

TRACKING PROGRESS ON REDUCING
CHILD POVERTY IN NEW ZEALAND

CHILD
POVERTY
MONITOR

TECHNICAL
REPORT

2016



New Zealand Child and Youth
Epidemiology Service

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INTRODUCTION

The 2016 Child Poverty Monitor Technical Report provides the fourth consecutive annual report on indicators that assess aspects of child poverty in New Zealand and their implications for child wellbeing. The first suite of indicators in this report comprises the five measures identified in the 2012 report to the New Zealand Children's Commissioner from the Expert Advisory Group on solutions to child poverty: A fixed-line income measure, a moving-line income measure, and measures of material hardship, severe poverty and poverty persistence.¹ These measures capture different aspects of child poverty and facilitate monitoring how well efforts to reduce child poverty in New Zealand are working. The second suite of indicators track progress on factors in the health, education, housing and social sectors that relate to the conditions in which children are born, live and grow, which affect their capacity to develop and thrive. These include infant mortality, and measures for children of hospitalisations for medical conditions with a social gradient, assault, neglect and maltreatment, unmet health need, and measures of education. Housing measures have been expanded in this report. The third suite of indicators has examples from the New Zealand social and economic environment as the context to the specific child-related issues. It includes measures of income inequality, and data on unemployment and underutilisation.

New Zealand signed the United Nations Agenda 2030 for sustainable development that came into effect in January 2016.² The Agenda's preamble states that "eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development" and a key target is to reduce, by at least half, the proportion of children living in poverty in all its dimensions according to national definitions by 2030. The Child Poverty Monitor includes indicators that are relevant to many of the issues identified as being of greatest importance: growing the economy, improving living standards, health and education, creating jobs, increasing the supply of affordable housing, encouraging women in leadership, keeping our communities safe, and protecting our environment.³

The Child Poverty Monitor comprises a partnership between the Office of the Children's Commissioner, the New Zealand Child and Youth Epidemiology Service (NZCYES) at the University of Otago, and the J R McKenzie Trust. The Child Poverty Monitor partners choose indicators taking into consideration the recommendations of the Expert Advisory Group on solutions to child poverty and the indicators previously included in the Children's Social Health Monitor.^{1,4}

KEY POINTS

“Poverty is about household resources being too low to meet basic needs – it is about “not having enough” when assessed against a benchmark of “minimum acceptable standards”. ”⁵

Measures of poverty

The following are the key points from the indicators examined in the 2016 Child Poverty Monitor Technical Report.

Income poverty measures

- Using a **contemporary median** threshold of below 60% of the median income after housing costs, an estimated 28% of dependent 0–17 year olds were living in income poverty in 2015. This amounts to approximately 295,000 children and young people, or about the size of the whole population of Wellington and Lower Hutt cities.
- Using a **fixed-line** threshold of below 60% of the median income (reference year 2007) after housing costs were taken into consideration, an estimated 21% of dependent 0–17 year olds were living in income poverty in 2015. This amounts to approximately 220,000 children and young people, or nearly the whole population of Hamilton.
- During the period 1982 to 1990, the number of 0–17 year olds living in income poverty was between 10% and 15% using the contemporary median threshold.
- If New Zealand meets the United Nations Sustainable Development Goal target of reducing poverty to 50% of 2015 national poverty measures, the percentage of child income poverty in New Zealand will decrease to 14% using the contemporary median threshold and 10% using the fixed-line threshold. These percentages are comparable to those of the 1980s.

Non-income poverty measures

- Using the New Zealand Household Economic Survey data, and defining household material hardship as lacking 7 or more of 17 items on DEP-17, the percentage of 0-17 year olds in households living in material hardship in 2015 was 14%, unchanged from 2014.
- Using the New Zealand Household Economic Survey data, and a definition of more severe household material hardship as lacking 9 or more of 17 items on DEP-17, the percentage of 0-17 year olds in households living in material hardship in 2015 was 8%, unchanged from 2014.

Severe and persistent poverty

- Using a poverty threshold of below 50% of the median income, before housing costs are accounted for, there were 13% of 0-17 year olds living in income poverty in 2015. After accounting for housing costs, the percentage in income poverty at <50% the median income was 20%. There were small reductions from 2014 of 14% to 13% and 21% to 20% respectively.
- During the period 1982 to 1990, the percentage of 0–17 year olds below the 50% threshold for income poverty was between 7% and 12% before housing costs, and between 7% and 10% after housing costs were accounted for.
- Māori were over represented in the persistent poverty in the Survey of Family, Income and Employment undertaken from 2002-2009.
- If New Zealand meets the United Nations Sustainable Development Goal target of reducing poverty to 50% of 2015 national poverty measures, the percentage of children in severe income poverty in New Zealand will decrease to 6.5% before housing costs, and 10% after housing costs, using the 50% contemporary median threshold. These percentages are comparable to those of the 1980s.

Child poverty related factors

Infant deaths

- Deaths of infants in the first year of life have fallen overall, with the majority of the decrease occurring between 1990 and 1999; rates have remained fairly stable from 2006 to 2013.
- Infant mortality rates in New Zealand are higher than the OECD average and in 2012 New Zealand ranked eighth highest among 34 OECD countries.
- From 1996 to 2013 there was a statistically significant fall in the sudden unexpected death in infancy (SUDI) rate. Ethnic disparity in SUDI has reduced, with a particularly marked fall in SUDI rates for Māori infants.

Conditions with a social gradient

Medical conditions with a social gradient include respiratory and communicable diseases such as asthma, bronchiolitis and gastroenteritis. Injuries with a social gradient include road traffic crashes, drowning and falls.

- From 2009 to 2013 amongst children aged 0–14 year olds, an average of 28 children died each year from medical conditions, and 38 died from injuries, that have a social gradient. (For a definition see **Appendix 1**):
 - Between 2000 and 2013, rates of death from injury fell, however, rates of death from medical conditions did not change significantly.
 - There is ethnic disparity. The death rates for children 0–14 year olds were 2.8 times higher for Māori, and 3.7 times higher for Pacific than for European/Others.
- From 2011 to 2015, the average number of hospitalisations each year of children for medical conditions was over 41,000 and there were also almost 9,000 hospitalisations per year for injury.
- The hospitalisation rate for medical conditions with a social gradient rose from 2000 to 2015. The rise was more marked for Māori, Pacific, MELAA and Asian/Indian children 0–14 year olds compared with European/Other.
- From 2000 to 2015 there was a gradual fall in hospitalisation rates for injuries with a social gradient which was more marked for European/Other 0–14 year olds than for Māori, Pacific, Asian/Indian and MELAA 0–14 year olds.

Assault neglect and maltreatment

- There have been small but significant falls in both the rates of death and hospitalisations of 0–14 year olds as a result of assault neglect and maltreatment.
- From the hospitalisation data:
 - The highest rates were seen in the first year of life.
 - The most common primary diagnoses included traumatic subdural haemorrhage in 0–4 year olds, and head injuries at all ages 0–14 years.
 - The rate for children living in areas with the greatest deprivation was more than 8 times higher than the rate for their peers living in areas with the lowest NZDep2013 scores.

Unmet health need

- Around 197,000 0–14 year olds (21.5% of this population nationally) experienced one or more types of unmet need for primary health care in 2015. Unmet need for ‘general practitioner care due to lack of transport’ affected around 26,000 0–14 year olds.
 - For unmet need for general practitioner care due to lack of transport: children living in the areas of greatest deprivation were 18 times more likely to experience this lack compared to their peers in the areas of least deprivation (adjusted for age, sex and ethnicity).
 - When adjusted for age and sex, Māori and Pacific children were 3.3 times more likely than non-Māori, and Pacific children were 2.8 times more likely than non-Pacific to experience unmet need for general practitioner care due to lack of transport.

Housing

- From Census data from 1986 to 2013:
 - The percentage of New Zealanders living in owner occupied dwellings fell while the percentage of people renting rose. These changes occurred at a faster rate for Māori and Pacific peoples than for European and Asian ethnic groups.
 - The percentage of people living in rented accommodation with a private sector landlord increased at each Census while there was a decrease in the percentage of people who occupied Housing New Zealand Corporation or other social sector housing.
- Low and middle-income New Zealand households are more likely than high income households to spend more than 30% of their income on housing costs.
 - In 2015, 43% of those in the lowest income quintile were spending more than 30% of their income on housing costs compared with 9% of households in the highest income quintile.
 - Over half of accommodation supplement recipients in rental accommodation were paying over 50% of their income on housing costs.
- In the 2013–2015 NZHES years 0–17 year olds were more likely than persons in the general New Zealand population to live in crowded households (that is houses with a need for one or more bedrooms).
 - The percentage of 0–17 year olds living in crowded Housing New Zealand Corporation (HNZC) and other social housing was 38% compared with 17% in private rental housing and 7% in owner-occupied homes.
- Major problems with housing quality and being forced to put up with feeling cold to save costs were also experienced by a higher percentage of 0–17 year olds than the general population.
 - Major problems with dampness and mould were experienced by 17% of 0–17 year olds in households in the lowest income quintile compared with 1% in the highest income quintile.
 - Major difficulties heating and keeping homes warm in winter were experienced by 21% of 0–17 year olds in households in the lowest income quintile compared with 2% in the highest income quintile.
 - Frequently being forced to put up with being cold to keep costs down was experienced by 22% of 0–17 year olds in households in the lowest income quintile compared with 1% in the highest income quintile. Almost all children (86%) who were forced to put up with feeling cold a lot to keep household costs down lived in households with the highest levels of material hardship.
- If New Zealand meets the Sustainable Development Goal 11 target of ensuring access to adequate, safe and affordable housing for all people it will mean fewer than 10% of 0–17 year olds living in crowded households and no more than 1-2% of 0–17 year olds living in damp, mouldy, hard-to-heat homes, or being forced to put up with feeling cold to save costs.

Education

Comparisons between student leavers in 2009 and 2015

- School leavers with NCEA level 1, rose from 81% in 2009 to 88% in 2015.
- School leavers with NCEA level 2 or above, rose from 67% in 2009 to 79% in 2015.
- School leavers with University Entrance standard, rose from 42% in 2009 to 53% in 2015.
- Students leaving with a qualification below NCEA level 1 decreased from 19.1% in 2009 to 11.6% in 2015.
- Ethnic disparity in educational achievement in NCEA continued to be evident. The percentage of Māori students who attained NCEA level 2 or above rose from 45.7% in 2009 to 62.2% in 2015, for Pacific students' achieving NCEA level 2 or above rose from 56.4% to 73.4% and for MELAA students, from 69.5% to 83.3%.
- For students attending schools in areas with the highest deprivation scores, 65% achieved NCEA level 2 in 2015 compared with 92% of students attending schools in areas with the lowest deprivation scores.

Wider economic factors

Unemployment and underutilisation

- Following the 2008 global financial crisis, unemployment rates for Māori and Pacific New Zealanders rose more steeply than unemployment rates for other New Zealanders and have remained higher than 2008 rates.
 - In June 2016 the unemployment rate for Māori was 11.0% and for Pacific peoples 9.1% compared with 3.8% for European/Other New Zealanders.
- In June 2016:
 - Māori and Pacific people had the highest rates of all ethnic groups of underutilisation and unemployment. In June 2016 the Māori underutilization rate was 23%, the Pacific rate was 19%, Asian 15% and European 11%.
 - The highest underutilisation rates were for 15–19 year olds (over 45%).
 - 15–19 and 20–24-year-old age groups had both the highest numbers and rates of underemployment, unemployment, potential labour force, and underutilisation.

Children reliant on recipients of a benefit

- There were 178,193 0–17 year olds (16.2%) dependent on a benefit recipient in June 2016. Most of these children and young people were dependent on a recipient of sole parent support.

Income inequality

- Between 1982 and 2015 real incomes, after housing costs, increased much more for people in households with higher incomes than for those with lower incomes.
- Using the P80:P20 ratio, the most rapid rises in income inequality occurred from 1988 to 1992 with a further gradual rise to a peak in 2004. Income inequality fell from 2004–2008 and rose again from 2008 to 2015 when income inequality increased to levels close to the previous 2004 high point before the 2004 Working for Families package was introduced.

CHILD POVERTY MEASURES

Child poverty is measured in this report using the indicators recommended by the Expert Advisory Group on solutions to child poverty in New Zealand. Five measures were proposed in order to capture different aspects of child poverty and to facilitate monitoring the reduction of child poverty in New Zealand. The measures included are the fixed-line income measure, the moving-line income measure and measures of material hardship, severe poverty and poverty persistence.¹

The data for these indicators are from two reports produced annually by the Ministry of Social Development about household incomes and material wellbeing of New Zealand households.^{5,8} The measures on income are updated annually using data from the New Zealand Household Economic Survey (NZHES). Measures presented on material hardship are from data from the NZHES, using the items from the Material Wellbeing Index collected from the NZHES 2012/13 onwards and indicators from the earlier Living Standards Survey. The additional 20 child-specific deprivation items being collected in the 2015/16 NZHES will give greater insight into current, severe and persistent child poverty and will be included in next year's Monitor. International comparisons with the European Union and the United Kingdom with respect to material hardship are included.

INCOME-BASED MEASURES

Children live in families and households with varying levels of resources to meet their needs for shelter, food and security. Low income, a lack of material resources and/or poor access to services for health or education are common reasons for households with limited resources having poorer outcomes for their children. Low family income has been associated with a range of negative health, education, justice, labour market and social outcomes.¹ Negative health outcomes include low birth weight, infant mortality, poorer mental health and cognitive development, and hospital admissions from a variety of causes.⁶ The pathways linking low family income to long term outcomes are complex, and in part may be influenced by other socioeconomic factors.⁷ Research suggests that exposure to low family income during childhood and early adolescence may also increase the risk of leaving school without qualifications, economic inactivity, early parenthood and contact with the justice system.⁷

Household income is one measure commonly used to monitor child poverty. The income resources of a household are a major factor likely to influence a child's wellbeing, positively or negatively. Household income measures are available from data gathered in the Statistics New Zealand Household Economic Survey (NZHES). They are based on a family's disposable income (market income, less tax, plus social assistance) that has been equivalised (that is, adjusted for family size and composition).

The income poverty threshold predominantly used in this report is a household equivalent disposable income of less than 60% of the median income, after adjusting for housing costs. As recommended in the Solutions to Child Poverty report,¹ two measures are reported: a moving line or contemporary median measure and a fixed-line measure. The moving line threshold measure is calculated using the contemporary median income, that is, it compares incomes in a given year to the median income in the same year. The fixed-line measure compares income in a given year to the median income in a reference year. The contemporary median measure is considered useful for assessing longer term change while the fixed-line measure is useful for examining short to medium term change. Income measures calculated both before and after housing costs are also considered because housing costs, which include mortgage and rent payments, often make up a large proportion of household costs.⁵ Comparing income poverty thresholds internationally is limited to before housing costs data as only the United Kingdom and New Zealand account for after housing costs. This subsection reviews the proportion of children aged 0–17 years living in households with incomes below the 60% median income poverty threshold from 1982 to 2015.

Data sources and methods

Indicators

Dependent 0–17 year olds in households below the 60% income poverty threshold before housing costs (BHC)
Dependent 0–17 year olds in households below the 60% income poverty threshold after housing costs (AHC)

Data source

New Zealand Household Economic Survey via Perry 2016.⁵

Definitions

Dependent children are all those under 18 years, except for those 16 and 17 year olds who are in receipt of a benefit in their own right or who are employed for 30 hours or more a week

Equivalised household income is the household after-tax cash income for the previous twelve months adjusted for household size and composition.

Notes on interpretation

Note 1. NZHES n=2,800–3,500 households per survey

Note 2. The median is a more stable measure of household incomes than the mean. A few households with a very high income will shift the mean upwards, and the number of very high income households varies from year to year

Note 3. Contemporary median poverty measures are defined in relation to the incomes of others in the same year. This gives a poverty benchmark that rises and falls with changes in contemporary median incomes. Fixed-line poverty measures select a poverty benchmark at a set point in time (in this report these are 1998 or 2007) and adjust forward and back in time for changes in consumer prices to maintain a constant buying power over time. 1998 is used as the reference year for fixed-line poverty calculations back to 1982 and forward to 2007, when the reference year was changed to 2007 due to the median increasing well above that of previous years⁵

Note 4. Both contemporary median and fixed-line measures can be calculated before or after taking housing costs into account.

Children living in income poverty in New Zealand

This section reports on two measures for children in households living in poverty. Children are defined as dependent children and young people aged 0–17 years. The income in both measures relates to the income of the child's household. Throughout this section, child poverty should be understood to mean children and young people aged 0–17 year of age in households living in income poverty (as defined). The two thresholds for poverty used are a contemporary median (moving line) defined as an income below 60% of the contemporary median income after housing costs; and a fixed-line defined as an income below 60% of the reference year (1998 and 2007) median income, after housing costs (**Table 1**).

The percentage of children in households living in income poverty in 2015 using the contemporary median measure is 28% (approximately 295,000 children). The percentage of children living in income poverty in 2015 using the fixed-line measure is 21% (approximately 230,000 children) (**Table 1**). There has been little change in the percentage of children in households living in income poverty with 2014 percentages being 29% and 23% respectively. These measures both indicate that any change in the last decade has not redressed the impact of the effects of the sudden increase in the late 1980s and early 1990s (**Figure 1**). The marked increase in the contemporary median measures of child income poverty from 13% in 1988 to 27% in 1992 (or 12% to 33% using the fixed-line measure) can be attributed to rising unemployment and cuts made to benefits in 1991.⁵ These cuts disproportionately reduced incomes for beneficiaries compared with changes in median income and has not been addressed.⁵

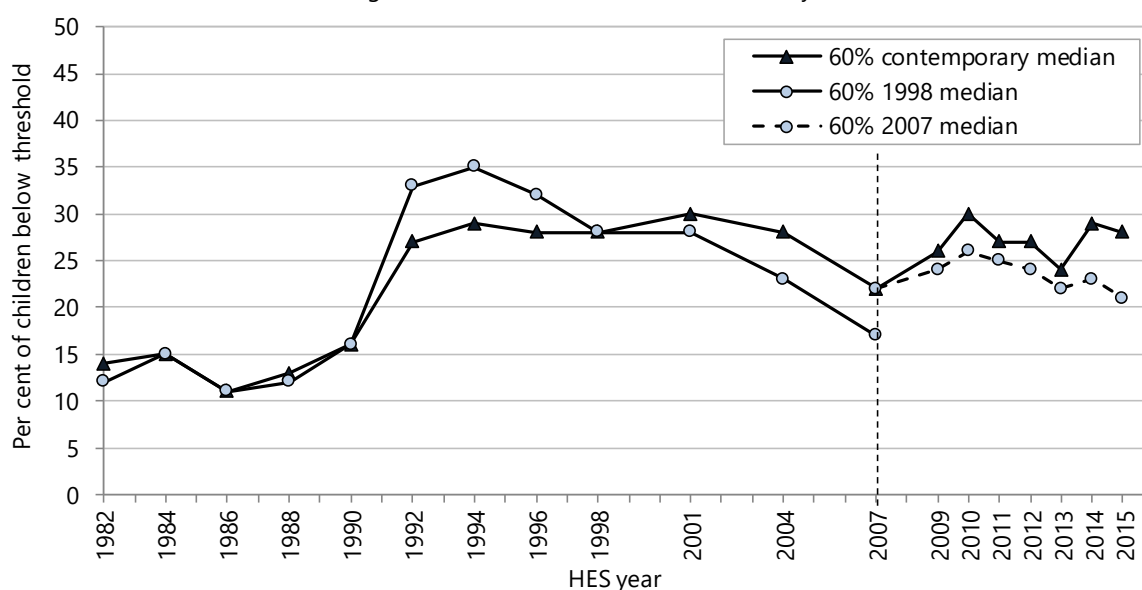
Analysis indicates that during 1992–1998, child poverty, as measured by the fixed-line threshold, declined as a result of falling unemployment with the incomes of those around the poverty line rising more quickly than the median. After 1998, as economic conditions improved, the median income rose again. Incomes for many low-income households with children did not rise, however, and the percentage of child poverty at this threshold has remained higher on both contemporary median and fixed-line measures. The promising decline seen from 2001 to 2007 when policies such as Working for Families contributed to some families' income increasing, has not been maintained. Between 2007 and 2010 child poverty rates increased (reflecting the time of the global financial crisis), then declined, so that in 2013 the rates were nearly equal to those in 2007.

Table 1. Number and percentage of dependent children aged 0–17 years living below various poverty thresholds, New Zealand 2001–2015 NZHES selected years

HES year	Before housing costs		After housing costs					
	<60% contemporary median		<50% contemporary median		<60% contemporary median		<60% 2007 median	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
2001	250,000	24	215,000	21	310,000	30	380,000	37
2004	265,000	26	200,000	19	285,000	28	320,000	31
2007	210,000	20	175,000	16	240,000	22	240,000	22
2009	230,000	21	210,000	20	280,000	26	255,000	24
2010	250,000	23	210,000	20	315,000	30	275,000	26
2011	235,000	22	210,000	20	290,000	27	270,000	25
2012	225,000	21	215,000	20	285,000	27	255,000	24
2013	215,000	20	205,000	19	260,000	24	235,000	22
2014	250,000	24	220,000	21	305,000	29	245,000	23
2015	220,000	21	210,000	20	295,000	28	230,000	21

Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁵

Figure 1. Dependent children aged 0–17 years living below the 60% income poverty threshold (contemporary median and fixed-line) after housing costs, New Zealand 1982–2015 NZHES years



Source: New Zealand Household Economic Survey via Perry 2016⁵

Before and after housing costs (BHC and AHC)

Housing costs can be a substantial component of a household's expenditure. **Figure 2** shows the percentage of children living in households with equivalised income below the 60% of contemporary median poverty threshold before and after accounting for housing costs.

Income-related rental policies introduced in 2000, along with later changes to accommodation supplements, helped reduce housing expenditure for some low income households.⁵ These changes contributed to reductions in AHC child poverty from 2001–2007. No further policy changes were made during 2007–2012 and there was no change to the maximum rates of assistance despite housing costs continuing to increase.⁵ This resulted in increases in the AHC child poverty rates during 2007–2010 (**Figure 2**).

Of the countries that report income poverty, only the United Kingdom reports income poverty after accounting for housing costs. The standard rates of income poverty reported internationally are before housing costs and cannot be compared to the rate of income poverty in New Zealand after housing costs.⁵

Child poverty and demographic factors

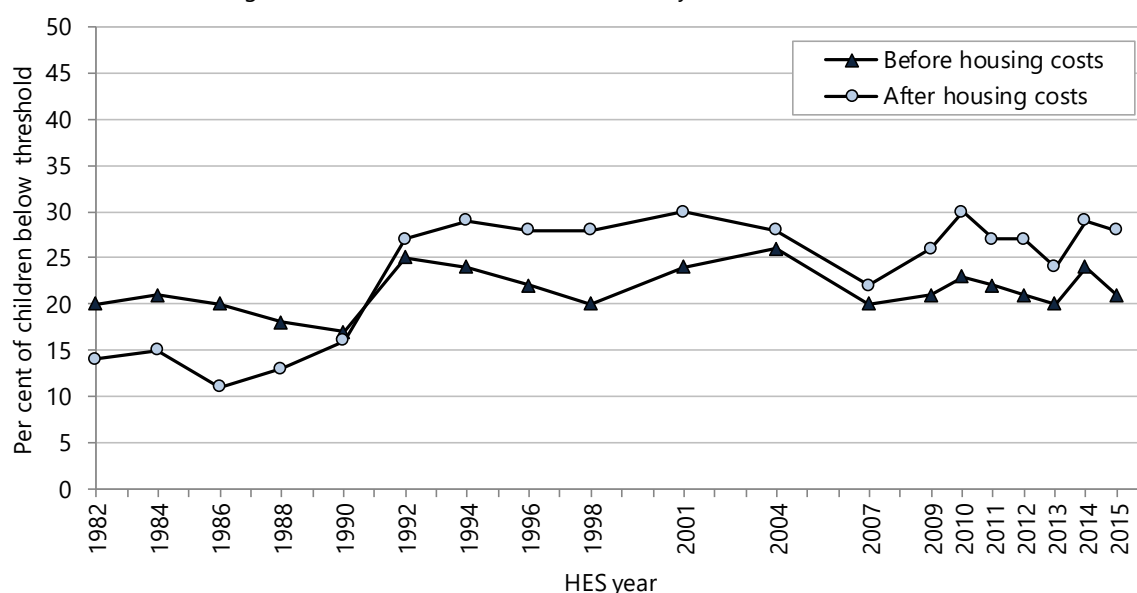
Patterns of income poverty for children vary in relation to age, household type, number of children in the household, source of household income, and ethnicity. The following data are from NZHES 1984–2015 found in Perry 2016.⁵

Age

Children and young people aged 0–17 years are much more likely to be in poverty than adults aged 65+ years. In 2015, they were 2.6 times more likely (21% for 0–17 year olds compared to 8% for 65+ years). During the whole period 1982 to 2015, poverty rates were also consistently higher for children aged 0–17 years than for adults aged 25–44 years. The lowest poverty rates were seen amongst those aged 65+ years (**Figure 3**).

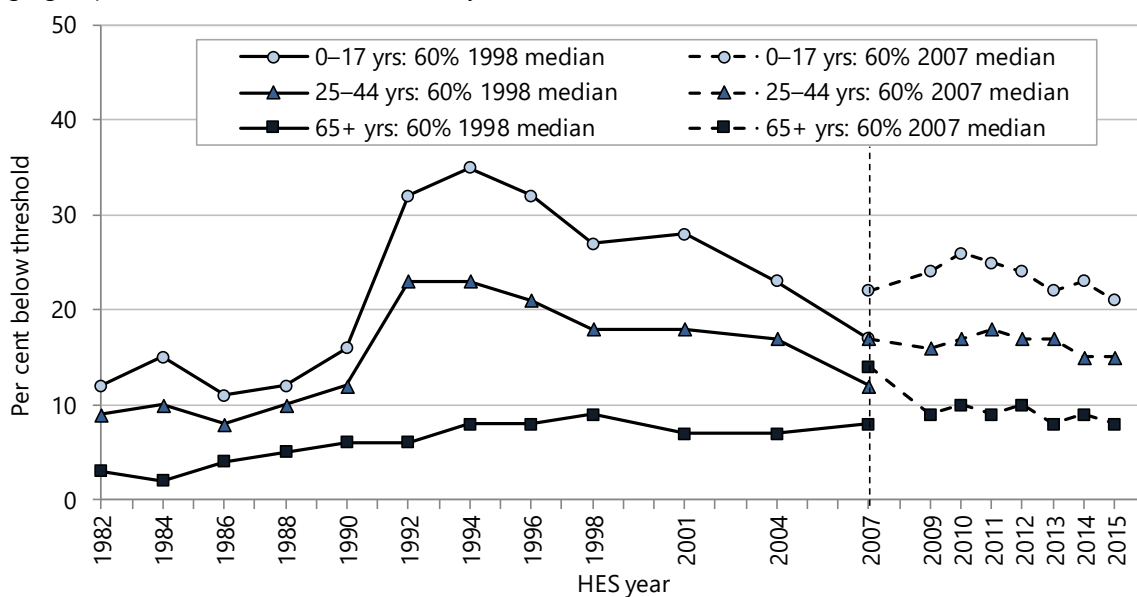
Figure 4 uses the contemporary median 60% median income threshold to compare the 0–17 year olds with those 65+ years. In 2007, their percentages were 22% and 14% respectively, but subsequently the difference increased again. For both age groups, the rate has changed little from 2009 to 2015. Note that the 65+ group receive government superannuation. The NZHES data show less difference between the age groups within the 0–17 year old grouping. However, income poverty rates for younger children (0–6 years and 7–11 years) were generally higher than for older children (12–17 years) (**Figure 5**).

Figure 2. Dependent 0–17 year olds living below the 60% income poverty threshold (contemporary median) before and after housing costs, New Zealand 1982–2015 NZHES years



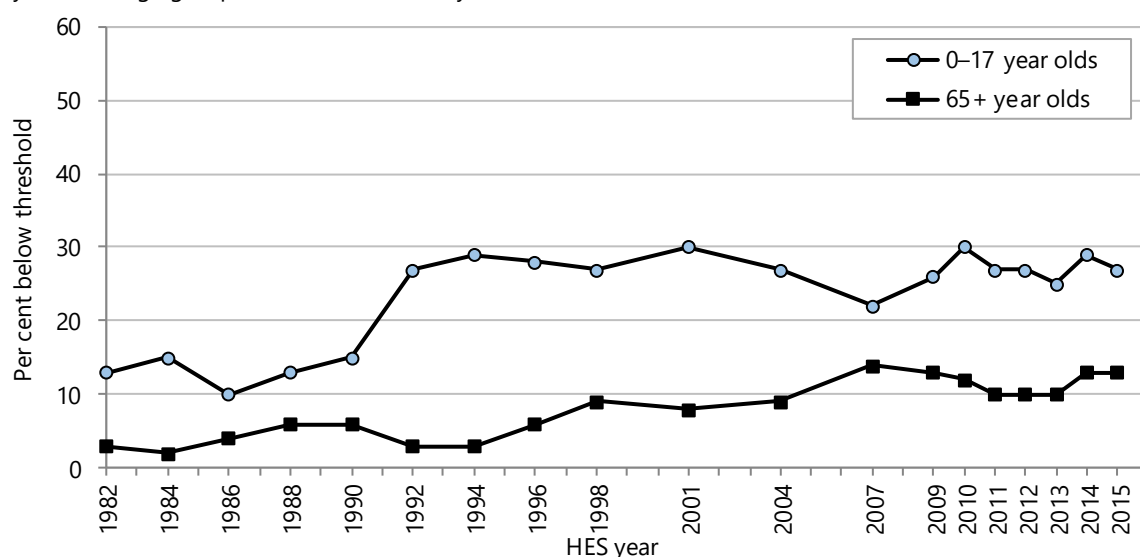
Source: New Zealand Household Economic Survey (NZHES) via Perry 2016 ⁵

Figure 3. Population living below the 60% income poverty threshold (fixed-line) after housing costs by selected age-group, New Zealand 1982–2015 NZHES years



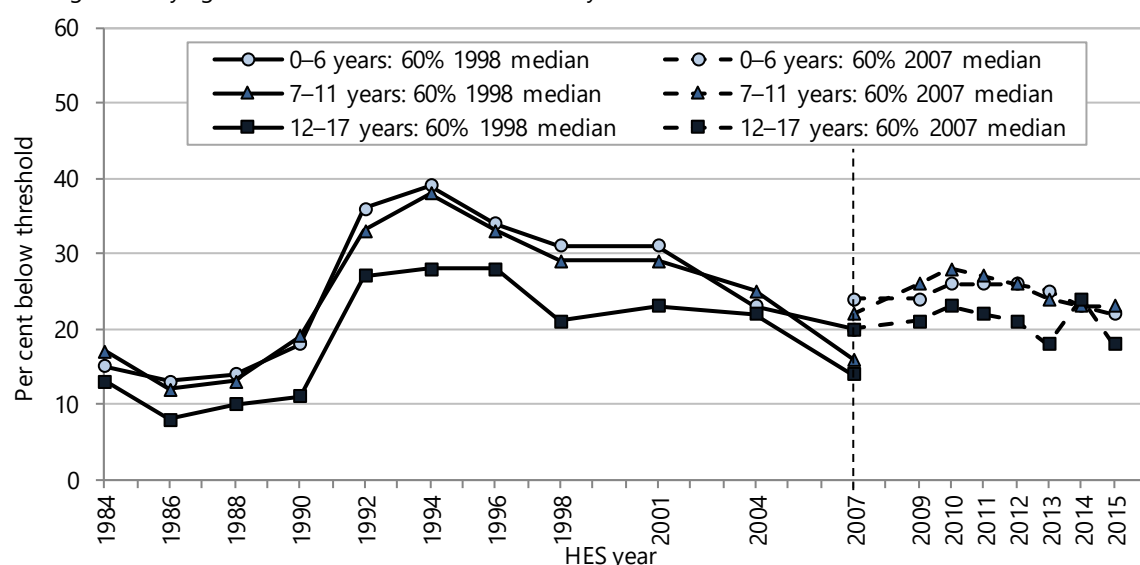
Source: New Zealand Household Economic Survey (NZHES) via Perry 2016 ⁵

Figure 4. Population living below the 60% income poverty threshold (contemporary median) after housing costs by selected age groups, 1982-2015 NZHES years



Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁵

Figure 5. Dependent children aged 0-17 years living below the 60% income poverty threshold (fixed-line) after housing costs, by age, New Zealand 1984-2015 NZHES years



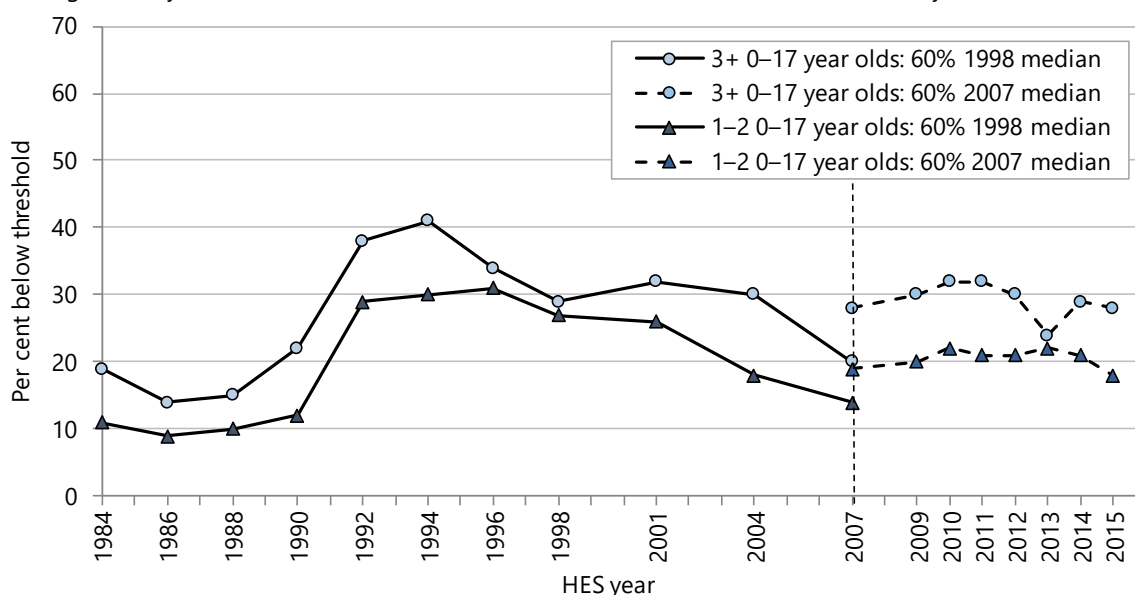
Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁵

Household type and number of children

Using the fixed line below 60% median income threshold, and NZHES data from 1984 to 2015, the percentage of children living in poverty has changed little since 2007 for households with one or two children or for those where there are three or more children in the household (

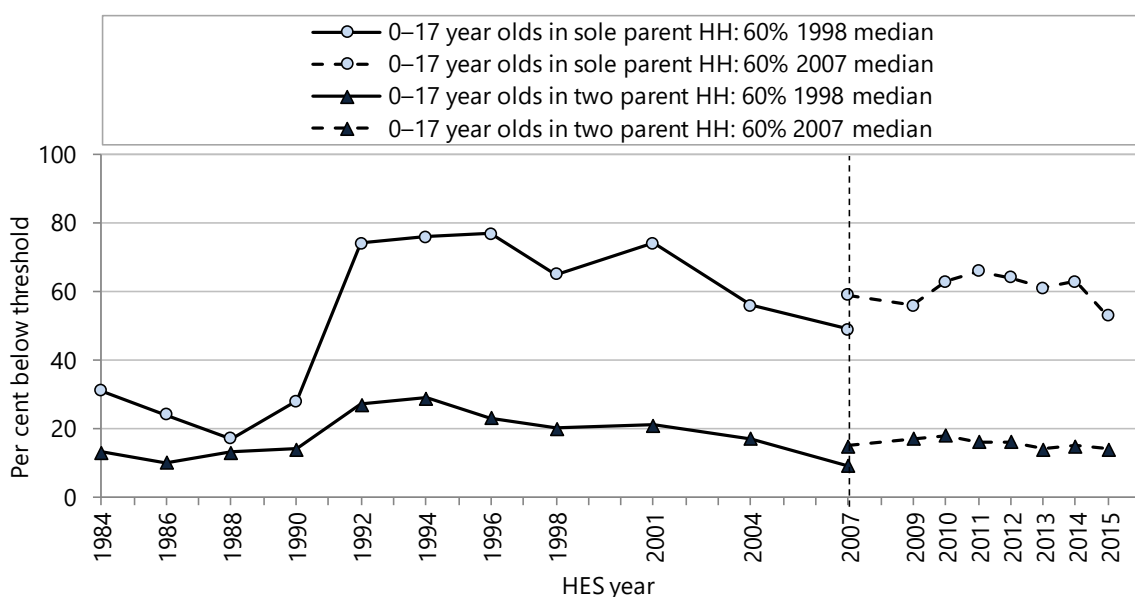
Figure 6). There was a slight fall in the percentage of children living in poverty in households with a sole parent, but the difference between the percentage in poverty in sole parent and two parent households remains considerable (**Figure 7).**

Figure 6. Dependent children aged 0–17 years living below the 60% income poverty threshold (fixed-line) after housing costs, by number of children in the household, New Zealand 1984–2015 NZHES years



Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁵

Figure 7. Dependent 0–17 year olds in households living below the 60% income poverty threshold (fixed line) after housing costs by household type, New Zealand 1984–2015 HES years



Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁵

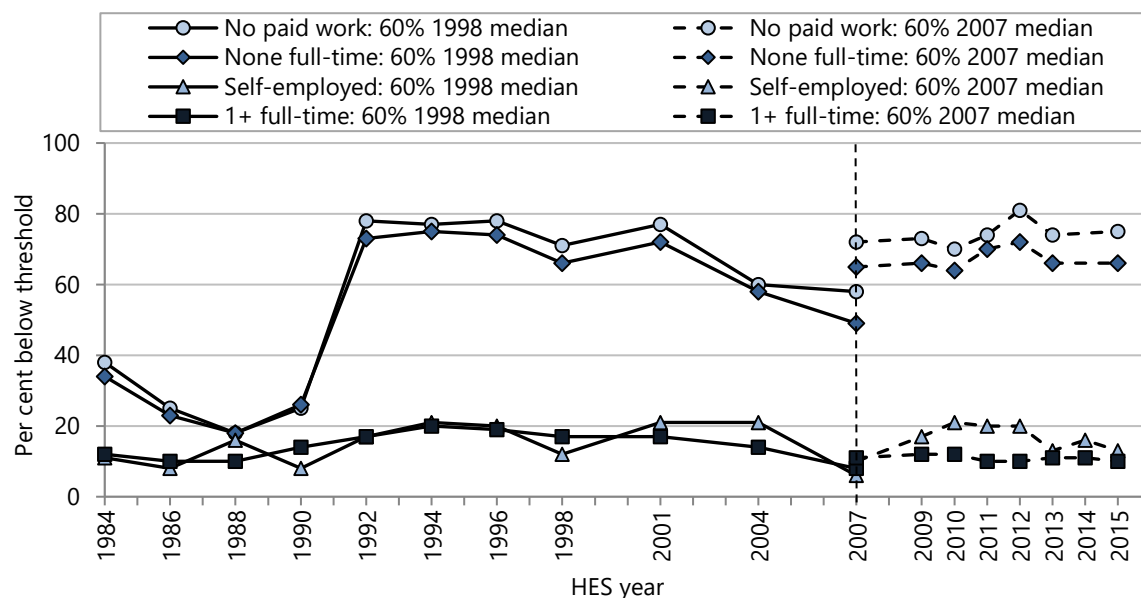
Source of household income

The differences between households with adults not in paid work or not in full time work and those with at least one in full time work or self-employed shows a marked difference (**Figure 8**). In 2015, 40% of children in households living below the fixed-line <60% median income poverty threshold came from households with at least one adult in full time paid work or self-employed. This is higher than the average of 37% during 2011–2013 but lower than the 2004 rate of 52% before Working for Families began. For 45% of children in households with an income below the <60% threshold, the main source of household income was paid work while for 55% the source was an income-tested benefit.

From 1992 to 2004, children in households with no adults in paid work generally had poverty rates around four times higher than for those in households where at least one adult worked full-time.⁵ In 2015, the difference was even greater - over seven times higher for children in households where no adults were in paid work.

Between 1988 and 1992, poverty rates for children in households with no adults in paid work, or where no adults worked full-time, increased rapidly compared to those in households with working or self-employed adults. The rates for children in these households remained elevated during the 1990s (range 66%–78%), before declining during 2001–2007. Even at their lowest point in 2007, poverty rates for children in these households remained much higher than 1980s levels. In contrast, increases in child poverty for households where an adult worked full-time, or was self-employed, were much less marked, with rates in 2007–2009 being similar to those in the 1980s.⁵

Figure 8. Dependent 0–17 year olds in households living below the 60% income poverty threshold after housing costs by work status of adults in the household, New Zealand 1984–2015 HES years



Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁵

Ethnicity

Poverty rates for Pacific and Māori children have been reported as being consistently higher than for European children.⁵ Over the three years 2012–2014, on average, around 33% of Māori children and 28% of Pacific children lived in poor households, compared to an average of 16% of European children (using the AHC 60% fixed-line measure). The higher poverty rates seen in Māori children potentially reflect the relatively high proportion of Māori children living in sole parent beneficiary households (around 46% of sole parent benefit recipients are Māori).⁵ On average, during 2012 to 2014, just under half (46%) of children living in poverty were Māori or Pacific, using the AHC 60% fixed line measure.⁵ There are limited analyses by ethnic group reported in the NZHES as the NZHES has relatively small sample sizes for Māori, Pacific and Other ethnic groups which means no time series data are available for ethnicity.

MATERIAL HARDSHIP

An alternative method of measuring child poverty is material hardship or material deprivation, a non-income based measure that indicates the presence or absence of resources adequate for children to grow and develop.⁸ Sets of non-income measures (NIMs) have been developed to monitor material hardship in New Zealand and other countries including the UK, Ireland, Australia and Europe. The NIMs provide insight into what material hardship looks like for everyday life by indicating families' actual living standards, including their ability to keep the house warm in winter, to afford meat and fresh fruit and vegetables, to replace worn out shoes and clothing, visit the doctor, have broken appliances fixed and cope with unexpected demands on the budget.⁸

Because there is no definitive point at which people are in hardship or not, the Child Poverty Monitor measures provide an indicative threshold. The measures also contain data on a range of thresholds of material hardship to reflect the spectrum of hardship from less to more severe.⁸ The range used utilises the DEP-17 scores and the Material Wellbeing Index (MWI) both of which have been developed recently for the Ministry of Social Development to improve New Zealand's ability to measure material hardship.

This section presents three sets of data. The first is data that are gathered in the New Zealand Household Economic Surveys (NZHES) and analysed by Perry using the MWI, and DEP-17 thresholds. These data provide insights into the households with children exposed to hardship. The second dataset is the information provided by analysis of the 2008 Living Standards Survey (LSS) data using the DEP-17 thresholds. The LSS continues to be the most recent survey to include child-specific items which can be used to measure children's experience of material hardship (these data will be replaced once the data are available from the 2015/16 NZHES which includes 20 child-specific deprivation items). The third dataset is a set of international comparisons using the EU-13 (from EU-SILC 2009) and comparable data for New Zealand from the LSS 2008.

Data sources and methods

Indicator

0–17 year olds experiencing material hardship

Data source

New Zealand Household Economic Survey (NZHES) via Perry 2016⁸

Notes on interpretation

Note 1. NZHES n=2,800–3,500 households per survey

Note 2. The DEP-17 is an index of material hardship or deprivation, particularly suited to capturing the living standards of those at the low end of the material living standards. The DEP-17 items reflect enforced lack of essentials, enforced economising, cutting back or delaying purchases 'a lot' because money was needed for other essentials, being in arrears more than once in last 12 months because of shortage of cash at the time (not through forgetting), and/or being in financial stress and vulnerability.

Note 3. The Material Wellbeing Index (MWI) captures the living conditions and consumption across the households from low to high material living standards rather than focusing only on the families with low material living standards. It includes items that reflect both 'enforced lacks' and 'freedoms enjoyed'. The 24 items in the MWI include questions on the basics such as food, clothing, accommodation, electricity, transport, keeping warm, maintaining household appliances and also about freedoms households report to purchase nonessential items that are commonly aspired to. For further details see Perry 2016⁸ and Appendix 6.

Note 4. A score of 7+ on DEP-17 (7 or more lacks out of 17) is equivalent to an MWI threshold of ≤ 9 to and a score of 9+ on DEP-17 (indicating 9 or more lacks out of 17) is equivalent to an MWI threshold of ≤ 5 .

Notes 5. International comparisons are made using the EU-13 2009 for 20 European Union countries and the United Kingdom and the LSS 2008 for New Zealand.

New Zealand Household Economic Surveys

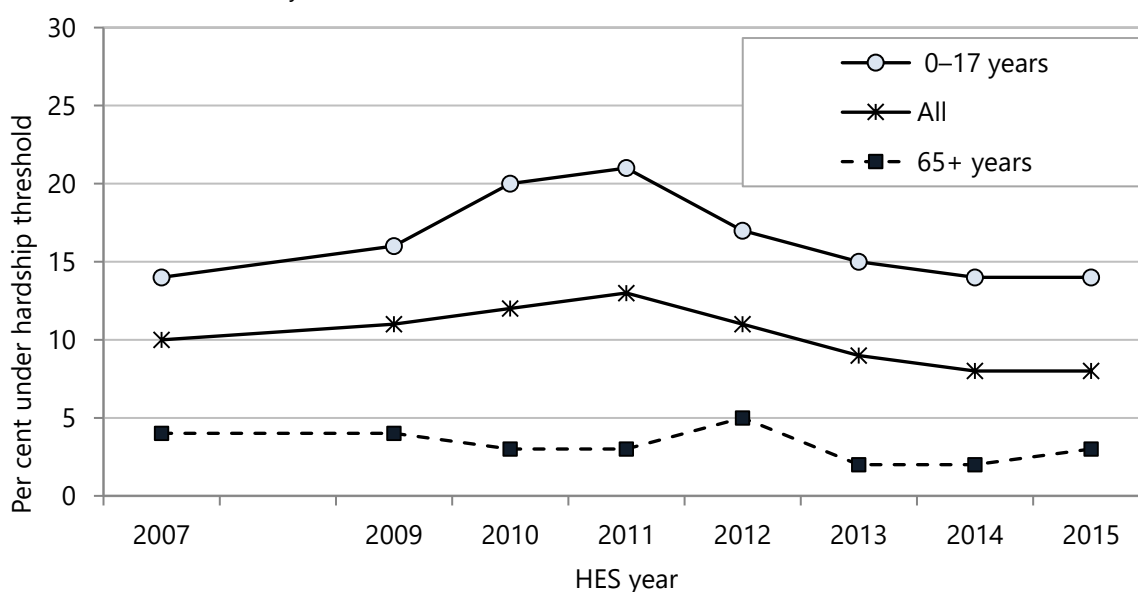
The non-income measures of hardship in this section from data collected in the New Zealand Household Economic Survey (NZHES) relate to items that the majority of New Zealanders view as being essential to an adequate standard of living. While going without a small number of these items does not constitute hardship, experiencing multiple 'enforced lacks' and 'economising a lot' indicates material hardship. The items included in the NZHES have been modified over time, reflecting changes that have improved the robustness of the measure. Child specific items are being collected in the 2015/2016 NZHES. For further details of these indices, see **Appendix 6**.

Material hardship by age and income (NZHES data)

The severity threshold of $MWI \leq 9$ is used in the following section as an indicative measure. It relates to measures used previously in New Zealand and is comparable to those used in other countries. The following data are from the NZHES survey data from 2007–2015. At a $MWI \leq 9$ or 7+/17 on DEP-17 severity threshold, the percentage of material hardship was consistently higher for children aged 0–17 years than for all ages or for older groups. The proportion of 0–17 year olds in material hardship at this level of severity rose from 16% in 2009 to 21% in 2011, before falling to 17% in 2012. In 2015, 14% of 0-17 year olds were at this level of hardship. The lowest hardship rates were among those aged 65+ years (**Figure 9**).

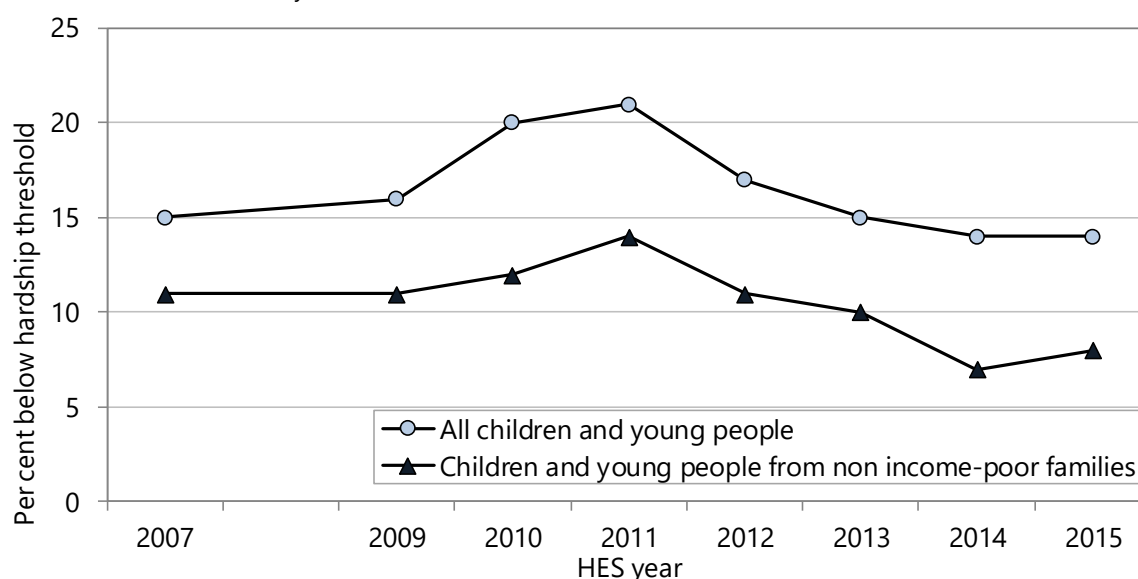
Children can experience material hardship whether their families are above or below the income-poverty threshold, however, a lower proportion of children from non income-poor families (those with a family income above the 60% poverty threshold) lived in material deprivation than did New Zealand children overall (**Figure 10**). The percentage rose slightly for children in non income-poor families between 2014 and 2015 with 8% of children from non income-poor families being under the hardship threshold compared to 14% of all children. Families with incomes above the 60% threshold may be in relatively precarious financial circumstances, and small drops in income or unexpected bills potentially make a significant difference to day-to-day living standards.⁸

Figure 9. Children and young people aged 0–17 years and selected sub-groups living in material hardship, New Zealand 2007–2015 NZHES years



Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁸ Hardship defined using Economic Living Standards Index (ELSI) and Material Wellbeing Index, $MWI \leq 9$ which is $\equiv 7+$ on DEP-17; See Methods box for further detail

Figure 10. Children and young people aged 0–17 year living in material hardship by family income category, New Zealand, 2007–2015 NZHES years

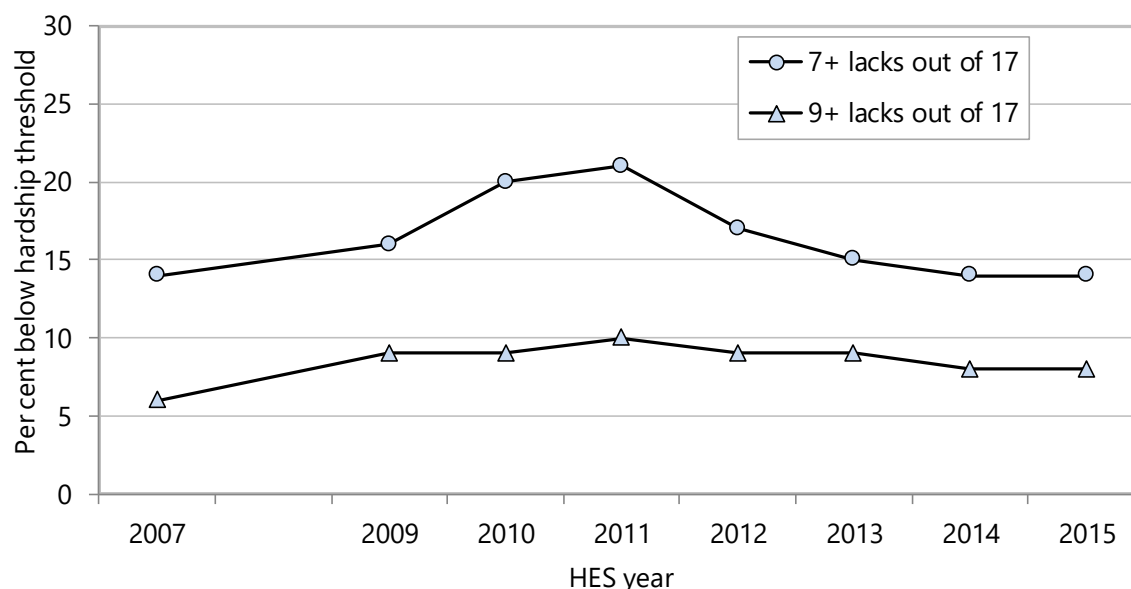


Source: New Zealand Household Economic Survey (NZHES) via Perry 2016.⁸ Hardship defined using Material Wellbeing Index (MWI ≤ 9 which is $\equiv 7+$ on DEP-17), see Methods for further detail. Non-income-poor families are those with an income above the 60% median income threshold

Material hardship measured by 9 or more lacks on the DEP-17

A more serious measure of hardship has been included in Government reporting: the MWI ≤ 5 or $9+ / 17$ on DEP-17 severity threshold. The following data are from the NZHES survey data from 2007–2015. At a hardship threshold of MWI ≤ 5 or $9+ / 17$ on DEP-17, the proportion of 0–17 year olds in households living at this level of material hardship has stayed relatively constant. In 2007, the proportion was 9% which increased to 10% in 2011, fell to 8% in 2014, where it remained in 2015 (**Figure 11**).

Figure 11. Children and young people aged 0-17 years in households living in hardship measured by 7+ and 9+ lacks on the DEP-17, New Zealand 2007–2015 NZHES years



Source: Perry 2016 derived from Statistics New Zealand Household Economic Survey (HES) 2007–2015; Material Wellbeing Index, MWI ≤ 9 which is $\equiv 7+$ on DEP-17 and MWI ≤ 5 which is $\equiv 9+$; See Methods box for further detail

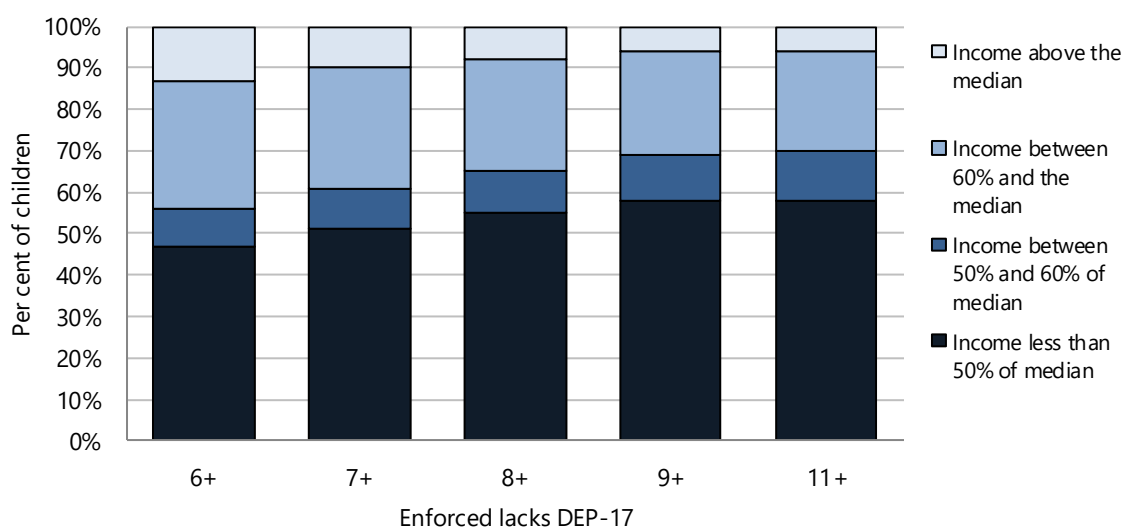
DEP-17 and 2008 Living Standards Survey

In the Living Standards Survey of 2008, respondents provided information about themselves and others in their economic family unit including information on specifically child related items.⁸ **Table 2** provides an overview of the day to day experience of children who experience hardship using the DEP-17 index on the data from the Living Standards Survey. Additional child specific items not included in the calculation of the DEP-17 score have been listed to highlight experiences of children living in households with differing experiences of material deprivation. It suggests that 18% of children at that time lived in families that scored 7+ items on DEP-17 ($\geq \text{MWI} \leq 9$). This is made up of 8% that had a DEP Score of 7–8, 4% that had a score of 9–10, and 6% that had a score of 11+.

When broken down by individual item, children experiencing material hardship (those living in households with DEP-17 scores of 7+) were more exposed to household economising behaviours such as having to wear worn out shoes or clothing, sharing a bed or bedroom, cutting back on fresh fruit and vegetables and postponing doctor's visits because of cost. For example, 26% of children whose families had a DEP-17 score of 7+ continued to wear worn out shoes or clothing, while 39% had major difficulty keeping the house warm in winter (**Table 2**).

Analysis shows the proportion of children who are living in material hardship by the household income at the various levels of hardship using the DEP-17 score. While there are households at all income levels experiencing increasing hardship, the greatest percentages are for those whose household income is below 50% of the median (**Figure 12**). Calculated from the data from LSS 2008, of the approximately 100,000 children whose families scored 9 or more lacks on DEP-17, 7 out of 10 was in a household with an income <60% of the median income and about 6 out of 10 had an income <50% of the median income.⁸ In comparison, of the approximately 180,000 children whose families scored 7+ or more lacks on DEP-17, 6 out of 10 were in households with an income <60% of the median income and 5 in 10 had an income of <50% of the median income.⁸

Figure 12. Distribution of children in hardship by household income and enforced lacks New Zealand



Source: NZ 2008 Living Standards Survey from Perry, 2016⁸

Table 2. Restrictions experienced by children by the deprivation score of their family (DEP-17 score), based on the New Zealand Living Standards Survey 2008

DEP-17 score	All	0	1	2	3-4	5-6	7-8	9-10	11+
Distribution of children (6-17yrs) across DEP-17 (%)	100	36	14	12	16	7	6	5	5
Distribution of children (0-17yrs) across DEP-17 (%)	100	33	14	11	16	10	8	4	6
Enforced lacks of children's items									
Friends to birthday party	7	0	0	2	2	10	14	25	50
Friends over for a meal	6	0	0	2	4	12	7	21	40
Waterproof coat for each child	8	0	0	3	6	12	18	25	54
Warm winter clothes for each child	4	0	0	0	0	0	7	18	36
Two pair strong/sturdy shoes for each child	8	0	2	5	5	7	17	39	44
Separate bed for each child	4	0	0	0	4	7	7	11	28
Separate bedrooms for children of opposite sex (10+ years)	8	0	2	5	5	15	15	9	39
All school uniform items required by the school	4	0	0	0	0	4	11	12	33
Economising 'a lot' on children's items to keep down costs to enable other basic things to be paid for									
Continued with worn out shoes/clothes for the children	9	0	0	3	8	11	26	36	60
Bought second-hand clothing instead of new	16	1	10	10	17	24	43	47	69
Postponed child's visit to dentist	3	0	0	0	1	5	15	5	23
Postponed child's visit to doctor	3	0	0	0	0	3	12	9	24
Did not pick up prescription for children	2	0	0	0	0	0	12	2	12
Child(ren) went without glasses or contact lenses	2	0	0	0	2	2	4	8	20
Unable to pay for school trip	4	0	0	0	0	4	16	11	36
Went without music, dance, kapa haka, art, swimming, etc	10	2	0	4	8	13	32	33	48
Involvement in sport had to be limited	9	0	0	2	5	16	30	28	45
Made do with very limited space for children to study/play	9	0	2	8	9	13	23	36	45
Multiple restrictions									
4+ out of 18	11	0	0	0	3	14	35	43	77
5+ out of 18	8	0	0	0	0	11	30	29	60
6+ out of 18	6	0	0	0	0	3	22	18	54
Children's serious health problems reported by respondent (6-17 years)									
Serious health problems for any child in the last year*	29	22	22	30	29	36	39	31	56
Enforced lacks, economising 'a lot' or financial stress reported by respondent in child's family (0-17 years)									
Meal with meat, fish or chicken at least each second day	3	0	0	0	0	2	6	15	86
Keep main rooms warm	9	0	3	3	8	12	14	33	46
One week's holiday away from home in last year	33	9	25	31	42	55	55	63	86
Cut back or did without fresh fruit and vegetables ('a lot')	14	0	0	7	12	17	43	52	79
Postponed visit to doctor ('a lot')	14	0	0	9	12	32	43	56	72
Delayed repair or replacement of appliances ('a lot')	20	0	2	13	17	28	54	69	84
Received community help in last 12 months ('> once')	8	0	2	2	5	12	25	26	46
Pawned/sold something to meet everyday costs	8	0	0	5	5	10	22	35	46
Not enough income to meet basics	26	4	11	19	33	44	49	74	86
Housing condition and local community safety									
Overall physical condition of house (poor/very poor)	7	0	3	4	5	9	25	20	35
Difficult to keep house warm in winter (major problem)	22	7	14	17	24	30	39	59	71
Dampness or mould (major problem)	17	5	7	14	18	26	36	51	56
Crime or vandalism in the area (major problem)	11	6	5	9	10	13	19	23	36

Source: NZ 2008 Living Standards Survey from Perry, 2016⁸; Note: * For example, diabetes, asthma, mental health problems or learning difficulties

Family and personal characteristics

Material hardship is experienced differently by different families depending on their circumstances, however, where there are not enough resources to meet the family needs, children can be negatively affected.

Table 3 indicates the rates of material hardship and severe hardship among children for DEP-17 7+ (equivalent to MWI ≤9) and the more severe hardship DEP-17 score of 9+ (equivalent to MWI ≤5). The rates were higher for children in:

- Māori and Pacific families compared to those in European and Other families.
- Families with three or more children compared to families with one or two.
- Sole parent families compared to two parent families.
- Families receiving a benefit compared families with income from paid work.

Table 3. Rates of material hardship and composition of 0–17 year olds in hardship for by DEP-17 scores using data from Living Standards Survey 2008

Hardship rates			Composition		
What percentage of this group of children is in hardship using different thresholds?			What percentage of all children in hardship (using a given threshold) are in this group/cell?		
Index: DEP-17	7+	9+	Index: DEP-17	7+	9+
Family type			Family type		
Sole parent	40	27	Sole parent	53	65
Two parent	12	5	Two parent	47	35
Main income source for parent(s)			Main income source for parent(s)		
Benefit (no movement off or onto benefit)	52	35	Benefit (no movement off or onto benefit)	44	54
Some movement	35	23	Some movement	10	12
Paid work (no main benefit income)	11	5	Paid work (no main benefit income)	46	35
Number of children in household			Number of children in household		
1	17	9	1	21	21
2	15	8	2	34	32
3	20	11	3	24	24
4+	28	16	4+	22	23
Ethnicity (total)			Ethnicity (total)		
European	14	8	European	41	35
Māori	33	19	Māori	31	33
Pacific	43	30	Pacific	22	28
Other	12	4	Other	7	6

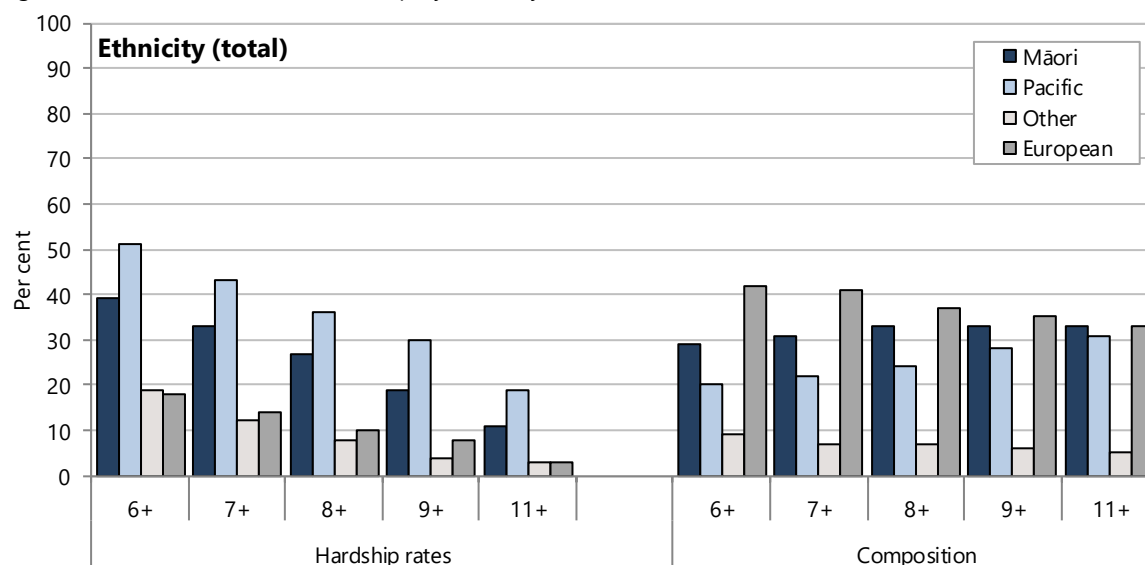
Source: Perry 2016: Data from Living Standards 2008; Threshold DEP-17, 7+ and 9+ items out of 17 items⁸

Figure 13 to **Figure 16** present the range of thresholds from the DEP-17 and show the continuum of material hardship from the less severe end (6+ items out of 17) to very severe hardship end (11+ items). These data are from the LSS 2008 data. Increasing DEP-17 score indicates increasing severity of material hardship. The graphs depict how the proportion of children affected differs depending on the question. The hardship graphs address the question “what percentage of the selected group of children are in hardship?” The composition graphs address the question “what percentage of all children in hardship are in this group?” Data show the disparity for the following: ethnicity, family type, number of children and the working status of the adults in the household.

Ethnicity

Figure 13 shows there was disparity between ethnic groups regarding children in hardship with 51% of Pacific children at the less severe threshold of 6+ and 19% at the most severe end of hardship (11+) compared with 39% of Māori children at 6+ and 11% at 11+. European and Other ethnicities children in hardship were lower at 18-19% at 6+ and 3% at 11+. The composition of the group “all children in hardship” was 42% European, 29% Māori and 20% Pacific at the 6+ threshold. This changed with increasing severity of material hardship and at the 11+ threshold the composition of ‘all children in hardship’ was 33% Māori, 31% Pacific and 33% European.

Figure 13. Number children in hardship by ethnicity

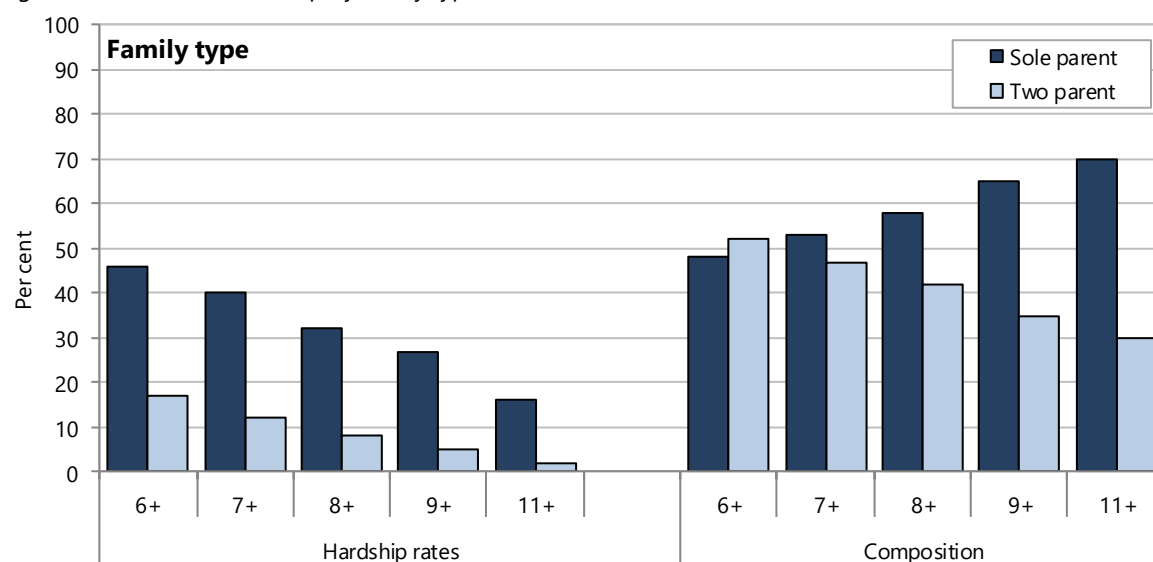


Source: NZ 2008 Living Standards Survey from Perry, 2016⁸; Note: left side of graph 'hardship rates' answers "what percentage of the selected group of children are in hardship?" and right side of graph 'composition' answers "what percentage of all children in hardship are in this group?"

Family type

There was disparity between sole parent and two parent families in the percentage of children in hardship (**Figure 14**). At the 6+ threshold, 46% of children from sole parent families were in hardship compared to 17% of children from two parent families. At the severe hardship threshold (11+), 16% of children from sole parent families were in hardship compared to 2% of the children from two parent families. The composition of "all children in hardship" showed that at a 6+ threshold, 48% of children in hardship were from two parent families compared to 52% from sole parent families. This changed as severity increased and at the 11+ threshold 70% of all children living in hardship were from sole parent families compared to 30% from two parent families.

Figure 14. Children in hardship by family type



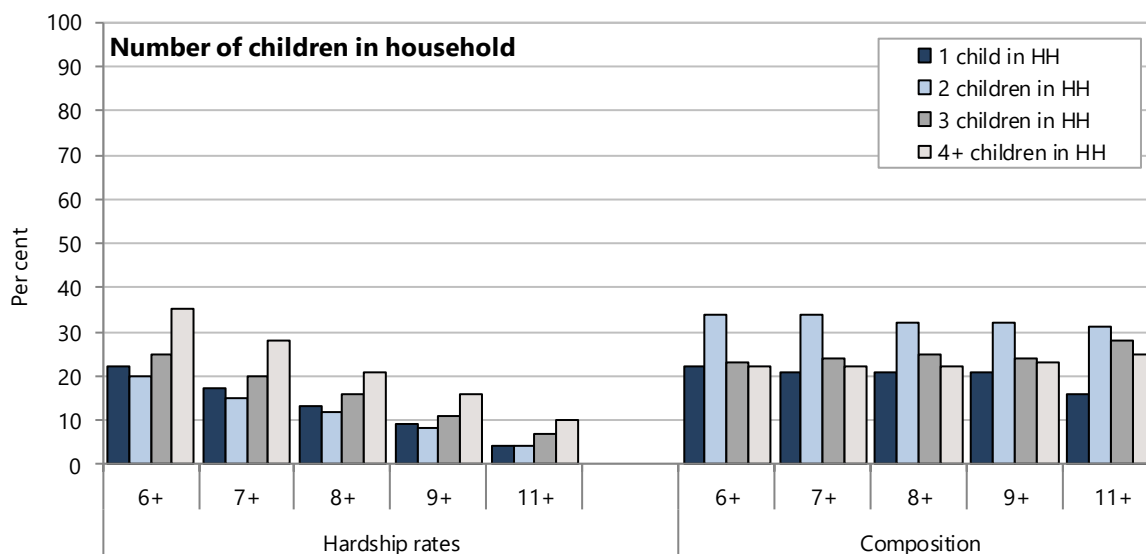
Source: NZ 2008 Living Standards Survey from Perry, 2016⁸; Note: left side of graph 'hardship rates' answers "what percentage of the selected group of children are in hardship?" and right side of graph 'composition' answers "what percentage of all children in hardship are in this group?"

Number of children

A greater percentage of children in families with 4+ children were identified as being in hardship (**Figure 15**). At the 6+ threshold, 22% of children from one child households were in hardship compared to 35% of children in 4+ children households. The composition of "all children in hardship" was more evenly spread. Across the thresholds from 6+ and 9+, approximately a third of the children were from 2-children households while other

sized families comprised between 20 to 25%. At the most severe hardship threshold (11+) the percentage of children from families with 3 or 4 + children increased and those from one child families reduced.

Figure 15. Children in hardship by the number of children in the household New Zealand 2008 LSS year

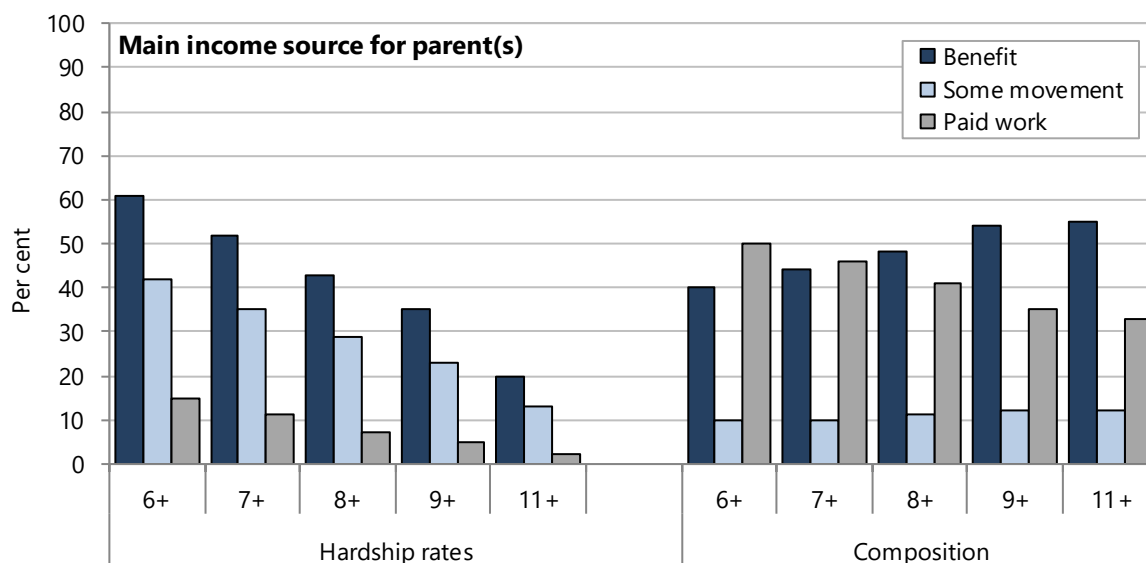


Source: NZ 2008 Living Standards Survey via Perry, 2016⁸; Note: left side of graph 'hardship rates' answers "what percentage of the selected group of children are in hardship?" and right side of graph 'composition' answers "what percentage of all children in hardship are in this group?"

Source of income

The main source of income for the parent(s) was determined as one of receiving a benefit, "some movement" indicating the adult moving between receiving a benefit and paid work (and vice versa), or paid work (**Figure 16**). At the 6+ hardship threshold, 61% of children from households where the main source of income was a benefit were in hardship compared to 15% of children with a parent in paid work. Those with parents moving between paid work and receiving a benefit comprised 42%. The composition of "all children in hardship" at the 6+ threshold of material was 50% in families with an adult in paid work and 40% receiving a benefit, and at the severe hardship threshold (11+) 55% were from families where the main source of income was a benefit and 33% were from families where the main income for the parent(s) was paid work.

Figure 16. Children in hardship by main income source for parent(s)



Source: NZ 2008 Living Standards Survey from Perry, 2016⁸; Note: left side of graph 'hardship rates' answers "what percentage of the selected group of children are in hardship?" and right side of graph 'composition' answers "what percentage of all children in hardship are in this group?"

SEVERITY AND PERSISTENCE

The Expert Advisory Group on solutions to child poverty in New Zealand identified that measures of severe and persistent poverty were needed to monitor long term implications of experiencing poverty over time.¹ Living in a household with seriously inadequate resources often has a considerable effect on a child's wellbeing. Measures for both severity and persistence have not been gathered consistently over time. However, given that the sustainable development goals include reducing all measures of poverty,² it is essential that the data available are included, and improving their reliability is considered a priority for ongoing monitoring of child poverty.

Data sources and methods

Indicators

Children aged 0–17 years who are both income poor and materially disadvantaged
Children aged 0–17 years living below the 50% income poverty threshold before and after housing costs
Children aged 0–17 years who were exposed to persistent poverty (using 60% gross median threshold)
Children aged 0–11 years who were exposed to persistent poverty (using 50% gross median threshold)

Data sources

New Zealand Household Economic Survey via Perry 2016⁸

New Zealand Survey of Family, Income and Employment (SoFIE) via Perry 2016⁸

Definitions

Persistent Poverty: People whose average income across all seven SoFIE years was below the average low income (poverty) line. As income was averaged across all seven years, participants may have been above the income poverty line in some years, but still classified as being in persistent poverty.⁹

Current Poverty: People whose income was below the income poverty line for the particular survey year.

Notes on interpretation

Note 1. NZHES n=2,800–3,500 households per survey.

Note 2. The <50% relative poverty measure is based on a poverty benchmark (50% of the median income) that rises and falls with changes in national median incomes (i.e. poverty is defined in relation to the incomes of others in the same year). For further detail see latest Perry report.

Note 3. The information in this section is based on the analysis of SoFIE data published by Carter and Imlach Gunasekara⁹ with some unpublished data provided to Perry by Carter and Imlach Gunasekara.

Note 4. The initial SoFIE sample in 2002–03 included around 11,500 households with almost 30,000 respondents (22,000 being aged 15+ years). In the final year of SoFIE (2008–09), just under 14,000 adults (aged 15+ years) were left. The overall attrition rate (63% remaining after seven years) is comparable to similar international longitudinal surveys. In this analysis, SoFIE participants who were eligible in the first year (2002–03) and who responded in all seven survey years have been included, giving a sample of just under 19,000.

Note 5. In this SoFIE analysis the poverty benchmarks used were 50% and 60% of gross income. This is different to the benchmarks used in the earlier income poverty section which are based on 60% of disposable income. The two 60% benchmarks are not comparable due to differences in the methodology used. Where comparisons are required the 50% gross income benchmark is the most appropriate, as it is closer to the 60% median disposable income benchmark.

Severe poverty

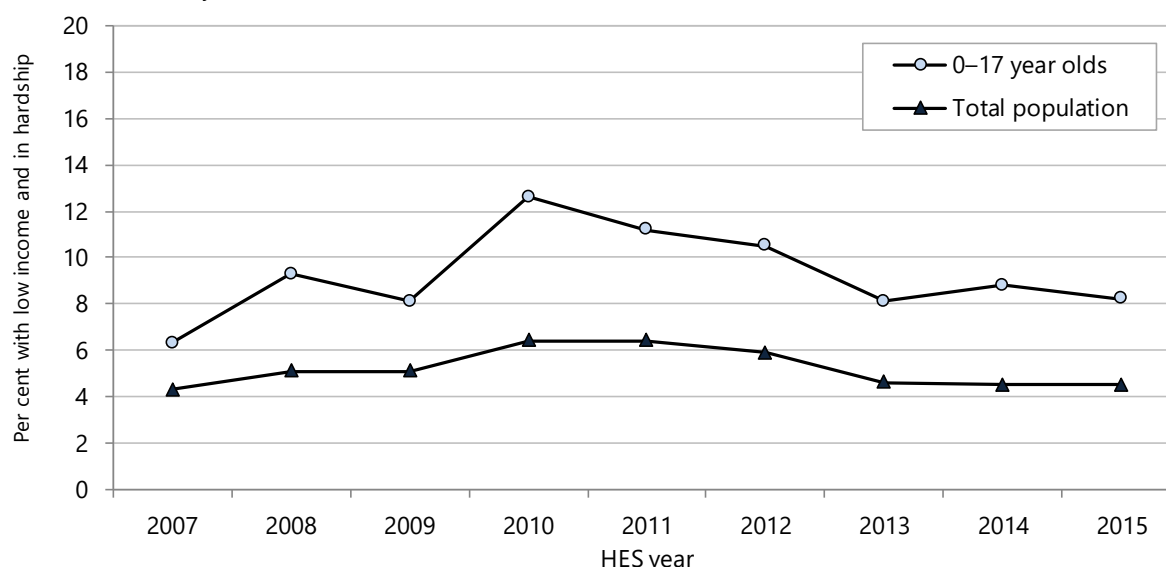
Some children and young people are experiencing severe poverty, and monitoring this aspect of poverty is essential. Different measures can be used and Perry (2016) notes three: higher deprivation scores on using the MWI (MW≤5) or the DEP-17 equivalent (9+/17), very low incomes (say, less than 40% of median AHC incomes) and having both low income and in material hardship, as above.⁸ Two measures have been reported in the Child Poverty Monitor each year to date: the combination of the household being income poor AND being in material hardship, and a household income poverty threshold of less than 50% of the median income. The rationale is that where all else is the same, children in households with incomes below a 50% poverty threshold will experience greater material disadvantage than those just below a 60% threshold. Both of these measures are reported below.

Income poor and material hardship

Living above the poverty threshold reduces the risk of material hardship, but does not remove it. Those in hardship with incomes above the <60% income threshold may have some expectation of living standards improving. For those living in material hardship and who also have low incomes, there is little chance of an

improvement unless their income increases and stays up.⁵ In 2015, 8.2% of households with children were income poor and in material hardship compared to less than 4.5% among the whole population (**Figure 17**).

Figure 17. Trends in the percentage of those who are both income poor and materially deprived, New Zealand 2007–2015 NZHES years

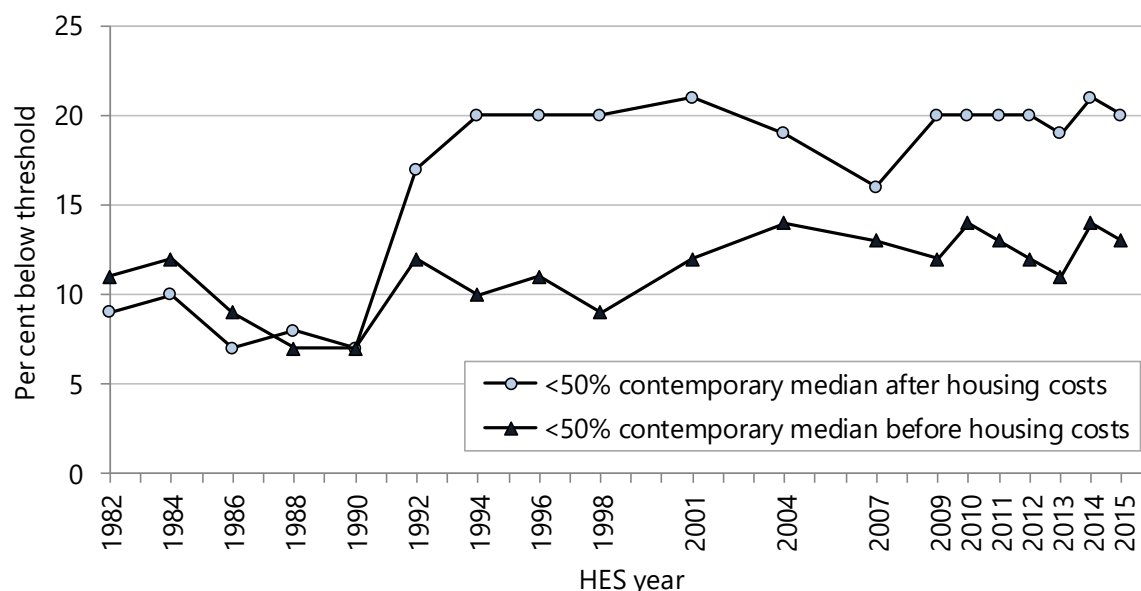


Source: Perry 2016⁸ derived from Statistics NZ Household Economic Survey (NZHES) 1982–2015

Below 50% of contemporary median threshold

The below 50% income poverty is another measure sometimes used to describe severe poverty. The percentage of children aged 0–17 years living in households with incomes below 50% of the contemporary median after accounting for housing costs (AHC), has not changed since 1994 when it rose very fast. The only exception has been in 2007 when the percentage dropped to 16% before returning to 20% the following year (**Figure 18**).

Figure 18. Percentage of dependent children aged 0–17 years living below the 50% of median income poverty threshold, before and after housing costs New Zealand 1982–2015 NZHES years



Source: Perry 2016⁸ derived from Statistics NZ Household Economic Survey (NZHES) 1982–2015

Persistent income poverty

Currently the set of data that provides a national measure on persistent poverty comes from Statistics New Zealand's Survey of Family, Income and Employment (SoFIE). SoFIE followed the same group of individuals

from 2002–03 to 2008–09 to obtain longitudinal data over seven years.⁵ While these estimates for poverty persistence have not been updated since 2012, they remain an important indicator for child poverty.

Data are described from two different age groups using two different thresholds of poverty. Poverty persistence was defined as being when a participant’s average income over the seven years of the survey was below the average low income poverty line over the same period (**Figure 19**); see the Methods box for further details.

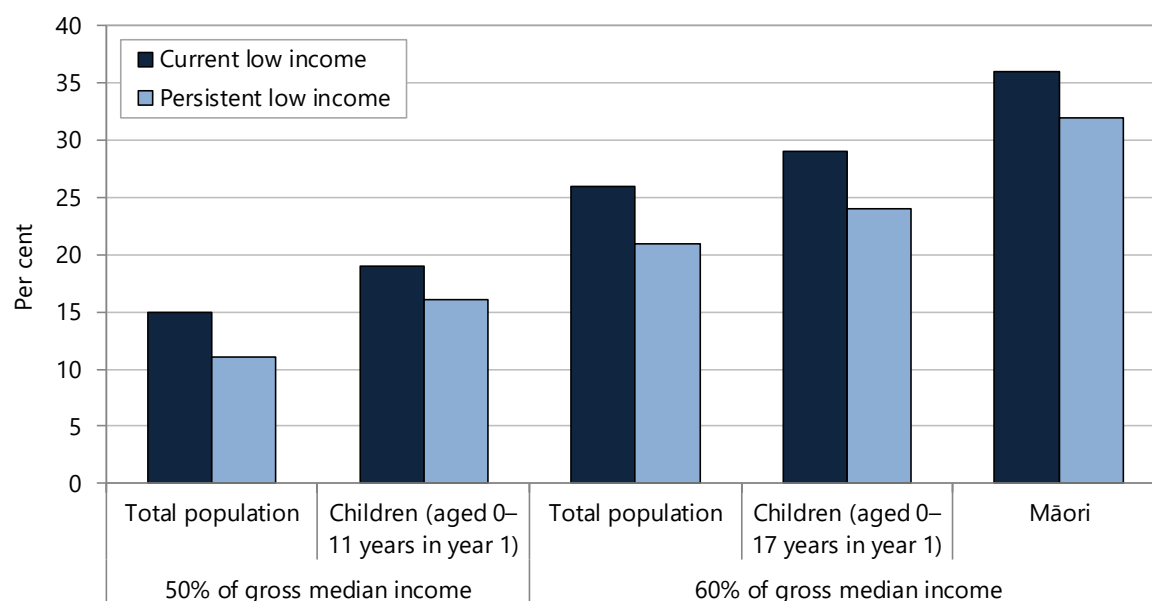
50% gross median threshold

When the threshold used was 50% of the gross median income, 16% of children who were aged 0–11 years in the first year (2002–03) were deemed to be in persistent poverty and 19% in current poverty over the seven years (**Figure 19**). In any one year, three out of five (60%) 0–11 year olds living in current poverty were also in persistent (also called chronic) poverty using the 50% gross median threshold.⁵ There was also a further group of children who, although not in poverty in the current year, were in persistent poverty when their households’ incomes were averaged over the seven survey years.

60% gross median threshold

Of those aged 0–17 years in the first year of SoFIE (2002–03), 24% lived in households experiencing persistent poverty where the household income averaged across all seven years was below 60% of the gross median. Twenty-nine per cent were deemed to be in current poverty as their household income was below 60% of the gross median in the year under review (**Figure 19**). This difference reflected the mix of those in poverty comprising those who had transiently moved into poverty in any given year, and those who were living in long term poverty.⁵ Māori children and young people were over represented in households living with current and persistent low incomes at the 60% gross median threshold with 36% in current low income and 32% in persistent low income. The rate of persistent poverty was around 81% of the current low income for the total population, 83% for 0–17 year olds and 88% for Māori.

Figure 19. Percentage of children with current and persistent low incomes, Statistics New Zealand’s Survey of Family, Income and Employment (SoFIE) 2002–2009

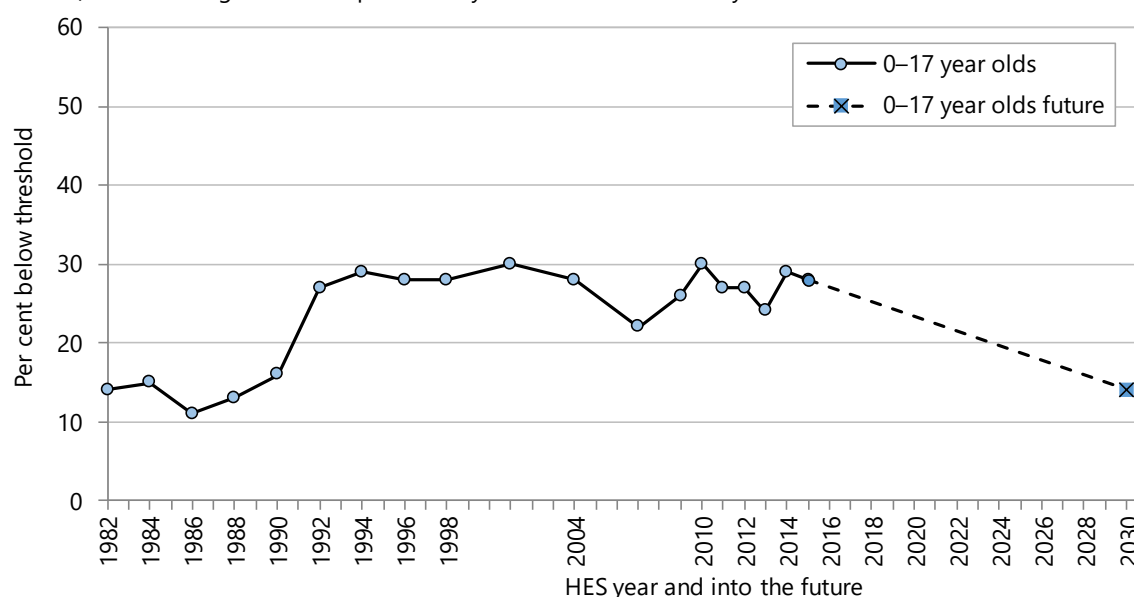


Source: Perry 2016⁵ derived from Statistics NZ’s Survey of Family, Income and Employment 2002–2009

SUSTAINABLE DEVELOPMENT GOALS (SDG)

New Zealand signed “Agenda 2030”, the United Nations strategy for sustainable development globally. One of its goals is to reduce poverty. A target relevant to New Zealand is reducing the national measures of poverty by at least 50% by 2030.² **Figure 20** shows a 50% reduction of the income poverty threshold for <60% of the median income (contemporary measure) from 2015 to 2030. This would indicate that only 14% of dependent children would be in households living below the 60% median income threshold (AHC). This percentage is similar to those seen in the 1980s.

Figure 20 Dependent 0-17 year olds in households living below the 60% income poverty threshold (contemporary median) after housing costs, extrapolated beyond 1982-2015 NZHES years, New Zealand

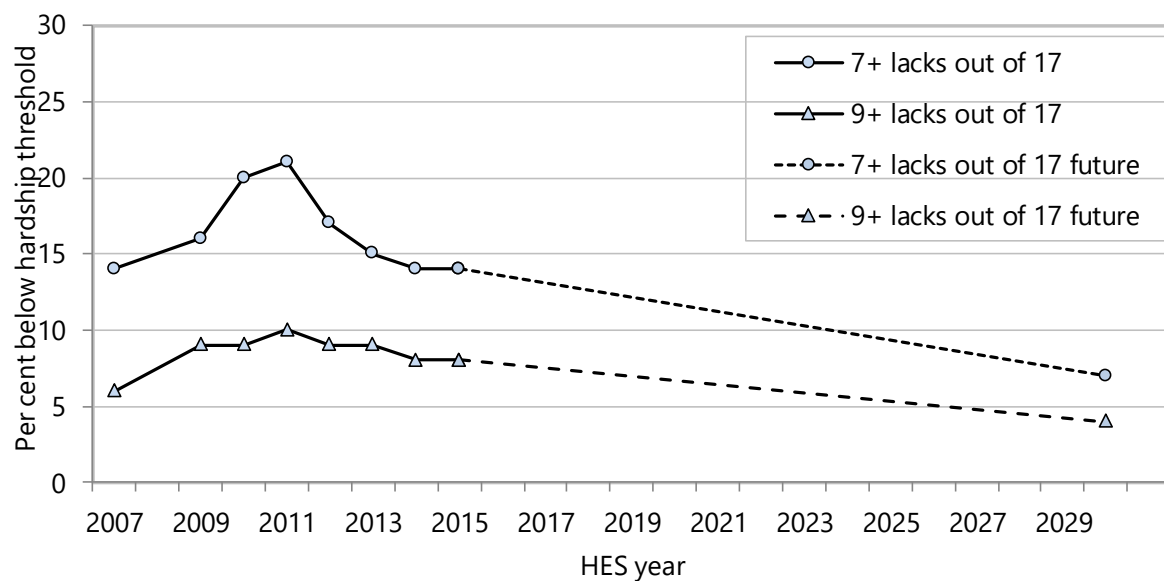


Source: Perry 2016⁸ derived from Statistics New Zealand Household Economic Survey (NZHES) 1982–2015 (extrapolated)

Figure 21 shows a 50% reduction in the percentage of dependent children living in households experiencing material hardship at the level of MWI ≤ 9 (or 7+ on DEP-17) from 2015 to 2030. If the United Nations Agenda 2030 sustainable development target on reducing this measure of poverty was met, in 2030, New Zealand’s proportion of children in households living in material hardship (using the measure of MWI ≤ 9) would be a maximum of 7%. If the United Nations Agenda 2030 sustainable development target on reducing the more severe level of material hardship (MWI ≤ 5 (or 9+ on DEP-17) was met, in 2030, New Zealand’s proportion of children in households living in material hardship (using the measure of MWI ≤ 5) would be a maximum of 4%.

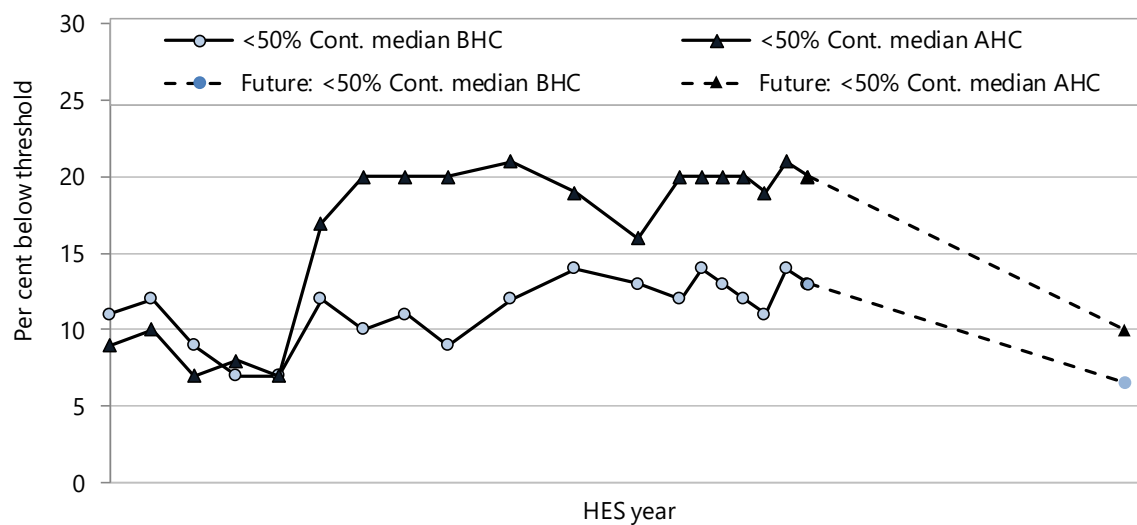
If New Zealand met its 50% reduction target for the “Agenda 2030”, United Nations strategy for sustainable development by reducing severe poverty, the percentage of 0-17 year olds in households living in severe poverty, as measured by the <50% median income threshold (contemporary median) after housing costs (AHC) would drop to 10.5% (**Figure 22**).

Figure 21. Dependent 0–17 year olds in households living in material hardship by selected 7+ and 9+, extrapolated beyond 1982–2015 NZHES years, New Zealand



Source: New Zealand Household Economic Survey (NZHES) via Perry 2016⁸ Hardship defined using Economic Living Standards Index (ELSI) and Material Wellbeing Index, MWI ≤ 9 which is $\equiv 7+$ on DEP-17;

Figure 22. Dependent 0–17 year olds living below the 50% income poverty threshold



Source: Perry 2016⁸ derived from Statistics NZ Household Economic Survey (NZHES) 1982–2015 (extrapolated)

INTERNATIONAL COMPARISONS

For some time there has been increasing interest in international comparisons on not only economic performance but also measures reflecting income hardship.⁵ Greater awareness is shown in further measures of poverty such as material hardship that begin to address the limitations of comparison of income alone. The value of including non-income items on living standards and items around social inclusion was accepted for conceptual and reasons.

The EU-SILC (Survey of Income and Living Conditions) was developed to collect timely and comparable data on income, poverty, social exclusion and living conditions. It is part of the European Statistical System (ESS) and is a headline poverty target in the EU on reducing the number of people under poverty and social exclusion; it has been defined based on the EU-SILC instrument.^a In 2009, a 9-item deprivation index was adopted which has grown to a 13 item index.⁸

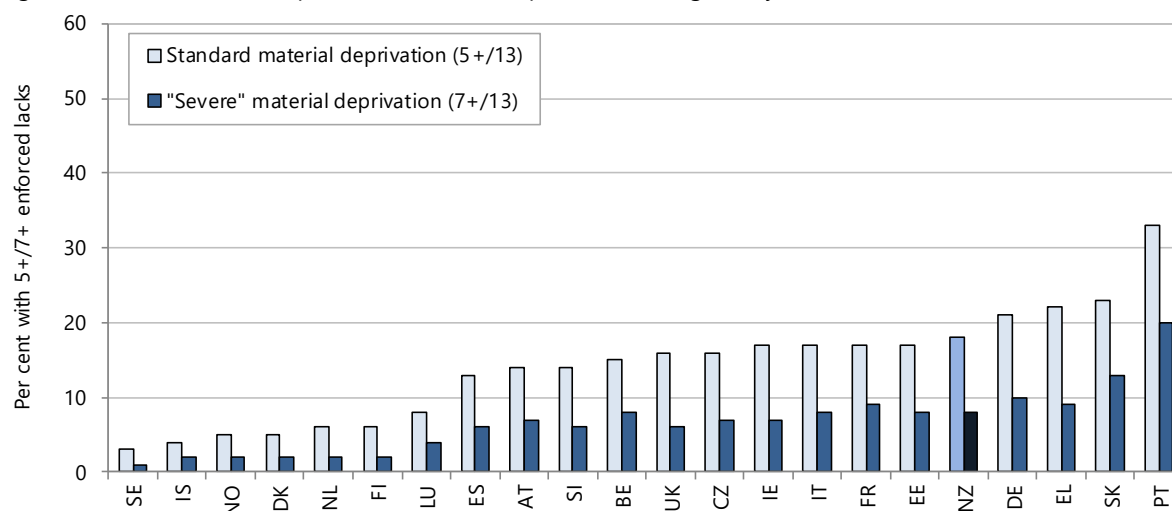
The New Zealand Living Standards Survey (LSS) 2008 included relevant items also in the EU-9 item index and Perry states,⁸ “we can replicate EU-13 for New Zealand to a very good degree from the LSS data” (p95). Currently the data compared are from the LSS, however, in the future enhancement of the NZ Household Economic Survey (NZHES) from the 2015/16 survey will mean comparisons with European countries will be possible.⁸

Children and young people in material deprivation

Two measures of material deprivation are used in this section from the EU-13: the enforced lack of 5+ items (standard material deprivation) and the enforced lack of 7+ items (severe material deprivation) out of the 13.⁸

New Zealand had 18% of 0-17 year olds who have a 5+ score making it 18th out of the comparable 22 countries.^b Eight per cent of 0-17 year olds were in households with a 7+ score (severe material deprivation), with New Zealand 14th equal (Figure 23). In comparison, New Zealand material deprivation rates for those aged 65+ years are much lower. Three per cent of 65+ year olds have enforced lack scores of 5+ items out of 13 items and only 1% have a score of 7+ items.

Figure 23. International comparison of material deprivation among 0-17 year olds



Source: Perry (2016) International comparisons using EU-SILC 2009 for EU countries and NZ LSS 2008 for New Zealand

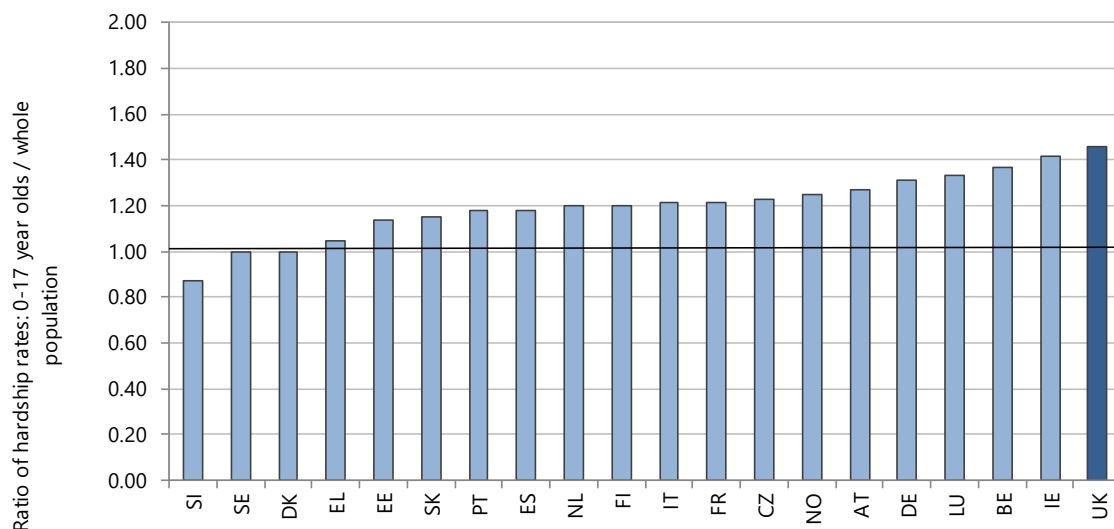
^a For information on EU-SILC: <http://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions> (accessed 20 Oct 2016)

^b AT Austria, BE Belgium, CZ Czech Republic, DE Germany, DK Denmark, EE Estonia, EL Greece, ES Spain, FI Finland, FR France, IE Ireland, IT Italy, LU Luxembourg, NL Netherlands, NO Norway, NZ New Zealand, PT Portugal, SE Sweden, SI Slovenia, SK Slovakia, UK United Kingdom

Risk ratio

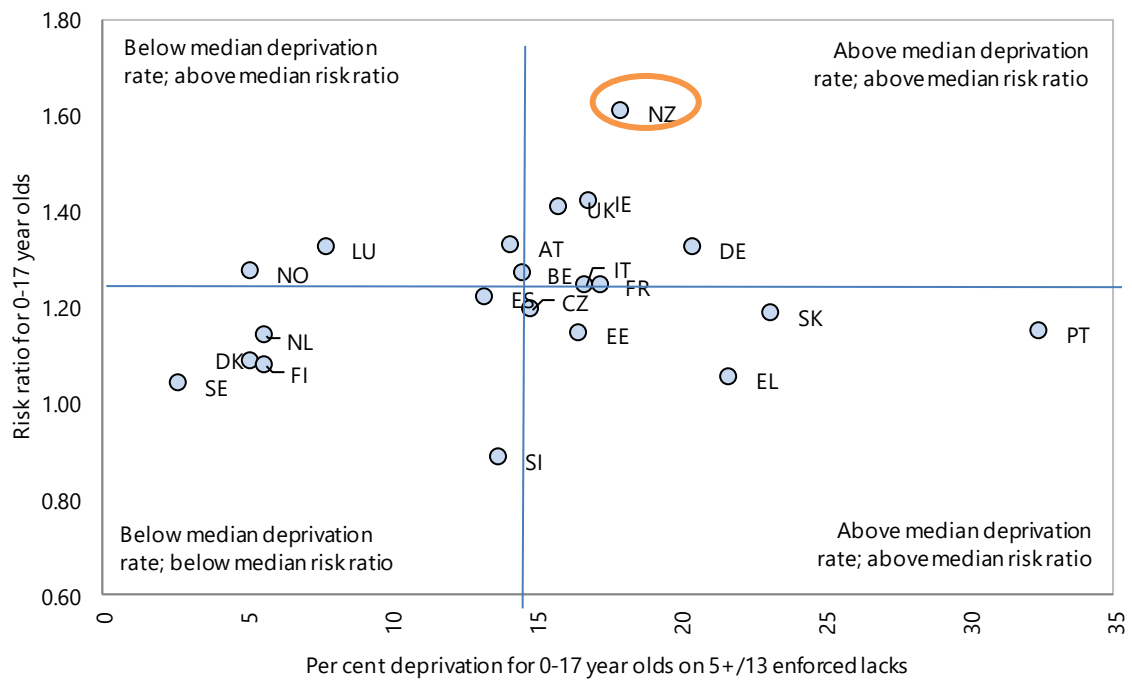
Perry notes that a risk ratio is a useful statistic that summarises over or under representation of a particular group within a population.⁸ **Figure 24** presents the risk ratio for deprivation for 0-17 year olds in relation to the whole population. The same countries are presented in this graph as in **Figure 23**. The risk ratio for New Zealand 0-17 year olds is 1.64 which is higher than the twenty nations and the United Kingdom. The median is 1.21. In addition, when the risk ratio is mapped against the percentage of deprivation among 0-17 year olds (continuing to use the measurement of enforced lacks) New Zealand is an outlier in the quadrant where there is above median deprivation and above the median risk ratio (**Figure 25**).

Figure 24. International comparison of the ratio of hardship rates for 0-17 year olds to whole populations



Source: Perry (2016) International comparisons using EU-SILC 2009 for EU countries and NZ LSS 2008 for New Zealand

Figure 25. International comparison of risk ratio for 0-17 year olds to overall population deprivation rate in selected countries



Source: Perry (2016) International comparisons; Percentage of 0-17 year olds with 5+/13 enforced lacks using the EU-13 index; 20 European countries and NZ using EU-SILC 2009 for EU countries and NZ LSS 2008 for New Zealand

CHILD POVERTY RELATED INDICATORS

In both poor and rich countries social inequities are responsible for a high proportion of death and illness among children. Health effects of poverty arise from complex interactions between social and environmental factors such as education, poor quality housing and household crowding.¹⁰ Within countries differences in health status are closely linked with degrees of social disadvantage.¹¹

This section of the Child Poverty Monitor brings together data from several sources, each giving valuable insights into factors in the health, education, housing and social sectors that relate to the conditions in which children are born, live and grow, which affect their capacity to develop and thrive. Health-related factors include: infant mortality, medical conditions with a social gradient, assault, neglect and maltreatment and unmet health need. Household crowding has been linked to several health conditions including communicable diseases such as gastroenteritis, hepatitis A and B, and respiratory infections.^{12,13} Household crowding is included in this report alongside other housing-related indicators. Socioeconomic background has a significant effect on educational outcomes in New Zealand and underpins observed variation in student performance.¹⁴ The final subsection summarises educational attainment in school leavers from 2009–2014.

INFANT DEATHS

The infant mortality rate reflects the effects of economic and social environments on the health of mothers and newborns and can be read as an indicator of national commitment to universal maternal and child health, particularly for poor and marginalised families.^{15,16} In all developed countries, infant mortality rates have been reduced to fewer than 10 infant deaths per thousand live births.¹⁵ Infant mortality rates in New Zealand, however, are higher than the OECD average. In 2012 New Zealand ranked eighth highest among the 34 OECD countries with data available.¹⁶

This section reviews infant deaths, including sudden unexpected death in infancy (SUDI), using information from the National Mortality Collection and the Birth Registration Dataset.

Data sources and methods

Indicators

Infant deaths and infant mortality rate
Sudden Unexpected Death in Infancy (SUDI) and SUDI rates

Data sources

Numerator: National Mortality Collection
Denominator: Birth Registration Dataset (live births only)

Definitions

Infant death: Death of a live born infant prior to 365 days of life (includes neonates)
Infant mortality rate: Deaths of live born infants prior to 365 days of life per 1,000 live births
Sudden unexpected death in infancy (SUDI): Death of a live born infant prior to 365 days of life, where the cause of death was sudden infant death syndrome (SIDS), accidental suffocation or strangulation in bed, inhalation of gastric contents or food, or ill-defined or unspecified causes
SUDI rate: SUDI per 1,000 live births
Sudden infant death syndrome (SIDS): Refers to refer to the sudden, unexpected death in an infant that is unexplained, even after a complete death scene investigation, thorough post-mortem (autopsy) and review of the infant's clinical history.¹⁷

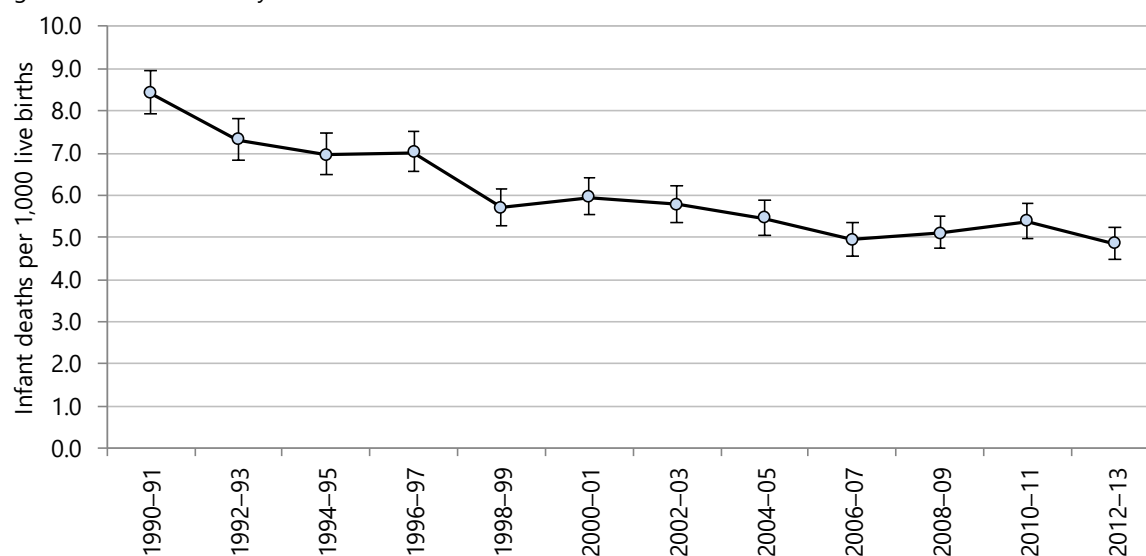
Note on interpretation

Cause of death is the main underlying cause of death. Refer to **Appendix 6** for relevant codes.

Population patterns

Infant mortality rates have fallen overall from 1990 to 2012, with the majority of the decrease occurring between 1990 and 1999. There has been a more gradual decline from 2000 to 2007 and fairly stable rates from 2006–2013 (**Figure 26**).

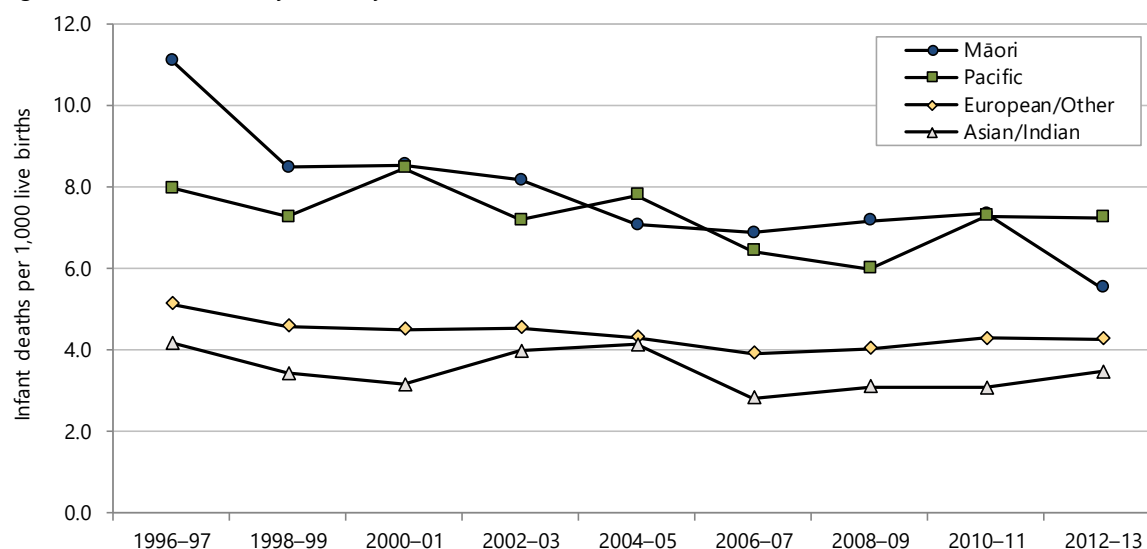
Figure 26. Infant mortality rates, New Zealand 1990–2013



Numerator: National Mortality Collection; Denominator: Birth Registration Dataset

From 1996 to 2013 the decline in infant mortality rates occurred in all ethnic groups and was most marked for Māori infants. Infant mortality rates for Māori and Pacific infants were consistently higher than for European/Other and Asian/Indian infants from 1996–2013 (**Figure 27**).

Figure 27. Infant deaths, by ethnicity, 1996–2012



Numerator: National Mortality Collection; Denominator: Birth Registration Dataset; Ethnicity is level 1 prioritised

Between 2009 and 2013 there were disparities in infant mortality rates. These are evident in the score of the infant's domicile on the NZDep2013 index of deprivation, maternal age, ethnicity and gender (**Table 4**). The following associations were observed, however, note that this analysis does not quantify the effect of each factor independently:

- The mortality rate for infants born in areas with the highest scores on the NZDep2013 index of deprivation (deciles 9–10) was almost three times higher than the mortality rate for infants born in areas with the lowest NZDep2013 scores (deciles 1–2).
- The mortality rates for infants born to mothers younger than 20 years and aged 20–24 years were 2–3 times higher than the mortality rate for infants born to mothers aged 30–34 years.
- The mortality rate for Māori infants was more than 1.5 times higher than mortality rates of European/Other infants, and for Pacific infants more than 1.6 times higher than for European/Other infants.

Table 4. Infant deaths by demographic factors, New Zealand 2009–2013

Variable	2009–2013 (n)	Rate per 1,000 live births	Rate ratio	95% CI
Infant mortality				
NZDep2013 index of deprivation quintile				
Deciles 1–2	123	2.72	1.00	
Deciles 3–4	176	3.52	1.29	1.03–1.63
Deciles 5–6	244	4.26	1.57	1.26–1.95
Deciles 7–8	340	4.96	1.83	1.49–2.24
Deciles 9–10	712	7.95	2.93	2.42–3.54
Maternal age group				
<20 years	213	10.48	3.09	2.60–3.69
20–24 years	414	7.18	2.12	1.83–2.46
25–29 years	346	4.41	1.30	1.12–1.52
30–34 years	296	3.39	1.00	
35+ years	310	4.56	1.35	1.15–1.58
Prioritised ethnicity				
Māori	602	6.65	1.57	1.41–1.76
Pacific	245	7.02	1.66	1.43–1.92
Asian/Indian	129	3.30	0.78	0.65–0.94
European/Other	623	4.23	1.00	
Gender				
Female	696	4.58	1.00	
Male	907	5.67	1.24	1.12–1.36

Numerator: National Mortality Collection; Denominator: Birth Registration Dataset; Rate ratios are unadjusted; Ethnicity is level 1 prioritised

Causes of infant deaths

Most infant deaths from 2009 to 2013 were caused by serious issues occurring around the time around birth such as congenital anomalies, extreme prematurity and other perinatal conditions. Sudden unexpected death in infancy (SUDI) was the most common cause of death for infants aged from 28 days old (**Table 5**). The most common specific diagnoses within the SUDI group were sudden infant death syndrome (SIDS), suffocation and strangulation in bed.

Table 5. Infant mortality by main underlying cause of death, New Zealand, 2009–2013

Cause of death	2009–2013 (n)	Annual average	Rate per 1,000 live births	%
Infant mortality				
Congenital anomalies	369	74	1.18	23.0
Extreme prematurity	276	55	0.88	17.2
Intrauterine hypoxia or birth asphyxia	19	4	0.06	1.2
Other perinatal conditions	468	94	1.50	29.2
SUDI: SIDS	122	24	0.39	7.6
SUDI: suffocation or strangulation in bed	115	23	0.37	7.2
SUDI: all other types	21	4	0.07	1.3
Injury or poisoning	32	6	0.10	2.0
Other causes	181	36	0.58	11.3
Total	1,603	321	5.14	100.0

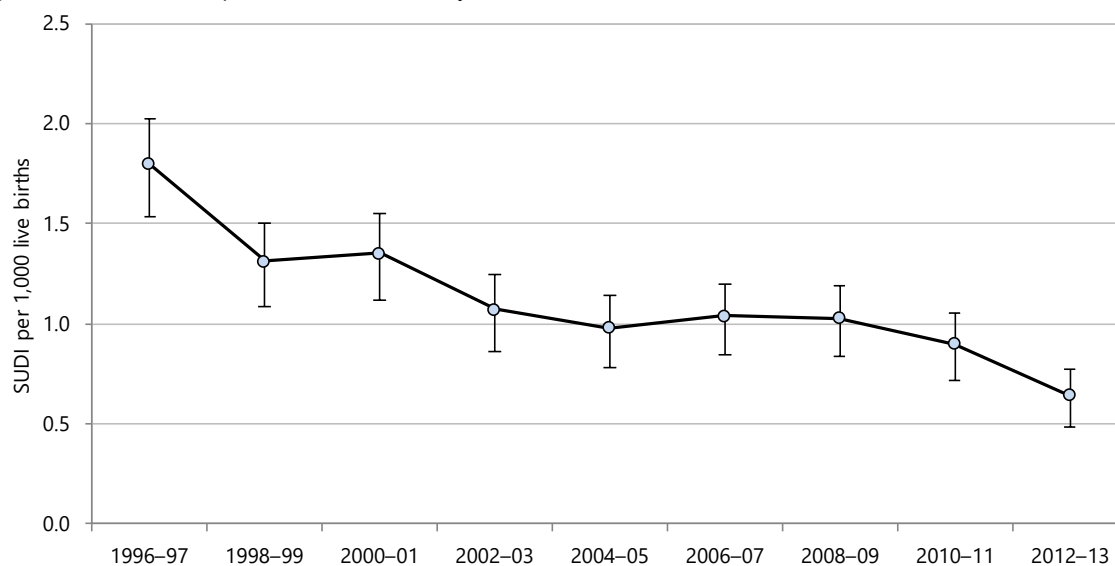
Numerator: National Mortality Collection; Denominator: Birth Registration Dataset; SUDI = sudden unexpected death in infancy; SIDS = sudden infant death syndrome

Sudden unexpected death in infancy

Sudden unexpected death in infancy (SUDI) is the leading cause of death for New Zealand infants aged from 28–364 days. These are deaths that occur suddenly and unexpectedly in the first year of life, usually in otherwise healthy infants, and often during sleep.^{17,18}

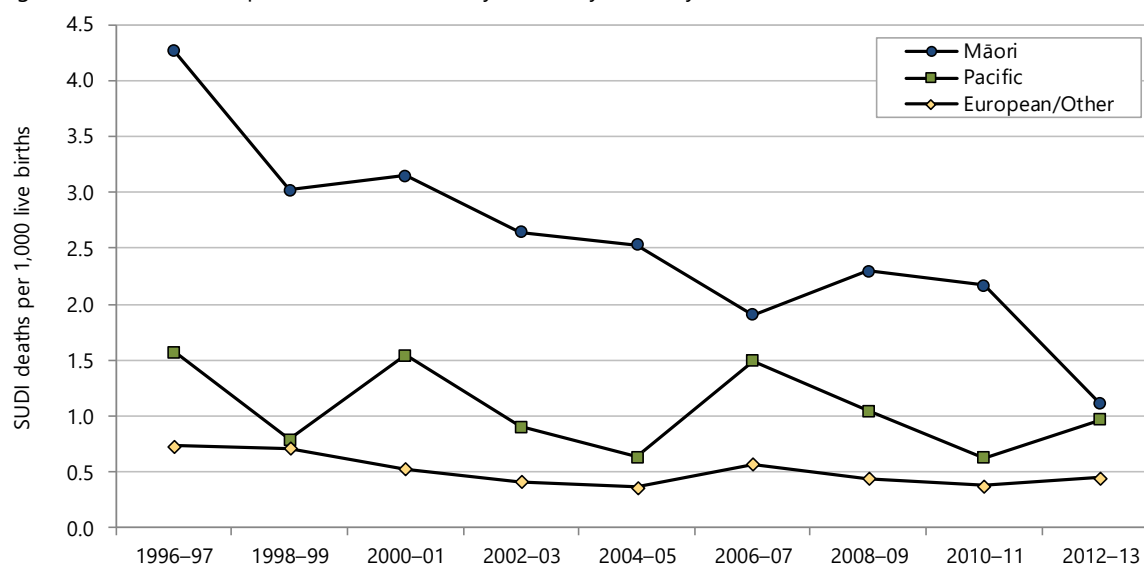
From 1996 to 2013 there was a statistically significant fall in the SUDI rate (**Figure 28**). In this time period the ethnic disparity in SUDI reduced, with a particularly marked fall in SUDI rates for Māori infants (**Figure 29**).

Figure 28. Sudden unexpected death in infancy (SUDI), New Zealand, 1996–2013



Numerator: National Mortality Collection; Denominator: Birth Registration Dataset; Error bars represent 95% confidence interval; SUDI=sudden unexpected deaths in infancy

Figure 29. Sudden unexpected death in infancy (SUDI) by ethnicity, New Zealand, 1996–2013



Numerator: National Mortality Collection; Denominator: Birth Registration Dataset; Ethnicity is level 1 prioritised; Asian/Indian rate suppressed due to small numerator numbers; SUDI=sudden unexpected death in infancy

Between 2009 and 2013 there were disparities in SUDI rates by score of infant domicile on the NZDep2013 index of deprivation, maternal age, ethnicity, gestational age at birth and gender (**Table 6**). The following associations were observed, however, note that the analysis does not quantify the effect of each factor independently:

- The SUDI rate for infants living in areas with the highest scores on the NZDep2013 index of deprivation (deciles 9–10) was almost six times higher than infant mortality rates for infants in areas with the lowest NZDep2013 scores (deciles 1–2).
- The SUDI rate for infants born to mothers aged under 20 years was almost seven times the rate for infants born to mothers aged 30 years or older, and for infants born to mothers aged 20–25 years the SUDI rate was more than four times the rate for infants born to mothers aged 30 years or older.

- Over the whole time period 2009–2013 the SUDI rate for Māori infants was four times higher than the SUDI rate for European/Other infants. The SUDI rate for Pacific infants was almost twice the SUDI rate for European/Other infants.
- The SUDI rate for infants born before 37 weeks gestation was three times higher than the SUDI rate for infants born at or after 37 weeks gestation.
- The SUDI rate for male infants was one and a half times higher than the SUDI rate for female infants.

Table 6. Sudden unexpected death in infancy, by demographic factors, New Zealand, 2009–2013

Variable	2009–2013 (n)	Rate per 1,000 live births	Rate ratio	95% CI
Sudden Unexpected Death in Infancy (SUDI)				
NZDep2013 index of deprivation decile				
Deciles 1–2	12	0.27	1.00	
Deciles 3–4	19	0.38	1.43	0.70–2.95
Deciles 5–6	28	0.49	1.85	0.94–3.63
Deciles 7–8	57	0.83	3.14	1.68–5.85
Deciles 9–10	141	1.57	5.94	3.30–10.7
Maternal age group				
<20 years	50	2.46	6.72	4.31–10.47
20–24 years	98	1.70	4.64	3.12–6.92
25–29 years	49	0.62	1.71	1.09–2.66
30–34 years	32	0.37	1.00	
35+ years	24	0.35	0.96	0.57–1.64
Prioritised ethnicity				
Māori	160	1.77	4.01	3.00–5.35
Pacific	29	0.83	1.88	1.22–2.92
Asian/Indian	<5	d=s	s	0.08–0.64
European/Other	65	0.44	1.00	
Gender				
Female	98	0.65	1.00	
Male	160	1.00	1.55	1.21–1.99

Numerator: National Mortality Collection; Denominator: Birth Registration Dataset; Rate ratios are unadjusted; Ethnicity is level 1 prioritised

CONDITIONS WITH A SOCIAL GRADIENT

A number of medical conditions and modes of injury have a social gradient. The New Zealand Child and Youth Epidemiology Service identified these as conditions where rates of death or hospitalisation are more than one and a half times higher for children living in areas with the highest NZDep index of deprivation scores (deciles 9–10) compared with children living in areas with the lowest NZDep scores (deciles 1–2) and conditions where there are strong social gradients on the basis of ethnicity (see **Appendix 5**).

This section reviews deaths and hospitalisations from medical conditions and injuries with a social gradient, including sudden unexpected death in infancy (SUDI), using information from the National Mortality Collection and the National Minimum Dataset.

Data sources and methods

Indicators:

Deaths from medical conditions and injuries with a social gradient in children aged 0–14 years

Hospitalisations for medical conditions and injuries with a social gradient in children aged 0–14 years

Data sources

Numerator: Deaths: National Mortality Collection

Hospitalisations: National Minimum Dataset

Denominator: Statistics NZ estimated resident population

Definitions

Deaths: Deaths (excluding neonates) with a medical condition or injury with a social gradient as the main underlying cause of death

Hospitalisations: Acute and arranged hospitalisations (excluding waiting list cases) with a medical condition with a social gradient as the primary diagnosis and hospitalisations with a primary diagnosis of injury with a social gradient, excluding ED cases. Arranged hospitalisations are admissions within 7 days of referral

Medical conditions with a social gradient: Acute bronchiolitis; acute lower respiratory infection unspecified; acute upper respiratory infections; asthma and wheeze; bronchiectasis; croup, laryngitis, tracheitis, epiglottitis; dermatitis and eczema; epilepsy or status epilepticus; febrile convulsions; gastroenteritis; inguinal hernia; meningitis; meningococcal disease; nutritional deficiencies or anaemias; osteomyelitis; otitis media; pneumonia; rheumatic fever or rheumatic heart disease; skin infections; tuberculosis; urinary tract infection; vaccine preventable diseases; viral infection of unspecified site (for codes see **Appendix 7**)

Injuries with a social gradient: External cause is land transport crashes (road traffic; non-traffic); falls; mechanical forces (inanimate; animate); thermal injury; poisoning; and drowning or submersion (for codes see **Appendix 7**)

Notes on interpretation

Note 1. Conditions were considered to have a social gradient if hospitalisation rates for 0–14 year olds living in areas with the highest NZDep2013 scores (deciles 9–10) were ≥ 1.8 times higher than for those living in areas with the lowest NZDep2013 scores (deciles 1–2); where rates for Māori, Pacific or Asian/Indian children were ≥ 1.8 times higher than for European children; or where there was a consistent, biologically plausible social gradient with a NZDep2013 deciles 9–10:NZDep2013 deciles 1–2 rate ratio ≥ 1.5 times

Note 2. Deaths and hospitalisations in neonates (<28 days) were excluded because events at this age are more likely to reflect issues arising around the time of birth (e.g. preterm infants may register multiple admissions as they transition from to the postnatal ward). Further, the aetiology of respiratory infections and/or other medical conditions arising in neonatal intensive care (NICU), and special care baby units (SCBU) contexts may differ from those arising in the community.

Note 3. Comparing hospitalisation data for medical conditions with those for injury requires caution as removal of emergency department (ED) cases from injury hospitalisations to improve consistency of case ascertainment across health services as well as socially determined differences in attendance at ED cf. primary care for minor medical conditions may have influenced some of the social gradients observed.

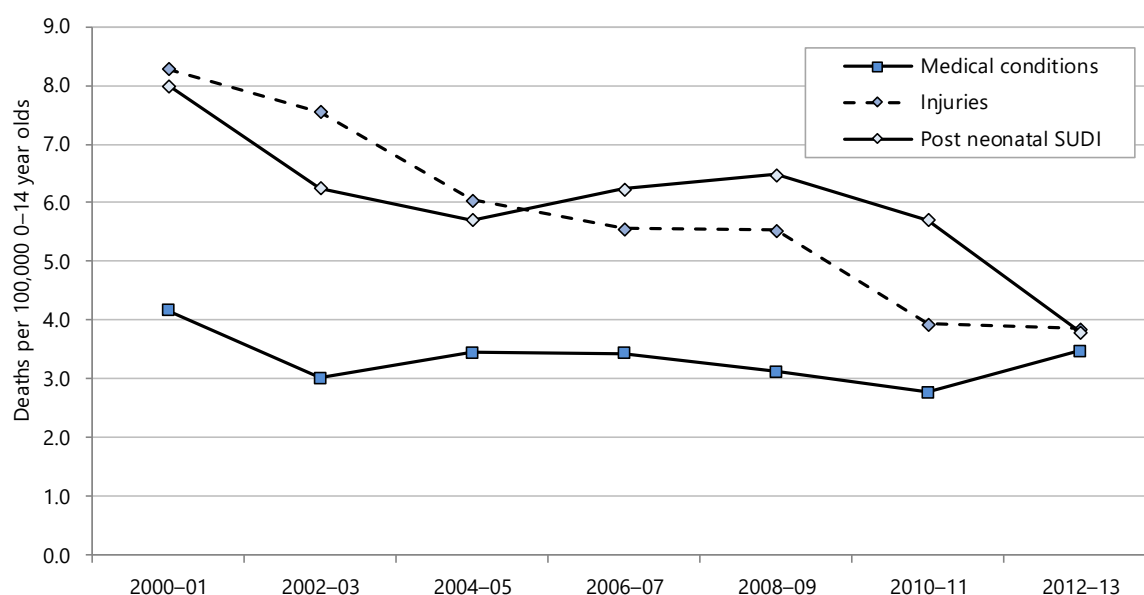
Note 4. SUDI rates are traditionally calculated per 1,000 live births, however in this section of the report the denominator used was children aged 0–14 years, so that the relative contribution SUDI makes to mortality in this age group is more readily appreciated. As a result, SUDI rates in this section are not readily comparable to SUDI rates reported elsewhere. SUDI data are presented separately because SUDI can be included in medical condition and injury classifications.

Note 5. For medical conditions waiting list admissions were excluded. For injuries waiting list admissions and ED cases were excluded.

Deaths from conditions with a social gradient

From 2000 to 2013 there was a fall in death rates for sudden unexpected death in infancy and injuries with a social gradient while there was little overall change in death rates for medical conditions with a social gradient (**Figure 30**).

Figure 30. Deaths from conditions with a social gradient in 0–14 year olds (excluding neonates), New Zealand, 2000–2013



Numerator: National Mortality Collection (neonates removed); Denominator: Statistics NZ Estimated Resident Population; SUDI deaths are for infants aged 28–364 days only; Injuries excludes ED and waiting list cases

From 2009 to 2013 there were 560 deaths of 0–14 year olds as a result of conditions with a social gradient. Post-neonatal sudden unexpected death in infancy (SUDI) was the most frequent underlying cause of such deaths, accounting for 231 (41%) of the 560 deaths in this time period. There was an average of 28 deaths as a result of conditions with a social gradient per year from medical causes and 38 deaths per year from injuries. Pneumonia was the most common underlying cause of death from medical conditions with a social gradient, accounting for 50 (36.2%) of such deaths. Road traffic injuries were the most common underlying cause of death of 0–14 year olds from injuries with a social gradient accounting for 69 (36%) of such deaths. Drowning and off-road transport injuries were also frequent causes of death from injuries with a social gradient (**Table 7**).

There was significant ethnic disparity in death rates from conditions with a social gradient, particularly for medical conditions, and gender-based disparity for deaths from injuries with a social gradient. Between 2009 and 2013 death rates for both medical conditions and injuries with a social gradient for Māori 0–14 year olds were more than twice the rates for European/Other children. Death rates from medical conditions with a social gradient for Pacific 0–14 year olds were almost four times higher than for European/Other while there was no statistically significant difference between death rates of Pacific and European/Other 0–14 year olds for deaths from injuries with a social gradient. Death rates from injury with a social gradient were significantly higher for male 0–14 year olds compared with female 0–14 year olds. Analysis by NZDep2013 confirmed the social gradient for the selected medical conditions and injuries (**Table 8**).

For analysis of SUDI by demographic factors see Sudden unexpected death in infancy (**page 35**).

Table 7. Deaths from conditions with a social gradient in 0–14 year olds (excluding neonates), by main underlying cause of death, New Zealand, 2009–2013

Cause of death	2009–2013 (n)	Annual average	Rate per 100,000 0–14 year olds	%
Medical conditions				
Pneumonia	50	10	1.11	36.2
Asthma and wheeze	12	2	0.27	8.7
Other respiratory conditions	10	2	0.22	7.2
Epilepsy or status epilepticus	22	4	0.49	15.9
Meningococcal disease	15	3	0.33	10.9
Gastroenteritis	13	3	0.29	9.4
Meningitis	5	1	0.11	3.6
Other conditions	11	2	0.24	8.0
Total medical conditions	138	28	3.06	100.0
Injuries				
Road traffic crash	69	14	1.53	36.1
Drowning	45	9	1.00	23.6
Non-traffic land transport crash	38	8	0.84	19.9
Mechanical forces: inanimate and animate	17	3	0.38	8.9
Thermal injury	10	2	0.22	5.2
Poisoning	7	1	0.16	3.7
Falls	5	1	0.11	2.6
Total	191	38	4.23	100.0
Post neonatal SUDI				
Post neonatal SUDI	231	46	5.12	
Total mortality New Zealand	560	112	12.40	

Numerator: National Mortality Collection (neonates removed); Denominator: Statistics NZ Estimated Resident Population; SUDI deaths are for infants aged 28–364 days only

Table 8. Deaths from conditions with a social gradient in 0–14 year olds (excluding neonates), by demographic factors, New Zealand 2009–2013

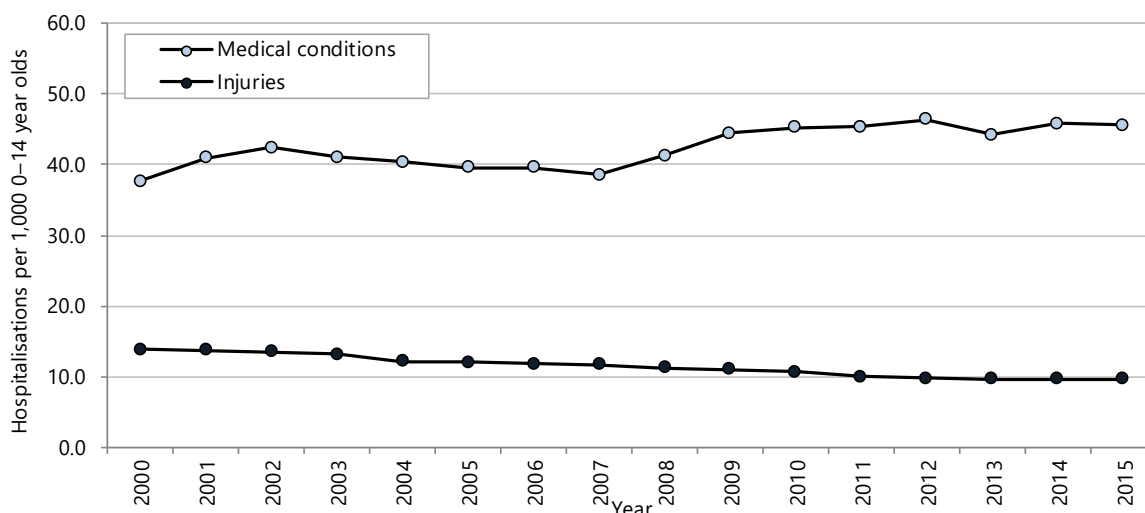
Variable	Rate	Rate ratio	95% CI	Variable	Rate per 100,000 0–14 year olds	Rate ratio	95% CI
Death from conditions with a social gradient in 0–14 year olds							
Medical conditions							
NZDep2013 index of deprivation quintile				Prioritised ethnicity			
Deciles 1–2	1.04	1.00		Māori	5.09	2.81	1.90–4.14
Deciles 3–4	2.12	2.03	0.90–4.55	Pacific	6.71	3.7	2.32–5.91
Deciles 5–6	1.76	1.69	0.74–3.85	Asian/Indian	1.30	0.72	0.31–1.68
Deciles 7–8	3.42	3.27	1.56–6.86	European/Other	1.81	1.00	
Deciles 9–10	6.04	5.79	2.88–11.63	Gender			
				Female	2.86	1.00	
				Male	3.24	1.13	0.81–1.58
Injuries							
NZDep2013 index of deprivation quintile				Prioritised ethnicity			
Deciles 1–2	1.85	1.00		Māori	7.72	2.49	1.83–3.38
Deciles 3–4	2.74	1.48	0.78–2.81	Pacific	4.63	1.49	0.91–2.44
Deciles 5–6	3.28	1.77	0.96–3.27	Asian/Indian	1.09	0.35	0.14–0.86
Deciles 7–8	3.74	2.01	1.12–3.64	European/Other	3.10	1.00	
Deciles 9–10	8.31	4.48	2.63–7.63	Gender			
				Female	2.91	1.00	
				Male	5.49	1.89	1.40–2.55

Numerator: National Mortality Collection (neonates removed); Denominator: Statistics NZ Estimated Resident Population; Rate ratios are unadjusted; Ethnicity is level 1 prioritised

Hospitalisations for conditions with a social gradient

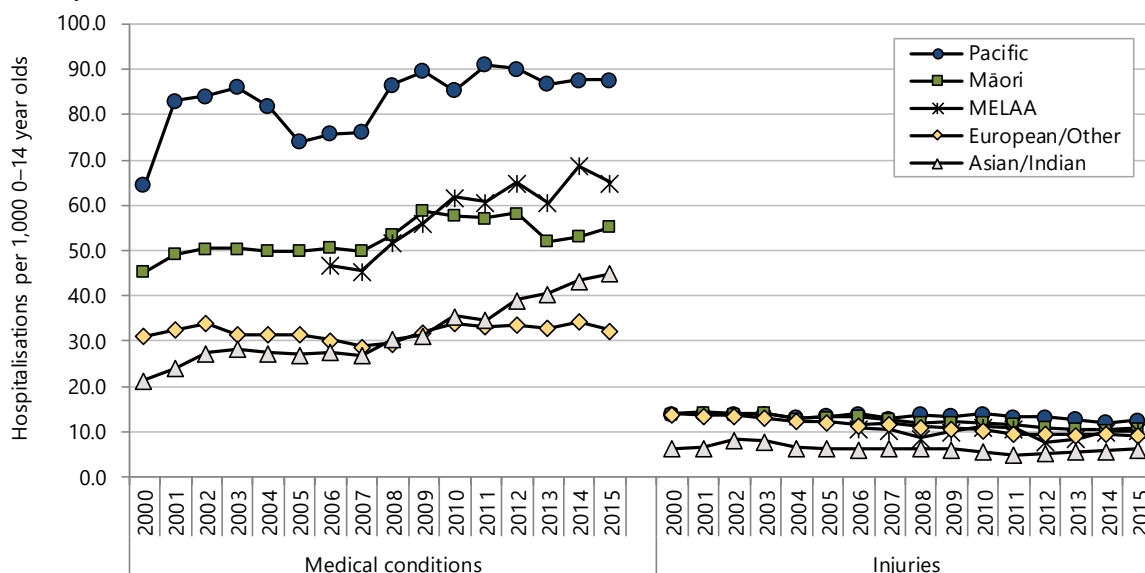
The hospitalisation rate of 0–14 year olds for medical conditions with a social gradient rose from 2000 to 2015; the rise was most marked from 2007 to 2012. Over the whole time period there was a gradual fall in the hospitalisation rate for injuries with a social gradient (**Figure 31**). The rise in hospitalisation rates for medical conditions with a social gradient was more marked for Māori, Pacific, MELAA and Asian/Indian 0–14 year olds compared with European/Other 0–14 year olds. The fall in hospitalisation rates for injuries with a social gradient was more marked for European/Other 0–14 year olds than for Māori, Pacific, Asian/Indian and MELAA 0–14 year olds (**Figure 32**).

Figure 31. Hospitalisations for conditions with a social gradient in 0–14 year olds (excluding neonates), New Zealand 2000–2015



Numerator: National Minimum Dataset; Denominator: Statistics NZ estimated population; Medical conditions acute and arranged hospitalisations; Injuries exclude ED cases

Figure 32. Hospitalisations for conditions with a social gradient in 0–14 year olds (excluding neonates), by ethnicity, New Zealand 2000–2015

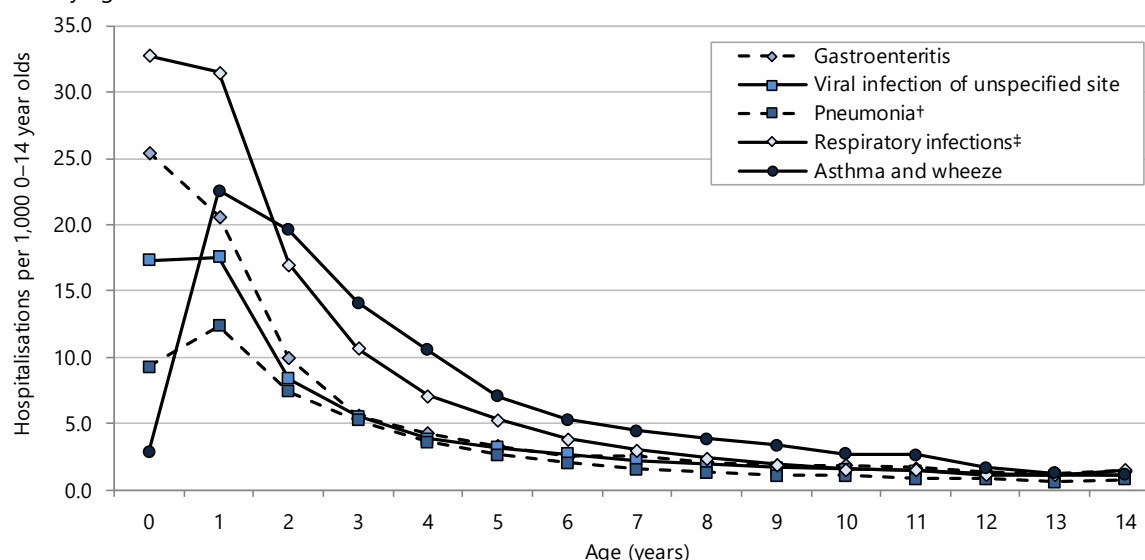


Numerator: National Minimum Dataset (neonates removed); Denominator: Statistics NZ estimated population; Medical conditions acute and arranged hospitalisations; Injuries excludes ED and waiting list cases; Ethnicity is level 1 prioritised

From 2011 to 2015 the most common primary diagnoses for hospitalisations for medical conditions with a social gradient were respiratory and communicable diseases such as asthma, bronchiolitis and gastroenteritis. Almost half (49.2%) of hospitalisations for injury with a social gradient resulted from falls and a further quarter (25.8%) resulted from inanimate mechanical forces (e.g. struck by, caught between or contact with sharp items or machinery) (**Table 9**).

Hospitalisation rates for selected respiratory and communicable diseases with a social gradient were highest for the youngest children and declined steeply with increasing age (**Figure 33**).

Figure 33. Hospitalisations for selected respiratory and communicable diseases with a social gradient in 0–14 year olds, by age, New Zealand 2010–2015



Numerator: National Minimum Dataset (acute and arranged admissions; neonates removed); Denominator: Statistics NZ Estimated Resident Population; + includes bacteria, non-viral, and viral pneumonia; # includes acute upper and lower respiratory infections (including croup, laryngitis, tracheitis, epiglottitis)

Table 9. Hospitalisations for select respiratory and communicable diseases with a social gradient in 0–14 year olds (excluding neonates) by primary diagnosis, New Zealand 2010–2015

Hospitalisations for conditions with a social gradient in 0–14 year olds				
Primary diagnosis	2011–2015 (n)	Annual average	Rate per 1,000 0–14 year olds	%
Medical conditions				
Respiratory diseases				
Asthma and wheeze	31,836	6,367.2	7.01	15.4
Acute respiratory infections*	30,965	6,193.0	6.81	15.0
Acute bronchiolitis	29,643	5,928.6	6.52	14.3
Other respiratory	23,101	4,620.2	5.08	11.2
Communicable and infectious diseases				
Gastroenteritis	26,243	5,248.6	5.78	12.7
Viral infection of unspecified site	21,593	4,318.6	4.75	10.4
Other communicable and infectious diseases	26,521	5,304.2	5.84	12.8
Other conditions	16,835	3,367.0	3.71	8.1
Total	206,737	41,347.4	45.50	100.0
Injuries				
Falls	21,754	4,350.8	4.79	49.2
Mechanical forces: inanimate	11,431	2,286.2	2.52	25.8
Mechanical forces: animate	2,898	579.6	0.64	6.6
Thermal injury	2,014	402.8	0.44	4.6
Road traffic crash	1,963	392.6	0.43	4.4
Poisoning	1,736	347.2	0.38	3.9
Non-traffic land transport crash	2,262	452.4	0.50	5.1
Submersion	164	32.8	0.04	0.4
Total	44,222	8,844.4	9.73	100.0

Numerator: National Minimum Dataset (neonates removed); Denominator: Statistics NZ estimated population. * Acute respiratory infections includes upper and lower respiratory infections and excludes croup; Medical conditions acute and arranged hospitalisations; Injury excludes emergency department cases

There was statistically significant ethnic and gender-based disparity in hospitalisation rates for medical conditions and injuries with a social gradient. Between 2011 and 2015 hospitalisation rates for both medical conditions and injuries with a social gradient were higher for Māori and Pacific 0–14 year olds compared with European/Other children. Hospitalisation rates for conditions with a social gradient were slightly higher for male 0–14 year olds compared with female 0–14 year olds. Analysis by NZDep2013 confirmed the social gradient for the selected medical conditions and injuries (**Table 10**).

Table 10. Hospitalisations for conditions with a social gradient in 0–14 year olds (excluding neonates) by demographic factors New Zealand 2010–2015

Hospitalisations for conditions with a social gradient in 0–14 year olds									
Variable	2011–2015 (<i>n</i>)	Rate	Rate ratio	95% CI	Variable	2011–2015 (<i>n</i>)	Rate	Rate ratio	95% CI
Medical conditions									
NZDep2013 index of deprivation quintile					Prioritised ethnicity				
Deciles 1–2	23,039	26.17	1.00		Māori	64,193	55.10	1.65	1.64–1.67
Deciles 3–4	26,182	32.26	1.23	1.21–1.25	Pacific	38,851	88.60	2.66	2.63–2.69
Deciles 5–6	31,435	36.64	1.40	1.38–1.42	Asian/Indian	20,027	40.71	1.22	1.20–1.24
Deciles 7–8	45,278	48.00	1.83	1.81–1.86	MELAA	3,673	64.05	1.92	1.86–1.98
Deciles 9–10	79,649	75.82	2.90	2.86–2.94	European/Other	79,678	33.33	1.00	
Gender									
Female	90,563	40.90	1.00						
Male	116,174	49.87	1.22	1.21–1.23					
Injuries									
NZDep2013 index of deprivation quintile					Prioritised ethnicity				
Deciles 1–2	6,620	7.52	1.00		Māori	12,662	10.87	1.15	1.13–1.18
Deciles 3–4	6,569	8.09	1.08	1.04–1.11	Pacific	5,600	12.77	1.35	1.32–1.39
Deciles 5–6	7,125	8.31	1.10	1.07–1.14	Asian/Indian	2,734	5.56	0.59	0.57–0.61
Deciles 7–8	8,882	9.42	1.25	1.21–1.29	MELAA	544	9.49	1.01	0.92–1.10
Deciles 9–10	14,630	13.93	1.85	1.80–1.91	European/Other	22,535	9.43	1.00	
Gender									
Female	17,470	7.89	1.00						
Male	26,752	11.48	1.46	1.43–1.48					

Numerator: National Minimum Dataset (neonates removed); Denominator: Statistics NZ Estimated Resident Population. Note: Medical conditions: acute and arranged admissions; Injury: excludes emergency department cases and waiting list admissions; Rates are per 1,000 0–14 year olds; Rate ratios are unadjusted; Ethnicity is level 1 prioritised

ASSAULT, NEGLECT OR MALTREATMENT

Data from national mortality and morbidity collections are important for monitoring maltreatment of children by parents or other caregivers. Child maltreatment is a serious public health issue that is recognised internationally.^{19,20} Cases that are hospitalised are only the ‘tip of the iceberg’ and hospitalisation data alone will underestimate the prevalence of child maltreatment in the community.¹⁹ Other limitations of these data include undercounting of such injuries even in hospital and possible reporting bias with the diagnoses being more readily used for children perceived to be at risk.^{21,22} Despite these limitations, the use of de-identified data allows surveillance of the important and sensitive issue of child maltreatment while protecting the privacy of individual children.¹⁹

The following section reviews deaths and hospitalisations of New Zealand 0–14 year olds that involved injuries due to assault, neglect or maltreatment, using data from the National Minimum Dataset and the National Mortality Collection.

Data sources and methods

Indicators

Deaths from injuries arising from the assault, neglect, or maltreatment of 0–14 year olds
Hospitalisations for injuries arising from the assault, neglect, or maltreatment of 0–14 year olds

Data sources

Numerator: Deaths: National Mortality Collection
Hospitalisations: National Minimum Dataset
Denominator: NZ Statistics NZ Estimated Resident Population

Definitions

Deaths Deaths in 0–14 year olds with intentional injury as a cause of death
Hospitalisations Hospitalisations of 0–14 year olds with a primary diagnosis of injury and an intentional injury (assault) external cause code in any of the first 10 external cause codes.

Notes on interpretation

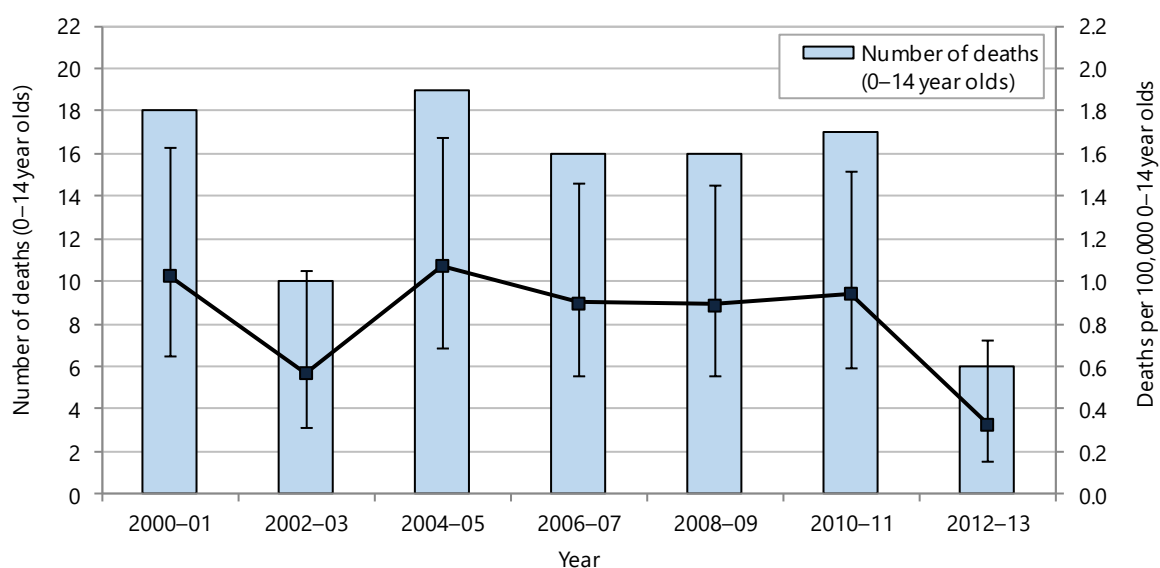
Note 1. As outlined in **Appendix 3** in order to ensure comparability over time, all hospitalisations with an emergency department specialty code on discharge were excluded, as were hospitalisations with a non-injury primary diagnosis
Note 2. Refer to **Appendix 6** for the codes included in this section

Deaths from assault, neglect or maltreatment

From 2000 to 2013 there were 102 children aged 0–14 years who died from injuries arising from assault, neglect, or maltreatment. The rate has remained stable at around nine deaths per million children per two-year period, with lower rates in 2002–03 and in 2012–13 (**Figure 34**).

Thirty-nine 0–14 year olds died as a result of assault, neglect or maltreatment in the five years from 2009–2013. Of these, 20 deaths were female and 15 were male children. Fourteen deaths occurred in the first year of life, 17 deaths were of 1–4 year olds and four of 5–14 year olds.

Figure 34. Deaths due to injuries arising from the assault, neglect, or maltreatment of 0–14 year olds, New Zealand 2000–2013

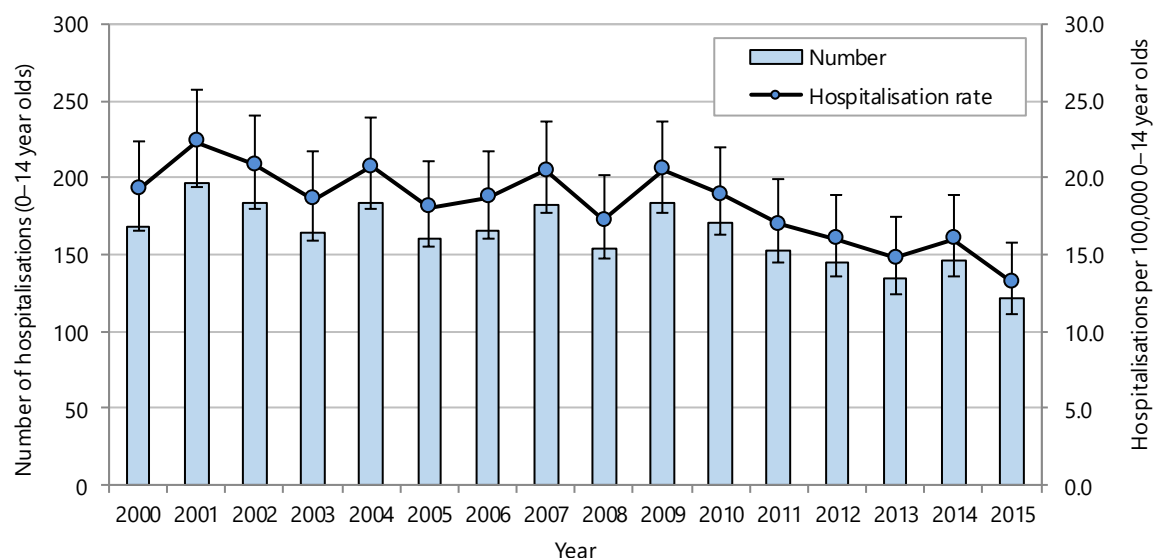


Numerator: National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population; Numbers are per two-year period; Error bars represent 95% confidence interval

Hospitalisations due to assault, neglect or maltreatment

There was an overall fall in both the number and rate of hospitalisations for injuries arising from assault, neglect or maltreatment of New Zealand children aged 0–14 years from 2000 to 2015 (**Figure 35**).

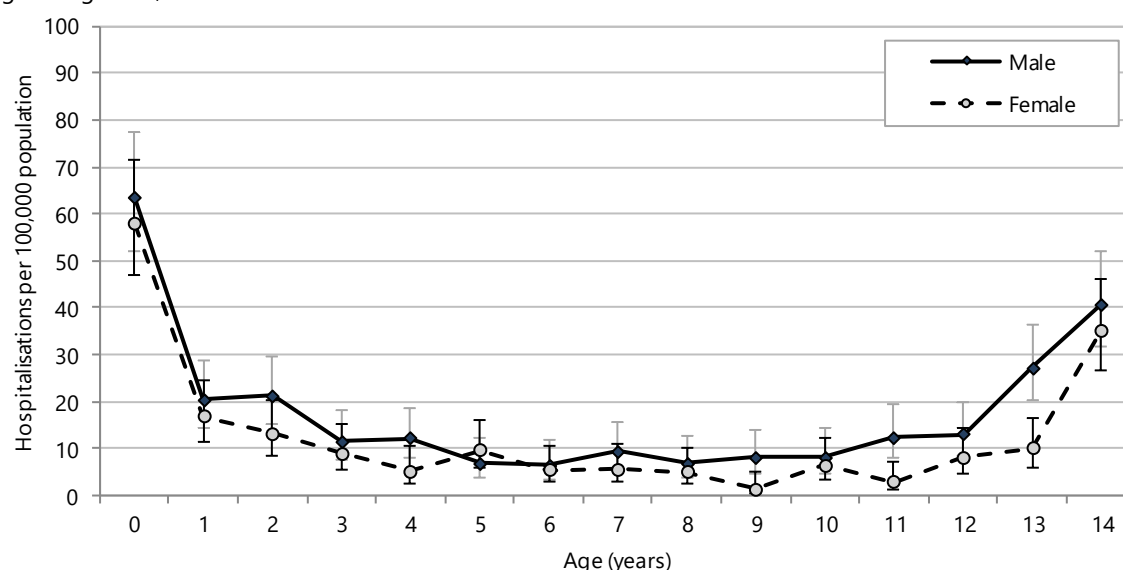
Figure 35. Hospitalisations due to injuries arising from the assault, neglect, or maltreatment of 0–14 year olds, New Zealand, 2000–2015



Numerator: National Minimum Dataset (emergency department cases excluded); Denominator: Statistics NZ Estimated Resident Population; Hospitalisation rate per 100,000 0–14 year olds

In the five years from 2011–2015 age-specific hospitalisation rates for injuries arising from assault, neglect or maltreatment were highest in the first year of life. At all ages male hospitalisation rates tended to be higher than female rates. (**Figure 36**).

Figure 36. Hospitalisations due to injuries arising from the assault, neglect, or maltreatment of 0–14 year olds, by age and gender, New Zealand 2011–2015



Numerator: National Minimum Dataset (emergency department cases excluded); Denominator: Statistics NZ Estimated Resident Population

There was a clear social gradient with increasing hospitalisation rates for children living in areas with higher scores on the NZDep2013 index of deprivation. Hospitalisation rates were eight times higher for children who lived in areas with the highest NZDep2013 scores compared with children living in areas with the lowest scores. There was also disparity by ethnicity, with hospitalisation rates for Māori and for Pacific children over twice the hospitalisation rates of European/Other children (**Table 11**).

Table 11. Hospitalisations for injuries arising from the assault, neglect, or maltreatment of 0–14 year olds, by demographic factors, New Zealand 2011–2015

Variable	2011–2015 (n)	Rate per 100,000 0–14 year olds	Rate ratio	95% CI
Assault, neglect, or maltreatment hospitalisations of 0–14 year olds				
New Zealand				
NZDep2013 index of deprivation quintile				
Deciles 1–2	31	3.52	1.00	
Deciles 3–4	58	7.15	2.03	1.31–3.14
Deciles 5–6	105	12.24	3.48	2.33–5.19
Deciles 7–8	192	20.36	5.78	3.96–8.45
Deciles 9–10	308	29.32	8.33	5.75–12.04
Prioritised ethnicity				
Māori	306	26.27	2.39	2.02–2.82
Pacific	100	22.81	2.07	1.65–2.61
Asian/Indian	27	5.49	0.50	0.34–0.74
European/Other	263	11.00	1.00	
Gender				
Female	283	12.78	1.00	
Male	416	17.86	1.40	1.20–1.62

Numerator: National Minimum Dataset (emergency department cases excluded); Denominator: Statistics NZ Estimated Resident Population; Rate ratios are unadjusted; Ethnicity is level 1 prioritised

The most common primary diagnoses for hospitalisations as a result of assault, neglect or maltreatment included traumatic subdural haemorrhage in 0–4 year olds, and head injuries at all ages 0–14 years (**Table 12**).

Table 12. Nature of injuries arising from injuries arising from the assault, neglect, or maltreatment of hospitalised 0–14 year olds, by age group, New Zealand 2011–2015

Primary diagnosis	2011–2015 (n)	Annual average	Rate per 100,000 population	Percentage
Assault, neglect, or maltreatment hospitalisations of 0–14 year olds				
0–4 year olds				
Superficial head injury	70	14	4.49	19.7
Traumatic subdural haemorrhage	66	13	4.23	18.6
Fracture skull or facial bones	18	4	1.15	5.1
Other head injuries	36	7	2.31	10.1
Injuries to thorax, abdomen, lower back, and pelvis	27	5	1.73	7.6
Injuries to upper limb	37	7	2.37	10.4
Fractured femur	12	2	0.77	3.4
Other injuries to lower limb	5	1	0.32	1.4
Maltreatment	56	11	3.59	15.8
Other injuries	28	6	1.80	7.9
Total	355	71	22.76	100.0
5–9 year olds				
Superficial head injury	15	3	1.00	15.5
Other head injuries	20	4	1.33	20.6
Injuries to abdomen, lower back, and pelvis	20	4	1.33	20.6
Limb injuries	16	3	1.07	16.5
Maltreatment	7	1	0.47	7.2
Other injuries	19	4	1.27	19.6
Total	97	19	6.47	100.0
10–14 year olds				
Fracture skull or facial bones	43	9	2.90	17.4
Concussion	33	7	2.22	13.4
Superficial head injury	22	4	1.48	8.9
Other head injuries	34	7	2.29	13.8
Injuries to thorax (including rib fractures)	7	1	0.47	2.8
Injuries to abdomen, lower back, and pelvis	15	3	1.01	6.1
Injuries to upper limb	37	7	2.49	15.0
Injuries to lower limb	21	4	1.42	8.5
Maltreatment	8	2	0.54	3.2
Other injuries	27	5	1.82	10.9
Total	247	49	16.65	100.0

Numerator: National Minimum Dataset (emergency department cases excluded); Denominator: Statistics NZ Estimated Resident Population; Rates are per 100,000 age-specific population

UNMET HEALTH NEED

Whether people can use health care services is an important determinant of population health.²³ In particular, in assessing whether services are appropriate and effective, three core elements to a health care system that should be measured from the perspective of patients are accessibility, timeliness or how quickly care is available, and quality of care.²⁴ Unmet health needs identified in the New Zealand Health Survey (NZHS) relate primarily to barriers to accessing primary care. The primary health care setting is a first point of health service contact for most people.²³

The NZHS reported that most 0–14 year olds (98%) in New Zealand are registered with a primary care provider. In the 2015 NZHS year, three-quarters of 0–14 year olds had attended a General Practitioner in the previous 12 months. There was little or no variation of attendance by sex, ethnic group or neighbourhood deprivation level. At the time of the 2014/15 NZHS the Ministry of Health was providing funding to encourage free GP consultations for 0–5 year olds.²⁵ The effects of the ‘zero fees for under-13s’ scheme which came into effect from July 2015 were not captured in these data.²⁶

The following sections use data from the New Zealand Health Survey 2012–2015 to examine unmet health needs for 0–14 year olds. The indicators in this section provide a measure with which to monitor progress toward ensuring access to good quality essential health-care services and access to safe, effective, and affordable essential medicines and vaccines for all (Sustainable Development Goal 3).²

Data sources and methods

Indicators

Unmet need for primary care for 0–14 year olds

Unmet need for general practitioner (GP) due to lack of transport for 0–14 year olds

Unmet need for after-hours due to cost for 0–14 year olds

Unfilled prescription due to cost among 0–14 year olds

Data source

New Zealand Health Survey (NZHS) 2012–2015 NZHS years

Definitions

Unmet need for primary health care: Experienced one or more of not seeing or having help from a GP, nurse or other health care worker in the past 12 months at their usual medical centre or after-hours services because of cost, transport, or being unable to arrange childcare for other children.

Unfilled prescription due to cost: Parent(s) received a prescription for their child but did not collect one or more prescription items because of cost in the past 12 months.

Notes on interpretation

Note 1. NZHS n= 4478–4,754 0–14 year olds per survey

Note 2. The NZ Health Survey utilised adjusted rate ratios to account for the potential influence of other demographic factors when undertaking demographic comparisons. Gender comparisons are adjusted for age, ethnic comparisons are adjusted for age and gender, and deprivation comparisons are adjusted for age, sex and ethnicity.²⁷

Note 3. Unadjusted percentages are used in data for individual factor analyses.

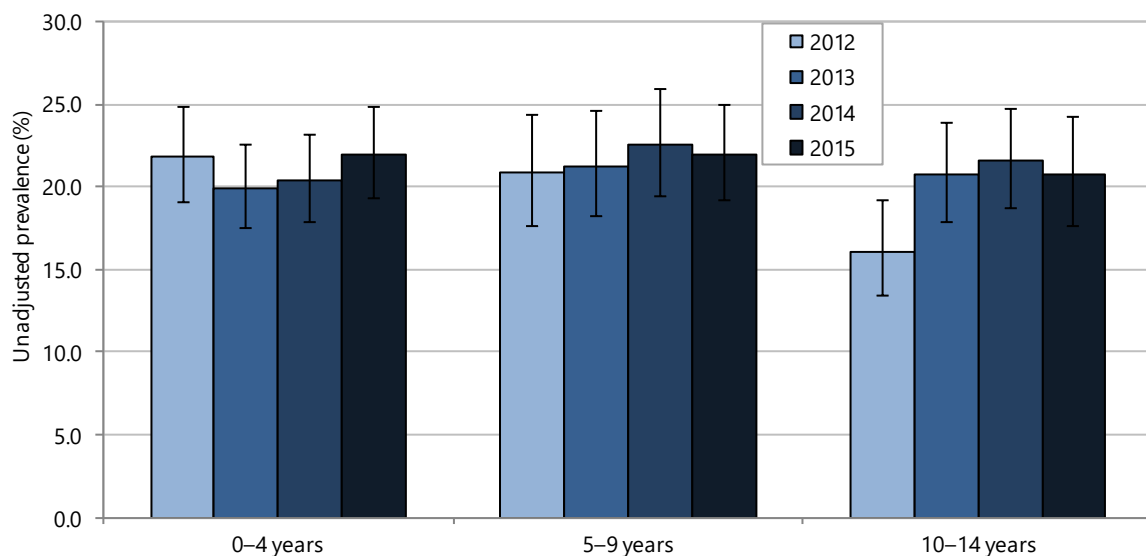
Note 4. The effects of the ‘zero fees for under-13s’ scheme which came into effect from July 2015 were not captured in these data. Under this scheme most general practices offer zero-fee visits for 0–12 year olds, 0–12 year olds no longer pay the \$5 charge for each item of prescription medicine, and district health boards are required to ensure that 0–12 year olds can access zero-fee after-hours care and prescription medicines within a maximum of one-hour travel time.²²

Unmet need for primary care

Around one in five 0–14 year olds had an unmet need for primary care in the 2012–2015 NZHS years. There was no significant change from year to year and the prevalence rates for 0–4 year olds, 5–9 year olds and 10–14 year olds were similar especially after 2013 (**Figure 37**, **Figure 38**).

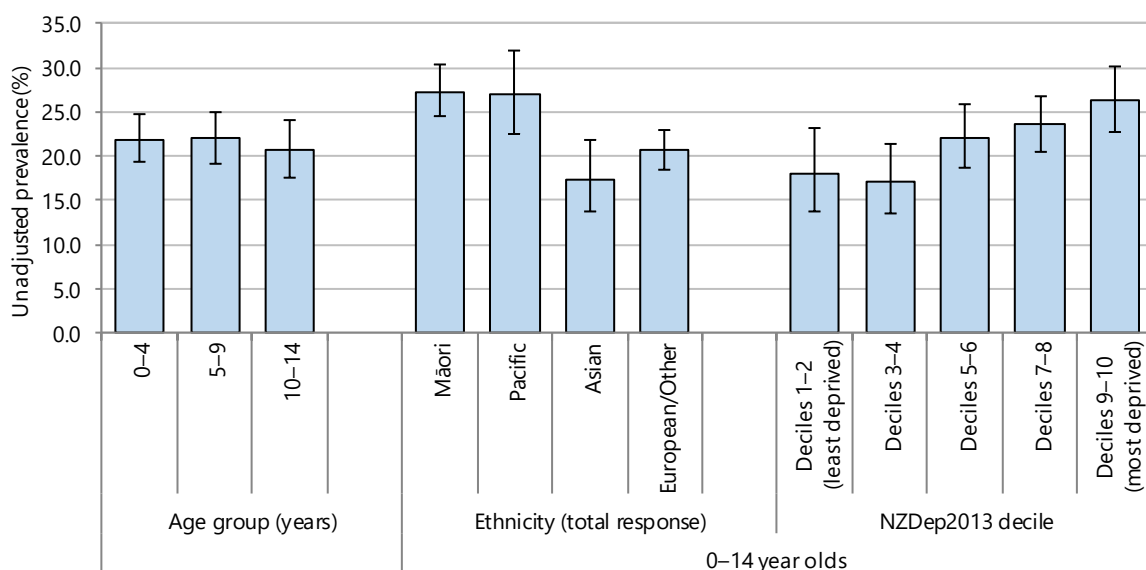
In 2015 it was estimated that 197,000 New Zealand 0–14 year olds experienced one or more types of unmet need for primary health care. There was disparity in unmet need with Māori and Pacific 0–14 year olds more likely than their European/Other peers, and 0–14 year olds living in areas with the highest NZDep2013 index of deprivation scores more likely than their peers living in areas with lower NZDep2013 scores to have one or more types of unmet need for primary health care (**Figure 38**). Although small, these disparities were statistically significant after adjusting for age and sex differences.

Figure 37. Unmet need for primary health care, 0–14 year olds, by age group and survey year, previous 12 months
NZ Health Surveys 2012–2015



Source: NZ Health Survey, 2012–2015 NHS years

Figure 38. Unmet need for primary health care, 0–14 year olds, by demographic factors, 2015 NZHS year



Source: NZ Health Survey, 2012–2015 NHS years

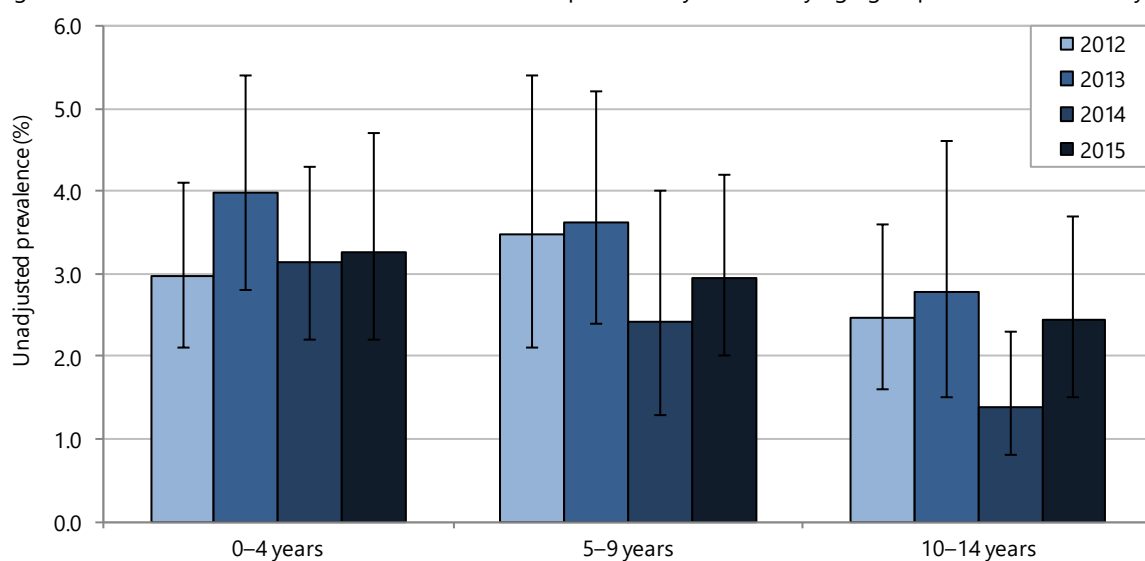
Unmet need for general practitioner visit due to lack of transport

In the 2012–2015 NZHS years between 3% and 4% of 0–14 year olds had a problem that needed medical attention but did not visit a general practitioner (GP) because the household had no transport to get there. Prevalence rates were similar for 0–4 year olds, 5–9 year olds and 10–14 year olds. Although there was some year-to-year variation there was no consistent pattern over time (**Figure 39**).

The prevalence of unmet need for a GP visit because of lack of transport in the 2015 NZHS year was highest for children living in areas with the highest NZDep2013 scores, and for Māori and for Pacific children (**Figure 40**). Overall an estimated 26,000 children (2.6%) in New Zealand experienced such need in the 2015 NZHS year

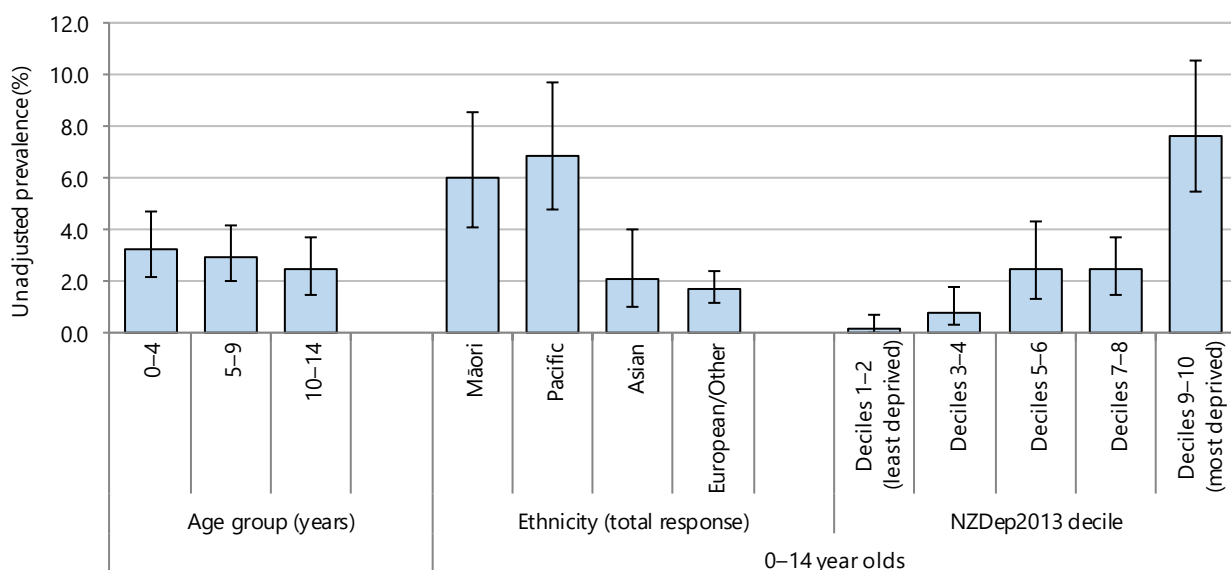
After adjustment for age and sex differences, 0–14 year olds living in areas with the highest NZDep2013 scores were almost 18 times more likely to experience lack of transport as a barrier to making a necessary GP visit than their peers living in areas with lowest NZDep2013 scores. Māori 0–14 year olds and Pacific 0–14 year olds were each around three times more likely than their non-Māori or non-Pacific peers to have an unmet need for a GP visit because they had no transport to get there (**Figure 40**).

Figure 39. Unmet need for GP visit due to lack of transport, 0–14 year olds, by age group, 2012–2015 NZHS years



Source: NZ Health Survey, 2012–2015 NHS years

Figure 40. Unmet need for GP visit due to lack of transport, 0–14 year olds, by demographic factors, NZHS 2015 year



Source: NZ Health Survey, 2012–2015 NHS years

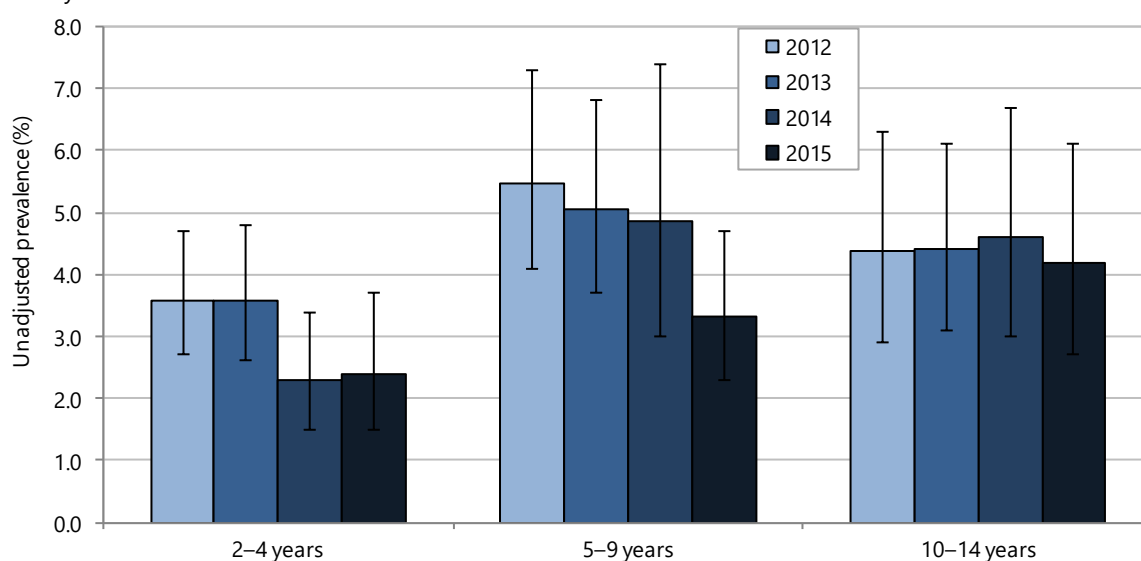
Unmet need for after-hours care due to cost

Between the 2012 and 2015 NZHS years there was a decline in the percentage of 0–4 year olds and 5–9 year olds who had a medical problem outside regular office hours but were not taken to an after-hours medical centre because of cost, with little year-to-year change for 10–14 year olds (**Figure 41**).

In the 2015 NZHS year it was estimated that 30,000 (3.1%) 0–14 year olds experienced cost as a barrier to necessary after-hours care. The prevalence of this barrier was highest for children living in areas with the highest NZDep2013 scores, and for Māori and for Pacific children. Prevalence increased with increasing age (**Figure 42**).

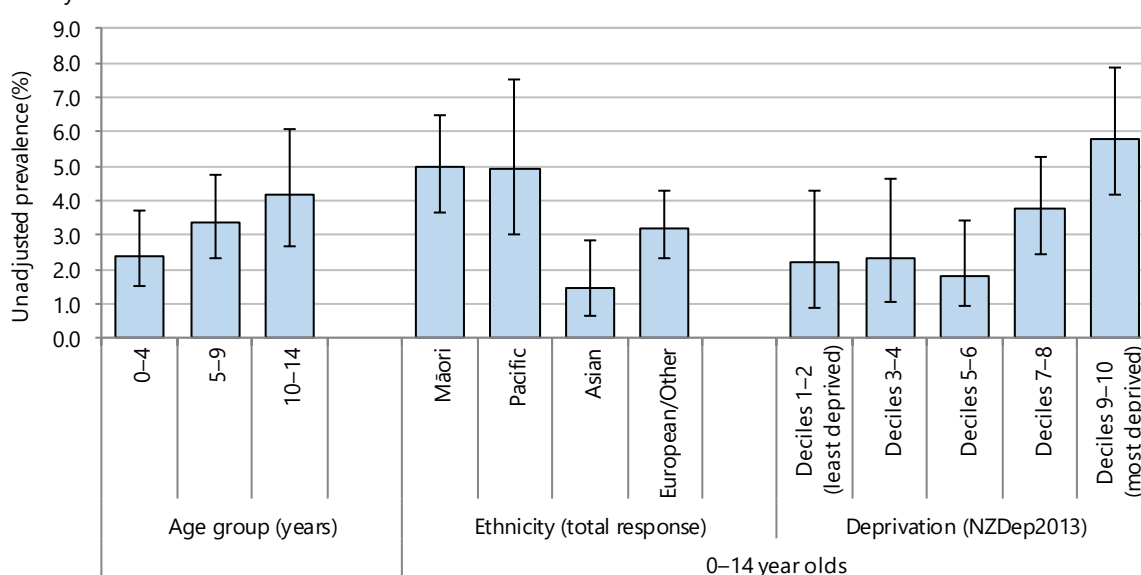
After adjustment for age and sex differences, 0–14 year olds living in areas with the highest NZDep2013 scores were three times more likely than their peers living in areas with the lowest NZDep2013 scores to experience cost as a barrier to after-hours medical care. Māori 0–14 year olds were 1.8 times and Pacific 0–14 year olds were 1.6 times more likely than their non-Māori non-Pacific peers to have had cost as a barrier to being taken to an after-hours medical centre for a medical problem (**Figure 42**).

Figure 41. Unmet need for after-hours medical care because of cost, 0–14 year olds, by age group, 2012–2015 NZHS years



Source: NZ Health Survey, 2012–2015 NHS years

Figure 42. Unmet need for after-hours medical care due to cost, 0–14 year olds, by demographic factors, 2015 NZHS year



Source: NZ Health Survey, 2012–2015 NHS years

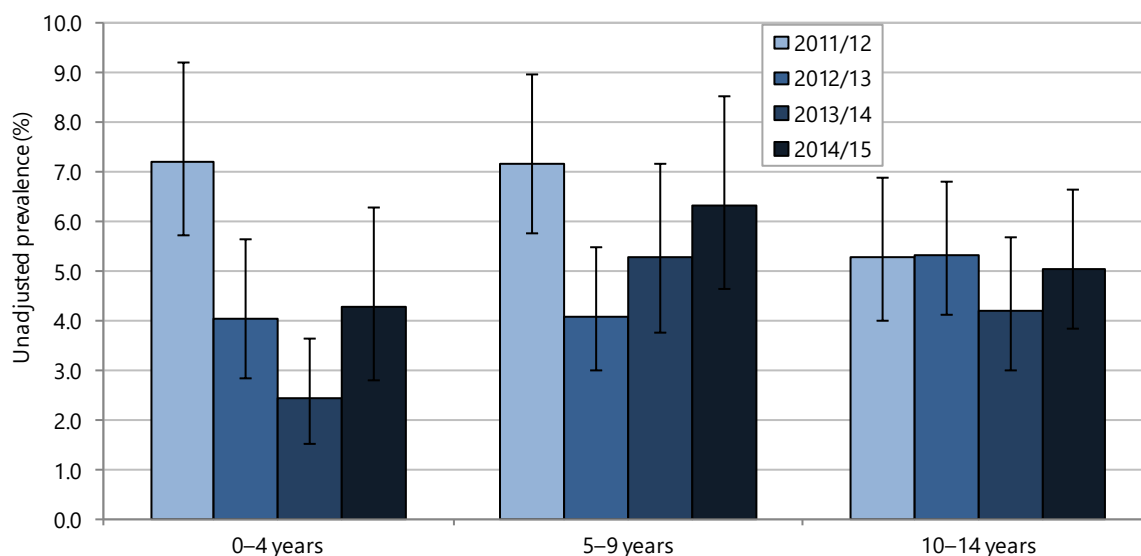
Unfilled prescription due to cost

Between the 2012 and 2015 NZHS years there was a significant fall in the percentage of 0–4 year olds who received a prescription but did not collect one or more items because of cost. Other age groups showed year-to-year variation but no consistent pattern over time (**Figure 43**).

Overall cost was a barrier to collecting prescribed items for around 48,000 (4.8%) 0–14 year olds. Unadjusted prevalence was highest for Pacific 0–14 year olds (14.1%), for 0–14 year olds living in areas with high NZDep2013 deprivation scores, and for Māori 0–14 year olds (**Figure 44**).

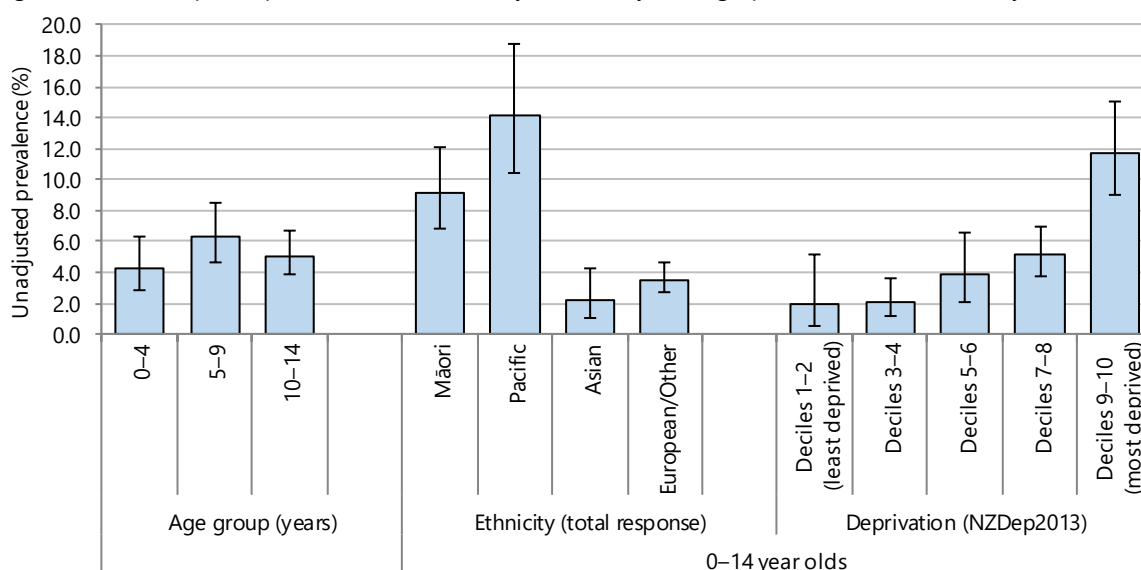
After adjustment for age and sex differences 0–14 year olds living in areas with the highest NZDep2013 scores were 5.2 times more likely than their peers living in areas with lowest NZDep2013 scores to miss out on prescription items because of cost. Māori 0–14 year olds were 2.4 times and Pacific 0–14 year olds were 3.6 times more likely than their non-Māori non-Pacific peers to experience cost as a barrier to getting prescription items (**Figure 44**).

Figure 43. Unfilled prescription due to cost, 0–14 year olds, by age group, 2012–2015 NZHS years



Source: NZ Health Survey, 2012–2015 NHS years

Figure 44. Unfilled prescription due to cost, 0–14 year olds, by demographic factors, 2015 NZHS year



Source: NZ Health Survey, 2012–2015 NHS years

HOUSING

Addressing quality and affordability of housing is arguably the most important action to mitigate the effects of child poverty in New Zealand and there is an urgent need to increase the housing stock, particularly for low-income families.¹ Housing was a primary concern of children consulted by the Expert Advisory Group on solutions to child poverty, with particular concerns about damp and cold houses affecting their health, high costs of heating, crowding, and the negative impact of insecure and unstable housing tenure.¹ Babies and pre-school children are particularly affected by poor housing as they are at home for most of the day.¹ The indicators in this chapter provide measures for monitoring progress toward ensuring access to adequate, safe and affordable housing for all people, a universal human right (Sustainable Development Goal 11).²

Housing tenure

Home ownership is a significant part of family wealth in New Zealand and enables one generation to pass resources on to the next generation.²⁸ In the early to mid-1990s, 72% of children lived in households that owned the home, whereas on average in 2014 to 2015 this proportion had fallen to 56%.⁵ The fall in home ownership in New Zealand between 1986 and 2013 disproportionately affected children, particularly Māori and Pacific children in one-parent households.²⁸ This is important for child health, because rental housing tends to be of poorer quality. Rates of mobility are higher for households who rent which can have negative consequences for children in relation to schooling and social interaction.²⁸ Most low income families cannot afford to buy their own home.¹ Child poverty rates show a clear gradient across different tenure types. Fifty-four percent of children living in Housing New Zealand Corporation (HNZC homes) in 2014–2015 lived in households with after housing cost (AHC) incomes below 60% of a fixed-line median, compared with 38% of children living in private rental accommodation and 13% in privately owned homes with a mortgage. Half of all children living in households with these low incomes lived in private rental accommodation and a further 17% lived in HNZC dwellings.⁵

The following section uses data from the New Zealand Census 1986–2013 to review home ownership for the total New Zealand population.

Data sources and methods

Indicators

Housing tenure
Landlord sector

Data sources

New Zealand Census 1986–2013 Census years via Statistics New Zealand²⁸

Definitions

Owned: People who owned their home, partly owned their home, or held it in a family trust.

Rented: People who did not own their home, did not have it in a family trust, and were making rent payments.

Private dwellings: Dwellings that accommodate a person or group of people and are not available to the public, such as houses, flats, and apartments.

Occupied dwellings: Dwellings that were occupied at midnight on census night, or at any time during the 12 hours following midnight on census night.

Landlord sector: The type of organisation or person from whom households rents private occupied dwellings.

Private sector landlord: Dwelling rented from private person, trust, or business.

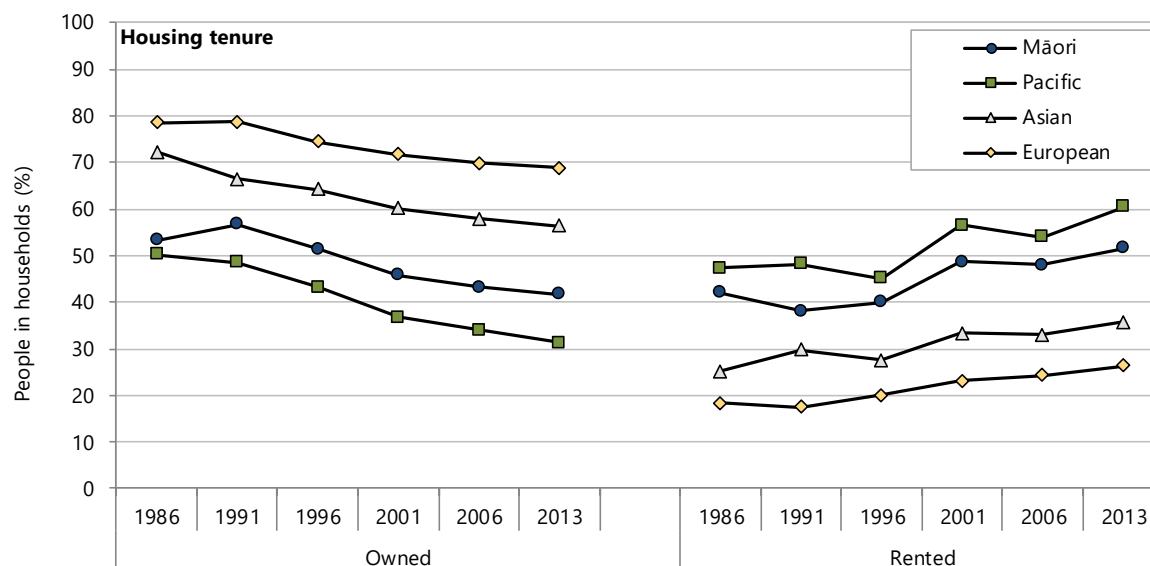
State sector landlord: Dwelling rented from Housing New Zealand Corporation, local authority or city council, or other state owned corporation or state-owned enterprise, or government department or ministry.

Note for interpretation

There were large undercounts of Housing New Zealand properties in the Census of 2001 and 2006.

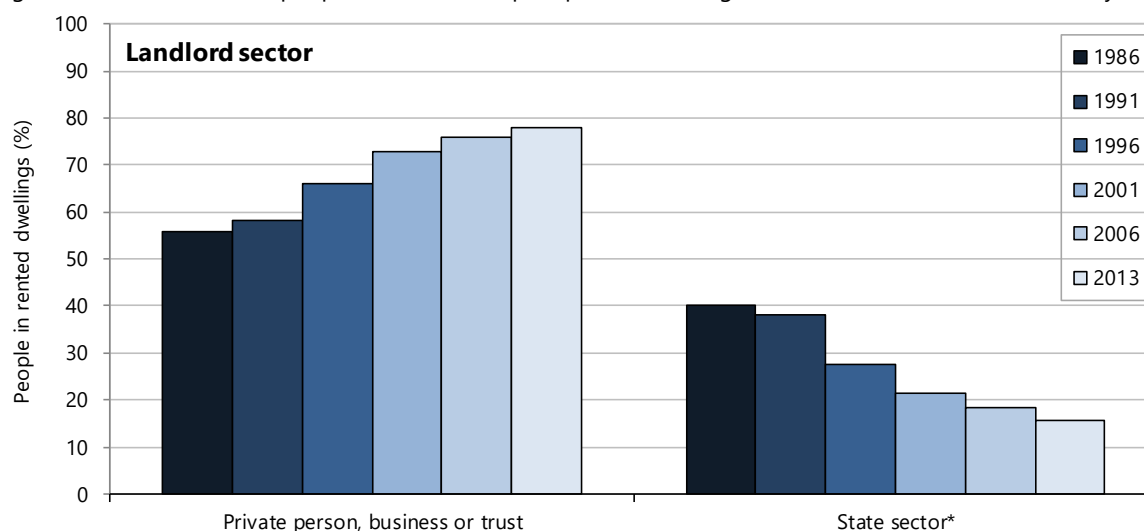
From 1986 to 2013 the proportion of people living in owner occupied dwellings fell with a rise in the proportion of people making rent payments for the dwellings they occupied. The fall in the proportion of people living in an owner-occupied dwelling and the rise in the proportion of people living in rented dwellings occurred at a faster rate for Māori and Pacific people than for European and Asian ethnic groups (**Figure 45**). The percentage of people living in rented accommodation who have a private sector landlord has increased at each Census while at the same time there has been a decrease in the percentage of people living in rented accommodation who occupy Housing New Zealand Corporation or other social sector housing (**Figure 46**).

Figure 45. Household tenure by ethnicity, people in households, New Zealand 1986–2013 Census years



Source: Statistics New Zealand. Owned= People who owned their home, partly owned their home, or held it in a family trust; Rented = People who did not own their home, did not have it in a family trust, and were making rent payments; Ethnicity is total response

Figure 46. Landlord sector, people in rented occupied private dwellings, New Zealand 1986–2013 Census years



Source: Statistics New Zealand²⁸. Rented dwelling =dwelling not owned by usual resident(s), who make rent payments; *Includes Housing New Zealand Corporation, other state-owned corporations/enterprises, government departments or ministries, local authorities; Excludes people who were away from home on Census night

Household affordability

The cost of housing is relatively high in New Zealand.¹ Meeting high housing costs relative to income can leave insufficient money to cover other basic needs such as food, clothing, transport, medical care and education, especially for low-income households.⁵ Children and young people spoke of the stress of having to move house, even in the middle of the night, when the household could not pay rent.¹ Households that spend more than 30% of income on owner-occupied or rental accommodation are said to have a high 'outgoings-to-income' ratio or OTI.⁵ The following section uses data from the Statistics New Zealand Household Economic Survey to review the proportion of households spending more than 30% of their income on housing costs.

Data source and methods

Indicator

Households spending more than 30% of their income on housing costs

Data source

New Zealand Household Economic Survey (NZHES) via Perry⁵

Definition

When a household spends more than 30% of its income on accommodation (rent, mortgage outgoings, rates) it is said to have a high 'outgoings-to-income' ratio (OTI)⁵

Notes on interpretation

Note 1. NZHES n=2,800–3,500 households per survey.

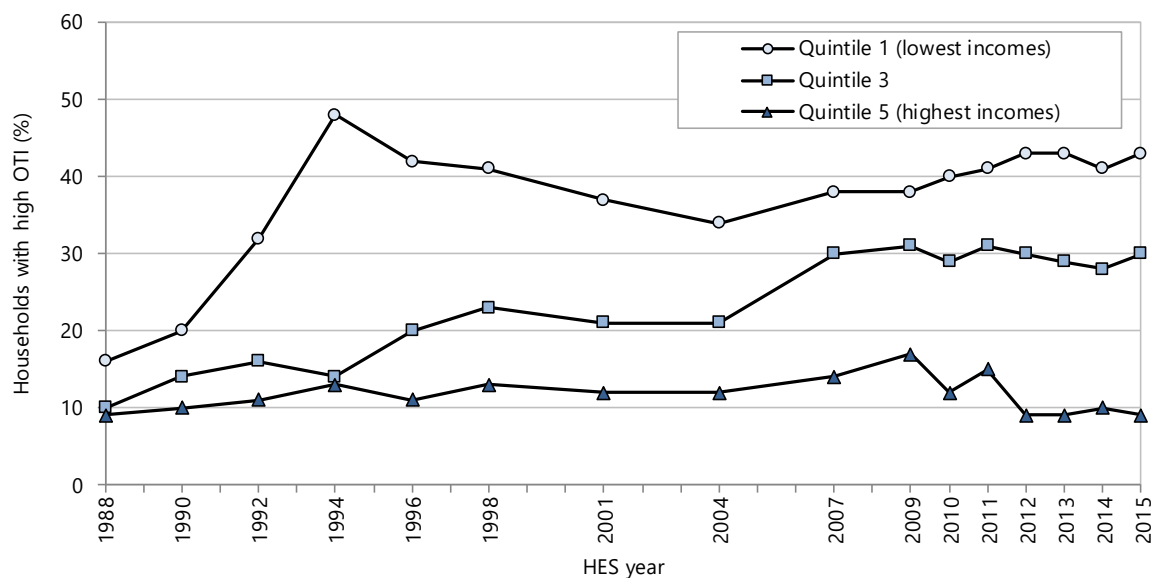
Note 2. Housing costs include all mortgage outgoings (principal and interest) together with rent and rates for all household members. Repairs, maintenance and dwelling insurance are not included. Any housing-related cash assistance from the government is included in household income.⁵

Note 3. Variations in housing costs do not necessarily correspond to similar variations in housing quality. This is because many older individuals live in good accommodation with relatively low housing costs, for example, those living in mortgage-free homes, whereas many in an earlier part of the life cycle have a similar standard of accommodation but relatively high accommodation costs.⁵

Note 4. Following Perry⁵ this report adopts a common short-hand convention for describing NZHES years where the 2006/07 NZHES is described as the 2007 NZHES year.

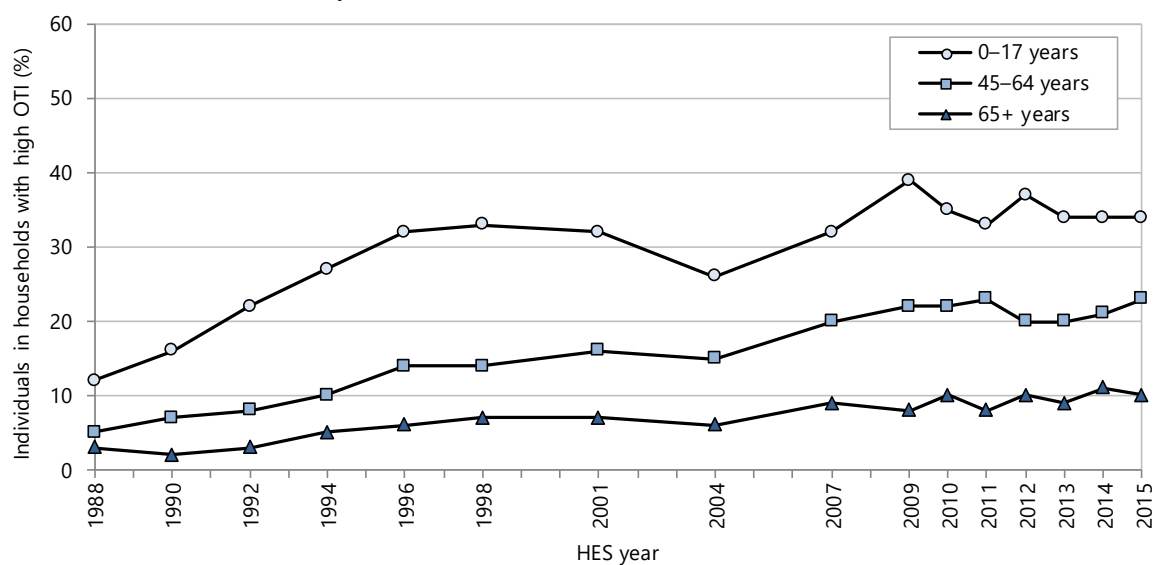
Low and middle-income New Zealand households are more likely than high income households to spend more than 30% of their income on housing costs (**Figure 47**). In 2015, 43% of those in the lowest income quintile (quintile 1) were spending more than 30% of their income on housing costs. In comparison, 30% of households in the middle income quintile and 9% of households in the highest income quintile (quintile 5) had such high outgoings to income ratios (OTI). The percentage of individuals living in households with high OTIs in 2015 are much higher than in the late 1980s for all age groups and increased almost threefold for 0–17 year olds (**Figure 48**). Almost all accommodation supplement recipients were paying more than 30% of their income on housing costs and over half of accommodation supplement recipients in rental accommodation were paying over 50% of their income on housing costs (**Table 13**).

Figure 47. Households spending more than 30% of their income on housing costs by income quintile, New Zealand 1988–2015 NZHES years



Source: Statistics NZ Household Economic Survey (NZHES) via Perry (2016).⁵ OTI = outgoings-to-income ratio; High OTI ratio benchmark is 30% i.e. households spending more than 30% of unequivalised household disposable income on housing costs

Figure 48. Individuals in households spending more than 30% of their income on housing costs by age group, New Zealand 1988–2015 NZHES years



Source: New Zealand Household Economic Survey (NZHES) via Perry⁵

Table 13. Housing costs as a proportion of income, accommodation supplement recipients, by household type, New Zealand 2016 NZHES year

Household type	Group as % of those receiving accommodation supplement*	Housing costs as a proportion of income		
		>30%	>40%	>50%
All	100	92	69	44
Renters	66	94	76	52
Single adult	55	94	73	50
Two parent with dependent children	9	89	56	29
One parent with one child	14	89	67	42
One parent with 2+ children	14	88	64	34
NZ Superannuation/Veterans Pension	13	86	54	27

Source: Perry⁸, derived from Statistics New Zealand Household Economic Survey (NZHES). Categories are not mutually exclusive and thus do not sum to 100%

Household crowding

Household crowding is clearly linked with poorer health outcomes, particularly for children, and there is also some evidence for poorer mental health, educational and social outcomes.^{12,13} There is a strong relationship between household income and household crowding, with crowded households having lower average equivalised incomes than households that are not crowded.¹² Living in crowded households also means severely reduced personal space and privacy and increases the chances of relational stress. Crowding is an issue that particularly affects children; 75–80% of people in crowded or severely crowded households are in households with children.⁵ Children report concerns about lack of privacy, arguments and tensions that affect family relationships, and difficulty in doing homework when they live in a crowded house.¹ At the 2013 Census 85,578 (10.7%) children lived in households requiring one additional bedroom and 44,613 (5.1%) in households requiring two or more additional bedrooms.²⁹ Pacific, Māori and Asian children were significantly more likely than European children to live in a crowded house; almost 60% of Pacific children living in areas with the highest NZDep2013 scores (decile 10) lived in crowded households.²⁹

The following section uses New Zealand Household Economic Survey data from 2013–2015 to review household crowding in New Zealand.

Data sources and methods

Indicator

Household crowding

Data source

New Zealand Household Economic Survey (NZHES) via Perry⁸
NZ Census 2013

Definitions

Household crowding: Households which required one or more additional bedrooms using the Canadian National Occupancy Standard (CNOS).

Owned: People who owned their home, partly owned their home, or held it in a family trust.

Private rental: People who did not own their home, did not have it in a family trust, and were making rent payments to a private person, trust, or business.

Social housing: People who did not own their home, did not have it in a family trust, and were making rent payments to Housing New Zealand Corporation, local authority or city council, or other state-owned corporation or state-owned enterprise, or government department or ministry.

Note on interpretation

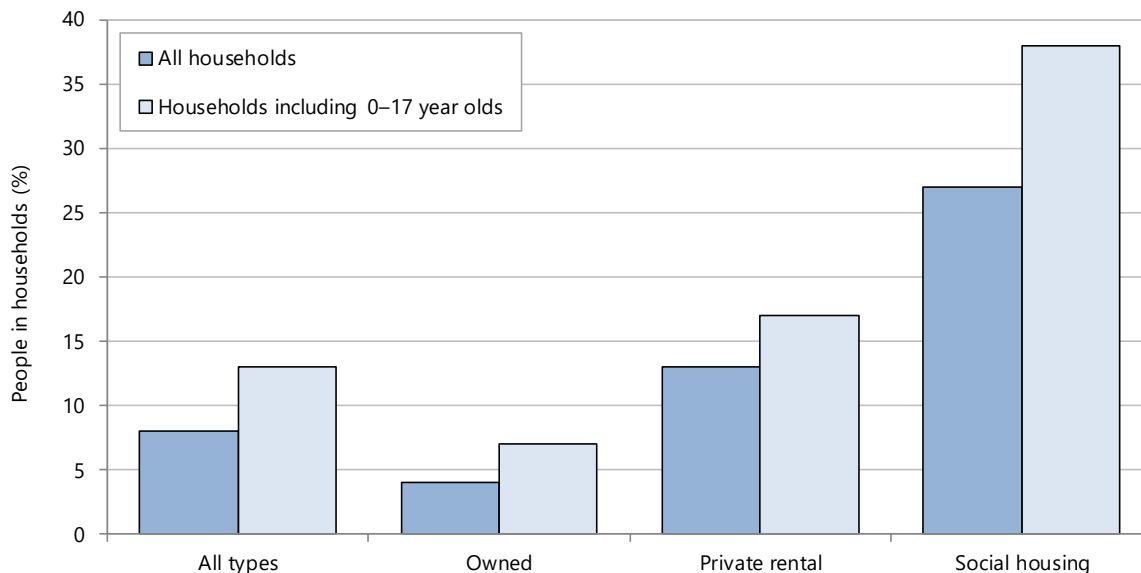
Note 1. NZHES n=2,800–3,500 households per survey.

Note 2. Using the Canadian National Occupancy Standard (CNOS) a crowded house requires one or more additional bedroom when using the following Canadian National Occupancy standard to set the bedroom requirements: no more than two people per bedroom; parents or couples share a bedroom; children aged under 5 years, either of the same or of the opposite sex, may reasonably share a bedroom; children aged under 18 years of the same sex may reasonably share a bedroom; a child aged 5–17 years should not share a bedroom with a child aged under 5 years of the opposite sex; single adults 18 years and over and any unpaired children require a separate bedroom.⁸

Note 3. NZHES data have been used to create the CNOS index. The NZHES data give a sense of the scale of the issue but are not sufficiently robust for a time series. The NZHES-based crowding rates are derived from a sample not from the total population and are somewhat lower than the Census rates.⁸

Compared with the general population, 0–17 year olds were more likely than persons in the general New Zealand population to live in crowded households. The highest rates of crowding were seen for 0–17 year olds living in Housing New Zealand Corporation (HCNZ) homes. Children aged 0–17 years living in HNZC and private rental homes were more likely to experience crowding than their peers in owner-occupied households (**Figure 49**).

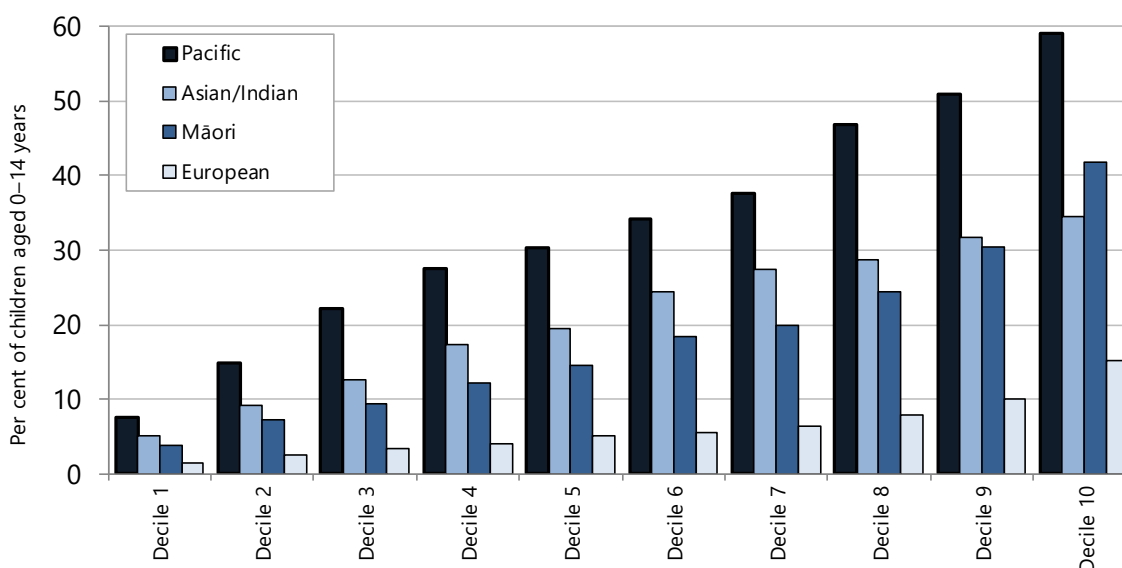
Figure 49. Household crowding by household tenure and composition, New Zealand NZHES 2013–2015



Source: New Zealand Household Economic Survey via Perry 2016.⁸ Owned = People who owned their home, partly owned their home, or held it in a family trust; Rented = People who did not own their home, did not have it in a family trust, and were making rent

In the 2013 Census there was disparity in household crowding. Pacific, Māori and Asian 0–14 year olds were significantly more likely than their European peers to live in a crowded house. This ethnic disparity was evident in each decile of NZDep2013 scores, and there was also a strong social gradient in household crowding with the proportion of children living in crowded households rising with each increasing score on the NZDep2013 index of deprivation (**Figure 50**).

Figure 50. Children aged 0–14 years living in crowded households by demographic factors 2013 Census



Source: Statistics New Zealand Census 2013; Note: Ethnicity is level 1 prioritised; decile is NZDep13

Household quality

The physical quality of housing is of public policy interest because of links with individual and family well-being and the positive health outcomes that accrue from investing in good quality housing.³⁰ The Expert Advisory Group on solutions to child poverty recommended that the government ensure all rental housing (both social and private sector) meets minimum health and safety standards, according to an agreed Warrant of Fitness, such as the Healthy Housing Index.¹ Information about housing quality can be used to develop effective housing policy and to evaluate the effectiveness of measures to improve New Zealand's housing stock.³⁰ Since 2013–2014 the Housing Economic Survey has asked respondents whether their accommodation had minor or major problems with dampness or mould or with heating it or keeping it warm in winter.⁸

The following section uses New Zealand Household Economic Survey (NZHES) data from 2013–2015 to review problems with dampness and heating issues in New Zealand homes.

Data sources and methods

Indicators

Major problem with damp or mould

Major problem with heating or keeping house warm in winter

Put up with feeling cold as a result of being forced to keep costs down to pay for other basics

Data source

New Zealand Household Economic Survey (NZHES) via Perry⁸

Definitions

Owned: People who owned their home, partly owned their home, or held it in a family trust.

Private rental: People who did not own their home, did not have it in a family trust, and were making rent payments to a private person, trust, or business.

Social housing: People who did not own their home, did not have it in a family trust, and were making rent payments to Housing New Zealand Corporation, local authority or city council, or other state-owned corporation or state-owned enterprise or government department or ministry.

Notes on interpretation

Note 1. NZHES n=2,800–3,500 households per survey.

Note 2. Values are averaged percentages from the 2013–2015 NZHES years.

Note 3. Although NZHES data give a sense of the scale of the issue they are not sufficiently robust for a time series.

Note 4. The 'put up with feeling cold as a result of being forced to keep costs down to pay for other basics' data refer to NZHES respondents who answered "a lot" in the last 12 months. The response options were "not at all", "a little", or "a lot".

Note 5. This section uses Material Wellbeing Index (MWI) quintiles. These are calculated by ranking all people by the MWI score of their households and then dividing them into five (quintiles) equal groups. The lowest quintile (Q1) is made up of the 20% of people in households with the lowest MWI scores. The MWI quintiles are population-based measures. Children are over-represented in the lowest quintile with 27–28% (300,000) in the lowest MWI quintile (Q1). For further details see Perry 2016⁸ and **Appendix 6**.

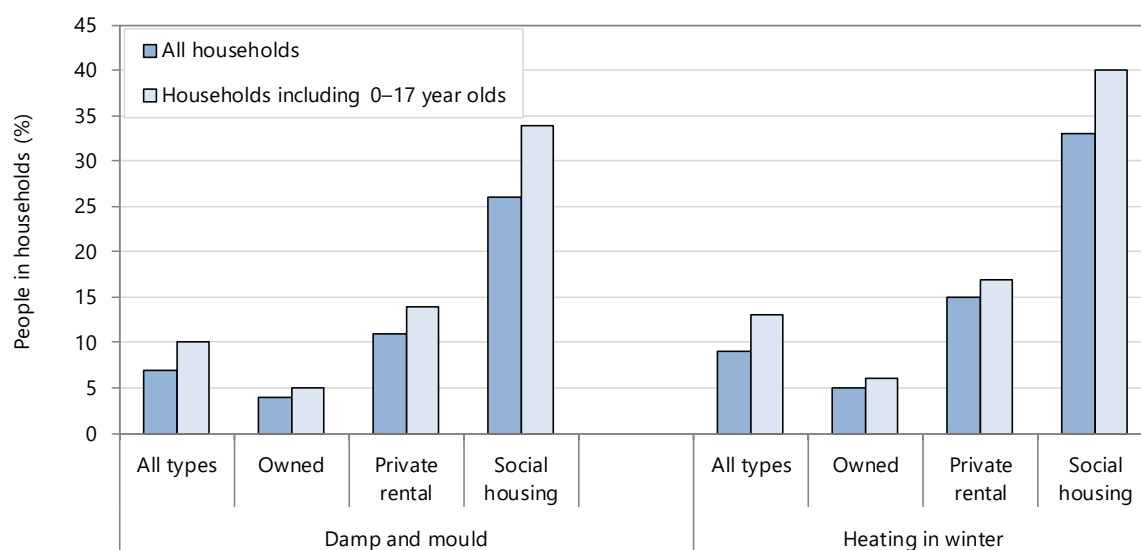
Note 6. If MWI deciles are used, while even the 10% of children in most severe hardship, do not suffer all or even most of the deprivations listed, children in the lowest MWI decile on average experiences a good number of lacks, whereas the vast majority of children do not experience any of them at all.

On average, in the 2013–2015 NZHES years, almost half of the households experiencing major problems with dampness, mould or heating lived in private rental housing, and one-fifth lived in social sector housing.⁸ The 0–17 year olds living in private rental accommodation were around three times more likely than their peers living in owner-occupied dwellings to live in homes that had major problems with dampness and mould or were hard to heat. The 0–17 year olds living in social sector housing were almost seven times more likely than their peers living in owner-occupied dwellings to experience these major housing quality issues (**Figure 51**).

Problems with dampness, mould, heating and keeping homes warm in winter were more prevalent in households with the lowest after housing costs (AHC) incomes. More of these households also reported frequently putting up with being cold because they were forced to keep costs down to pay for other basics (**Figure 52**). In the bottom AHC income quintile there were around 50% more people in working families with children than in beneficiary families with children (a ratio of around 60:40), so the numbers reporting being forced to put up with the cold were fairly similar for each group.⁸ These three housing quality issues were particularly concentrated in households experiencing multiple lacks across a range of essentials, as reflected in very low scores on the material wellbeing index (MWI) (**Figure 53**). Almost all children (86%) who were forced to put up with feeling cold a lot to keep household costs down lived in households in quintile 1, the quintile with the lowest MWI scores.⁸

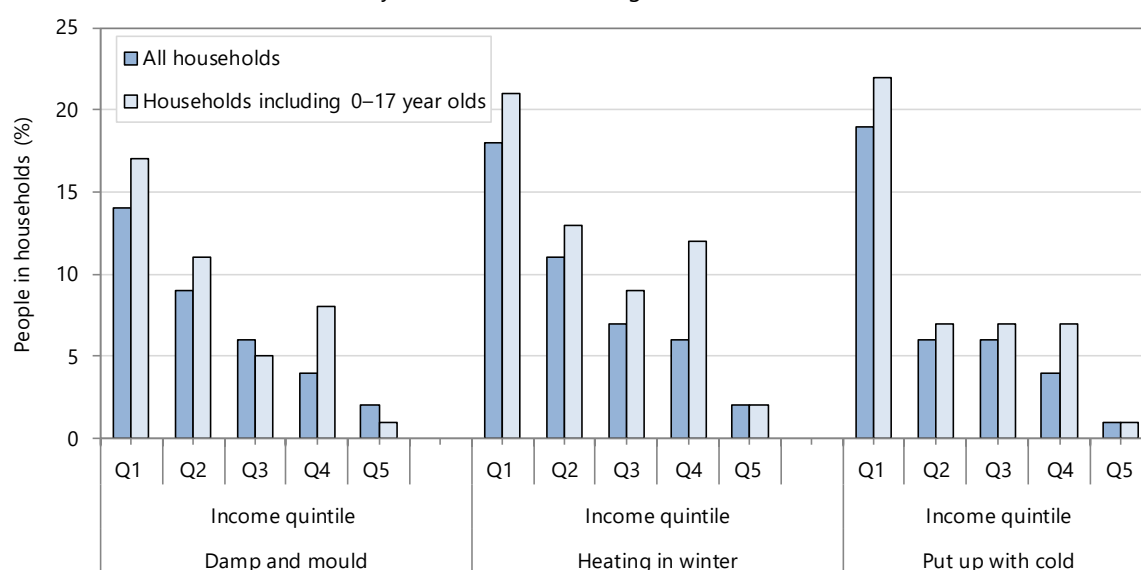
Major problems with housing quality and being forced to put up with feeling cold to save costs were also experienced by a higher percentage of 0–17 year olds than the general population. Major problems with dampness and mould were experienced by 34% of 0–17 year olds living in social housing compared with 14% in private rental and 5% in owner-occupied homes. These problems were experienced by 17% of 0–17 year olds in households in the lowest income quintile compared with 1% in the highest income quintile. Major difficulties heating and keeping homes warm in winter were experienced by 40% of 0–17 year olds living in social housing compared with 17% in private rental and 6% in owner-occupied homes. These difficulties were experienced by 21% of 0–17 year olds in households in the lowest income quintile compared with 2% in the highest income quintile. Frequently being forced to put up with being cold to keep costs down was experienced by 22% of 0–17 year olds in households in the lowest income quintile compared with 1% in the highest income quintile. Almost all children (86%) who were forced to put up with feeling cold a lot to keep household costs down lived in households with the highest levels of material hardship.

Figure 51. Housing quality problems, by household tenure and composition, people in households, New Zealand NZHES years 2013–2015 (average)



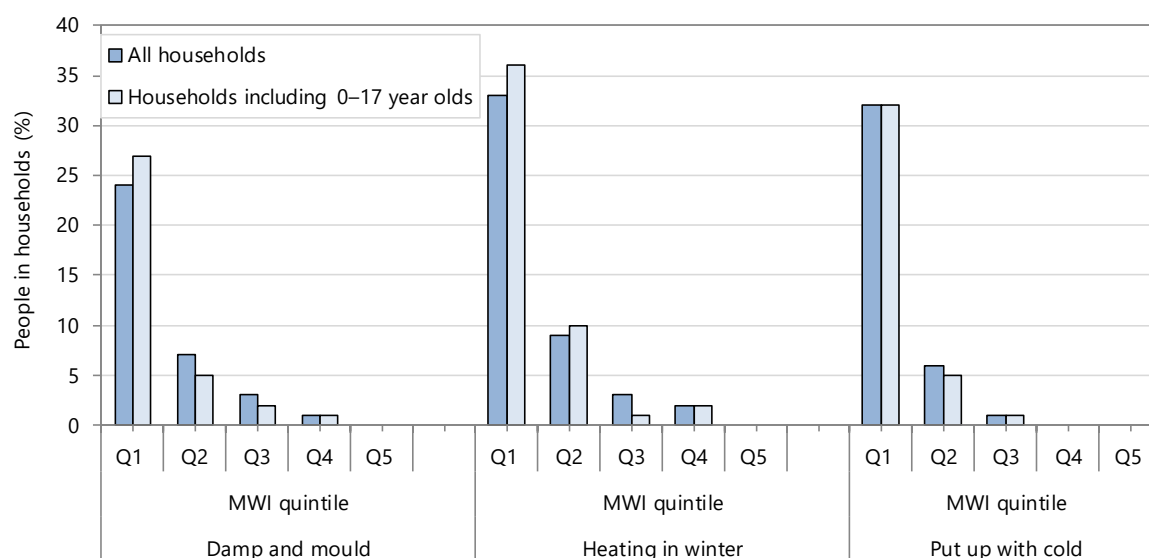
Source: NZ Housing Economic Survey via Perry 2016.⁸ Damp and mould = major problem with damp and mould in previous 12 months; Heating in winter = Major problem with heating or keeping home warm in winter

Figure 52. Housing quality problems, by household income quintile after housing costs and composition, people in households, New Zealand NZHES years 2013–2015 (average)



Source: NZ Housing Economic Survey via Perry 2016.⁸ Damp and mould = major problem with damp and mould in previous 12 months; Heating in winter = Major problem with heating or keeping home warm in winter; Put up with cold = Put up with feeling cold “a lot” as a result of being forced to keep costs down to pay for other basics; AHC = After housing costs; Q1 = lowest income quintile Q5 = highest income quintile

Figure 53. Housing quality problems, by household material wellbeing index quintile and composition, people in households, New Zealand NZHES years 2013–2015 (average)



Source: NZ Housing Economic Survey via Perry 2016.⁸ Damp and mould = major problem with damp and mould in previous 12 months; Heating in winter = Major problem with heating or keeping home warm in winter; Put up with cold = Put up with feeling cold “a lot” as a result of being forced to keep costs down to pay for other basics; MWI = Material wellbeing index; MWI are divided into equal quintiles (see DSM box); MWI Q1 households experience multiple lacks across a range of essential items, MWI Q5 households have no enforced lacks and enjoy multiple non-essential items⁸

EDUCATION

Secondary education matters for children and young people's continuing education, their employment, their health and for having a better quality of life.³¹ The socioeconomic context in which children and young people live has a significant impact on their educational performance.¹⁴ Measures of young people's academic success reported in New Zealand are usually presented in terms of the National Certificate of Educational Achievement (NCEA). A NCEA Level 2 qualification is the desired minimum qualification for school leavers, giving them opportunities for the future.³¹

The following section presents Ministry of Education data to summarise key measures for educational attainment of school leavers from 2009-2015.

Data Source and Methods

Indicators

School leavers with no qualifications
School leavers with NCEA Level 1 or higher
School leavers with NCEA Level 2 or higher
School leavers with a University Entrance Standard

Data Sources

Ministry of Education ENROL system <http://www.educationcounts.govt.nz>

Numerator: Number of students leaving school with no qualifications, NCEA Level 1 or higher, NCEA Level 2 or higher, or a University Entrance Standard

Denominator: Number of school leavers in a given year

Notes on Interpretation

Note 1. The National Certificate of Educational Achievement (NCEA) is part of the National Qualifications Framework (NZQF). There are three levels depending on the difficulty of the standards achieved. At each level, students must achieve a certain number of credits, with credits being able to be gained over more than one year.

Note 2. These data follow a new definition of school leavers from the Ministry of Education's ENROL system utilised from 2009 onwards so comparison with previous years is not possible.

Note 3.: Ethnicity is total response so individual students may appear in more than one ethnic group.

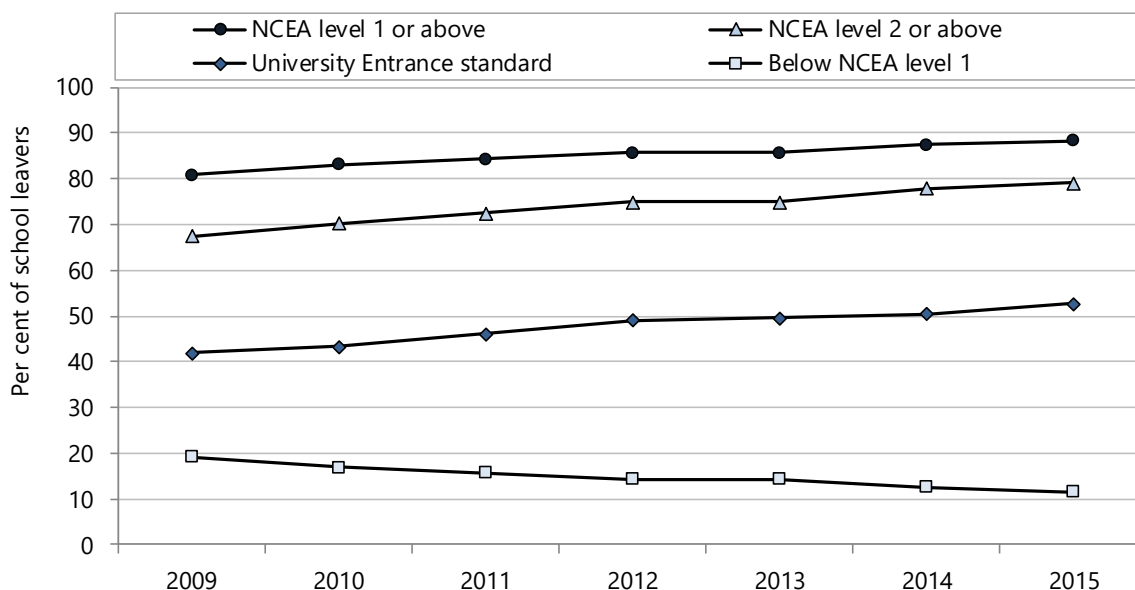
Note 4. Listed qualification levels include the NZQF as well as other equivalent qualifications that are non-NZQF.

Note 5. School socioeconomic decile: All schools are assigned a decile ranking based on the socioeconomic status of the areas they serve. These rankings are based on census data from families with school age children in the areas from which the school draws its students. Census variables used in the ranking procedure include equivalent household income, parent's occupation and educational qualifications, household crowding and income support payments. Schools are assigned a decile ranking, with decile 1 schools being the 10% of schools with the highest proportion of students from low socioeconomic communities and decile 10 schools being the 10% of schools with the lowest proportion of these students. Decile ratings are used by the Ministry of Education to allocate targeted funding, as well as for analytical purposes.

Educational attainment

New Zealand has continued to see an increasing percentage of students leaving school with qualifications. From 2009 to 2015, the proportion of school-leavers with NCEA level 1 rose from 80.9% in 2009 to 88.4% in 2015; with NCEA level 2 or above, the proportion rose from 67.5% in 2009 to 79.1% in 2015 and with University Entrance standard, from 41.9% in 2009 to 52.8% in 2015. Over the same period, the percentage of students leaving with a qualification below NCEA level 1 dropped from 19.1% to 11.6% (**Figure 54**).

Figure 54. Highest educational attainment of school leavers, New Zealand 2009–2015

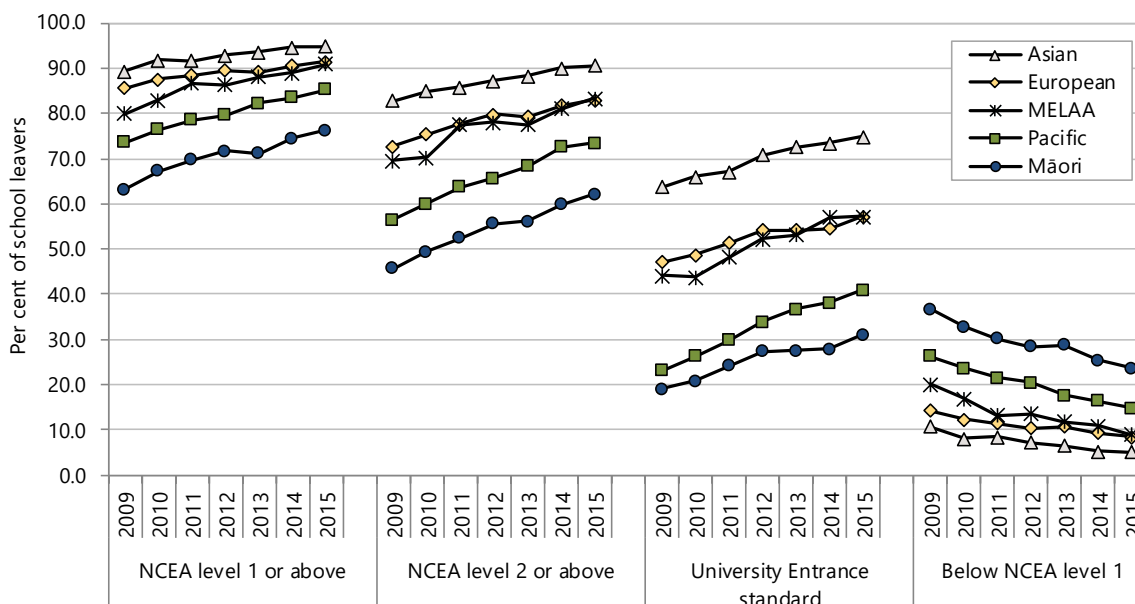


Source: Ministry of Education ENROL; UE standard corresponds to school leavers achieving a University Entrance or a level 3 qualification or higher

Attainment by ethnicity

Ethnic disparity continued to be evident in educational achievement among school leavers (**Figure 55**). For all three measures of attainment, NCEA level 1, NCEA level 2 and University Entrance, Māori and Pacific students were less likely than European or Asian students to leave with a qualification and more likely to leave school without one. However, the percentage of Māori students who attained NCEA level 2 or above rose from 45.7% in 2009 to 62.2% in 2015. Over this same time period, the percentage of Pacific students' achieving NCEA level 2 or above rose from 56.4% to 73.4% and for MELAA students, from 69.5% to 83.3%.

Figure 55. Educational attainment of school leavers, by ethnicity, New Zealand 2009–2015



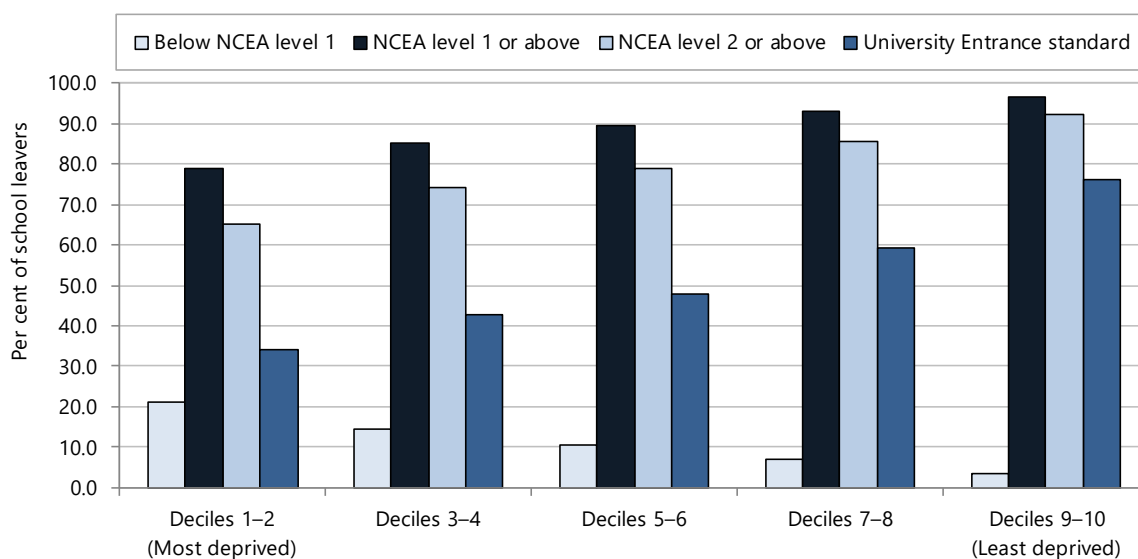
Source: Ministry of Education ENROL; Ethnicity is total response ethnicity, such that students been counted in each ethnic group they belong to; UE standard corresponds to school leavers achieving a University Entrance or a level 3 qualification or higher

Educational attainment by socioeconomic status

The deciles used by the Ministry of Education are for funding purposes. The intent of defining school deciles is to provide the basis for determining resource allocation so schools with children from areas of greater deprivation receive additional support. Decile 1 schools are the 10% of schools with the highest proportion of students from low-socio-economic communities. The criteria are noted in **Appendix 3** (Note that the description of the deciles is in the opposite direction to that used in the NZDep2013 index of deprivation used elsewhere in the Child Poverty Monitor.)

In 2015, the percentage of students attaining NCEA 1 or above, NCEA Level 2 and above and those attaining University standard increased with increasing decile. Conversely the percentage of those leaving school with attainment below NCEA level 1 decreased with increasing decile (**Figure 56**).

Figure 56. School leavers in school socioeconomic decile by qualification and deprivation quintile, New Zealand 2015



Source: Ministry of Education ENROL; Deprivation is based on school socioeconomic decile

SOCIAL AND ECONOMIC ENVIRONMENT

The health and social circumstances are affected by forces in the broader social and economic environment that are beyond the control of the individual child and family which may damage their health and threaten their wellbeing.¹⁰ The following section shows the changes over time in New Zealand's economic growth relative to average hourly income, and in employment and underutilisation. A rise in the unemployment rate is a key marker of an economic downturn in a community, with effects on a wide range of outcomes for all children and young people in a community, not only for those directly affected by job loss within their own household.³² Underutilisation is an indicator of insufficiencies in the volume of work.³³ The number of children reliant on benefit recipients is also examined - children in New Zealand households where the main income is from an income support benefit are more likely than other children to experience material deprivation and to live in income-poor households.³⁴

ECONOMIC GROWTH AND INDIVIDUAL EARNINGS

The gross domestic product (GDP) remains the official measure of economic growth in New Zealand.³⁵ Economic reforms in the decade from 1984–1994 were intended to enhance long-term economic performance. While the reforms successfully halted a decline in GDP per capita, they also contributed to large increases in income inequality and poverty, aggravated by the rising burden of housing costs on low-income households.^{14,36} In most OECD countries over the last three decades the share of national income paid to workers for their labour services has been declining while the owners of capital have been receiving an increasing share. Key drivers of this disparity include rapid technological change, globalisation and decreases in labour’s bargaining power.³⁷

This section compares growth in GDP with average hourly earnings using data from Statistics New Zealand.

Data sources and methods

Indicators

Real per capita gross domestic product (RPC-GDP)

Real ordinary time average hourly earnings (ROT-AHE)

Data sources

Numerator: Base series from Lattimore and Equab³⁸ and supporting web page 1975–1987Q1. Statistics NZ GDP (production) chain volume seasonally adjusted total 1987Q2–2016Q2

Denominator: Statistics New Zealand Estimated de facto population 1975–1990; Statistics New Zealand Estimated resident population 1991–2016

ROT-AHE: Statistics New Zealand Average hourly rates, all sectors EMP013AA 1980–1986; Average hourly earnings index ERN001AA was used to calculate back from EMP013AA data for 1975–1979; Statistics New Zealand Quarterly Employment Survey 1987–2016

Definitions

Real GDP is adjusted for changing prices and reflects the extent to which growth in the value of goods and services is due to increased production rather than an increase in the absolute value of the goods and services produced.

RPC-GDP divides the national GDP by the population.

Real AHE are adjusted for changing prices.

ROT-AHE represent the number of hours usually worked and the usual income in a reference week.

Notes on interpretation

Note 1. The production approach to GDP measures the total value of goods and services produced in New Zealand, after deducting the cost of goods and services used in the production process.³⁵

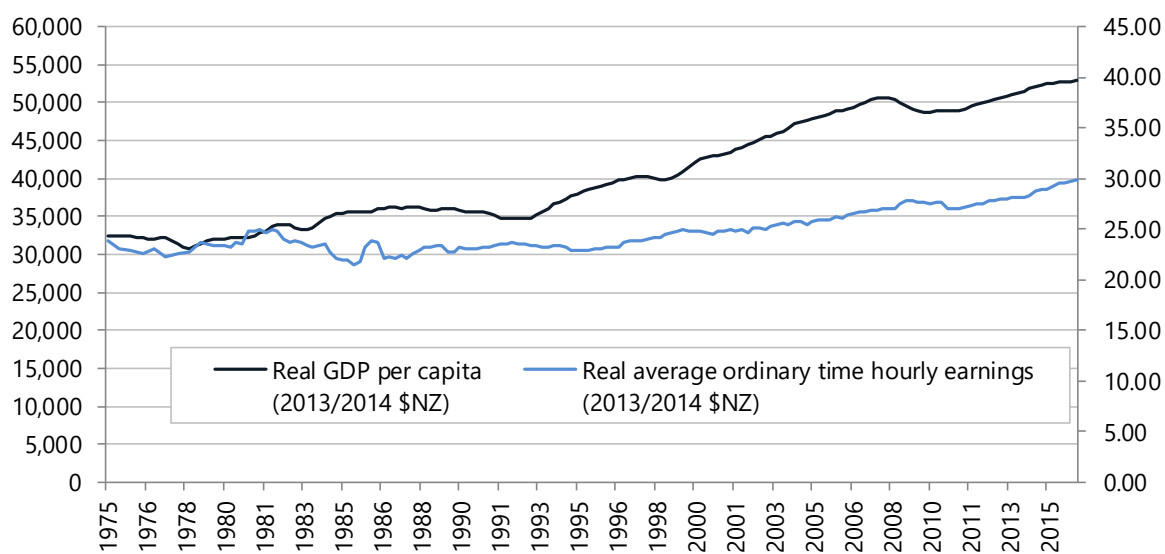
Note 2. GDP data were re-expressed in March 2014 prices using a constant ratio based on the ratio of the nominal and real values in the March 2014 quarter; AHE data were re-expressed in March 2014 prices using 2014 rebased Consumer Price Index.

Note 3. While the different data series used to develop a composite AHE data set may have had different underlying methodologies, this is not likely to have a significant effect on the overall pattern of quarterly change in AHE.

Note 4. The important comparison in the section on RPC-GDP and ROT-AHE is the quarterly percentage change in each variable rather than the absolute monetary value. The graph axes have been scaled to make it easier to compare the relative changes in each variable over time.

Although both gross domestic product (GDP) and average hourly earnings have increased in New Zealand since the 1975, the increase in GDP has been much more rapid than the benefits received by workers. In 2013/14 New Zealand dollars, real GDP per capita increased from \$32,498 in the March quarter of 1975, to \$53,022 in the June quarter of 2016, while real average ordinary time hourly earnings only increased from \$23.81 to \$29.94 during the same period (**Figure 57**).

Figure 57. Real gross domestic product per capita and real average ordinary time hourly earnings, New Zealand March quarter 1975 to June quarter 2016



Source: Lattimore & Eaquib³⁸ and Statistics New Zealand. Figures are expressed in March 2014 \$NZ

UNEMPLOYMENT AND UNDERUTILISATION

Unemployment increases the risk of poverty and consequent social exclusion.³⁹ A rise in the unemployment rate is a key marker of an economic downturn, effecting a wide range of outcomes for all children and young people in a community.³² Overall the unemployment rate in New Zealand has increased since 1987, an observation which is categorised as ‘negative change’ when the unemployment rate is used as a progress indicator.³⁹

Underutilisation is a concept that is supplementary to unemployment and reflects the total number of people in the labour force who are not being fully utilised, as well as some who are outside of the labour force who can be considered ‘potential labour supply’. Underutilisation measures replace the previous ‘jobless’ data.³³

The following section uses data from Statistic New Zealand’s Household Labour Force Survey to review unemployment from 1986–2016 and underutilisation from 2004–2016.

Data sources and methods

Indicators

Persons unemployed and unemployment rate
Persons underutilised and underutilisation rate

Data source

Statistics New Zealand Household Labour Force Survey (HLFS)

Definitions⁴⁰

Unemployed: All people in the working-age population who, during the reference week, were without a paid job, available for work, and had either actively sought work in the past four weeks or had a new job to start within the next four weeks.

Unemployment rate: Number of unemployed people expressed as a percentage of the labour force.

Working age population: Usually resident, non-institutionalised, civilian population of New Zealand aged 15 years and over.

Underutilised: Sum of those unemployed, underemployed, and in the potential labour force.

Underutilisation rate: Number of underutilised people expressed as a proportion of those in the extended labour force.

Underemployment: People who are in part-time employment who would like to, and are available to, work more hours.

Potential labour force: People who are not actively seeking work but are available and wanting a job, and people who are actively seeking but not currently available for work, but will be available in the next four weeks.

Extended labour force: people in the labour force, or in the potential labour force.

Notes on interpretation

Note 1. The estimates from the HLFS were revised in March 2015 using 2013 Census data.

Note 2. Seasonal adjustment removes the seasonal component present when dealing with quarterly data and makes the underlying behaviour of the series more apparent.

Note 3. A redesigned HLFS was implemented from the June 2016 quarter and will enable more accurate reporting of underutilisation statistics in line with International Labour Organisation recommendations.

Note 4. Underutilisation measures in the HLFS replace previously produced ‘jobless’ data.

The seasonally adjusted unemployment rate has remained under 6% since June 2014. Looking back over the past 30 years the unemployment rate peaked at 11% in 1992 and at 8% in 1998, fell to a low of 4% in 2007 before peaking at 7% in 2012. In June 2016 there were 131,000 New Zealanders who were officially unemployed (5%) (**Figure 58**).

Figure 58. Seasonally adjusted quarterly unemployment numbers and rates, New Zealand March 1986 to June 2016

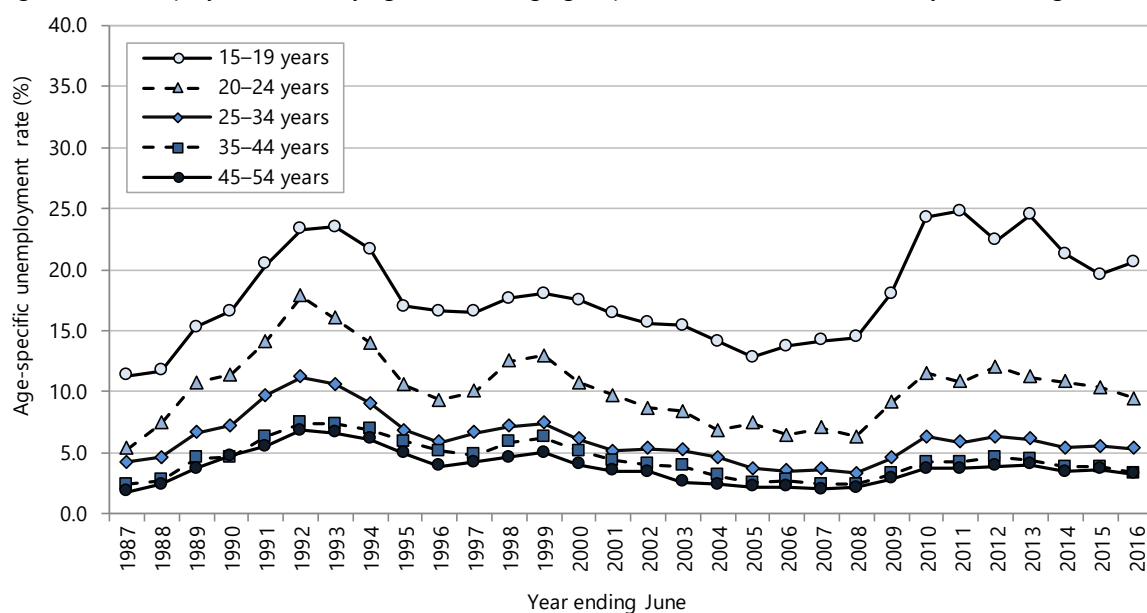


Source: Statistics New Zealand, Household Labour Force Survey. Rates have been seasonally adjusted; All previously published figures are subject to revision when the seasonal adjustment program is run each quarter; Unemployment rate* = number of people unemployed as a percentage of the labour force

Unemployment rates differ by age, with the highest rates consistently observed for young people aged 15–19 years. Unemployment rates in this age group rose more steeply and peaked much higher than for other age groups from 2008–2011 and have remained much higher. In June 2016 the unemployment rate for young people aged 15–19 years was 21% compared with rates of around 3% for adults aged over 34 years (**Figure 59**). This figure would include some young people in education and training.

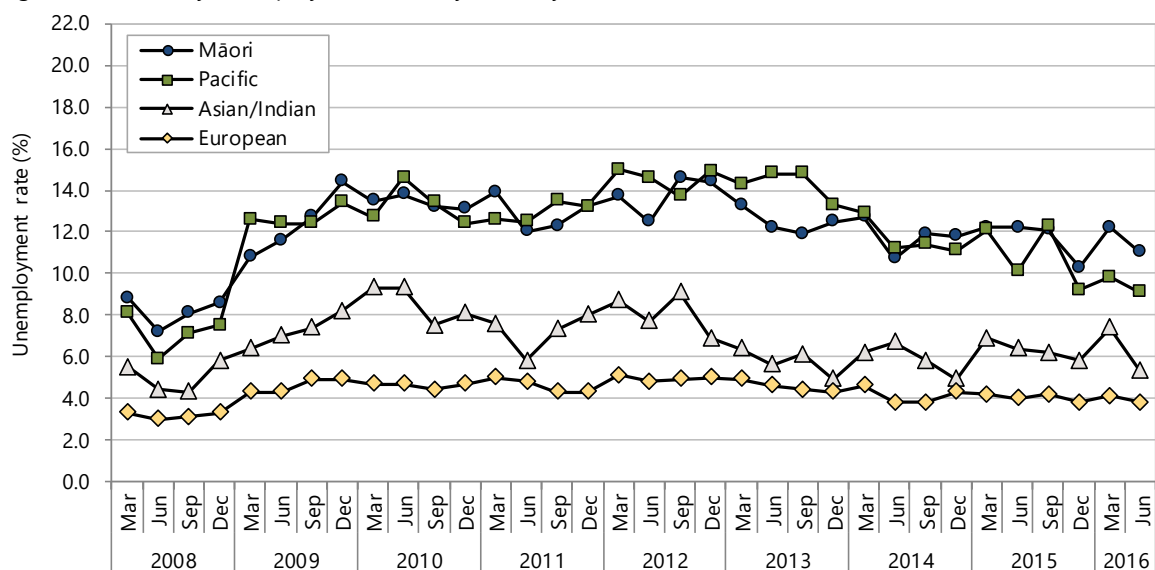
Following the 2008 global financial crisis, unemployment rates for Māori and Pacific New Zealanders rose more steeply than unemployment rates for other New Zealanders and have remained higher than 2008 rates for these ethnic groups. In June 2016 the unemployment rate for Māori was 11.0% and for Pacific peoples 9.1% compared with 3.8% for Europeans (**Figure 60**).

Figure 59. Unemployment rates by age (selected age groups), New Zealand 1987–2016 (years ending June)



Source: Statistics New Zealand, Household Labour Force Survey; Rates for 55–64 year olds not included as these were very similar to and overlapping with 45–54 year olds

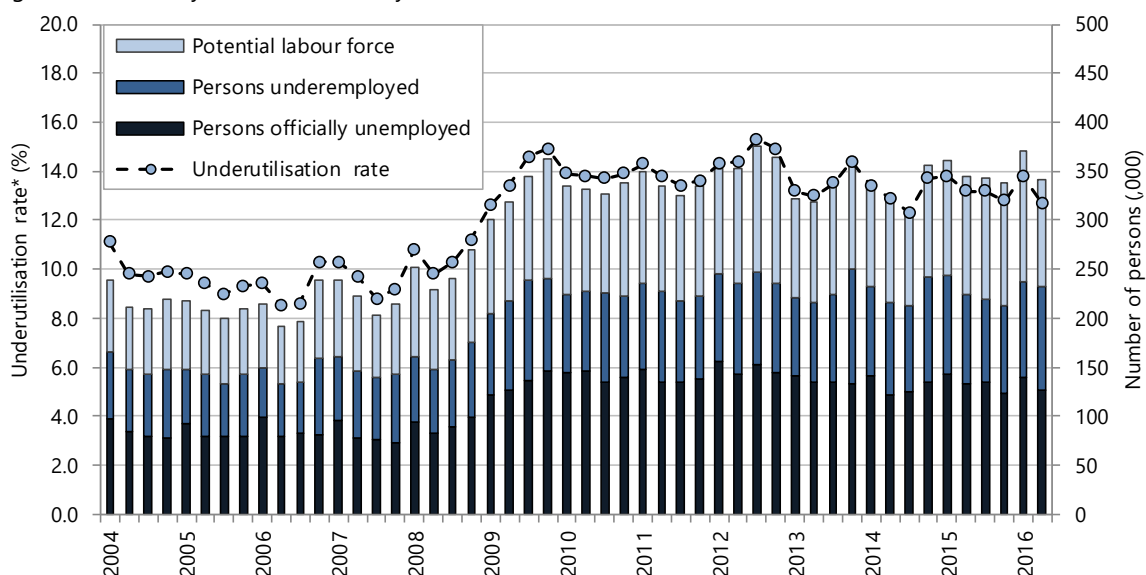
Figure 60. Quarterly unemployment rates by ethnicity, New Zealand March 2008–2015



Source: Statistics New Zealand Household Labour Force Survey; Ethnicity is total response

The underutilisation rate increased following the 2008 global financial crisis with increases in the number of persons employed and seeking additional hours. There was also an increase in the number of persons unemployed and either actively seeking work but not available in the next week or available but not actively seeking work (**Figure 61**). Analysis by Statistics New Zealand showed that from 2004–2016 unemployment and underutilisation data followed similar patterns over time with the underutilisation rate much higher than the unemployment rate. In the June 2016 quarter underutilisation and unemployment rates followed the same pattern across the ethnic groups; Māori and Pacific people had the highest rates of all ethnic groups. The highest underutilisation rates in the June 2016 quarter were observed for 15–19 year olds (over 45%). These 15–19 and 20–24 year old age groups had both the highest numbers and rates of underemployment, unemployment, potential labour force, and underutilisation.⁴¹

Figure 61. Quarterly underutilisation by extended labour force status, New Zealand March 2004 to June 2016



Source: Statistics New Zealand, Household Labour Force Survey; Underutilisation rate* (%) = Number of underutilised persons as a percentage of the extended labour force; See DSM box for further definitions

CHILDREN RELIANT ON RECIPIENTS OF A BENEFIT

Children in New Zealand households where the main income is from an income support benefit are more likely than other children to experience material deprivation and to live in income-poor households.³⁴ Cuts in the real value of most welfare benefits was a contributor to the dramatic increase in child poverty rates in the early 1990s. Through decisions about issues such as access to and value of income support benefits, Government policies can have a substantial effect on household incomes for families dependent on benefit payments.¹

The following section uses data from the Ministry of Social Development to review the proportion of children who are reliant on a recipient of a benefit.

Data sources and methods

Indicator

Children aged 0–17 years reliant on a recipient of a benefit

Data sources

Numerator: SWIFTT Database: Number of children aged 0–17 years who were reliant on a recipient of a benefit

Denominator: Statistics NZ Estimated Resident Population as at 30 June each year

Notes on Interpretation

Note 1. The SWIFTT database provides information on the recipients of financial assistance through Work and Income.

Note 2. All figures refer to the number of children reliant on a recipient of a benefit at the end of June and provide no information on the number receiving assistance at other times of the year. Figures refer to the number of children not the number of benefit recipients; in a household with more than one child each will be included in the count.

Note 3. Welfare reform in July 2013 introduced three new benefits (Jobseeker Support, Sole Parent Support, and Supported Living Payment), which replaced many of the previously existing benefits, and changed the obligations to be met by recipients of a benefit. The welfare reform changes have been described at <https://www.msd.govt.nz/about-msd-and-our-work/work-programmes/welfare-reform/july-2013/>

Note 4. The benefits prior to the June 2013 reform are not directly comparable with the benefits as at June 2014.

Prior to 2014, "Other benefits" included: Domestic Purposes Benefit - Women Alone and Caring for Sick or Infirm, Emergency Benefit, Independent Youth Benefit, Unemployment Benefit Training, and Unemployment Benefit Training Hardship, Unemployment Benefit Student Hardship, Widows Benefit, NZ Superannuation, Veterans and Transitional Retirement Benefit. "Other Benefits" did not include Orphan's and Unsupported Child's Benefits, and Non-benefit assistance.

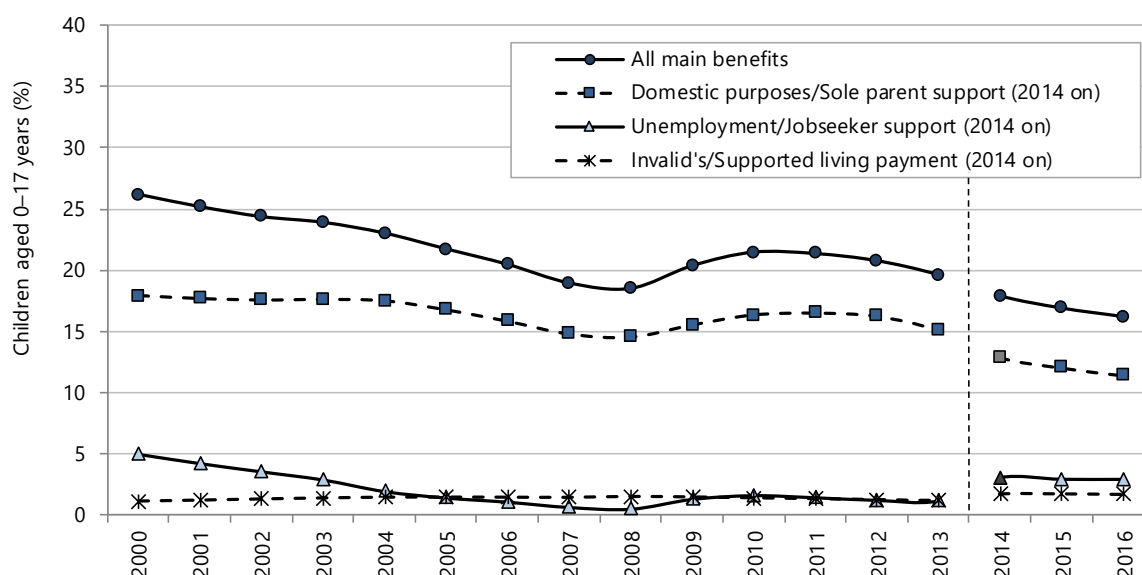
From 2014, "Other benefits" included: Emergency Benefit, Youth Payment, Young Parent Payment, Unemployment Benefit Student Hardship, NZ Superannuation, Veterans and Transitional Retirement Benefit.

Note 5. To be eligible for a benefit, clients must have insufficient income from all sources to support themselves and any dependents, and meet specific eligibility criteria. Information about current eligibility criteria for benefits can be found at <http://www.workandincome.govt.nz/eligibility/>

Patterns over time

The number and proportion of 0–17 year olds who were reliant on a recipient of a benefit declined from 271,463 (26.2%) in June 2000 to 178,193 (16.2%) in June 2016 (**Figure 62**). In June 2016 most of these children (125,573; 70.5%) were reliant on a recipient of sole parent support, with the remainder reliant on recipients of jobseeker support (32,047; 18.0%), supported living payments (18,210; 10.2%) or other benefits (2,363; 1.3%).

Figure 62. Children aged 0–17 years who were reliant on a recipient of a benefit, New Zealand as at end of June 2000–2016

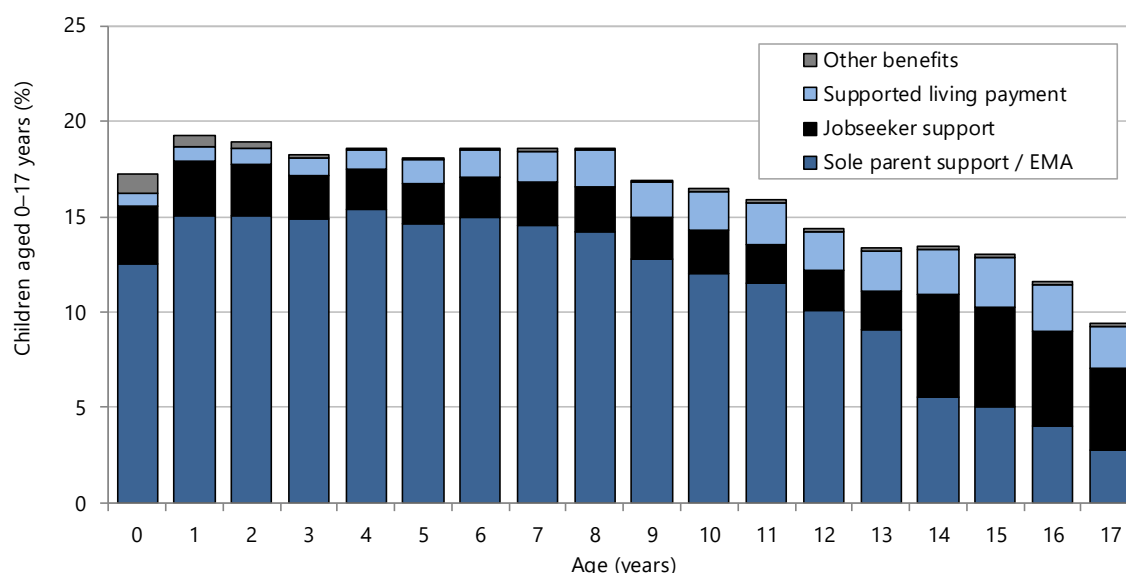


Numerator: MSD SWIFTT Database; Denominator: Statistics NZ Estimated Resident Population; Benefits prior to the June 2013 reform are not directly comparable with the benefits as at June 2014, see DSM box for details

Patterns by age

In June 2016 the percentage of children aged 1–17 years who were reliant on a recipient of a benefit fell with age, from almost 20% of children aged 1–2 years to less than 10% of children aged 17 years. The percentage of children reliant on a recipient of sole parent support declined steadily from around 15% of children aged 0–6 years to 12% of children aged 10 years, 5% of children aged 15 years and almost 3% of children aged 17 years. For 14–17 year olds the percentage of children reliant on a recipient of sole parent support was lower than the percentage of children reliant on recipients of jobseeker support (**Figure 63**).

Figure 63. 0–17 year olds who were reliant on a recipient of a benefit, by age and benefit type, New Zealand as at end of June 2016



Numerator: MSD SWIFTT Database; Denominator: Statistics NZ Estimated Resident Population; Benefits prior to the June 2013 reform are not directly comparable with the benefits as at June 2014, see DSM box for details

INCOME INEQUALITY

Income inequality is a way of showing how dispersed incomes are, or in other words the size of the gap between those on ‘higher’ and those on ‘lower’ incomes. Poverty and inequality are quite different concepts that need to be kept distinct as far as possible. A main difference is that although some degree of income inequality may be inevitable and acceptable, income poverty and material hardship are, by definition, unacceptable states of affairs.⁵ The level of income inequality can be regarded as an indicator of the fairness of a society. A population with a high level of inequality may be considered less socially connected than a more equal society.⁴² When comparing countries, the correlation between income inequality and mortality is strong yet there is little association between the average income of a country (as measured by GDP per capita) and life expectancy.⁴³ Income inequality is a manifestation of differences in living standards within each country, with high income inequality indicative of a population where human resources are wasted through a high proportion of the population out of work or trapped in low-paid and low-skilled jobs.⁴² The World Bank seeks to boost shared prosperity in every society. This shared prosperity goal requires a positive growth rate for the average incomes of the bottom 40 percent of the population.⁴⁴ Sustainable development goal 11 also includes a target of sustained income growth of the bottom 40 per cent of the population at a rate higher than the national average.²

This section uses data from the New Zealand Household Economic Survey (NZHES) to describe income distribution in New Zealand.

Data sources and methods

Indicators

Trends in real income

Income Inequality as measured by the P80:P20 Ratio

Income Inequality as measured by the Gini Coefficient

Data sources

Statistics New Zealand Household Economic Survey (NZHES) via Perry⁵

OECD income distribution database

Definitions

Real income: Income adjusted for changing prices over time.

Income percentiles: Calculated by ranking individuals on the equivalised income of their respective households and dividing them into 100 equal-sized groups or percentiles. If the ranking starts with the lowest income then the income at the top of the 10th percentile is denoted P10, the median or top of the 50th percentile is P50 and so on.

P80:P20 Ratio: Ratios of values at the top of selected percentiles, such as P80:P20, are often called percentile ratios. Percentile ratios summarise the relative distance between two points in the income distribution: In the case of P80:P20 ratio this is the relative distance in the income distribution between high household incomes (those in the 80th percentile) and low household incomes (those in the 20th percentile). The higher the P80:P20 ratio, the greater the level of inequality; a P80:P20 ratio of 3.0 indicates that the incomes of individuals in households at the top of the 80th percentile are three times higher than for those at the top of the 20th percentile.

Gini coefficient: Gives a summary of income differences between each person in the population and every other person in the population. When the Gini coefficient = 0, all people have the same level of income. When it approaches 1, one person receives all the income. It is an overall measure of income inequality as the higher the value, the greater the level of inequality. The Gini coefficient is often reported as a percentage so scores range between 0 and 100. When comparing changes in income distributions over time, the Gini coefficient is more sensitive to changes in the denser low-to-middle parts of the distribution, than it is to changes towards the ends of the distribution.

Notes on interpretation

Note 1. NZHES sample size = 2,800–3,500 households per survey.

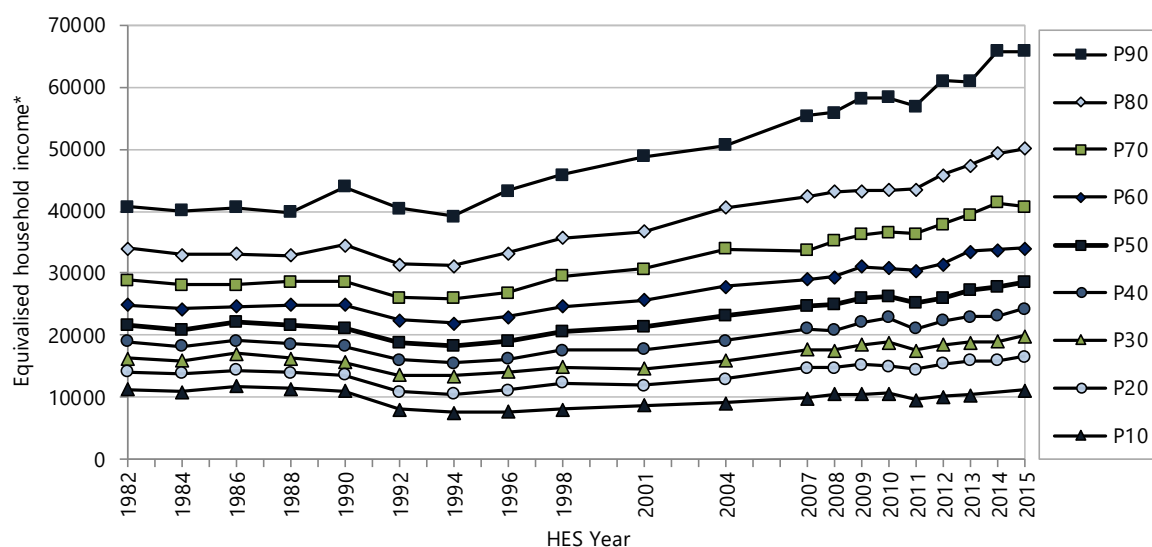
Note 2. Random fluctuation in very high income households captured in the surveys like NZHES leads to considerable fluctuation in Gini numbers. In this report the Gini coefficient has been used for international comparisons but not for year-to-year monitoring within New Zealand.

Note 3. Measures of inequality are discussed fully in Perry 2016.⁵

Trends in real income

Between 1982 and 2015 the income growth rates were very different across the income distribution range. This led to a greater gap between those on ‘higher’ and those on ‘lower’ incomes in 2015 than in the 1980s. Real incomes after housing costs for households in the lowest income decile in 2015 were lower than incomes for households in the lowest income decile in the 1980s, whereas real incomes after housing costs for households in the higher income deciles increased much more, both in proportion and in absolute terms (**Figure 64**).

Figure 64. Real equivalised household incomes after housing costs by income decile New Zealand 1982–2015, 2015 dollars NZHES years



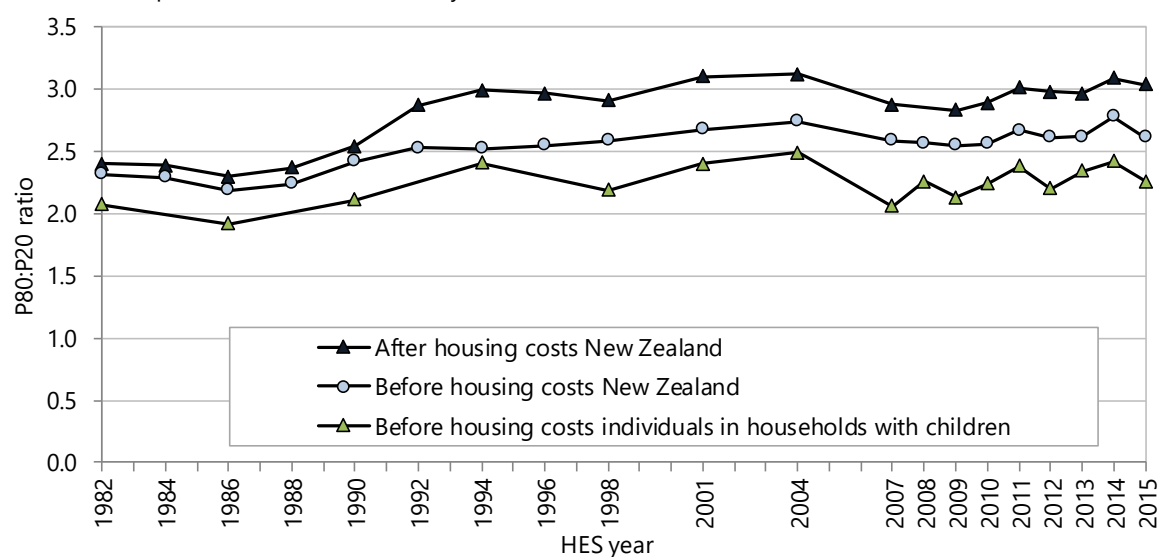
Source: Housing Economic Survey via Perry;⁵ *After housing costs 2015 NZ dollars; P10=highest income in decile 1 and so on; P50 = median income

The P80:P20 ratio

The P80:P20 ratio gives an indication of the degree of dispersion, or gap between ‘higher’ and ‘lower’ equivalised household incomes, for a range which includes most of the population. It avoids the volatility associated with the top and bottom ten percent of incomes that would be included if the full spread of the distribution was included.⁵ Higher ratios indicate a greater degree of income inequality. If the P80:P20 ratio gets larger it means that incomes for the 20% of the population with highest incomes increased more than the increase in incomes for the 20% of the population with the lowest incomes.

In New Zealand the most rapid rises in income inequality occurred from 1988 to 1992. From 2004 to 2007 income inequality fell, particularly for households with children, after the introduction of the Working for Families (WFF) package. Unemployment rates also fell during this period. There has been more volatility in the P80:P20 ratio since the 2008 global financial crisis. Housing costs contribute to income inequality as they usually take up a greater proportion of household income for households on lower incomes than those on higher incomes. Although the P80:P20 ratio BHC (before housing costs) suggests that inequality was fairly stable from 2000–2015, the P80:P20 ratio AHC (after housing costs) indicates that inequality increased from 2008 to 2015 and was close to the previous high point before the 2004 WFF package (**Figure 65**).

Figure 65. Income inequality in New Zealand as assessed by the P80:P20 ratio, before and after housing costs, by household composition 1982–2015 NZHES years



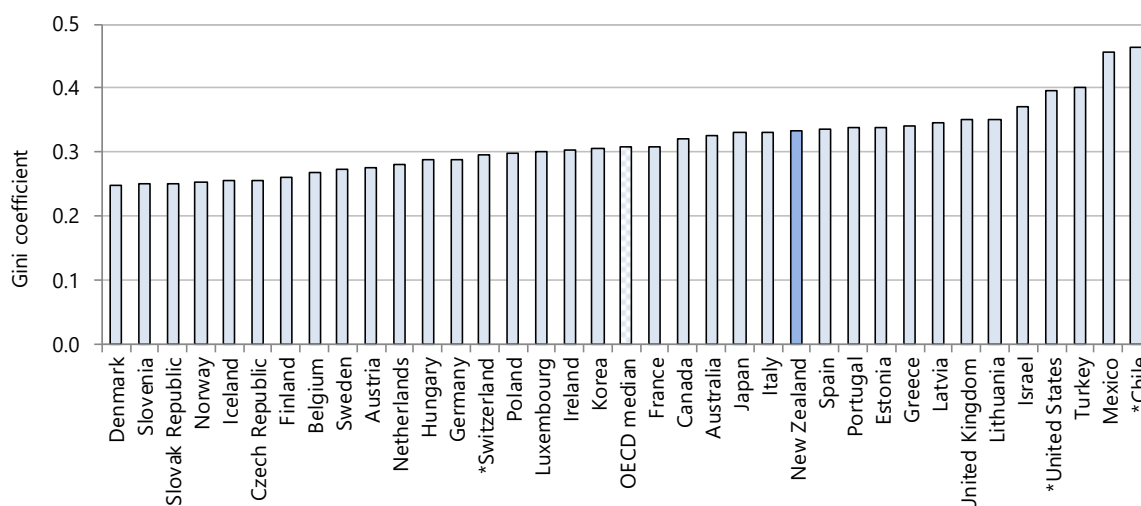
Source: Housing economic survey via Perry⁵

The Gini coefficient

The Gini coefficient ranges between 0 in the case of perfect equality (where everyone has the same income) and 1 in the case of perfect inequality (where one person has all the income). It is used to benchmark and monitor income inequality and poverty across countries.^{42,45} An increase in income inequality raises economic as well as social and political concerns, because rising inequality tends to drag down GDP growth. OCED reports note that when lower income people are prevented from realising their human capital potential it is bad for the economy as a whole.⁴⁵

The 2012 Gini coefficient for New Zealand (0.330) is higher than the OECD median (0.308), similar to the values for Italy and Spain, higher than Australia and Canada and lower than the United Kingdom. The lowest Gini coefficient in the 2016 OECD report was in Denmark (0.250) and the highest in Chile (0.470)⁴⁶ (**Figure 66**).

Figure 66. Income inequality, 36 OECD countries, with OECD median



Source: OECD income distribution database;⁴⁶ *Switzerland *United States *Chile = 2013 data; All other countries=2012 data

APPENDICES

APPENDIX 1: METHODS USED TO DEVELOP THE CHILD POVERTY MONITOR

The indicators reported upon in the Child Poverty Monitor Technical Report (2013-2016) combine measures of child poverty recommended by the 2012 Children's Commissioner's Expert Advisory Group on solutions to child poverty,¹ with children's health and well-being measures being developed for the Children's Social Health Monitor that was produced by the NZ Child and Youth Epidemiology Service from 2009 to 2012.⁴

Indicators used

The indicator set needs to be methodologically robust and able to be monitored consistently over time. The data selected are from routinely collected sources that provide complete population coverage. A set of selection criteria were established against which potential indicators were scored. Currently these criteria include:

- Measures of economic performance and wellbeing that are internationally recognised and likely to change in response to economic changes
- Health conditions that are likely to be influenced by families' physical adaptations to changes in economic conditions
- The data included are updated at least annually

For the original Children's Social Health Monitor, a long list of potential indicators were assessed against the selection criteria and a baseline set of measures was established that included:

Economic indicators:

- Gross Domestic Product
- Income inequality
- Child poverty
- Unemployment rates
- The number of children reliant on a recipient of a benefit

Child health and wellbeing indicators:

- Hospitalisations from conditions with a social gradient
- Deaths from conditions with a social gradient
- Infant mortality
- Hospitalisations and deaths from intentional injury

The economic indicators and a number of the child health and wellbeing indicators had established methods of analysis. Methods for assessing hospitalisations and deaths for conditions with a social gradient were developed for the Children's Social Health Monitor with the following definition:

A **social gradient** occurs when hospitalisation or death rates are different for children living in areas with different scores on an NZDep index of deprivation. This occurs for example, where the rates of a condition are higher for children living in areas with high deprivation index scores compared with rates for children living in areas with low scores. From the 40 most frequent causes of hospital admission in children aged 0–14 years, conditions exhibiting a social gradient were selected. Hospitalisations for neonatal (infants aged less than 28 days) were excluded on the basis that these admissions are likely to reflect issues arising prior to, or at the time of birth. For medical conditions, only acute and arranged hospital admissions were included as waiting list admissions are likely to reflect service capacity rather than the burden of health need. All injury cases with an emergency department specialty code on discharge were excluded as a result of inconsistent uploading of emergency department cases across district health boards. This differential filtering means that it is not possible to accurately compare hospitalisations with a social gradient between the medical condition and injury categories. Differences in how communities use emergency departments versus primary care for minor medical conditions may also have accounted for some of the social gradients seen. As the number of deaths from a particular condition was insufficient to calculate reliable rate ratios for many of the socioeconomic categories, deaths occurring as a result of conditions identified as having a social gradient in hospitalisation data were categorised as deaths with a social gradient with the addition of deaths from drowning and sudden unexpected death in infancy (SUDI).

APPENDIX 2: STATISTICAL SIGNIFICANCE TESTING

Inferential statistics are used when a researcher wishes to use a sample to draw conclusions about a larger population as a whole (for example, weighing a class of 10-year-old boys, in order to estimate the average weight of all 10-year-old boys in New Zealand). The findings obtained from the sample provide an estimate for the population, but will always differ from it to some degree, simply due to chance. Similarly, samples are used when a researcher questions whether the risk of developing a particular condition is different between two groups, and the fit of the estimate obtained from the samples to the actual population needs to be carefully considered. An example of this would be a study examining whether lung cancer is more common in smokers or non-smokers: researchers using sample groups would have to consider the possibility that some of the differences observed arose from chance variations in the populations sampled.

Over time, statisticians have developed a range of measures to quantify the uncertainty associated with random sampling error. These measures can assign a level of confidence to estimates and conclusions drawn from samples, allowing researchers to assess, for example, whether the average weight of boys in the sample reflects the true weight of all 10-year-old boys, or the rates of lung cancer in smokers are really different to those in non-smokers. Two of the most frequently used statistical significance tests are:

- **P values:** The p value from a statistical test measures the probability of finding a difference at least as large as the one observed between groups, if there were no real differences between the groups studied. For example, if statistical testing of the difference in lung cancer rates between smokers and non-smokers resulted in a p value of 0.01, this tells us that the probability of such a difference occurring if the two groups were identical is 0.01 or 1%. Traditionally, results are considered to be statistically significant if the p value is <0.05 ; that is, when the probability of the observed differences occurring by chance is less than 5%.⁴⁷
- **Confidence Intervals:** When sampling from a population a confidence interval is a range of values that contains the measure of interest. While a confidence interval for the average height of 10-year-old boys could be 20cm to 200cm, for example, the smaller range of 130cm to 150cm is a more informative statistic. A 95% confidence interval suggests that if you were to repeat the sampling process 100 times, 95 times out of 100 the confidence interval would include the true value.⁴⁷

Statistical significance testing in this report

When tests of statistical significance have been applied in a particular section, the statistical significance of the associations presented has been signalled in the text with the words significant, or not significant. Where the words significant or not significant do not appear in the text, then the associations described do not imply statistical significance or non-significance.

Several data sources are used in this report. In general they belong to one of two groups: 1) population surveys or, 2) routine administrative datasets. The relevant statistical testing for each of these data sources are as follows:

Population surveys

Some of indicators reported on here are derived from data from national surveys where information from a sample has been used to make inferences about the population as a whole. In this context, statistical significance testing is appropriate and, where such information is available in published reports, it has been included in the text accompanying graphs and tables. In a small number of cases, information on statistical significance was not available, and any associations described do not imply statistical significance.

Numbers derived from routine administrative data

A large number of the indicators included in this report are based on data from New Zealand's administrative datasets, for example the National Mortality Collection, which capture information on all of the events occurring in a particular category.

Rate ratios derived from routine administrative data

To facilitate comparisons between different time periods, and for examining the data from New Zealand in a wider context, whenever measures of association (rate ratios) are presented in this report, 95% confidence intervals have been provided.⁴⁸

APPENDIX 3: DATASETS USED IN THE CHILD POVERTY MONITOR

The Child Poverty Monitor presents information derived from several national administrative datasets. These are described briefly below, and limitations to be aware of when interpreting results drawn from these sources are outlined.

The National Mortality Collection

The National Mortality Collection is a dataset managed by the Ministry of Health which contains information on the underlying cause, or causes, of death along with basic demographic data for all deaths registered in New Zealand since 1988. Fetal and infant death data are a subset of the Mortality Collection, with cases in this subset having additional information on factors such as birth weight and gestational age.⁴⁹ Each of the approximately 28,000 deaths occurring in New Zealand each year is coded manually by Ministry of Health staff. For most deaths the Medical Certificate of Cause of Death provides the information required, although coders also have access to information from other sources such as Coronial Services, Police, NZ Transport Agency, the NZ Cancer Registry, the Institute of Environmental Science and Research, and Water Safety NZ.²⁴

The National Minimum Dataset

The National Minimum Dataset (NMDS) is national hospital discharge dataset and is maintained by the Ministry of Health. It is used for policy formation, performance monitoring, and research purposes, providing key information about the delivery of hospital inpatient and day patient health services both nationally and on a provider basis. It is also used for funding purposes.⁵⁰

Information in the NMDS includes principal and additional diagnoses, procedures, external causes of injury, length of stay and sub-specialty codes; and demographic information such as age, ethnicity and usual area of residence. Data have been submitted by public hospitals electronically since the original NMDS was implemented in 1993, with additional data dating back to 1988 also included. The private hospital discharge information for publicly funded events has been collected since 1997. The current NMDS was introduced in 1999.⁵⁰

The Birth Registration Dataset

Since 1995 all NZ hospitals and delivering midwives have been required to notify the Department of Internal Affairs within five working days of the birth of a live or stillborn baby. This applies to stillborn babies born at or more than 20 weeks gestation, or those weighing 400g or more; prior to 1995, only stillborn babies reaching more than 28 weeks of gestation required birth notification. Information on the hospital's notification form includes maternal age, ethnicity, multiple birth status, and the baby's sex, birth weight and gestational age. In addition, parents must jointly complete a birth registration form as soon as reasonable practicable after the birth, and within two years of delivery, which duplicates the above information with the exception of birth weight and gestational age. Once both forms are received by Internal Affairs the information is merged into a single entry. This two-stage process it is thought to capture 99.9% of births occurring in New Zealand and cross-checking at the receipting stage allows for the verification of birth detail.⁵¹

Ministry of Social Development Reports on Household Income and Non-income Measures

Following Perry⁵ this report adopts a common short-hand convention for describing NZHES years where the 2006/07 NZHES is described as the 2007 NZHES year.

Dataset limitations

There are limitations when using any of these datasets. The following are of particular relevance to this report.

Clinical coding accuracy and coding changes over time

The quality of data submitted to the administrative national datasets may vary. While the data for the National Mortality Collection and the Birth Registration Dataset are coded by single agencies, the clinical information held in the NMDS is entered by health providers before being collated by the Ministry of Health. In a 2001 review of the quality of coding in the data submitted to the NMDS, 2,708 events were audited over ten sites during a three month period. Overall the audit found that 22% of events required a change in coding, although this also included changes at a detailed level. Changes to the principal diagnosis involved 11% of events, to

additional diagnoses 23%, and to procedure coding, 11%. There were 1,625 external causes of injury codes, of which 15% were re-coded differently.⁵² These findings were similar to an audit undertaken a year previously. While the potential for such coding errors must be taken into consideration when interpreting the findings of this report, the average 16% error rate indicated by the 2001 review may be an overestimate as, in the majority of the analyses undertaken in this report, only the principal diagnosis is used to describe the reason for admission.

Changes in the coding systems used over time may result in irregularities in time series analyses.²⁴ New Zealand hospitals use the clinical coding classification developed by the World Health Organization and modified by the National Centre for Classification in Health, Australia. The current classification is called The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM), the Australian Classification of Health Interventions (ACHI) and Australian Coding Standards (ACS). The introduction of ICD-10-AM represented the most significant change in classification in over 50 years, expanding the number of codes from ~5,000 to ~8,000, to provide for recently recognised conditions and allow greater specificity about common diseases.

From 1988 until 1999, clinical information in the NMDS was coded using versions of the ICD-9 classification system. From July 1999 onwards, the ICD-10-AM classification system has been used. Back and forward mapping between the two systems is possible using predefined algorithms,⁴⁹ and for most conditions there is a good correspondence between ICD-9 and ICD-10-AM codes. Care should still be taken when interpreting time series analyses which include data from both time periods as some conditions may not be directly comparable between the two coding systems.

Variation in reporting hospitalisations to the NMDS

Historically, there have been differences in the way New Zealand's 20 district health boards (DHBs) have reported their emergency department (ED) hospitalisations to the NMDS, which can affect the interpretation of hospitalisation data. Inconsistent recording of ED cases has resulted from differing definitions of the time spent in the ED, and at what point this time constitutes an admission. This is important in paediatrics where hospitalisations for acute onset infectious and respiratory diseases in young children especially are mainly of short duration. In addition, there are regional differences in treatment processes for paediatric emergency cases.

This report includes all ED day cases in its analyses of hospitalisations for medical conditions. This approach differs from that commonly used by the Ministry of Health when analysing NMDS hospital discharge data, which the Ministry of Health uses to minimise the impact of the inconsistent reporting of ED cases. Short stay ED events are often excluded from the Ministry's analyses to improve comparability between regions. However, as noted above, the treatment of children in acute cases differs from that of adults, and the inclusion of ED day cases is justified when considering hospitalisations for medical conditions, despite inconsistencies in the dataset. The Ministry of Health's practice of filtering out ED day cases for hospitalisations for injuries is followed in this report as it is considered that the processes for injury assessments are relatively consistent around the country.

Further information on the details of the inconsistencies can be seen in earlier reports by the NZCYES <http://www.otago.ac.nz/ncyes>

Changes in the way ethnicity information has been recorded over time

Due to inconsistencies in the way ethnicity information was recorded in the health sector, and in census data before 1996, all ethnic group specific analyses in this report are for the year 1996 onwards. See Appendix 4 for a brief review of the changes in the recording of ethnicity information over the past 35 years in New Zealand.

APPENDIX 4: ETHNICITY DATA

Because of inconsistencies in the manner in which ethnicity information in New Zealand was collected prior to 1996, all ethnic group specific analyses presented in this report are for the 1996 year onwards, and reflect self-identified concepts of ethnicity. Details of the changes made in the census question on ethnicity, and why they were made, can be found on the Statistics New Zealand website <http://www.stats.govt.nz>

This report presents ethnic-specific analyses for 1996 onwards and, unless otherwise specified, prioritised ethnic group has been used to ensure that each health event is only counted once.

Despite significant improvements in the quality of ethnicity data in New Zealand's national health collections since 1996, care must still be taken when interpreting the ethnic-specific rates as the potential still remains for Māori and Pacific children and young people to be undercounted in our national data collections. The authors of Hauora IV developed a set of adjusters which could be used to minimise the bias such undercounting introduced when calculating population rates and rate ratios. These, or similar, adjusters were not utilised in this report because previous research has shown that ethnicity misclassification can change over time and ethnic misclassification may vary significantly by district health board.⁵³ Adjusters developed using national level data (as in Hauora IV⁵⁴) may not be applicable to district health board level analyses, with separate adjusters needing to be developed for each.

In addition, the development of adjusters requires the linkage of the dataset under review with another dataset for which more reliable ethnicity information is available, and this process is resource-intensive and not without error, particularly if the methodology requires probabilistic linkage of de-identified data. The development of a customised set of period and age specific adjusters was seen as being beyond the scope of the current project. The data presented in this report may undercount Māori and Pacific children to a variable extent depending on the dataset used, and that in the case of the hospital admission dataset for Māori, this undercount may be as high as 5–6%.

APPENDIX 5: THE NZDEP INDEX OF DEPRIVATION

The NZ index of deprivation (NZDep) was first created using information from the 1991 census, and has been updated following each census. It is a small area index of deprivation, and is used as a proxy for socioeconomic status. The main concept underpinning small area indices of deprivation is that the socioeconomic environment in which a person lives can confer risks or benefits which may be independent of their own social position within a community.⁵⁵ They are aggregate measures, providing information about the wider socioeconomic environment in which a person lives, rather than information about their individual socioeconomic status.

The latest index, NZDep2013, combines nine variables from the 2013 census to reflect eight dimensions of material and social deprivation (**Table 14**). Each variable represents a standardised proportion of people living in an area who lack a defined material or social resource. These are combined to give a score representing the average degree of deprivation experienced by people in that area. Individual area scores are ranked and placed on an ordinal scale from 1 to 10, with decile 1 reflecting the least deprived 10% of small areas and decile 10 reflecting the most deprived 10% of small areas.⁵⁶

The advantage of the NZDep is its ability to assign measures of socioeconomic status to the older population, the unemployed and to children, to whom income and occupational measures often don't apply, as well as to provide proxy measures of socioeconomic status for large datasets when other demographic information is lacking. Small area indices have limitations, however, as not all individuals in a particular area are accurately represented by their area's aggregate score. While this may be less of a problem for very affluent or very deprived neighbourhoods, in average areas, aggregate measures may be much less predictive of individual socioeconomic status.⁵⁵ Despite these limitations, the NZDep has been shown to be predictive of mortality and morbidity from a number of diseases in New Zealand.

Table 14. Variables used in the NZDep2013

Dimension	Variable in order of decreasing weight in the index
Communication	People aged <65 with no access to the Internet at home
Income	People aged 18–64 receiving a means tested benefit
Income	People living in equivalised* households with income below an income threshold
Employment	People aged 18–64 unemployed
Qualifications	People aged 18–64 without any qualifications
Owned home	People not living in own home
Support	People aged <65 living in a single parent family
Living space	People living in equivalised* households below a bedroom occupancy threshold
Transport	People with no access to a car

* The setting of the household equivalised income threshold was based on two principles: 1) the proportion of the population identified as being socioeconomically deprived by the threshold should be broadly consistent with the other variables in the index, and 2) the threshold should be broadly consistent with other measures of income poverty.

APPENDIX 6: MEASURES OF MATERIAL HARDSHIP

This appendix outlines the main New Zealand data sources for non-income measures (NIMs) that are used in this report to monitor material hardship or material wellbeing.

The Ministry of Social Development reports on material wellbeing household income use data from the New Zealand Household Economic Survey (NZHES) to determine the Material Wellbeing Index score that indicates a range of material hardship being experienced by households.⁸ The DEP-17 provides a simpler indication of enforced lacks than the MWI for higher levels of deprivation. While the items in the DEP-17 are not child specific, because it is known which households have aged 0-17 year olds the proportion of children and young people can be calculated at the differing levels of hardship. The Living Standards Survey 2008 included items considered essential for children. These, and a few items in the DEP-17 are combined to provide insight into the lacks and enforced lacks and economising experienced by children and young people in households living in material hardship.

Note that specific items for measuring material hardship among children and young people are being collected in the 2015/16 New Zealand Household Economic Survey and these are expected to be reported in the next Child Poverty Monitor.

Table 15 is modified from Perry 2016 and provides a brief overview of the deprivation and material wellbeing indices used in his report and in other Ministry of Social Development (MSD) research.⁸ The NIMs used in New Zealand are designed to be in line with indices such as the EU-SILC series that has been used in Europe since 2005.

Table 15. National and international deprivation and material wellbeing indices

Index	Description	Data sources
EU-9	A 9 item material deprivation index used officially by the EU	LSS 2008
EU-13	A 13 item material deprivation index likely to be formally adopted by the EU to replace EU-9	LSS 2008 NZHES 2015–16 and later
DEP-17	A 17 item deprivation index developed and used by MSD (sometimes referred to as “MSD’s material deprivation index”)	LSS 2008 NZHES 2012–13 and later
ELSI ELSI-SF	ELSI is MSD’s prototype full-spectrum index using 40 NIMs to cover the range from low to high material living standards. The short-form (SF) version uses 25 items. The ELSI has been replaced by the MWI	LSS 2000, 2004 and 2008 NZHES 2006–07 to 2011–12 have ELSI-SF items GSS 2008, 2010 and 2012 have ELSI-SF items
MWI MWI-9	MSD’s Material Wellbeing Index (MWI) is a 24 item index covering the full spectrum of material wellbeing from low to high. It was developed as a ‘mark 2 ELSI’, incorporating what was learnt from using the prototype. The short-form version has 9 items	LSS 2008 NZHES 2012–13 and later GSS 2014 (MWI-9 only)
NZiDep	NZiDep is an 8 item deprivation index developed by Wellington School of Medicine researchers.	SoFIE (and the 2006–07 NZ Health Survey)
NZDep	See Appendix 5	Census

Source: Perry 2016⁸

Non-income measures for material hardship

Three types of NIMs are of particular relevance to the Child Poverty Monitor: general household items (for example, being able to keep the house warm); individual adult respondent items (for example, having a set of clothes for important or special occasions); and child-specific items (for example: owning two sets of warm winter clothes for each child, having a separate bed for each child).

The following are the sources of current non-income measures reported in New Zealand:⁸

- The Living Standards Surveys (LSS), undertaken nationally by MSD (2004 and 2008) provide data on households with children and child specific measures. The survey collected information from 5,000 households on their material circumstances including ownership and quality of household durables, and their ability to keep the house warm, pay the bills, have broken down appliances repaired and pursue hobbies and other interests.⁸ The details of the 2008 Survey are available from earlier MSD reports.⁸

- Statistics NZ conducts the New Zealand Household Economic Survey (NZHES) that has included a range of non-income measures starting with the 2006-07 survey. From 2006-07 to 2011-12 there were 25 items – these were the items for the Economic Living Standards Index (ELSI). From 2012-13 to 2014-15 there were 29 items. Subsets of these were used to create the Material Wellbeing Index (MWI), the mark 2 version of ELSI, and the 17 item DEP-17.
- The Material Wellbeing Index (MWI) was developed by Ministry of Social Development. The relevant items are in the 2008 Living Standards Survey, and have been collected in the NZHES since 2012-13. The MWI items gather data across the wellbeing spectrum from low to high gathering information not only on ‘enforced lacks’ but also ‘freedoms enjoyed’.⁸ **Table 16** lists the items included in the MWI and the DEP-17. The 2015/16 NZHES includes an additional suite of child specific items that will provide greater insight into children and young people’s experiences of hardship that is currently possible. For greater detail of the MWI construction see Perry 2016.⁸
- DEP-17 is a 17 item deprivation index based on data from the 2008 Living standards Survey (LSS). It focuses on the lower 20-30% of material wellbeing. It has been developed in conjunction with the MWI and provides a simpler score for material hardship compared to MWI’s composite scoring. The range of items included provides differing degrees of hardship which allows for finer nuances within material hardship and how it is experienced by different people. The Perry 2016 report⁸ uses DEP-17 thresholds in the range of 6+ to 11+ lacks out of 17 items to examine the characteristics of households with low living standards. This is working on a spectrum from less to more severe hardship. A score of 9+ is considered to indicate households experiencing ‘more severe hardship’ and 7+ ‘less severe hardship’. For further detail on the methodology used see Perry 2016.⁸
- Statistics New Zealand’s longitudinal Survey of Family, Income and Employment (SoFIE) has an 8 item set of the general household and adult respondent types.

Table 16. Non-income items used in the New Zealand Household Economic Survey and scoring for MWI and DEP-17

Item description	MWI	DEP-17
Ownership or participation (have/do, don't have/do and enforced lack (EL)) For DEP-17, score an EL as		
1 Two pairs of shoes in a good condition and suitable for daily activities	✓	✓
2 Suitable clothes for important or special occasions	✓	✓
3 Contents insurance	✓	✓
4 A meal with meat, fish or chicken (or vegetarian equivalent) at least each 2nd day	✓	✓
5 A good bed	✓	-
6 Presents for family/friends on special occasions	✓	✓
7 Holiday away from home at least once every year	✓	-
8 Overseas holiday at least once every three years	✓	-
Economising (not at all, a little, a lot) – to keep down costs to help in paying for (other) basic items		
9 Gone without or cut back on fresh fruit and vegetables	✓	✓
10 Buy cheaper cuts of meat or bought less meat than you would like	✓	✓
11 Continued wearing worn out clothes	✓	-
12 Put up with feeling cold	✓	✓
13 Do without or cut back on trips to the shops or other local places	✓	✓
14 Delay replacing or repairing broken or damaged appliances	✓	✓
15 Spent less on hobbies or other special interests than you would like	✓	-
16 Postponed visits to the doctor	✓	✓
17 Postponed visits to the dentist	✓	✓
Housing problems (no problem, minor problem, major problem)		
18 Dampness or mould	✓	-
19 Heating or keeping it warm in winter	✓	-
Freedoms/Restrictions		
20 When buying, or thinking about buying, clothes or shoes for yourself, how much do you usually	✓	✓
21 \$300 spot purchase for an 'extra' – how restricted? (5 point response from 'not restricted' ...	✓	-
22 \$500 unexpected unavoidable expense on an essential – can you pay in a month without	✓	✓
Financial strain (in last 12 months) (not at all, once, more than once)		
23 Behind on rates or utilities	✓	✓
24 Behind on car registration, wof or insurance	✓	✓
25 Behind on rent or mortgage	-	-
26 Borrowed from family or friends to meet everyday living costs	-	✓
27 Received help in the form of food, clothes or money from a welfare or community organisation	-	-
Global self-ratings		
28 Adequacy of income to cover basics of accommodation, food, clothing, etc	-	-
29 Satisfaction with life	-	-

Source: Perry 2016;⁸ Items 1-24 are the MWI items; EL is an enforced lack – wanted but not possessed because of the cost

APPENDIX 7: ICD-10-AM CODES

Hospitalisations with a social gradient

Category	ICD-10-AM
Age range	Up to 14 years, neonates <28 days excluded
Medical hospitalisations	Acute and arranged (arranged = within 7 days of referral), excluding ED admissions
Injury hospitalisations	exclude ED admissions and waiting list admissions
SES Eligible admit type (excludes waiting list)	AA (Arranged Admission), AC (Acute), RL (Psychiatric patient returned from leave), ZA (Arranged Admission, ACC covered), ZC (Acute, ACC covered)
ED admission (based on health specialty code)	M05–M08

Category	ICD-10-AM
Injury diagnoses	S00–T79; ICD-9-CM: 800–904, 910–995

Category	ICD-10-AM
Gastroenteritis	A00–A09, R11, K529
Tuberculosis	A15–A19
Vaccine preventable diseases	A33, A34, A35, A36, A37, A80, B05, B06, B16, B26, B18.0, B18.1, P35.0 or M01.4
Meningococcal disease	A39
Nutritional deficiencies or anaemias	E40–E64 or D50–D53
Acute upper respiratory infections	J00–J03 or J06
Croup/laryngitis/tracheitis/epiglottitis	J04
Pneumonia: viral	J12, J10.0 or J11.0
Pneumonia: bacterial, non-viral, unspecified	J13–J16 or J18
Acute bronchiolitis	J21
Acute lower respiratory infection unspecified	J22
Asthma and wheeze	J45–J46, R062
bronchiectasis	J47
Meningitis: bacterial	G00–G01
Meningitis: viral, other, NOS	A87, G02 or G03
Epilepsy or status epilepticus	G40 or G41
Otitis media	H65, H66 or H67
Rheumatic fever and rheumatic heart disease	I00–I09
Inguinal hernia	K40
Skin infections)	L00–L08, H00.0, H01.0, J34.0 or L98.0
Dermatitis and eczema	L20–L30
Osteomyelitis	M86
Urinary tract infection	N10, N12, N13.6, N30.0, N30.9 or N39.0
Febrile convulsions	R56.0
Viral infection of unspecified site	B34

Medical conditions with a social gradient (primary diagnosis)

Acute bronchiolitis	J21
Acute lower respiratory infection unspecified	J22
Acute upper respiratory infections	J00–J03 or J06
Asthma and wheeze	J45–J46, R062
Bronchiectasis	J47
Croup, laryngitis, tracheitis, epiglottitis	J04
Dermatitis and eczema	L20–L30
Epilepsy or status epilepticus	G40 or G41
Febrile convulsions	R56.0
Gastroenteritis	A00–A09, R11, K529
Inguinal hernia	K40
Meningitis: bacterial	G00–G01
Meningitis: viral, other, NOS	A87, G02 or G03
Meningococcal disease	A39
Nutritional deficiencies or anaemias	E40–E64 or D50–D53
Osteomyelitis	M86
Otitis media	H65, H66 or H67
Pneumonia: bacterial, non-viral, unspecified	J13–J16 or J18
Pneumonia: viral	J12, J10.0 or J11.0
Rheumatic fever and rheumatic heart disease	I00–I09
Skin infections	L00–L08, H00.0, H01.0, J34.0 or L98.0
Tuberculosis	A15–A19
Urinary tract infection	N10, N12, N13.6, N30.0, N30.9 or N39.0
Vaccine preventable diseases	A33, A34, A35, A36, A37, A80, B05, B06, B16, B26, B18.0, B18.1, P35.0 or M01.4
Viral infection of unspecified site	B34

Injury

S00–T79

Injuries with a social gradient (external cause code)

Emergency Department specialty code	M05–M08
Falls	W00–W19
Mechanical forces: inanimate	W20–W49
Mechanical forces: animate	W50–W64
Thermal injury	W85–X19
Poisoning	X40–X49
Road traffic crash	
Pedestrian	V00–V06.(1), V09.(2,3)
Cyclist	V10–V18.(4,5,9), V19.(4,5,6,9)
Motorbike	V20–V28.(4,5,9), V29.(4,5,6,9)
3-wheeled	V30–V38.(5,6,7,9), V39.(4,5,6,9)
Vehicle occupant	V49.(4,5,6,9), V59.(4,5,6,9), V69.(4,5,6,9), V79.(4,5,6,9), V40–V78.(5,6,7,9)
Other land transport	V81.1, V82.(1,9), V83.(0,1,2,3), V84.(0,1,2,3), V85.(0,1,2,3), V86.(0,1,2,3), V87, V89.(2,3)
Non-traffic land transport crash	
Pedestrian	V00–V06.(0), V09.(0,1)
Cyclist	V10–V18.(0,1,2), V19. (0,1,2,3)
Motorbike	V20–V28.(0,1,2), V29. (0,1,2,3)
3-wheeled	V30–V38.(0,1,2,3), V39. (0,1,2,3)
Vehicle occupant	V49.(0,1,2,3), V59.(0,1,2,3), V69.(0,1,2,3), V79.(0,1,2,3), V40–V78.(0,1,2,3)
Other land transport	V81.0, V82.0, V83.(5,6,7,9),V84.(5,6,7,9),V85.(5,6,7,9),V86.(5,6,7,9), V88, V89.(0,1)

Infant mortality and SUDI (underlying cause of death)

Extreme prematurity	P07.2	765
Intrauterine hypoxia or birth asphyxia	P20,P21	768
Other perinatal conditions	P00–P19; P22–P96	760–779
Congenital anomalies	Q00–Q99	740–759
SUDI: SIDS	R95	798
SUDI: unspecified	R96, R98, R99	798.1, 798.2, 798.9
SUDI: suffocation or strangulation in bed	W75	E913.0
SUDI: inhalation of gastric contents or food	W78, W79	E911
Injury or poisoning	V01–Y36	800–999

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