capture pre-test order status.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B4: Continuous length of time on all types of care and protection orders, 2003–2006 (per cent)

	<1 year	1 to <3 years	3 to <5 years	5 to <7 years	7 or more years	Total
2003	18.4	24.5	20.0	13.4	23.7	100.0
2004	17.4	28.9	19.6	13.8	20.3	100.0
2005	18.2	30.6	17.9	14.0	19.3	100.0
2006	14.4	30.3	20.5	14.4	20.4	100.0

Notes

1. Includes all children in the study population (see Box 2.1) who had test score data (that is, sat test, absent/withdrawn or exempt) for adding and/or numeracy in each year, and for whom data on length of time on orders were available. For sample sizes, refer to Table B3.
2. Data were collected at 1 August in each year. Testing occurs during August each year, so these data capture pre-test order status.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B5: Children on guardianship/custody orders, by living arrangements, 2003–2006

Living arrangements	2003	2004	2005	2006
		Number		
Foster care	559	571	642	684
Parents	64	95	140	71
Other relatives/kin				
Relatives/kin who are reimbursed	236	318	367	358
Relatives/kin who are not reimbursed	14	11	22	14
Other home-based care	39	39	41	41
Residential care	52	45	46	76
Independent living	1	1	1	—
Other living arrangements (including unknown)	621	445	362	483
Total	**1,586**	**1,525**	**1,621**	**1,727**
		Per cent		
Foster care	35.2	37.4	39.6	39.6
Parents	4.0	6.2	8.6	4.1
Other relatives/kin				
Relatives/kin who are reimbursed	14.9	20.9	22.6	20.7
Relatives/kin who are not reimbursed	0.9	0.7	1.4	0.8
Other home-based care	2.5	2.6	2.5	2.4
Residential care	3.3	3.0	2.8	4.4
Independent living	0.1	0.1	0.1	—
Other living arrangements (including unknown)	39.2	29.2	22.3	28.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Notes

1. Includes all children in the study population (see Box 2.1) who had test score data (that is, sat test, absent/withdrawn or exempt) for reading and/or numeracy in each year.
2. Data were collected on living arrangements at 30 June each year, for consistency with the timeframe used for these data in the annual AIHW publication *Child protection Australia* (see AIHW 2010). Testing occurs during August each year, so these data capture pre-test living arrangements. Refer to the Glossary for definitions of living arrangements categories.
3. The following categories are types of out-of-home care: 'Foster care', 'Relatives/kin who are reimbursed', 'Other home-based care', 'Residential care' and 'Independent living'. The 'Other living arrangements' category may also include cases of out-of-home care.
4. Queensland had a comparatively high proportion of children living in 'other living arrangements' such as: youth justice residentials, establishments for people with disabilities, hospitals, hostels, boarding schools, and all other placements not funded by Child Safety Services. Victoria also had a comparatively high proportion of children in 'other living arrangements'.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B6: Children on guardianship/custody orders, by number of different out-of-home care placements in the previous 12 months, 2003–2006

Number of different placements	2003	2004	2005	2006
		Number		
1	471	588	738	824
2	305	231	243	250
3	94	101	113	115
4	43	36	31	48
5 or more	15	23	24	47
Subtotal	*928*	*979*	*1,149*	*1,284*
Unknown	658	546	472	443
Total	**1,586**	**1,525**	**1,621**	**1,727**
		Per cent		
1	50.8	60.1	64.2	64.2
2	32.9	23.6	21.2	19.5
3	10.1	10.3	9.8	9.0
4	4.6	3.7	2.7	3.7
5 or more	1.6	2.4	2.1	3.7
Total	**100.0**	**100.0**	**100.0**	**100.0**

Notes

1. Includes all children in the study population (see Box 2.1) who had test score data (that is, sat test, absent/withdrawn or exempt) for reading and/or numeracy in each year, and for whom data on out-of-home care placement were available. Children without placement data are included in the 'Unknown' category.
2. Percentages exclude children for whom number of out-of-home placements is unknown.
3. Data were collected on number of out-of-home care placements in the previous 12 months at 1 August (for example, between 2 August 2004 and 1 August 2005). Testing occurs during August each year, so these data capture pre-test stability of placements. Data exclude placements that were not formal out-of-home care placements (see Glossary).

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B7: Children on guardianship/custody orders, by number of different government schools attended in the previous 12 months, 2003–2006

Number of different government schools	2003	2004	2005	2006
		Number		
1	719	690	797	842
2	219	212	238	223
3	30	34	34	38
4	4	2	8	8
5 or more	3	2	1	1
Subtotal	*975*	*940*	*1,078*	*1,112*
Unknown	611	585	543	615
Total	**1,586**	**1,525**	**1,621**	**1,727**
		Per cent		
1	73.7	73.4	73.9	75.7
2	22.5	22.6	22.1	20.1
3	3.1	3.6	3.2	3.4
4	0.4	0.2	0.7	0.7
5 or more	0.3	0.2	0.1	0.1
Total	**100.0**	**100.0**	**100.0**	**100.0**

Notes

1. Includes all children in the study population (see Box 2.1) who had test score data (that is, sat test, absent/withdrawn or exempt) for reading and/or numeracy in each year, and for whom data on government school attendance were available. Queensland, South Australia and Tasmania were able to provide data on school attendance for this pilot study. Children without school attendance data are included in the 'Unknown' category—this includes all children from Victoria and Western Australia.
2. Percentages exclude children for whom number of schools attended is unknown.
3. Data were collected on number of government schools attended in the previous 12 months at 1 August (for example, between 2 August 2004 and August 2005). Testing occurs during August each year, so these data capture pre-test stability of schooling.
4. State education departments were unable to provide data on the number of non-government schools attended, so the above data may represent an undercount of the total number of schools attended for some children.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B8: Comparison of participation in reading and numeracy testing each year, by children on guardianship/custody orders, 2003–2006 (number)

	Numeracy test							
	Sat test		Exempt		Absent/withdrawn		Total	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
					2003			
Reading test								
Sat test	1,365	86.1	—	—	32	2.0	1,397	88.1
Exempt	2	0.1	60	3.8	2	0.1	64	4.0
Absent/withdrawn	68	4.3	3	0.2	54	3.4	125	7.9
Total	**1,435**	**90.5**	**63**	**4.0**	**88**	**5.5**	**1,586**	**100.0**
					2004			
Reading test								
Sat test	1,320	86.6	2	0.1	34	2.2	1,356	88.9
Exempt	3	0.2	71	4.7	2	0.1	76	5.0
Absent/withdrawn	45	3.0	4	0.3	44	2.9	93	6.1
Total	**1,368**	**89.7**	**77**	**5.0**	**80**	**5.2**	**1,525**	**100.0**
					2005			
Reading test								
Sat test	1,359	83.8	4	0.2	41	2.5	1,404	86.6
Exempt	3	0.2	89	5.5	—	—	92	5.7
Absent/withdrawn	40	2.5	—	—	85	5.2	125	7.7
Total	**1,402**	**86.5**	**93**	**5.7**	**126**	**7.8**	**1,621**	**100.0**
					2006			
Reading test								
Sat test	1,445	83.7	2	0.1	37	2.1	1,484	85.9
Exempt	5	0.3	126	7.3	—	—	131	7.6
Absent/withdrawn	51	3.0	—	—	61	3.5	112	6.5
Total	**1,501**	**86.9**	**128**	**7.4**	**98**	**5.7**	**1,727**	**100.0**

Note: Includes all children in the study population (see Box 2.1) for whom data on participation in testing were available. Calculations may be affected where data were not provided for all categories (see Table B10 for further details).

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B9: Changes over time in participation in testing by children on guardianship/custody orders

Years	Odds ratio (OR_{MH})	95% CI	Sample size (n)
		Reading test	
From 2003 to 2005	17.8	7.3–43.1	395
From 2004 to 2006	13.9	7.1–27.3	440
		Numeracy test	
From 2003 to 2005	33.0	11.8–91.7	395
From 2004 to 2006	17.4	8.5–35.7	440

Notes

1. All odds ratios are significant at the 99.9% level ($p<0.0001$).
2. The odds ratios indicate the increased likelihood of children who were absent/withdrawn/exempt from testing in 1 year to also be absent/withdrawn/exempt from testing 2 years later.
3. Data only include children from the study population (see Box 2.1) who were continuously on guardianship/custody orders over the 2-year period. Calculations may be affected where data were not provided for all categories (see Table B10 for further details).

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B10: Participation in testing by children on guardianship/custody orders, 2003–2006 (per cent)

	Vic	Qld	WA	SA	Tas	Total
			Reading test			
2003						
Sat test	88.2	83.4	96.8	100.0	91.1	88.1
Exempt	n.p.	8.3	n.p.	n.p.	n.p.	4.0
Absent/withdrawn	11.8	8.4	3.2	n.p.	8.9	7.9
2004						
Sat test	95.0	84.4	95.7	83.8	91.9	88.9
Exempt	n.p.	8.7	n.p.	10.8	n.p.	5.0
Absent/withdrawn	5.0	6.9	4.3	5.4	8.1	6.1
2005						
Sat test	85.1	84.9	96.4	86.5	90.3	86.6
Exempt	n.p.	9.0	n.p.	10.7	n.p.	5.7
Absent/withdrawn	14.9	6.1	3.6	2.8	9.7	7.7
2006						
Sat test	86.0	84.2	96.9	78.8	89.4	85.9
Exempt	0.3	11.8	n.p.	15.6	1.0	7.6
Absent/withdrawn	13.7	3.9	3.1	5.7	9.6	6.5
			Numeracy test			
2003						
Sat test	92.4	85.3	99.4	100.0	93.7	90.5
Exempt	n.p.	8.1	n.p.	n.p.	n.p.	4.0
Absent/withdrawn	7.6	6.6	0.6	n.p.	6.3	5.5
2004						
Sat test	92.3	86.5	97.1	83.8	94.6	89.7
Exempt	n.p.	8.8	n.p.	10.8	n.p.	5.0
Absent/withdrawn	7.7	4.7	2.9	5.4	5.4	5.2
2005						
Sat test	85.7	84.8	97.0	83.1	92.5	86.5
Exempt	n.p.	9.2	n.p.	10.7	n.p.	5.7
Absent/withdrawn	14.3	6.1	3.0	6.2	7.5	7.8
2006						
Sat test	87.9	85.0	97.8	78.8	91.3	86.9
Exempt	0.3	11.7	n.p.	14.6	1.0	7.4
Absent/withdrawn	11.9	3.3	2.2	6.6	7.7	5.7

Note: Includes all children in the study population (see Box 2.1) for whom data on participation in testing were available. Calculations may be affected where data were not provided for all categories.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B11: Proportion of children on guardianship/custody orders achieving the national reading and numeracy benchmarks, 2003

	Reading			Numeracy		
	Per cent	95% CI	Sample size	Per cent	95% CI	Sample size
Vic						
Grade 3	84.4	75.5–91.0	96	89.8	82.0–95.0	98
Grade 5	79.2	70.3–86.5	106	81.4	73.1–87.9	109
Grade 7	74.7	67.2–81.3	158	50.3	42.3–58.3	161
Qld						
Grade 3	69.8	63.6–75.5	245	65.7	59.5–71.6	251
Grade 5	47.0	40.6–53.4	247	55.3	49.0–61.6	253
Grade 7	64.2	57.5–70.6	218	52.7	45.9–59.5	220
WA						
Grade 3	86.5	74.2–94.4	52	69.6	55.9–81.2	56
Grade 5	78.2	65.0–88.2	55	61.1	46.9–74.1	54
Grade 7	68.2	52.4–81.4	44	55.6	40.0–70.4	45
SA						
Grade 3	60.0	44.3–74.3	45	75.6	60.5–87.1	45
Grade 5	65.6	52.3–77.3	61	68.9	55.7–80.1	61
Grade 7	79.0	66.8–88.3	62	61.3	48.1–73.4	62
Tas[(a)]						
Grade 3	95.8	78.9–99.9	24	76.0	54.9–90.6	25
Grade 5	92.3	74.9–99.1	26	70.4	49.8–86.2	27
Grade 7	63.6	40.7–82.8	22	45.5	24.4–67.8	22

(a) As the number of children on guardianship/custody orders in this jurisdiction is small, caution should be taken in interpreting the results.

Note: Includes all children in the study population (see Box 2.1) who had the test score data required to calculate achievement of the national benchmarks (that is, sat test, exempt. Refer to Box 3.2 for further details). A description of the method used to calculate the 95% confidence intervals is included in Appendix A.6.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B12: Proportion of children on guardianship/custody orders achieving the national reading and numeracy benchmarks, 2004

	Reading			Numeracy		
	Per cent	95% CI	Sample size	Per cent	95% CI	Sample size
Vic						
Grade 3	79.8	70.8–87.0	104	93.3	86.6–97.3	104
Grade 5	81.8	73.3–88.5	110	87.2	79.4–92.8	109
Grade 7	81.3	73.9–87.3	144	50.4	41.6–59.1	135
Qld						
Grade 3	86.5	82.0–90.2	289	62.2	56.4–67.8	294
Grade 5	52.1	45.9–58.3	259	57.6	51.5–63.6	269
Grade 7	78.6	72.6–83.8	224	49.8	43.1–56.5	227
WA						
Grade 3	88.5	77.8–95.3	61	78.3	65.8–87.9	60
Grade 5	69.9	58.0–80.1	73	63.3	51.7–73.9	79
Grade 7	58.5	45.6–70.6	65	44.4	31.9–57.5	63
SA[(a)]						
Grade 3	68.8	41.3–89.0	16	66.7	38.4–88.2	15
Grade 5	64.3	35.1–87.2	14	60.0	32.3–83.7	15
Grade 7	80.0	28.4–99.5	5	60.0	14.7–94.7	5
Tas[(a)]						
Grade 3	94.4	81.3–99.3	36	73.0	55.9–86.2	37
Grade 5	66.7	43.0–85.4	21	45.5	24.4–67.8	22
Grade 7	72.7	39.0–94.0	11	45.5	16.7–76.6	11

(a) As the number of children on guardianship/custody orders in this jurisdiction is small, caution should be taken in interpreting the results.

Note: Includes all children in the study population (see Box 2.1) who had the test score data required to calculate achievement of the national benchmarks (that is, sat test, exempt. Refer to Box 3.2 for further details). A description of the method used to calculate the 95% confidence intervals is included in Appendix A.6.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B13: Proportion of children on guardianship/custody orders achieving the national reading and numeracy benchmarks, 2005

	Reading			Numeracy		
	Per cent	95% CI	Sample size	Per cent	95% CI	Sample size
Vic						
Grade 3	79.6	70.3–87.1	98	91.3	84.1–95.9	103
Grade 5	75.2	65.7–83.3	101	91.6	84.1–96.3	95
Grade 7	78.7	70.4–85.6	122	44.8	35.9–54.0	125
Qld						
Grade 3	76.8	70.9–81.9	241	68.2	61.9–74.0	242
Grade 5	43.7	37.4–50.0	252	57.9	51.5–64.0	254
Grade 7	61.9	55.7–67.8	265	51.9	45.7–58.1	262
WA						
Grade 3[(a,b)]	64.5	45.4–80.8	31	64.5	45.4–80.8	31
Grade 5	68.9	55.7–80.1	61	57.1	44.0–69.5	63
Grade 7	64.7	52.2–75.9	68	58.2	45.5–70.2	67
SA						
Grade 3	70.4	56.4–82.0	54	69.8	55.7–81.7	53
Grade 5	50.0	37.6–62.4	68	55.4	42.5–67.7	65
Grade 7	86.3	73.7–94.3	51	69.4	54.6–81.7	49
Tas[(b)]						
Grade 3	76.7	57.7–90.1	30	61.8	43.6–77.8	34
Grade 5	67.9	47.6–84.1	28	67.9	47.6–84.1	28
Grade 7	53.8	33.4–73.4	26	41.7	22.1–63.4	24

(a) Due to earlier changes to the enrolment age, Western Australia had a half year cohort in Grade 3 in 2005.

(b) As the number of children on guardianship/custody orders in this jurisdiction is small, caution should be taken in interpreting the results.

Note: Includes all children in the study population (see Box 2.1) who had the test score data required to calculate achievement of the national benchmarks (that is, sat test, exempt. Refer to Box 3.2 for further details). A description of the method used to calculate the 95% confidence intervals is included in Appendix A.6.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B14: Proportion of children on guardianship/custody orders achieving the national reading and numeracy benchmarks, 2006

	Reading			Numeracy		
	Per cent	95% CI	Sample size	Per cent	95% CI	Sample size
Vic						
Grade 3	87.5	78.7–93.6	88	85.9	77.0–92.3	92
Grade 5	75.2	66.2–82.9	113	87.6	80.1–93.1	113
Grade 7	80.7	72.4–87.3	119	51.6	42.4–60.8	122
Qld						
Grade 3	81.9	76.0–86.9	210	62.7	55.8–69.3	212
Grade 5	44.0	38.3–49.9	293	48.5	42.6–54.3	295
Grade 7	53.8	47.7–59.8	277	42.8	36.9–48.9	278
WA						
Grade 3	75.3	64.2–84.4	77	65.9	54.6–76.0	82
Grade 5	77.1	65.6–86.3	70	54.3	41.9–66.3	70
Grade 7	54.1	42.1–65.7	74	50.7	38.6–62.8	71
SA						
Grade 3	64.7	52.2–75.9	68	68.7	56.2–79.4	67
Grade 5	65.7	53.4–76.7	70	57.7	45.4–69.4	71
Grade 7	74.2	61.5–84.5	62	63.3	49.9–75.4	60
Tas[(a)]						
Grade 3	86.8	71.9–95.6	38	48.7	32.4–65.2	39
Grade 5	87.9	71.8–96.6	33	68.6	50.7–83.1	35
Grade 7	60.9	38.5–80.3	23	31.8	13.9–54.9	22

(a) As the number of children on guardianship/custody orders in this jurisdiction is small, caution should be taken in interpreting the results.

Note: Includes all children in the study population (see Box 2.1) who had the test score data required to calculate achievement of the national benchmarks (that is, sat test, exempt. Refer to Box 3.2 for further details). A description of the method used to calculate the 95% confidence intervals is included in Appendix A.6.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B15: Proportion of children on guardianship/custody orders achieving the national reading and numeracy benchmarks, by Indigenous status, 2003–2006

	Indigenous Australians			Other Australians		
	Per cent	95% CI	Sample size	Per cent	95% CI	Sample size
			Reading benchmark			
2003						
Grade 3*	63.0	53.1–72.1	108	78.8	74.2–83.0	354
Grade 5	53.8	44.9–62.6	130	64.9	59.8–69.8	365
Grade 7*	57.1	46.3–67.5	91	72.4	67.8–76.7	413
2004						
Grade 3	83.2	75.2–89.4	119	86.0	82.2–89.3	387
Grade 5*	50.0	40.4–59.6	112	66.6	61.5–71.4	365
Grade 7	66.0	55.7–75.3	97	79.3	74.6–83.4	352
2005						
Grade 3	67.2	57.9–75.7	116	78.7	73.9–82.9	338
Grade 5*	36.8	28.4–45.9	125	61.0	56.0–65.9	385
Grade 7*	55.0	46.0–63.8	129	72.2	67.6–76.5	403
2006						
Grade 3*	70.2	61.3–78.2	121	83.1	78.8–86.8	360
Grade 5*	47.0	38.9–55.3	151	63.6	58.8–68.1	428
Grade 7*	43.5	34.9–52.4	131	67.9	63.3–72.3	424
			Numeracy benchmark			
2003						
Grade 3	62.8	53.2–71.7	113	75.7	70.9–80.0	362
Grade 5*	45.9	37.2–54.7	133	70.8	65.9–75.3	380
Grade 7*	29.8	20.8–40.1	94	58.2	53.3–63.0	416
2004						
Grade 3*	58.9	49.7–67.6	124	75.4	70.8–79.6	386
Grade 5*	46.2	36.9–55.6	117	70.3	65.4–74.9	377
Grade 7*	35.8	26.2–46.3	95	52.9	47.5–58.2	346
2005						
Grade 3*	59.0	49.5–68.0	117	77.5	72.7–81.8	346
Grade 5*	49.2	40.3–58.2	128	69.5	64.6–74.1	377
Grade 7*	39.7	31.1–48.8	126	56.1	51.1–61.0	401
2006						
Grade 3*	45.3	36.5–54.3	128	75.0	70.2–79.4	364
Grade 5*	45.0	36.9–53.3	151	64.0	59.3–68.5	433
Grade 7*	27.3	19.9–35.7	132	53.9	49.0–58.8	421

Notes

1. Includes all children in the study population (see Box 2.1) who had the test score data required to calculate achievement of the national benchmarks (that is, sat test, exempt. Refer to Box 3.2 for further details). A description of the method used to calculate the 95% confidence intervals is included in Appendix A.6.
2. Asterisks indicate statistically significant differences between the proportions of Indigenous and Other children achieving the national benchmark.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B16: Changes over time in benchmark achievement by children on guardianship/custody orders

Years	Odds ratio (OR_{MH})	95% CI	Sample size (n)
		Reading test	
From 2003 to 2005	4.9	3.0–8.0	345
From 2004 to 2006	6.0	3.5–10.3	339
		Numeracy test	
From 2003 to 2005	8.7	5.2–14.7	349
From 2004 to 2006	11.0	6.4–19.1	346

Notes

1. All odds ratios are significant at the 99.9% level ($p<0.0001$).
2. The odds ratios indicate the increased likelihood of children who achieved the benchmark in 1 year to also achieve the benchmark in testing 2 years later.
3. Data only include children from the study population (see Box 2.1) who were continuously on guardianship/custody orders across 2003 to 2006—this is to ensure consistency with the pathway mapping in figures 3.3, B1 and B2.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B17: Test scores of children on guardianship/custody orders, Victoria, 2003–2006

	Reading				Numeracy			
	Median	Mean	SD	n	Median	Mean	SD	n
2003								
Grade 3	1.8	1.9	0.8	96	1.9	1.9	0.7	98
Grade 5	2.6	2.7	0.8	106	2.5	2.6	0.6	118
Grade 7	3.6	3.8	0.8	158	3.5	3.6	0.6	161
2004								
Grade 3	1.8	1.8	0.8	104	1.9	1.8	0.6	104
Grade 5	2.7	2.8	0.7	110	2.6	2.7	0.6	109
Grade 7	3.8	3.8	0.7	144	3.5	3.5	0.5	135
2005								
Grade 3	1.9	1.9	0.8	98	1.8	1.8	0.7	103
Grade 5	2.6	2.7	0.7	101	2.6	2.7	0.6	95
Grade 7	3.7	3.8	0.7	122	3.3	3.4	0.6	125
2006								
Grade 3	2.1	2.0	0.7	87	1.8	1.8	0.7	91
Grade 5	2.6	2.8	0.8	113	2.6	2.6	0.6	113
Grade 7	3.7	3.8	0.7	119	3.5	3.6	0.6	122

Notes

1. Includes all Victorian children in the study population (see Box 2.1) who sat the tests each year—children recorded as exempt or absent/withdrawn from testing are excluded (see Box 3.1) .

2. Median test scores were not found to be significantly different between years within grades (at $p<0.0083$). For example, reading test scores for Grade 3 students were not significantly different across 2003 to 2006. Refer to Appendix A.6 for a description of the method used.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B18: Test scores of children on guardianship/custody orders, Queensland, 2003–2006

	Reading				Numeracy			
	Median	Mean	SD	n	Median	Mean	SD	n
2003								
Grade 3	478.8	481.6	71.8	214	484.4	483.0	81.4	220
Grade 5	561.3	567.8	60.0	227	548.8	548.0	78.3	233
Grade 7	636.1	643.6	56.7	205	605.9	613.0	83.2	208
2004								
Grade 3	495.9	498.7	49.3	257	473.2	470.4	79.6	261
Grade 5	566.0	570.4	53.0	240	549.0	550.6	76.7	248
Grade 7	646.9	653.9	45.8	203	601.4	600.7	68.1	208
2005								
Grade 3	503.8	498.5	82.8	215	473.6	480.4	76.0	216
Grade 5	556.3	560.3	70.3	225	559.8	552.4	77.6	227
Grade 7	638.4	640.2	73.2	245	605.8	609.2	70.0	241
2006								
Grade 3	477.6	486.7	60.2	192	482.5	473.9	83.0	195
Grade 5	566.0	567.8	62.5	247	538.1	545.5	70.7	250
Grade 7	620.1	630.8	60.2	245	593.0	593.7	64.2	245

Notes

1. Includes all Queensland children in the study population (see Box 2.1) who sat the tests each year—children recorded as exempt or absent/withdrawn from testing are excluded (see Box 3.1) .

2. The median reading test score of Grade 3 students in 2003 was found to be significantly lower than that for Grade 3 students in 2004 and 2005; 2004 students also had a significantly higher median test score than those in 2006 ($p<0.007$). The median reading test score of Grade 7 students in 2004 was found to be significantly higher than that for Grade 7 students in 2006 ($p<0.001$). The median numeracy test score of Grade 7 students in 2004 was found to be significantly lower than that for Grade 7 students in 2006 ($p<0.006$). Refer to Appendix A.6 for a description of the method used.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B19: Test scores of children on guardianship/custody orders, Western Australia, 2003–2006

	Reading				Numeracy			
	Median	Mean	SD	n	Median	Mean	SD	n
2003								
Grade 3	245.0	247.9	75.1	52	273.5	269.6	85.3	56
Grade 5	323.0	318.2	63.5	55	350.5	351.5	60.8	54
Grade 7	398.0	403.0	63.5	44	419.0	429.7	77.1	45
2004								
Grade 3	267.0	252.6	98.3	61	330.0	323.1	83.1	60
Grade 5	316.0	313.8	77.2	73	356.0	347.7	82.0	79
Grade 7	371.0	377.1	65.1	65	394.0	398.0	82.8	63
2005								
Grade 3[(a)]	248.0	236.1	90.4	31	285.0	273.9	95.6	31
Grade 5	319.0	314.8	78.6	61	334.0	334.8	67.8	63
Grade 7	380.0	381.9	53.6	68	405.0	403.0	59.3	67
2006								
Grade 3	235.0	232.3	84.7	77	280.0	275.2	90.4	82
Grade 5	315.0	316.0	80.2	70	342.5	339.0	92.0	70
Grade 7	370.0	379.8	78.9	74	405.0	407.6	72.7	71

(a) Due to earlier changes to the enrolment age, Western Australia had a half year cohort in Grade 3 in 2005. As the number of children on guardianship/custody orders is small for this grade, caution should be taken in interpreting the results.

Notes

1. Includes all Western Australian children in the study population (see Box 2.1) who sat the tests each year—children recorded as exempt or absent/withdrawn from testing are excluded (see Box 3.1) .

2. The median numeracy test score of Grade 3 students in 2004 was found to be significantly higher than that for Grade 3 students in 2003 and 2006 ($p<0.001$). Refer to Appendix A.6 for a description of the method used.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B20: Test scores of children on guardianship/custody orders, South Australia, 2003–2006

	Reading				Numeracy			
	Median	Mean	SD	n	Median	Mean	SD	n
2003								
Grade 3	42.7	42.4	9.3	45	43.3	42.8	8.9	45
Grade 5	52.3	50.8	8.4	61	53.3	52.8	9.1	61
Grade 7	56.5	55.8	5.7	62	59.1	58.6	10.4	62
2004								
Grade 3	45.6	44.3	7.0	15	42.0	42.1	5.7	14
Grade 5	52.7	54.8	5.7	11	51.2	53.1	6.7	12
Grade 7	55.4	57.0	5.3	5	60.6	60.0	7.7	5
2005								
Grade 3	44.2	45.3	8.1	47	45.2	45.7	7.2	46
Grade 5	50.5	50.0	6.1	59	50.8	51.2	6.5	56
Grade 7	57.2	58.3	6.0	48	60.4	59.2	8.5	46
2006								
Grade 3	45.3	46.2	7.1	51	45.4	46.0	7.0	52
Grade 5	49.5	50.2	6.6	62	52.2	51.9	5.2	63
Grade 7	57.6	57.8	5.1	54	58.9	59.4	6.2	52

Notes

1. Includes all South Australian children in the study population (see Box 2.1) who sat the tests each year—children recorded as exempt or absent/withdrawn from testing are excluded (see Box 3.1) .
2. As the number of children on guardianship/custody orders in this state is small for some grades, caution should be taken in interpreting the results.
3. Median test scores were not significantly different between years within grades (at $p<0.0083$). For example, median reading test scores for Grade 3 students were not significantly different across 2003 to 2006. Refer to Appendix A.6 for a description of the method used.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B21: Test scores of children on guardianship/custody orders, Tasmania, 2003–2006

	Reading				Numeracy			
	Median	Mean	SD	n	Median	Mean	SD	n
2003								
Grade 3	357.0	362.9	35.8	24	358.0	355.4	51.4	25
Grade 5	369.0	372.5	16.9	26	370.0	371.7	18.4	27
Grade 7	390.0	391.2	39.0	22	376.0	380.2	39.3	22
2004								
Grade 3	341.0	345.6	28.4	36	349.0	351.1	31.7	37
Grade 5	362.0	371.0	26.0	21	357.0	361.1	32.6	22
Grade 7	399.0	393.1	35.9	11	378.0	378.2	44.6	11
2005								
Grade 3	333.0	334.7	25.6	30	332.5	340.1	32.7	34
Grade 5	368.5	373.7	39.5	28	376.0	374.1	26.2	28
Grade 7	391.0	391.1	24.0	26	386.0	388.4	20.9	24
2006								
Grade 3	336.5	334.9	24.7	38	325.0	333.3	32.5	39
Grade 5	368.5	372.9	26.7	32	376.0	376.5	28.4	34
Grade 7	391.0	390.3	31.2	23	378.0	384.7	28.1	22

Notes

1. Includes all Tasmanian children in the study population (see Box 2.1) who sat the tests each year—children recorded as exempt or absent/withdrawn from testing are excluded (see Box 3.1) .
2. As the number of children on guardianship/custody orders in this state is small, caution should be taken in interpreting the results.
3. The median reading test score of Grade 3 students in 2003 was found to be significantly higher than that for Grade 3 students in 2005 and 2006 ($p<0.003$). Refer to Appendix A.6 for a description of the method used.
4. Although Tasmania and Western Australia used the same testing regime across 2003 to 2006, Tasmania applied specific standardisation procedures to the resulting test scores. The Tasmanian standardised scores are presented in Table B21; they will differ to the scores presented for Western Australia in Table B19 due to the different measurement scales used.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B22: Associations between reading and numeracy benchmark achievement, 2003–2006

	Chi-square value	Significance
2003	230.2	p<0.0001
2004	195.5	p<0.0001
2005	307.5	p<0.0001
2006	383.9	p<0.0001

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B23: Odds of benchmark achievement of children on guardianship/custody orders, by Indigenous status

Year	Odds ratio[(a)]	Lower 95% CI	Upper 95% CI	Sample size (n)
		Reading test		
2003	0.548	0.375	0.801	777
2004	0.605	0.420	0.874	823
2005	0.435	0.313	0.603	914
2006	0.453	0.323	0.635	869
		Numeracy test		
2003	0.430	0.300	0.617	791
2004	0.448	0.319	0.628	836
2005	0.538	0.389	0.743	914
2006	0.347	0.249	0.485	874

(a) The odds ratios indicate the decreased likelihood of Indigenous children on guardianship/custody orders in achieving the national reading and numeracy benchmarks compared with other children on orders.

Notes

1. All odds ratios are significant at the 95% level ($p<0.05$).
2. Data only include children from the study population (see Box 2.1) who were included in the binary logistic regression analyses (see Section 4 and tables 4.1 and 4.2).

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B24: The effects of various characteristics on changes to reading and numeracy benchmark achievement between 2003 and 2005, among children on guardianship/custody orders[a]

		Parameter estimates[c]	
Predictor variable	**Category[b]**	**Reading**	**Numeracy**
Intercept		-0.538	0.760
State	*QLD*		
	Vic	1.001	0.479
	WA	-0.211	0.153
	SA	0.585	0.537
	Tas	-0.308	-0.756
Sex	*Female*		
	Male	-0.226	-0.040
Indigenous status	*Other Australians*		
	Indigenous Australians	-0.408 *	-0.259
School grade 2003	*Grade 3*		
	Grade 5	0.318 *	-0.186
Living arrangements[d]			
2003	*Relatives/kin*		
	Foster care	0.134	-0.153
	Other	-0.377	0.069
2005	*Relatives/kin*		
	Foster care	-0.207	0.398
	Other	0.341	-0.382
Length of time on current guardianship/ custody order[e]			
2003		-0.028	-0.017
2005		0.016	0.003
Continuous length of time on all care/ protection orders[e]			
2003		-0.045	0.039
2005		0.054	-0.025
Number of different out-of-home care placements in the past 12 months[e]			
2003		-0.120	0.087
2005		0.164	-0.030
R-Square		0.19	0.11
Sample size (n)		273	276

(a) The outcome variable was dichotomous (positive/negative)—the outcome modelled was 'positive' (see Appendix A.6 for more details).

(b) An italicised entry indicates the reference category.

(c) Asterisks indicate statistical significance at the following levels: * <0.05, ** <0.01, *** <0.001.

(d) Living arrangements at 30 June. 'Relatives/kin' includes: the child's natural or adoptive parents, relatives/kin who are reimbursed by the state/territory for the care of the child, and relatives/kin who are not reimbursed. 'Other' includes: residential care, independent living, and other home-based care. Unknown living arrangements are excluded.

(e) Counted as at 1 August.

Source: AIHW Educational outcomes 2008 pilot data collection.

Table B25: The effects of various characteristics on changes to reading and numeracy benchmark achievement between 2004 and 2006, among children on guardianship/custody orders[a]

		Parameter estimates[c]	
Predictor variable	**Category[b]**	**Reading**	**Numeracy**
Intercept		1.533	3.702 *
State	*QLD*		
	Vic	0.710	0.368
	WA	0.059	0.253
	SA	-0.200	0.345
	Tas	0.175	-0.345
Sex	*Female*		
	Male	0.021	-0.040
Indigenous status	*Other Australians*		
	Indigenous Australians	-0.287	-0.432 *
School grade 2004	*Grade 3*		
	Grade 5	-0.168	-0.075
Living arrangements[d]			
2004	*Relatives/kin*		
	Foster care	-0.364	-0.434
	Other	1.136	0.734
2006	*Relatives/kin*		
	Foster care	-0.337	-0.369
	Other	0.110	0.733
Length of time on current guardianship/ custody order[e]			
2004		0.014	0.025
2006		0.000	-0.014
Continuous length of time on all care/ protection orders[e]			
2004		-0.037	0.026
2006		0.022	-0.046
Number of different out-of-home care placements in the past 12 months[e]			
2004		-0.198	-0.024
2006		-0.289	-0.596 **
R-Square		0.20	0.25
Sample size (n)		233	240

(a) The outcome variable was dichotomous (positive/negative)—the outcome modelled was 'positive' (see Appendix A.6 for more details).

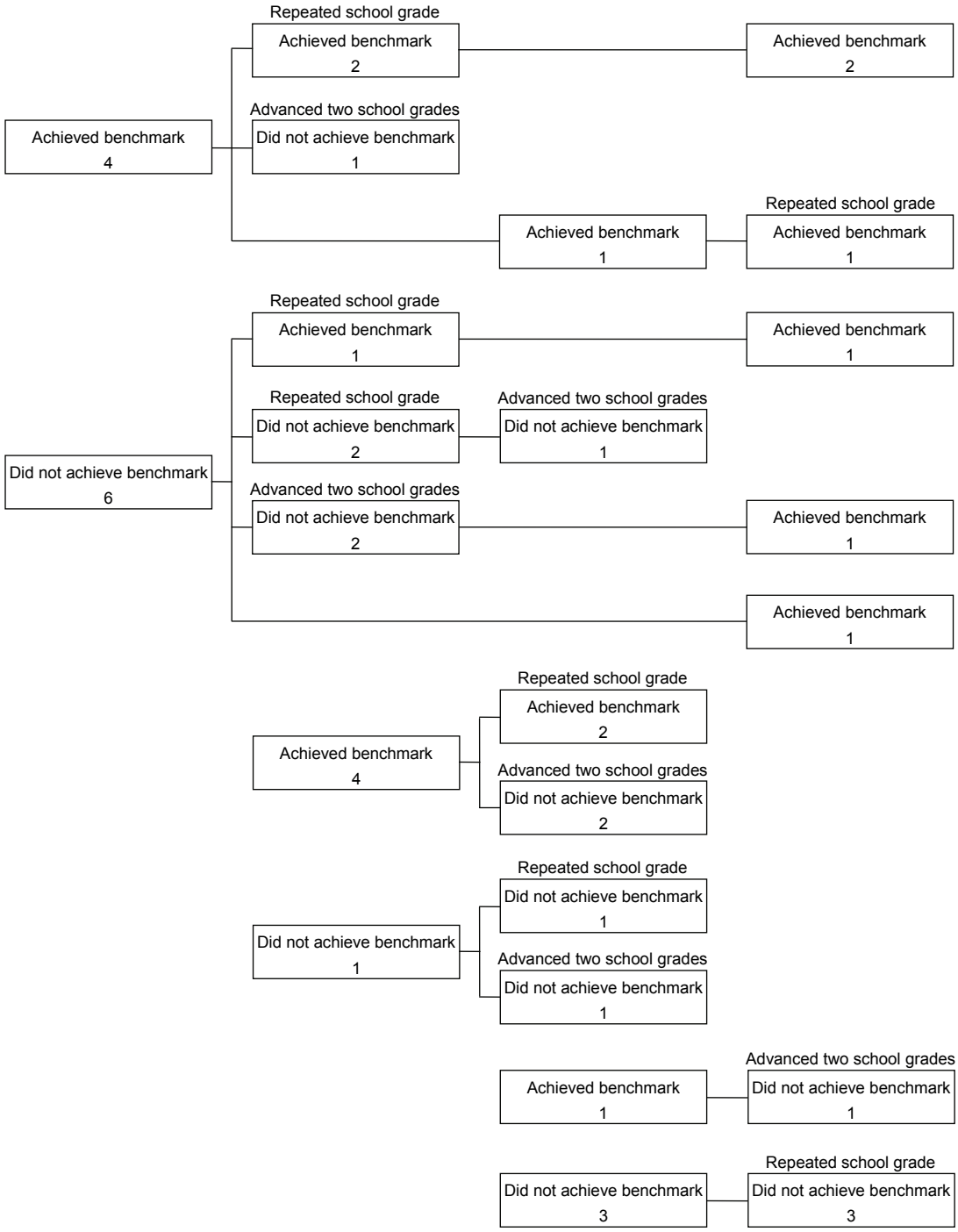
(b) An italicised entry indicates the reference category.

(c) Asterisks indicate statistical significance at the following levels: * <0.05, ** <0.01, *** <0.001.

(d) Living arrangements at 30 June. 'Relatives/kin' includes: the child's natural or adoptive parents, relatives/kin who are reimbursed by the state/territory for the care of the child, and relatives/kin who are not reimbursed. 'Other' includes: residential care, independent living, and other home-based care. Unknown living arrangements are excluded.

(e) Counted as at 1 August.

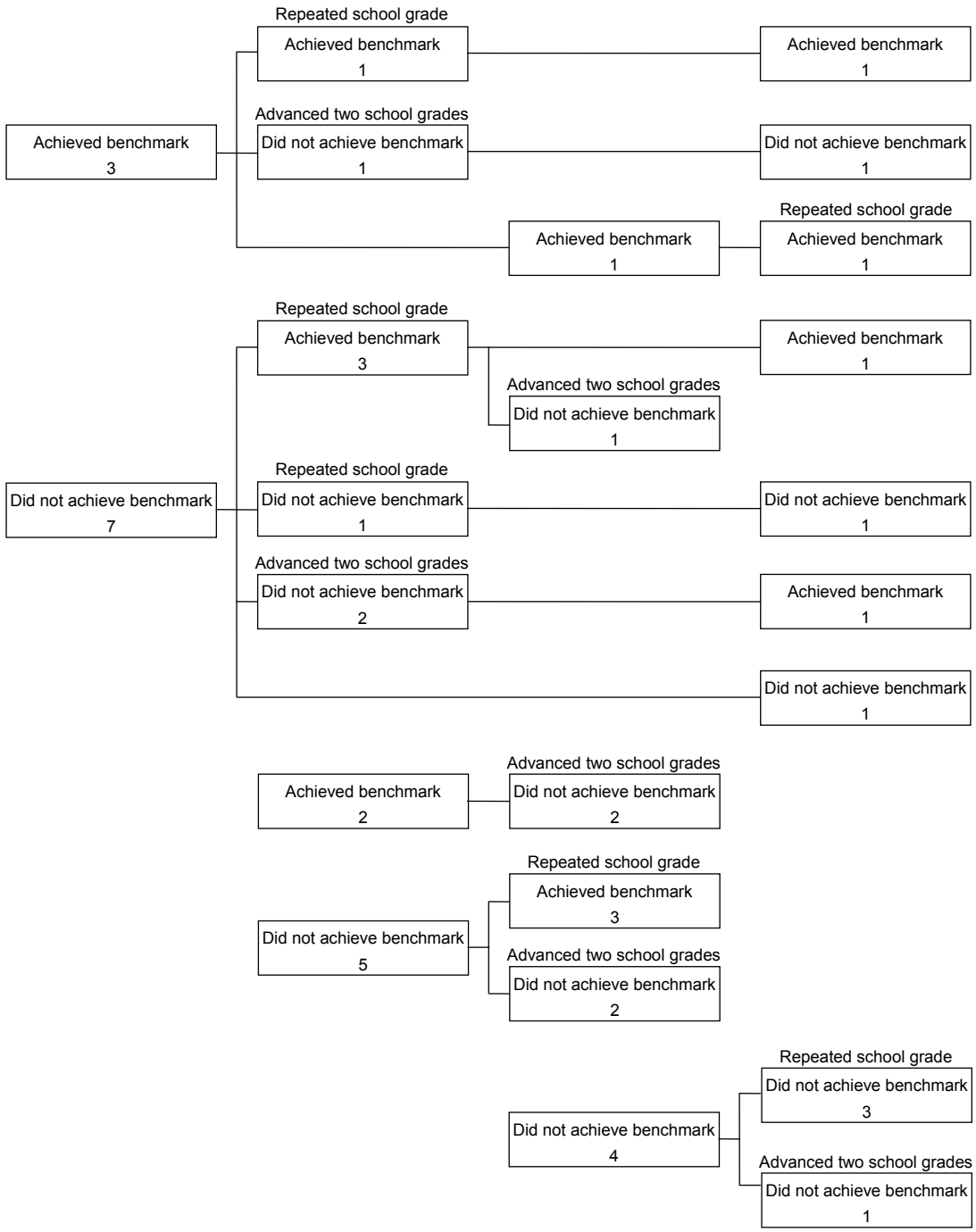
Source: AIHW Educational outcomes 2008 pilot data collection.



Note: This figure only includes a small group of children who were continuously on guardianship/custody orders from 2003 to 2006, had at least 2 years of benchmark achievement data, and followed complex pathways, which involved repeating and skipping grades. Children who followed the 'typical' pathways are included in Figure 3.3.

Source: AIHW Educational outcomes 2008 pilot data collection.

Figure B1: 'Complex' reading benchmark achievement pathways, 2003–2006



Note: This figure only includes a small group of children who were continuously on guardianship/custody orders from 2003 to 2006, had at least 2 years of benchmark achievement data, and followed complex pathways, which involved repeating and skipping grades. Children who followed the 'typical' pathways are included in Figure 3.3.

Source: AIHW Educational outcomes 2008 pilot data collection.

Figure B2: 'Complex' numeracy benchmark achievement pathways, 2003–2006

Glossary

Benchmark achievement

The categories of national benchmark achievement are described in Box 3.2. Background information on the benchmarks is included in Section 3.1.

Child protection services

For this report, this term is used to broadly encapsulate a variety of statutory state/territory-funded child protection-related services, including care and protection orders and out-of-home care. This term may be used/defined differently within the state and territory departments.

Continuously on guardianship/custody orders

This refers to the time, in months, that a child has continuously been on guardianship or custody orders (that is, unbroken time) over a given period. A new guardianship/custody order that is applied within 5 days of the discharge of another guardianship/custody order is deemed to be unbroken.

This information allowed identification of children within the study population who had been continuously involved in this type of child protection intervention over a number of years (regardless of the number of different guardianship/custody orders over this period). Separate data on the child's length of time on their current guardianship/custody order was also collected (see below).

Guardianship/custody orders

Guardianship/custody orders are one type of care and protection order (see Box 2.1). For this study, a guardianship/custody order was defined as an order sought through the court that has the impact of transferring custody or guardianship of the child—see Appendix A.1 for more details.

Indigenous status

An Indigenous student is a student of Aboriginal and/or Torres Strait Islander origin. Children with unknown Indigenous status are included in the 'Other Australians' category.

Language background other than English

For the purposes of MCEETYA reporting, a student with a language background other than English is a one who was born overseas, or has a home language other than English, or has a parent(s) born in a non-English-speaking country (MCEETYA 2007).

Length of continuous time on all care and protection orders

The total unbroken time on all types of care and protection orders—it is counted in completed months, at 1 August in each relevant year. Care and protection orders include guardianship/custody orders, supervisory orders, and interim and temporary orders (see Box 2.1). A new care and protection order/arrangement that is applied within 5 days of the discharge of another care and protection order/arrangement (regardless of type) is deemed to be unbroken. For more details on care and protection orders refer to AIHW 2007b.

Length of time on the current guardianship/custody order

The number of completed months that the child has been on their current guardianship/custody order, at 1 August in each relevant year. Length of time on previous guardianship/custody orders is excluded. If a child has remained on the same guardianship/custody order over a number of years, the length of time reported for 2003, 2004 , 2005 and 2006 will be cumulative.

Living arrangements

Living arrangements refers to the type of care that the child was living in at 30 June of each relevant year. A child on an authorised absence/outing was counted in their usual type of living arrangements. There are eight categories of living arrangements:

- *Foster care*—where the caregiver is authorised and reimbursed by the state/territory for the care of the child.
- *Parents*—including birth or adoptive parents.
- *Relatives/kin who are reimbursed*—where the relative/kinship carer is authorised and reimbursed by the state/territory for the care of the child. Excludes parents.
- *Relatives/kin who are not reimbursed*—excludes parents.
- *Other home-based care*—any other placement that is in the home of a carer who is reimbursed by the state/territory for the care of the child.
- *Residential care*—where the placement is in a residential building whose purpose is to provide placements for children and where there are paid staff.
- *Independent living*—includes private board and lead tenant households.
- *Other living arrangements*—includes living arrangements that don't fit into the above categories and unknown living arrangements.

Number of different government schools attended in the previous 12 months

The number of different government schools that the child was enrolled at in the previous 12 months, at 1 August (for example, between 2 August 2004 and 1 August 2005). A return to a previous school is not counted as a different school.

Number of different out-of-home care placements in the previous 12 months

The number of different out-of-home care placements that the child had in the previous 12 months, at 1 August (for example, between 2 August 2004 and 1 August 2005). A return to a previous placement is not counted as a different placement. A return home is not counted as an out-of-home care placement.

'Out-of-home care' is defined as out-of-home overnight care for children aged 0–17 years, where the state/territory makes a financial payment. Children in out-of-home care include children in legal and voluntary placements.

Out-of-home care does not include placements made in disability services, psychiatric services, juvenile justice facilities, overnight child care services, or children in Supported Accommodation Assistance Program placements or respite/temporary placements lasting less than 7 days.

Changes in the placement include a change in the placement type—for example, from home-based to a facility-based placement—or within placement types, a change in the

venue—for example, a change from one home-based placement to a different home-based placement.

Participation in assessment

The categories of participation in assessment are described in Box 3.1.

Remote and very remote

In each state and territory, students' school locations are categorised using the MCEETYA Geographical Location Classification. There are four geographical location categories: metropolitan, provincial, remote and very remote areas.

For the purposes of this report, children in 'remote' and 'very remote' areas were used as comparison groups. Although 'very remote' was the preferred comparison group, these data were not available for all five jurisdictions participating in this study—no data were available for Victoria and only partial data were available for Tasmania, due to the small number of students attending 'very remote' schools in these states. As such, comparisons were also made using the 'remote' category, as these data were available for all five jurisdictions.

The classification of 'remote' follows the criteria adopted by the Australian Bureau of Statistics, and refers to areas with an average Accessibility/Remoteness Index of Australia score greater than 5.92. This takes into account accessibility to service areas by road (MCEETYA 2007:52).

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