



**MINISTRY OF SOCIAL  
DEVELOPMENT**

TE MANATŪ WHAKAHIATO ORA

# **Possible Effects of the Best Start Tax Credit - A Rapid Review of International Evidence**

**January 2021**

## **Authors**

Kasia Momsen, Analyst, Research and Evaluation, Ministry of Social Development

## **Acknowledgements**

Thank you to our colleagues at MSD for their peer review, and both our MSD and cross-agency reference groups for their valuable input.

## **Disclaimer**

The views and interpretations in this report are those of the Research and Evaluation team and are not the official position of the Ministry of Social Development.

## **Published**

Ministry of Social Development  
PO Box 1556  
Wellington  
[www.msd.govt.nz/insights](http://www.msd.govt.nz/insights)  
March 2021

## **ISBN (online)**

978-1-99-002335-4

# Contents

---

Executive summary .....	4
Key findings .....	4
Background .....	6
Purpose .....	6
Introduction .....	6
Family income and outcomes – recent reviews.....	6
Differential impacts of cash transfers .....	10
A rapid review of evidence on post-natal payments .....	11
Methodology.....	11
International comparisons .....	12
Evidence synthesis .....	15
Evidence on birth rate and birth timing effects.....	17
Evidence on maternal labour supply .....	18
Evidence on child outcomes.....	18
Comment on the state of evidence in the field .....	19
Limitations of the new rapid review .....	20
Applying the findings to the Aotearoa New Zealand context.....	21
Conclusion.....	22
Literature produced through formal review .....	23
References .....	23
Appendix A: Methodology.....	28
Appendix B: Results of quality appraisal.....	32

# Executive summary

---

This paper provides a rapid review of international evidence relevant to understanding the **possible effects of the Best Start tax credit**. Best Start was introduced as part of the Aotearoa New Zealand government's Families Package in 2018, and provides payments to families with children from birth up to the age of three.

## Key findings

- Recent evidence reviews of experimental and quasi-experimental research have found that, while the evidence base on causal impacts is still limited, **increases in family income from cash transfers are likely to positively affect outcomes for both children and adults:**
  - both the lack of ability to purchase **resources** for children **and stress** on parents and children resulting from low income **are pathways** influencing negative outcomes
  - **the strongest evidence for the negative causal effect of poverty on children relates to cognitive development and school achievement** and the next strongest relates to social and behavioural development; a growing body of evidence also indicates impacts on involvement with child protective services, child neglect, and entry into care
  - increases in income have a **bigger positive effect on life course outcomes for children in low-income families** compared with higher-income families
  - **exposure to poverty across childhood and adolescence influences later outcomes**
  - on current evidence, there is no consensus about which stage of childhood is most important, but **from a developmental perspective, the prenatal stage to age five has been identified as particularly important**
  - **increased income in adulthood has been shown to have a positive impact on mental health** and, from a very small evidence base, there are indications that it makes a positive impact in reducing domestic abuse.
- **There is very little international research evaluating the specific impacts of post-natal payments:**
  - The small number of available studies indicates that in other countries post-natal payments with some similarities to Best Start have **altered birth timing and increased birth rates**. Evidence on whether increased birth rates were maintained over time, and whether total completed fertility was impacted, is limited due to the difficulty in adequately controlling for other factors that influence fertility over a longer window of time.
  - Very few studies have examined impacts on outcomes other than birth timing and birth rates: our review identified one study which found a post-natal payment, that was paid at a higher rate for women in employment before the birth of their child, **reduced labour supply during the receipt of the payment** (particularly for mothers with higher incomes and for first-time mothers) but resulted in

several **positive effects on maternal labour supply in the medium term** (3-5 years after childbirth), and one study which found **modest positive effects on reading and numeracy test scores** at around age eight for children from disadvantaged backgrounds.

- **The more general evidence base leads us to expect that increased income as a result of Best Start will contribute to improved outcomes for children and adults in families affected across a number of areas of life**, and that those in low-income families will benefit the most from income gains. The *size* of the impact of increased income on different outcomes is uncertain and more New Zealand research will be a useful addition to the evidence base.

# Background

---

## Purpose

This rapid evidence review was conducted to inform the monitoring and evaluation approach for the New Zealand Families Package. Its purpose is to further add to our understanding of the possible impacts of the Best Start tax credit.

We begin by describing Best Start and its policy aims, and then summarise the findings from recent reviews that have examined the more general evidence base on the causal link between income level or poverty, and outcomes for children and adults. We then describe results from our own rapid review of evidence on the particular effects of post-natal payments with similarities to Best Start.

## Introduction

A key priority for Government is to improve the wellbeing of New Zealanders and their families (Department of the Prime Minister and Cabinet, 2018). Included in this, is the objective to make New Zealand the best place in the world to be a child or young person.

The Government's 2018 Family Package was intended to reduce child poverty by improving income adequacy for low- and middle-income families with children. As part of the Families Package, the Government introduced the Best Start tax credit which aimed to assist families with expenses in a child's early years.

Best Start is paid to the principal caregiver of children born or expected to be born on or after 1 July 2018 at a rate of \$60 per child per week (totalling up to \$3,120 per year per child), paid weekly or fortnightly, or as a lumpsum after the end of the tax year. For the first year of the child's life, Best Start is available regardless of income level. Low- and middle-income families with incomes less than \$93,858 annually receive the tax credit until the child turns three – families with incomes under \$79,000 receive the full amount, and those with incomes between \$79,000 and \$93,858 receive an abated amount. For families receiving paid parental leave, Best Start begins after paid parental leave ends. Families then receive Best Start for the remainder of the first year of the child's life, and for the following two years if they meet the income criteria.

Best Start acknowledges that the early years of a child's life are critical for development and that parents' participation in the labour market is most limited during these years (The New Zealand Treasury, 2018). It intends to provide families with more choice regarding their care and work responsibilities during the first three years of their child's life.

## Family income and outcomes – recent reviews

A number of recent evidence reviews have examined the evidence base on **income, poverty, transfer payments and outcomes for children and adults**. These include the systematic review by Cooper and Stewart (2020; and previous iterations in 2017, 2015 and 2013), and rapid evidence reviews by the New Zealand Ministry of Social Development (2018), Oranga Tamariki Evidence Centre (2018), Pega et al. (2017),

Bastagli et al. (2016) and Butcher (2017). The summary that follows draws on these reviews and other sources.

Reviews point to the different theoretical frameworks from which to understand the ways that poverty may impact children's development (Duncan, Magnuson, & Votruba-Drzal, 2014). The **Investment Model** suggests that the impact of inadequate income on children's outcomes is due to the inability of parents to invest in resources, goods and services that contribute to healthy child development (eg Becker, 1993 cited in Duncan et al., 2014; Cooper & Stewart, 2020). In the **Family Stress Model**, stress related to the management of limited financial resources affects the mental wellbeing of parents which in turn may compromise their parenting and negatively impact child outcomes (Cooper & Stewart, 2020; Duncan et al., 2014, Duncan, Magnuson, & Votruba-Drza, 2017). The impact of stress on children might also be more direct; in Duncan et al.'s work (2014) for example, higher stress resulted in poorer cognitive and immunological functioning in children. Importantly, the two pathways interact with one another and are not mutually exclusive (Cooper & Stewart, 2020; MSD, 2018).

In terms of the immediate impacts on children, the evidence on the impact of increased income in **improving children's cognitive development and school attainment** is strong and profuse (Cooper & Stewart, 2020; Duncan et al., 2017; MSD, 2018). Parental income has consistently been found to be one of the strongest predictors of children's educational attainment (Aizer et al., 2016, cited in MSD, 2018).

In their review of the evidence on the impact of increases in family income on children, Duncan et al. (2014) found the strongest evidence was for impacts on children's test scores (achievement) and the number of years of schooling they complete (attainment). Aizer et al. (2016, cited in MSD, 2018) report similar results, demonstrating that children whose families receive income support through cash transfers complete 0.4 more years of school compared to children whose families do not receive such support. A cluster-randomised controlled trial by Robertson et al. (2013), included in the review by Pega et al. (2017), showed that unconditional cash transfers significantly increased the percentage of children with good school attendance. Reviewing 16 experimental studies, Duncan, Morris and Rodrigues (2011) estimate that an annual increase of NZ\$1575.05 (US\$1,000) improves children's achievement by 5–6 percent of a standard deviation. Cooper and Stewart's review (2020) produced evidence on a range of cognitive and academic outcomes. Their review suggests that income affects children's school engagement and attendance, their test scores, and later influences their option set or decision-making process at key educational transitions. Their report notes that the effects of increased incomes were more pronounced in households with lower incomes.

There is a well-established association between children's family income and health (including mortality) and neurological development (Pascoe, Wood, Duffee, & Kuo, 2016). In Cooper and Stewart's review (2020) most of the included studies demonstrated significant **positive causal effects of income on a range of health measures**. The effect of income on birthweight was especially prominent. Mixed results were reported for the impact on health later in childhood. There was no support for income having impacts on asthma, wheezing and other respiratory diseases (Cooper & Stewart, 2020). This, they argue, may be due to a dearth in studies that investigate these outcomes (Cooper & Stewart, 2017). Aizer et al.'s study (2016, cited in MSD, 2018) indicated that men who received the cash transfer as children had a reduced

probability of being underweight and increased life expectancy of close to one year. Similar to other outcomes, the literature suggests that the impact of income on health is stronger for people at the lower end of the income distribution (Cooper & Stewart, 2020).

Evidence also indicates causal effects of income on **children's social, emotional and behavioural development**. In their 2017 systematic review, Cooper and Stewart, reported strong evidence for the effect of income on these aspects of children's development (12 out of 16 studies examining these outcomes in the review found positive effects). A longitudinal quasi-experimental study by Akee and colleagues (2018, cited in MSD, 2018) showed that income transfers reduce the prevalence of behavioural and emotional disorders among children.

The association between low income and child maltreatment is well established but there is less research that demonstrates that the relationship is causal (Berger, Font, Slack, & Waldfoegel, 2017; Bywaters, Bunting, Davidson, & Hanratty, 2016). It is important to note that poverty or low income is not a necessary or sufficient factor in the incidence of child abuse and neglect, and most low-income families do not harm their children (through neglect or abuse) (Oranga Tamariki Evidence Centre, 2018).

The Oranga Tamariki Evidence Centre (2018) conducted a review on the experimental and quasi-experimental evidence from welfare and tax policy studies on the impact of income on child maltreatment. The review found evidence for a significant causal relationship between low income and **increased neglect** but notes that the relationship with abuse (physical and other) remains unclear. They report that some studies show small and modest increases in income for families can reduce child protection service involvement for families experiencing financial hardship. Higher levels of benefit are related to lower rates of substantiated neglect and entry into care. However, their review did not find evidence of an association between benefit levels and physical and sexual abuse. The impact of income increases seem to be greater for sole mothers, and for families experiencing multiple risk factors and chronic need. In Cooper and Stewart's (2017) review, a randomised control trial study by Gennetian and Miller (2002) indicated that increased income not only impacts child abuse and neglect but also has a positive impact in **reducing domestic abuse**.

Adult family members who receive cash transfers also seem to benefit from increased income. Research increasingly finds income support is an effective way to **reduce maternal stress and mental health problems** (Cooper & Stewart, 2020). Cooper and Stewart's review (2015) found evidence across multiple studies that additional financial resources during adulthood resulted in increased happiness, decreased depression and anxiety. The results on health behaviours of parents are more fixed than for other intermediate outcomes (Cooper & Stewart, 2020).

Findings on the impact of income support on **employment** were varied but suggest that cash transfers result in individuals having more choices and may enable individuals to look for different types of work (Ministry of Social Development, 2018). However, in Bastagli's review (2016) over half of the studies that investigated the impact of cash transfers on employment did not yield statistically significant findings. Studies that looked at the impact of cash transfers on individuals who take care of dependent children demonstrated a (non-significant) decrease in labour participation and intensity. Pega et al. (2017) were also unable to confidently draw conclusions from the evidence on the



effect of unconditional cash transfers on the likelihood of adults working due to high risk of bias in the available studies.

The systematic review by Cooper and Stewart (2017) found that increases in income lead to **decreases in food insufficiency**. A review by Pega et al. (2017) produced five cluster-randomised control trials that assessed food security. The evidence included in their meta-analysis was considered low quality due to a high level of heterogeneity, but the authors conclude that unconditional cash transfers may be beneficial in reducing food insecurity and in increasing dietary diversity.

Literature on cash transfers suggest that cash transfers are effective in **increasing income and reducing poverty**. According to the OECD, the most direct way of reducing child poverty is by increasing the income of poor families with children through the tax and benefit systems (Pisu, 2012). On average, net transfers reduce the poverty rate for households with a head of working age and with children by approximately 36 percent and those without children by about 51 percent. Targeting cash transfers to the people in the most need increases the effectiveness of cash transfers while limiting their size. Findings by Whiteford and Adema (2007) from 19 OECD countries, show that benefit transfers and taxes lift an average of 40 percent of households with children, whose market income is lower than the poverty threshold, out of relative poverty. Research by Förster and Tóth (2001) also concluded that child poverty would be considerably higher in the absence of public social transfers. A review by Bastagli et al. (2016) reported on the impact of cash transfers programmes in Latin America and sub-Saharan Africa on poverty. Their review revealed a statistically significant effect on beneficiaries' total and food expenditure; however, in a third of the cases the impact on poverty measures were non-significant. This suggests that while cash transfers are effective in increasing expenditure, the impacts may not always be large enough to result in a reduction of poverty.

In New Zealand, the evaluation of the Working for Families (WFF) package provides some evidence on the effects of increased cash payments on poverty. Before the WFF changes, the percentage of children in poverty<sup>1</sup> was increasing. This was largely due to the rapid rise of the median income from 1998 to 2004. The evaluation demonstrated that after the WFF changes, the moving line poverty rate fell from 26 percent in 2004 to 20 percent in 2007 (Ministry of Social Development & Inland Revenue, 2010). The fixed line measure (which takes out the impact of the rising median income) showed that the child poverty rate fell from 26 percent in 2004 to 18 percent in 2008. It was estimated that without the WFF change, the child poverty rate in New Zealand would have reached 30 percent in 2008, a rate that would have been one of the highest of any country in the European Union (Ministry of Social Development & Inland Revenue, 2010). In addition to income measures of poverty, the evaluation also looked at the impact of the WFF changes using a hardship measure<sup>2</sup>. From 2004 to 2008, hardship rates for all children fell by seven percent. The hardship rates of low- and middle-income households with children fell from 36 percent in 2004 to 25 percent in 2008.

---

<sup>1</sup> Defined as below 60% of median income, using a moving line measure.

<sup>2</sup> Using the Economic Living Standard Index (ELSI) Levels 1 and 2.

## Differential impacts of cash transfers

Studies suggest that the relationship between income and child outcomes is non-linear, and that **the impact of change in income is greater for children in families at the lower end of income distribution** (Aizer et al., 2016, cited in MSD; Cooper & Stewart, 2015, 2017, 2020; Duncan et al., 2014; MSD, 2018). Duncan et al. (2011) explain that this is likely because at the low end of income distribution, the increases represent a larger proportion of total family income.

The impact of increases in family income on children seem to depend on their age (Duncan et al., 2014; Oranga Tamariki Evidence Centre, 2018). There is no consensus regarding the stage of childhood that might be most important in terms of the impact of low income or poverty (Cooper & Stewart, 2013). A few studies report larger effects (both in childhood and for long-term outcomes) when income is increased at younger ages (Aizer et al., 2016 & Duncan et al., 2010, cited in MSD, 2018; Duncan et al., 2014). **Stronger effects of income in earlier childhood is aligned to several childhood development theories** which marks birth to five years in age as a critical period for child development, and a time during which children are particularly susceptible to family influences (Duncan et al., 2011; Kim, Evans, Chen, Miller, & Seeman, 2018; Lynch & Smith, 2005; Ministry of Social Development, 2018; Shonkoff & Phillips, 2000; Shonkoff, Richter, Van Der Gaag, & Bhutta, 2012).

Research suggests that family cash transfers work alongside other benefits to produce collective impact (Duncan et al., 2014). Unemployment and housing benefits and other social transfers also contribute to poverty reduction and improved outcomes for children and families (Oranga Tamariki Evidence Centre, 2018). Therefore, according to Whiteford and Adema (2007), when looking to decrease the number of families with children that are living below the poverty line, the most important challenge for policy is finding a balance between a range of approaches. They cite New Zealand's WFF package as an example of such an approach. Non-financial supports and incentives may also obscure the impact of welfare policies (Oranga Tamariki Evidence Centre, 2018).

From the existing evidence we can extrapolate that increased income from the Families Package in general, and Best Start in particular, is likely to contribute to improved outcomes for children and adults in families affected across a number of areas of life, and that people in low-income families will benefit the most from income gains. It is not possible for us to anticipate the size of the impact of increased income on different outcomes.

# A rapid review of evidence on post-natal payments

---

To examine the evidence base on payments with similarities to Best Start, we conducted a new review.

## Methodology

We followed the approach adopted in some rapid reviews of utilising a systematic method to search and appraise existing research (Grant & Booth, 2009). This form of review can be seen as a variation of a systematic review where the main steps are streamlined and simplified in an attempt to produce information more efficiently while preserving the quality of the review (Haby et al., 2016; Khangura, Konnyu, Cushman, Grimshaw, & Moher, 2012; Tricco et al., 2015). It attempts to achieve shortened timeframes while limiting potential for resulting bias.

Details of the search strategy and keywords and inclusion criteria are in Appendix A. Appendix B provides detailed information on the quality appraisal of the individual studies.

After inclusion criteria were applied, and the quality appraisal was completed, seven studies remained in the rapid evidence assessment. Three of these studies were carried out in Australia; two studies took place in Germany; one study was based in Austria and one in Canada. The table below describes the nature of the payments studied and sets out equivalent design features for Best Start.

## International comparisons

Payment	Amount (per fortnight) in NZD	Total value in NZD <sup>3</sup>	Timing and duration of payment	History	Conditions
Best Start, New Zealand	2018: \$120	Up to \$3,120 annually per child Up to \$9,360 per child for families earning less than \$79,000 a year	Weekly or fortnightly payments, or received as a lump sum after the end of the tax year Payable for up to three years (depending on income) Paid with Working for Families tax credits if the family receives these	Introduced in 2018 for children due or born on or after 1 July 2018 Parental Tax Credit was abolished when Best Start was introduced. This tax credit was not available to recipients of a main benefit or other forms of government assistance. It had provided eligible families with up to \$220 per week for the first 10 weeks of a child's life	A universal, non-means-tested payment in the first year of a child's life. Not payable while the principal caregiver is receiving paid parental leave Not included in taxable income Income tested in the second and third years. Abated when annual family income exceeds \$79,000. No entitlement when income reaches \$93,858
Baby Bonus, Australia	As at 2009: \$402	2004: \$3,138 2006: \$4,185 2008: \$5,231	Lump sum payment until 2009 when it was changed to 13 equal biweekly payments (Parents under 18 and families deemed vulnerable had received the payment in fortnightly instalments from July 2007)	Replaced Maternity Allowance (a smaller means-tested cash transfer) and the variable First Child Tax Refund As a result, the median income gain at the 2004 introduction was considerably lower than the nominal value of the payment Removed in 2014	Initially a universal, non-means-tested payment Not included in taxable income From January 2009, the payments were means tested to exclude high income families (+\$150,000 per year) From January 2011, not payable to families receiving the new, more generous, paid parental leave scheme for low-income working parents

<sup>3</sup> Conversions used exchange rates current at the time of writing and were not adjusted for inflation.

Payment	Amount (per fortnight) in NZD	Total value in NZD	Timing and duration of payment	History	Conditions
Allowance for Newborn Children (ANC), Quebec, Canada	-	Dependent on birth rank of child As at 1992-97: First child received total of \$570 Second child received a total of \$1,140 (in two payments) Third and higher order children received quarterly payments for five years, totalling \$9,116	Lump sum for first child of child From 1989 second children received an initial lump sum at birth and another on their first birthday Third or higher order children received multiple quarterly payments	For children born between 1 May 1988 and 30 Sept 1997 The number of quarterly payments given for third or higher order children increased each year by four payments, over the period between 1989 and 1992 The amount given to families at each time remained the same except for 1992 when the amount given in each quarterly payment for third and higher order children was increased Removed in 1997	Universal, non-means-tested payment, available independent of labour market status, income, and marital status
Parental benefit (Elterngeld), Germany	As at 2007: Minimum monthly payment of \$510 Or 67% of the parents' after-tax earnings, averaged over 12 months before the child's birth, up to a maximum monthly payment of \$3,043	As at 2007: Minimum of \$6,085 (based on minimum monthly amount for 12 months) Maximum of \$42,598 (based on maximum monthly amount for 14 months)	Monthly payments for between 12 and 14 months	Introduced in 2007 Replaced a means-tested allowance that had been payable to low-income parents not working full-time for up to 24 months While more generous to those with high prior earnings, low-income families who qualified only for the minimum parental benefit and who would have previously qualified for the 24-month allowance were worse off	Universal, non-means-tested payment (with the level of payment determined by prior earnings) Not available if the parent is working 30 or more hours per week
Geburtenbeihilfe, Austria	-	As at 1996: \$1,851	Initially a lump sum payment From 1987, paid in 5 payments (up to child's 4th birthday)	Introduced January 1968 Removed in January 1997	Universal payment, not included in taxable income In 1975, payment was made conditional on medical examinations before and after birth

As mentioned the maximum total amount payable to families through the Best Start tax credit is \$3,120 per year per child. Higher-income families receive up to of \$3,120 over one year (this amount is reduced if they receive paid parental leave) and low- and middle-income families receive up to \$9,360 over three years for each child. The Best Start payment replaced the Parental Tax Credit which provided eligible families with up to \$220 per week for the first 10 weeks of a child's life (thus totalling \$2,200). For non-beneficiaries the Parental Tax Credit was more generous on a weekly basis in the initial weeks of a child's life than Best Start (from which families could receive \$60 a week). The Parental Tax Credit was not available to recipients of a benefit, Veteran's Pension, NZ Superannuation, Student Allowance or Accident Compensation earnings-related payments. While all families will be better off over the first year of a child's life with Best Start, the net gain in transfer payments for low-income families is substantially more than for families with higher income.

The Australian Baby Bonus, which is the focus of three of the included studies, provided a maximum amount of \$A3,000 (\$NZ3,138) when it was introduced in 2004. But because it replaced Maternity Allowance (a smaller means-tested cash transfer) and the variable First Child Tax Refund, the median income gain at the time of its introduction was only \$A1,700 (\$NZ1,778). Parents from more disadvantaged backgrounds benefited most, on average. Around three-quarters of births in June 2004 were better off under the policy, but only 44 percent benefitted from the full net \$A2,157 (\$NZ2,255) increase in cash transfers (Deutscher & Breunig, 2018)<sup>4</sup>.

In contrast, the German payment studied is in some respects more generous than Best Start, providing a minimum of \$6,085 (based on minimum monthly amount for 12 months) and up to \$42,598 (based on maximum monthly amount for 14 months), depending on prior earnings, and combining elements of a paid parental leave policy with a universal post-natal payment. Because it replaced a means-tested allowance that was (for low-income families) more generous, some families received less than they would have previously. An important part of the study that looked at the impact of its introduction was considering differences across the income distribution (Kluve & Schmidt, 2018).

Studies most commonly explored the impact of post-natal payments on birth timing and birth rates. Only two studies looked at child outcomes in some form. Most studies agreed that the introduction of a post-natal payment created a natural experiment and used a quasi-experimental study design to estimate impacts. In some studies, families whose children were born just before the introduction of a policy were considered the control group and families whose children were eligible for the payment were considered the treatment group. Difference-in-difference approaches, time series and trend analyses were commonly employed. In large, researchers made efforts to be cognisant of maternal demographic factors and their influence on the measured outcomes.

---

<sup>4</sup> Deutscher and Breunig looked at the distribution of the net gain in tax and transfer payments from the Baby Bonus introduction for carers in the bottom and top quintiles by base income. The (hypothetical) net gain was calculated by subtracting the refund claim from the \$A2,157 increase in cash transfers (the \$A3,000 Baby Bonus minus the \$A843 Maternity Allowance). The authors note that net gain will be an underestimate for some families who were not eligible for Maternity Allowance. For base income, the primary carer's income in the year prior to the birth of the child was used.

## Evidence synthesis

Authors and place of study	Study population, data sources and methods	Key findings
<p>Brunner, B. &amp; Kuhn, A. (2014). National, Austria</p>	<p>All Austrian births from 1990-2006 Using individual-level birth records Regression analysis used to estimate differences from projected trends</p>	<p>Birth timing:</p> <ul style="list-style-type: none"> <li>• Within the month before the abolition about 8% more children were born</li> <li>• This was estimated to have occurred as a result of (re-) scheduling conceptions rather than direct birth timing through medical intervention</li> </ul>
<p>Gans, J. S. &amp; Leigh, A. (2009). National and state/territory, Australia</p>	<p>All recorded births 1975-2004 Using state and territory births registries and data collected from hospitals; birth and death data from selected states Regression analysis used to estimate differences from projected daily births</p>	<p>Birth timing:</p> <ul style="list-style-type: none"> <li>• Estimated that over 1,000 births were moved into the post-1 July 2004 Baby Bonus eligibility period, constituting 6% of the babies who would have otherwise been born in June</li> <li>• A smaller effect was estimated when the Baby Bonus was increased on 1 July 2006, (600 births, or 4% of expected June births, were moved to July)</li> </ul> <p>Newborn health:</p> <ul style="list-style-type: none"> <li>• Children born in the week after the introduction of the Baby Bonus weighed 75g more than children in the week prior to introduction (timing consequences)</li> <li>• No evidence of rise in infant mortality</li> </ul>
<p>Milligan, K. (2005). Canada</p>	<p>All families in which the female spouse or lone-parent female was aged 15-34, had not changed province in the last 5 years, and was resident in Canada Using census microdata for 1991 and 1996 for Quebec and the rest of Canada Difference-in-difference estimates comparing trends in Quebec and the rest of Canada, with controls for observable variables affecting fertility, and triple difference estimates comparing parity-specific fertility rates</p>	<p>Birth rate:</p> <ul style="list-style-type: none"> <li>• The responsiveness of fertility to the new birth subsidy was estimated to be large—with a 12% increase in fertility on average, and a 25% increase in fertility for families eligible for the maximum amount</li> <li>• A C\$1,000 increase in first-year benefits was estimated to increase the probability of having a child by 16.9%</li> <li>• There is evidence of heterogeneity in the response to the policy with higher-income families showing a larger response</li> <li>• The movements in births of third or higher order appear to be larger than those for births of first or second order, consistent with the magnitude of the incentives</li> </ul>
<p>Neugart &amp; Ohlsson (2013). National, Germany</p>	<p>All births during 7 days before and after the introduction of the payment and the 2 weeks centred around the turn of the year of the previous 2 years in comparison, 74,000 observations Using national births data Difference-in-difference-in-difference estimation of impact on birth timing</p>	<p>Birth timing:</p> <ul style="list-style-type: none"> <li>• Women with an employment history near end of their term (who stood to gain the most from the introduction of the new parental benefit) succeeded in shifting births</li> <li>• Slightly more than 600 births were shifted from the end of 2006 to beginning of 2007</li> </ul>

Authors and place of study	Study population, data sources and methods	Key findings
<p>Sinclair, S., Boymal, J. &amp; De Silva, A. (2012). National, Australia</p>	<p>All Australian women aged 15-49, 1990-2009</p> <p>Using birth registration data and annual residential population estimates, average weekly earnings for females and real GDP per capita</p> <p>Structural time series model with policy intervention variables to estimate departure from the underlying trend and whether spikes occurred</p>	<p>Birth rate:</p> <ul style="list-style-type: none"> <li>The fertility rate spiked significantly approximately 10 months after the announcement of the Baby Bonus. The fertility rate also changed significantly approximately 9 months after the introduction of the Baby Bonus</li> </ul> <p>Birth timing:</p> <ul style="list-style-type: none"> <li>Confirms a birth timing effect on the introduction of the policy changes in July 2004 but not for subsequent changes in magnitude and structure of policy (2004 and 2006)</li> </ul>
<p>Kluge, J. &amp; Schmitz, S. (2018). National, Germany</p>	<p>Control group sample: mothers with children born between 1 October and 31 December 2006</p> <p>Treatment sample: mothers with children born between 1 January and 31 March 2007</p> <p>Using German census data 2006-2011 (annual representative stratified sample)</p> <p>Regression discontinuity design comparing mothers with children born in the 3 months pre- (control) and post- (treatment) the 1 January 2007 introduction of the policy (the policy was agreed in May 2009 so that conceptions for these cohorts are unlikely to have been influenced by the policy)</p>	<p>Maternal employment:</p> <ul style="list-style-type: none"> <li>When controlling for covariates, mothers in treatment group display 4.5 percentage point lower probability of being employed during first 14 months following childbirth</li> <li>Average treatment effect on medium term employment probability 3-5 years after childbirth was an increase of 2.9 percentage points</li> </ul> <p>Job continuity and quality</p> <ul style="list-style-type: none"> <li>Treatment mothers have a significantly higher probability of continuing in the same job and of holding an unlimited contract (open-ended or permanent contract) instead of a fixed-term contract</li> <li>These treatment effects are driven mostly by mothers from the medium and upper terciles of the income distribution. Mothers from the lower tercile of the income distribution do not seem to experience the same positive effects</li> </ul>
<p>Deutscher, N. &amp; Breunig, R. (2018). Australia</p>	<p>Children in selected jurisdictions born before and after policy took effect in 2004 and in same windows in 2003 and 2005, who were sitting national school tests in the year in which they turned 8, 9, or 10</p> <p>Using individual-level administrative data from the Australian Curriculum, Assessment and Reporting Authority</p> <p>Difference-in-differences study design with controls for parental education and occupation and location to estimate impact on educational outcomes</p>	<p>Child outcomes:</p> <ul style="list-style-type: none"> <li>No significant difference in reading and numeracy test scores in aggregate</li> <li>Some evidence of a modest effect for children from disadvantaged backgrounds</li> </ul>



## Evidence on birth rate and birth timing effects

The dominant focus on birth rate and birth timing effects may reflect the common supposed intent of the cash transfers as aimed at increasing fertility. The Australian Baby Bonus in particular was often referred to as a response to the low fertility levels in Australia (Sinclair et al., 2012). The German parental benefit that came into effect in 2007 was also designed within a context of decreasing fertility rates (Kluve & Schmitz, 2018).

Milligan (2005), looking at the Allowance for Newborn Children (ANC) in Quebec, Canada, found a large fertility effect with a 12 percent increase in fertility for those eligible for the new programme and a 25 percent increase in fertility for larger families eligible for the maximum amount. They found that an increase of NZD\$1,111 (C\$1,000) in first-year benefits increased the probability of having another child by 16.9 percent.

There is some evidence of heterogeneity in the response to the policy. Milligan (2005) performed regressions incorporating interactions with socio-demographic characteristics. The interaction terms of marital status, age, and education were not statistically significant. This suggests no differences in the responsiveness of women to the policy attributable to these characteristics. Their results did indicate a strong association between income and policy responsiveness, with higher-income families showing a stronger response (Milligan, 2005).

Other studies examined whether there was a shift in the timing of births. Announcement (or introduction) effects speak to an initial increase in birth rates followed by a return to previous levels. There was substantial evidence that the announcement or scheduled abolition of post-natal payments did result in birth timing effects. Gans and Leigh (2009) compared the 28 days before and after the introduction of the Australian Baby Bonus and estimated that 1,170 births were moved into the eligibility period. They also reported a substantial 687 births were moved from June to July after the increase in the value of the payment in 2006, again confirming an introduction effect. Sinclair, Boymal and De Silva (2012) attributed birth timing effects to the introduction of the policy in July 2004, as identified by Gans and Leigh (2009). However, unlike Gans and Leigh, they did not identify birth timing effects in 2006 or 2008 as a result of the increased value of the Baby Bonus at those times. The findings of Sinclair et al. (2012) show that an unusually large number of babies were born in December 2008. This suggests that the change of means testing the Baby Bonus from 1 January 2009 also had an impact on the timing of births. They found spikes in birth rates 10 months after the announcement of the Baby Bonus, and nine months after its introduction. They also estimated increased fertility rates over the longer term, but it is less clear that this increase can be causally linked to the Baby Bonus alone.

An introductory effect was also found after the reform of the German parental benefit in 2007 (Neugart & Ohlsson, 2013). An estimated 600 births were shifted from the end of 2006 to the beginning of 2007. A study based in Austria looked at the effect of the abolition of a Baby Bonus (Brunner & Kuhn, 2014). With the abolition of the policy, there was an incentive for families to have a baby sooner. Results indicated that during the month before the abolition approximately 8 percent more children were born. This was attributed to the rescheduling of conceptions rather than medical intervention.

Some women were more likely to shift births, but results conflicted across countries and studies. In an Australian study, parents with higher status occupations and levels of education were less likely to shift births (Deutscher & Breunig, 2018). In the study by Neugart and Ohlsson (2013), examining the German parental benefit, women with an employment history near end of their term (who stood to gain the most from the introduction of the new parental benefit) were more successful in shifting births to benefit from the new payment.

While there is an indication of introduction effects, robust evidence on whether effects on fertility are sustained is lacking. Whether the Baby Bonus had any impact on Australian women's total completed fertility over their lifetime, for example, has not been established due to the difficulty in adequately controlling for other factors that influence fertility over a longer window of time (Sinclair et al., 2012).

## **Evidence on maternal labour supply**

The rapid review yielded one publication that studied the impact of a post-natal payment on maternal employment. Kluve and Schmitz (2018) estimated the effects of the natural experiment associated with the introduction of the German parental benefit. They looked at employment rates, type of employment (part-time vs. full-time), number of hours worked and job continuity and quality, and concluded that Elterngeld resulted in positive effects on maternal labour supply over the medium term.

In terms of employment rates, their results indicated that mothers were less likely to be employed during the first 14 months after childbirth, as a result of Elterngeld. This was particularly pronounced for mothers with higher incomes and for first-time mothers for whom the generous payment would have created an incentive to stay at home during this time. On the other hand, the payment was linked to a substantial increase in the employment rate three to five years after childbirth (Kluve & Schmitz, 2018).

Furthermore, high-income mothers returned to full-time employment sooner (after the first 14 months). First-time mothers demonstrated a significant increase in part-time employment in the medium run (ie 25-59 months after childbirth). Mothers also had a higher probability of continuing in the job they had before the birth and of holding an unlimited contract.

The authors argue that these patterns are driven by the policy design setting expectations for employers and employees of a specific point in time for a return to work for new mothers, and that benefit entitlements that are short and generous increase the continuity of full-time employment. A noteworthy finding was that mothers with lower incomes, for whom the payment was less generous, did not seem to benefit, in terms of employment effects in the same way as middle- and high-income mothers.

## **Evidence on child outcomes**

Several studies confirmed the effect of the announcement and introduction of post-natal benefits on birth timing. This phenomenon raised some concern over the possible consequences for the health of newborns. Two studies included in this review examined this.

Brunner and Kuhn (2014) looked at birth shifting in relation to the announcement of the abolishment of a universal post-natal benefit – the Austrian Baby Bonus. In their analysis of birth procedures, they found a statistically significant increase in the fraction

of birth complications (an increased likelihood of 17 percent), in the month prior to the abolition, suggesting that the shifting of births did place children at some risk. The study did not find evidence for any serious negative impact on the health of newborn children. Gans and Leigh (2009), also looked at birth shifting and found no evidence of a rise in infant mortality.

Only one study investigated the effect of a post-natal payment on child outcomes beyond infant health outcomes. Deutscher and Breunig (2018) used a difference-in-differences design to estimate the long-term effects of the Australian Baby Bonus on the educational outcomes of children at around age eight. They estimated differences-in-differences comparing children born shortly before and after the introduction of the Baby Bonus in 2004, with children born either side of an equivalent date in 2003 and 2005. Their findings do not suggest that the Baby Bonus payments improved reading and numeracy test scores in aggregate. However, there does seem to be some evidence of a modest positive effect on children from disadvantaged backgrounds. Deutscher and Breunig (2018) concluded that the longer-term benefits of payments on child outcomes is small and that substantial impact would require higher-value payments than the Australian Baby Bonus.

## **Comment on the state of evidence in the field**

In general, there is a paucity of research evaluating the effects of post-natal payments. This seems surprising considering the wide reach and substantial cost of such policies.

There was limited evidence regarding the interaction between post-natal payments and other family policies. In the Aotearoa New Zealand context, it would seem useful to study the relationship between policies such as Best Start and parental leave in particular.

Milligan (2005) found that an increase in the value of the Quebec post-natal payment increased the fertility effect significantly. Other authors suggested that small effects could be attributed to the small magnitude of payments. Considering this, it would be worthwhile to explore the relationship between value of payments and size of effects. Larger amounts would arguably be able to reveal clearer and longer-term effects. It would also be useful to evaluate whether there are any differences comparing lump sum payments and regular instalment payments, as well as examining the effect of the duration of financial support.

The research that emerged through the rapid review process largely focused on birth rate and birth timing effects. It did not generate any publications touching on the impact of post-natal cash transfers on poverty reduction and found only one study focussed on the longer-term outcomes for children. This is unexpected considering one of the key intentions of a payment like Best Start is to improve incomes and reduce financial and material hardship.

While the literature indicated some differential effects of the policy between low-income and high-income mothers, this was not examined in much detail. Research on these differential effects generated inconsistent results, likely partly reflecting differential gains from the policies studied (for example see Kluve & Schmitz, 2018). This reveals a pressing need for research that addresses the impact of post-natal policies on low-income families and on poverty reduction, particularly considering that Best Start is

intended to improve the wellbeing of New Zealand families with children, and to reduce child poverty (Department of the Prime Minister and Cabinet, 2018).

A range of studies identified through the review, but not included due to limitations in their research designs, examined changes in birth rates, fertility intentions, or sterilisations following the introduction of the Australian Baby Bonus, and estimated the scale of departure from prior trends. These studies did not draw firm conclusions about causality, but suggested post-natal payments had a positive impact on birth rates (see Drago, Sawyer, Shreffler, Warren, & Wooden, 2011; Einarsdóttir et al., 2012; Lain et al., 2009; Lain, Roberts, Raynes-Greenow, & Morris, 2010) and fertility intentions (see Risse, 2010), and decreased female sterilisations (see Jama-Alol et al., 2016). Research by Fan and Maitra (2013) sought to investigate how fertility preferences translated into fertility realisations. Their research was particularly interested in exploring whether cash transfers increased the bargaining power of a partner with a greater preference for a child. This would have led to an increase in fertility for couples with disagreement in their fertility preferences. Their findings did not confirm this hypothesis.

Some of these studies suggested heterogeneity in the fertility response to the policy. Some studies were suggestive of a stronger fertility effect on second and higher order births (Drago et al., 2011; Einarsdóttir et al., 2012; Lain et al., 2009). In studies that considered effects by age group, the greatest increase in birth rate was evident for younger women, although there was some contention surrounding the exact age group (Einarsdóttir et al., 2012; Lain et al., 2009; Langridge et al., 2012). In terms of the effect of post-natal payments on fertility and birth rates according to level of income, women residing in areas of high socio-economic status showed the greatest increase in general fertility (Lain et al., 2010; Langridge et al., 2012). This finding is noteworthy since these women, prior to the introduction of the post-natal benefit, reported the lowest levels of fertility (Langridge et al., 2012). Finally, Australian research found the largest increases in birth rates were for women living in rural and remote areas (Einarsdóttir et al., 2012; Lain et al., 2009). Considering these descriptive findings for Australia, a focus for future New Zealand research could be to assess the variability in the impact of Best Start.

## **Limitations of the new rapid review**

**Limitations in the existing body of research.** Most studies included in our new rapid review based their research on comparisons between cohorts of women who had children immediately before and after the introduction or disestablishment of post-natal benefits. While a limitation of the studies is that information regarding which women received the post-natal benefits was not available, because take-up of the payments tends to be very high, this is unlikely to have substantially altered results.

Some of the studies identified through the review were not included due to limitations in their research designs. For example, they were unable to control for the possible influence of economic climate, underlying demographic shifts, and other policies that could impact fertility.

**Sources of bias that could have been introduced in this review.** Rapid reviews of evidence are limited in that there is no synthesis of the totality of evidence. Furthermore, the streamlining of the systematic review process leaves the review susceptible to bias. Ideally at least two reviewers independently assess the quality of the included studies to minimise the risk of selection bias (Akobeng, 2005). However, in the

current review the study selection, quality appraisal and data extraction were undertaken by one reviewer, with peer review (but not a parallel independent assessment) conducted by a second researcher. Finally, bias is inevitably introduced due to the exclusion of publications produced in languages other than English.

## **Applying the findings to the Aotearoa New Zealand context**

The rapid review of evidence did not produce any relevant publications from Aotearoa New Zealand (noting that our new search was confined to publications that dealt with post-natal payments similar to Best Start, and no similar initiative has applied historically).

An important factor to keep in mind while considering the generalisability of the findings to the New Zealand context is the value of the post-natal payments included in the rapid review of evidence. The lack of literature that studied the impact of the value of payments on the measured outcomes makes it difficult to determine the degree to which differences in value would affect generalisability.

The payment schedules of post-natal benefits could also affect the generalisability of the findings to our context. Many of the benefits evaluated consisted of lump sum payments. The weekly or fortnightly payment schedule of Best Start, with the option of a lump sum, year-end, payment, could result in differential effects.

Finally, being a review of international evidence, it is probable that the different socio-economic contexts affected the degree to which findings would be applicable here. Since the included literature largely neglected to investigate how the socio-economic climate influenced findings it is difficult to predict how relevant they might be to Aotearoa New Zealand. However, three out of the seven reports included in our new review were produced in Australia. Considering the comparable socio-economic contexts between the two countries it is feasible that the results would be replicated in the New Zealand context.

## Conclusion

---

**A range of recently reviewed evidence leads us to expect that increased income as a result of Best Start will contribute to improved outcomes for children and adults in families affected across a number of areas of life**, and that those in low-income families will benefit the most from income gains. The *size* of the impact of increased income on different outcomes is uncertain and more New Zealand research will be a useful addition to the evidence base.

**Evidence from quasi-experimental studies on the impacts specific to post-natal payments similar to Best Start is limited** and focused largely on impacts on birth rates and birth timing. The very small number of available studies indicates that in other countries post-natal payments with some similarities to Best Start have increased birth rates and impacted on birth timing. However, it is not possible to establish whether these increases were maintained over time, and whether total completed fertility was impacted due to the difficulty in adequately controlling for other factors that influence fertility over a longer window of time. The literature seemed to suggest differential effects for different groups of women, but the evidence was unclear.

Only two studies looked at post-natal payments and outcomes beyond fertility. One found that a post-natal payment that was paid at a higher rate for women in employment before the birth of their child, reduced labour supply during the receipt of the payment (particularly for mothers with higher incomes and for first-time mothers) but resulted in several positive effects on maternal labour supply three to five years after childbirth. Another study found modest positive effects on reading and numeracy test scores of children from disadvantaged backgrounds.

## Literature produced through formal review

---

1. Brunner, B., & Kuhn, A. (2014). Announcement effects of health policy reforms: Evidence from the abolition of Austria's Baby Bonus. *European Journal of Health Economics*, 15(4), 373–388.
2. Deutscher, N., & Breunig, R. (2018). Baby Bonuses: Natural experiments in cash transfers, birth timing and child outcomes. *Economic Record*, 94(304), 1–24.
3. Gans, J. S., & Leigh, A. (2009). Born on the first of July: An (un)natural experiment in birth timing. *Journal of Public Economics*, 93(1–2), 246–263.
4. Kluge, J., & Schmitz, S. (2018). Back to work: Parental benefits and mothers' labor market outcomes in the medium run. *ILR Review*, 71(1), 143–173.
5. Milligan, K. (2005). Subsidizing the stork: New evidence on tax incentives and fertility. *Review of Economics and Statistics*, 87(3), 539–555.
6. Neugart, M., & Ohlsson, H. (2013). Economic incentives and the timing of births: Evidence from the German parental benefit reform of 2007. *Journal of Population Economics*, 26, 87–108.
7. Sinclair, S., Boymal, J., & De Silva, A. (2012). A re-appraisal of the fertility response to the Australian Baby Bonus. *Economic Record*, 88(SUPPL.1), 78–87.

## References

---

- Aizer, B. A., Eli, S., & Ferrie, J. (2016). The long-run impact of cash transfers to poor families. *American Economic Review*, 106(4), 935–971.
- Akee, R., Copeland, W., Costello, E. J., & Simeonova, E. (2018). How does household income affect child personality traits and behaviors? *American Economic Review*, 108(3), 775–827.
- Akobeng, A. K. (2005). Understanding systematic reviews and meta-analysis. *Archives of disease in childhood*, 90(8), 845–848.
- Bastagli, F., Hagen-Zanker, J., Harman, L., Barca, V., Sturge, G., Schmidt, T., & Pellerano, L. (2016). *Cash transfers: What does the evidence say? A rigorous review of programme impact and of the role of design and implementation features*. Retrieved from <https://doi.org/DOI: 10.13140/RG.2.2.29336.39687>
- Becker, G. S. (1993). *A Treatise on the Family*. Cambridge, MA: Harvard University Press.
- Berger, L. M., Font, S. A., Slack, K. S., & Waldfogel, J. (2017). Income and child maltreatment in unmarried families: Evidence from the earned income tax credit. *Review of Economics of the Household*, 15(4), 1345–1372.
- Butcher, K. F. (2017). *Assessing the long-run benefits of transfers to low-income families*. The Hutchins Center on Fiscal and Monetary Policy Working Paper No. 26. Retrieved from [www.brookings.edu/research/assessing-the-long-runbenefits-%0Aof-transfers-to-low-income-families/](http://www.brookings.edu/research/assessing-the-long-runbenefits-%0Aof-transfers-to-low-income-families/).
- Bywaters, P., Bunting, L., Davidson, G., & Hanratty, J. (2016). *The relationship between poverty, child abuse and neglect: an evidence review*. York, United Kingdom:

- Joseph Rowntree Foundation. Retrieved from [www.jrf.org.uk/report/relationship-between-poverty-child-abuse-and-neglect-evidence-review](http://www.jrf.org.uk/report/relationship-between-poverty-child-abuse-and-neglect-evidence-review)
- Cooper, K., & Stewart, K. (2013). *Does money affect children's outcomes? A systematic review*. York, United Kingdom: Joseph Rowntree Foundation. Retrieved from [www.jrf.org.uk/sites/files/jrf/money-children-outcomes-full.pdf](http://www.jrf.org.uk/sites/files/jrf/money-children-outcomes-full.pdf)
- Cooper, K., & Stewart, K. (2015). *Does money in adulthood affect adult outcomes?* York, United Kingdom: Joseph Rowntree Foundation. Retrieved from [www.jrf.org.uk/sites/default/files/jrf/migrated/files/money-adult-outcomes-full.pdf](http://www.jrf.org.uk/sites/default/files/jrf/migrated/files/money-adult-outcomes-full.pdf)
- Cooper, K., & Stewart, K. (2017). *Does money affect children's outcomes? An update*. London, United Kingdom: Centre for Analysis of Social Exclusion, London School of Economics. Retrieved from <https://sticerd.lse.ac.uk/dps/case/cp/casepaper203.pdf>
- Cooper, K., Stewart, K. (2020). Does household income affect children's outcomes? A systematic review of the evidence. *Child Indicators Research*, 1-25.
- Department of the Prime Minister and Cabinet. (2018). *Strategic Intentions 2018-2022* (Vol. G.48). Retrieved from <https://dpmc.govt.nz/sites/default/files/2018-12/Strategic%20Intentions%202018.pdf>
- Drago, R., Sawyer, K., Shreffler, K. M., Warren, D., & Wooden, M. (2011). Did Australia's Baby Bonus increase fertility intentions and births? *Population Research and Policy Review*, 30(3), 381–397.
- Duncan, G. J., Magnuson, K., & Votruba-Drzal, E. (2014). Boosting family income to promote child development. *Future of Children*, 24(1), 99–120.
- Duncan, G. J., Magnuson, K., & Votruba-Drza, E. (2017). Moving beyond correlations in assessing the consequences of poverty. *Annual Review of Psychology*, 68, 413–434.
- Duncan, G. J., Morris, P., & Rodrigues, C. (2011). Does money really matter? Estimating impacts of family income on young children's achievement with data from random-assignment experiments. *Developmental Psychology*, 47(5), 1263–1279.
- Duncan, G. J., Ziol-Guest, K. M., & Kalil, A. (2010). Early-childhood poverty and adult attainment, behavior, and health. *Child Development*, 81(1), 306–325.
- Einarsdóttir, K., Langridge, A., Hammond, G., Gunnell, A. S., Haggard, F. A., & Stanley, F. J. (2012). The Australian Baby Bonus maternity payment and birth characteristics in Western Australia. *PLoS ONE*, 7(11), e48885.
- Fan, E., & Maitra, P. (2013). Women rule: Preferences and fertility in Australian households. *B.E. Journal of Economic Analysis and Policy*, 13(1), 1–30.
- Förster, M. F., & Tóth, I. G. (2001). Child poverty and family transfers in the Czech Republic, Hungary and Poland. *Journal of European Social Policy*, 11(4), 324–341.
- Government Social Research Service. (2009). *Government Social Research Service rapid evidence assessment toolkit*. Retrieved from <https://webarchive.nationalarchives.gov.uk/20110405165029/http://www.civilservice.gov.uk/my-civil-service/networks/professional/gsr/resources/REA-how-to-resources-for-appraising-studies.aspx#print>



- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26, 91–108.
- Haby, M. M., Chapman, E., Clark, R., Barreto, J., Reveiz, L., & Lavis, J. N. (2016). What are the best methodologies for rapid reviews of the research evidence for evidence-informed decision making in health policy and practice: A rapid review. *Health Research Policy and Systems*, 14(1), 1–12.
- Jama-Alol, K. A., Bremner, A. P., Stewart, L. M., Kemp-Casey, A., Malacova, E., Moorin, R., ... Preen, D. B. (2016). Declining rates of sterilization procedures in Western Australian women from 1990 to 2008: The relationship with age, hospital type, and government policy changes. *Fertility and Sterility*, 106(3), 704–709.e1.
- Khangura, S., Konnyu, K., Cushman, R., Grimshaw, J., & Moher, D. (2012). Evidence summaries: The evolution of a rapid review approach. *Systematic Reviews*, 1(1), 10.
- Kim, P., Evans, G. W., Chen, E., Miller, G., & Seeman, T. (2018). How socioeconomic disadvantages get under the skin and into the brain to influence health development across the lifespan. In N. Halfon, C. B. Forrest, R. M. Lerner, & E. M. Faustman (Eds.), *Handbook of Life Course Health Development* (pp. 463–497). Cham, Switzerland: Springer.
- Lain, S. J., Ford, J. B., Raynes-Greenow, C. H., Hadfield, R. M., Simpson, J. M., Morris, J., & Roberts, C. L. (2009). The impact of the Baby Bonus payment in New South Wales: Who is having “one for the country”? *The Medical Journal of Australia*, 190, 238–241.
- Lain, S. J., Roberts, C. L., Raynes-Greenow, C. H., & Morris, J. (2010). The impact of the Baby Bonus on maternity services in New South Wales. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 50(1), 25–29.
- Langridge, A. T., Nassar, N., Li, J., Jacoby, P., & Stanley, F. J. (2012). The impact of monetary incentives on general fertility rates in Western Australia. *Journal of Epidemiology and Community Health*, 66(4), 296–301.
- Lynch, J., & Smith, G. D. (2005). A life course approach to chronic disease epidemiology. *Annual Review of Public Health*, 26, 1–35.
- Madaleno, M. & Waights, S. (2016). *Guide to scoring evidence using the Maryland Scientific Methods Scale*. What Works Centre for Local Economic Growth. Retrieved from [www.whatworksgrowth.org/public/files/Scoring-Guide.pdf](http://www.whatworksgrowth.org/public/files/Scoring-Guide.pdf)
- Ministry of Social Development. (2018). *Rapid evidence review: The impact of poverty on life course outcomes for children, and the likely effect of increasing the adequacy of welfare benefits*. Wellington, New Zealand. Retrieved from [www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/information-releases/weag-report-release/rapid-evidence-review-the-impact-of-poverty-on-life-course-outcomes-for-children-and-the-likely-effect-of-increasing-the-adequacy-of-welfare-benef.pdf](http://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/information-releases/weag-report-release/rapid-evidence-review-the-impact-of-poverty-on-life-course-outcomes-for-children-and-the-likely-effect-of-increasing-the-adequacy-of-welfare-benef.pdf)
- Ministry of Social Development, & Inland Revenue. (2010). *Changing families' financial support and incentives for working: the summary report of the evaluation of the Working for Families package*. Wellington, New Zealand. Retrieved from

<https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/evaluation/receipt-working-for-families/wff-full-report.pdf>

The New Zealand Treasury (2018). *Families Package information release*. Wellington, New Zealand. Retrieved from [www.treasury.govt.nz/publications/informationreleases/families-package](http://www.treasury.govt.nz/publications/informationreleases/families-package)

Oranga Tamariki (2019). *How do welfare and tax settings affect children's involvement with child protective services?* Wellington, New Zealand. Retrieved from [www.orangatamariki.govt.nz/assets/Uploads/How-do-welfare-and-tax-settings-affect-childrens-involvement-with-child-protective-services-Final-Report.pdf](http://www.orangatamariki.govt.nz/assets/Uploads/How-do-welfare-and-tax-settings-affect-childrens-involvement-with-child-protective-services-Final-Report.pdf)

Parr, N., & Guest, R. (2011). The contribution of increases in family benefits to Australia's early 21st-century fertility increase: An empirical analysis. *Demographic Research*, 25, 215–244.

Pascoe, J. M., Wood, D. L., Duffee, J. H., & Kuo, A. (2016). Mediators and adverse effects of child poverty in the united states. *Pediatrics*, 137(4), e20160340–e20160340. <https://doi.org/10.1542/peds.2016-0340>

Pega, F., Liu, S. Y., Walter, S., Pabayo, R., Saith, R., & Lhachimi, S. K. (2017). Unconditional cash transfers for reducing poverty and vulnerabilities : effect on use of health services and health outcomes in low- and middle-income countries (Review). *Cochrane Database of Systematic Reviews*, 11, 1–259. <https://doi.org/10.1002/14651858.CD011135.pub2>. [www.cochranelibrary.com](http://www.cochranelibrary.com)

Pisu, M. (2012). *Less income inequality and more growth – are they compatible? Part 5. Poverty in OECD Countries* (OECD, Economics Department Working Papers, No. 928). Paris: OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/5k9h28tlt0bs-en>

Risse, L. (2010). "...And one for the country" The effect of the Baby Bonus on Australian women's childbearing intentions. *Journal of Population Research*, 27(3), 213–240.

Robertson, L., Mushati, P., Eaton, J. W., Dumba, L., Mavise, G., Makoni, J., ... Gregson, S. (2013). Effects of unconditional and conditional cash transfers on child health and development in Zimbabwe: A cluster-randomised trial. *The Lancet*, 381(9874), 1283–1292.

Sherman, L. W., Gottfredson, D. C., MacKenzie, D. L., Eck, J., Reuter, P., & Bushway, S. D. (1998). *Preventing crime: What works, what doesn't, what's promising*. National Institute of Justice (Vol. Research i). <https://doi.org/10.1111/an.1986.27.3.11.5>

Shonkoff, J. P., & Phillips, D. A. (2000). *From neurons to neighborhoods: The science of early childhood development*. National Academy Press: Washington, DC.

Shonkoff, J. P., Richter, L., Van Der Gaag, J., & Bhutta, Z. A. (2012). An integrated scientific framework for child survival and early childhood development. *Pediatrics*, 129(2), e460–e472. <https://doi.org/10.1542/peds.2011-0366>

Tricco, A. C., Antony, J., Zarin, W., Striffler, L., Ghassemi, M., Ivory, J., ... Straus, S. E. (2015). A scoping review of rapid review methods. *BMC Medicine*, 13(1). <https://doi.org/10.1186/s12916-015-0465-6>

Whiteford, P., & Adema, W. (2007). *What works best in reducing child poverty: A benefit or work strategy?* (OECD Social, Employment and Migration Working Papers, No. 51). Paris: OECD Publishing. Retrieved from <https://doi.org/10.1787/233310267230>

## Appendix A: Methodology

---

We follow the approach adopted in some rapid reviews of utilising a systematic method to search and appraise existing research (Grant & Booth, 2009). This form of review can be seen as a variation of a systematic review where the main steps are streamlined and simplified in an attempt to produce information more efficiently while preserving the quality of the review (Haby et al., 2016; Khangura et al., 2012; Tricco et al., 2015). It attempts to achieve shortened timeframes while limiting potential for resulting bias.

**Search strategy and keywords.** To increase the effectiveness of the review, the development of the search strategy was done in consultation with an internal information management team and internal stakeholders.

Keywords were designed to reflect the nature of the intervention (a type of payment), the target population (parents/primary guardians of children under the age of three) and the requisite for reporting on an outcome. To identify relevant studies for inclusion the electronic database Koha (through the Ebsco Discovery Search) was used<sup>5</sup>.

The search strategy consisted of four steps (see Figure 1). The first step involved an initial scope of literature using the keywords: "Baby Bonus" and "maternity grant". This search generated a list of relevant synonyms for the two base search terms which were used in the subsequent steps. The first set of keywords referred to the target population receiving the intervention (eg newborn or post-natal) and the second to the type of intervention (eg payment or benefit). At least one form of each base keyword had to be present in the title or abstract of a publication for it to be included in the review.

During the generation of keywords, it was found that some keywords, for example "allowance" and "family", produced an overwhelming amount of irrelevant literature<sup>6</sup>. They were therefore discarded as keywords for this review.

The second step involved a review of reviews. For this the two base keywords were used as well as keywords to specify for publications of reviews (including systematic reviews and meta-analyses). The third step involved a search for all academic literature containing a variation of both base keywords. Due to time constraints, the search was limited to studies published in the last 20 years (ie from 1999). The time constraints were only applied to date of publication and not to the cohorts of participants or data sources used in the study.

After the third step the titles and abstracts of each identified publication were checked against the inclusion and exclusion criteria. If the title and abstract were inconclusive, the full text was obtained and reviewed. As far as possible, requests were made to obtain unavailable articles. A lenient inclusion approach was applied at this stage of the

---

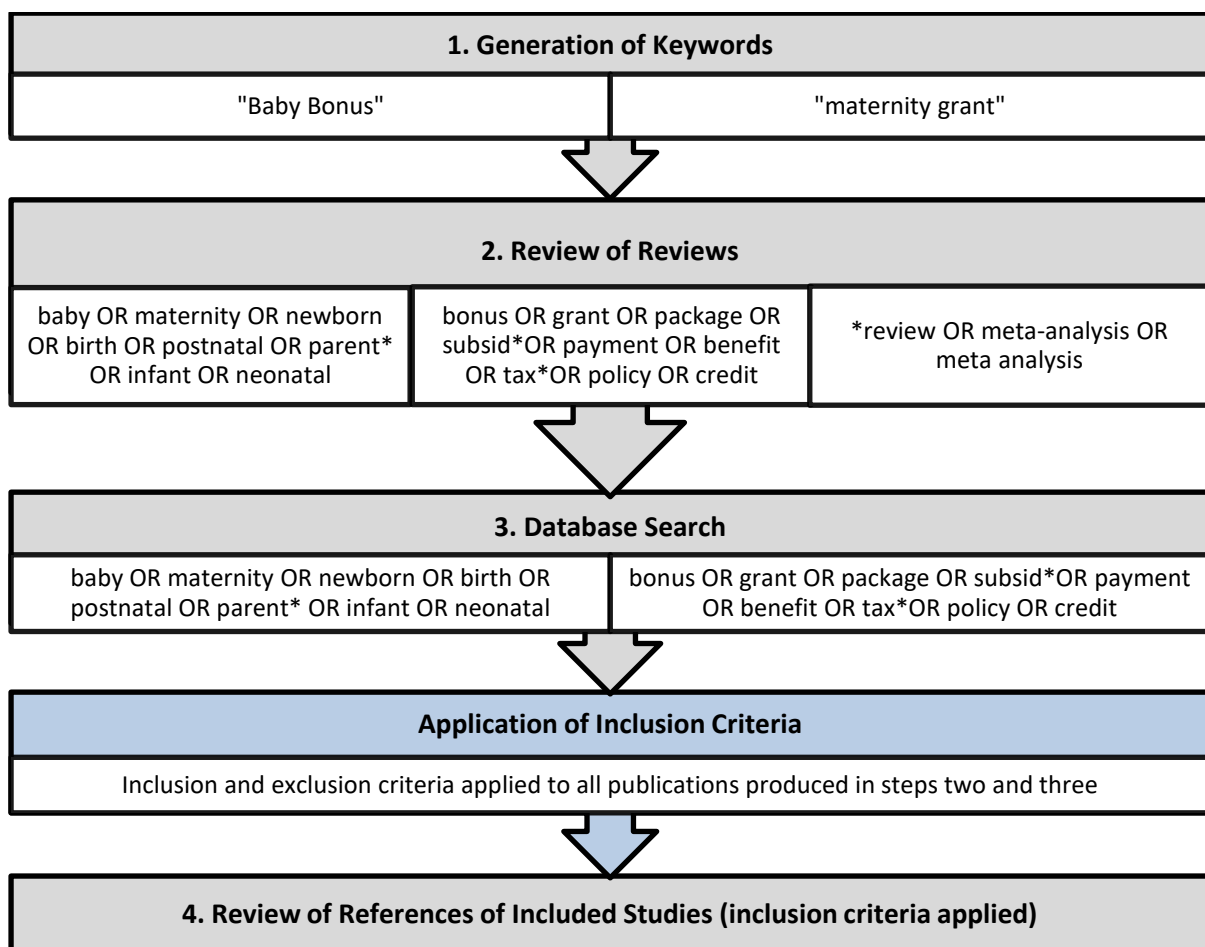
<sup>5</sup> Koha is a fully featured, open-source Integrated Library System (ILS) used by the Ministry of Social Development (MSD). Koha's Ebsco Discovery Search has additional functionality useful for complex searches. Often in a review more than one database is used to increase the number of studies included and to minimise the possibility of a selection bias. However, there's a significant content overlap between the Koha and other databases such as Google Scholar, with most relevant content indexed in Google Scholar also indexed in one or more of the databases covered by Koha. It was therefore concluded that using Koha alone would be sufficient. The following search options in Koha were selected: the search field (eg all text or abstract etc.) was left unselected; the Boolean/Phrase mode; apply related words; apply equivalent subjects; peer reviewed; English; date published: 1999-2019; the search results were sorted by relevance.

<sup>6</sup> A way in which these keywords could have been used was through a separate search using only these keywords in conjunction with the second set of keywords. However, due to time constraints this was not possible.

process so that articles were included rather than excluded and reviewed for relevance later. Titles and abstracts were screened until saturation was reached for each search string. Saturation was defined as 50 consecutive results that did not offer relevant content.

In the final step, the reference lists of the publications that met the inclusion criteria were searched for additional relevant publications. It was hoped that this step would allow important studies prior to 1999 to be included in the review. During the full text review of the referenced studies (phase 4, figure 1) we found publications that had not been produced during the previous steps. These cited studies were included in the review. This step of the process was not systematic. We did not do a thorough search of the reference list of these studies, instead, publications were included if they were discussed at length in the research produced through the search of the references.

**Figure 1. Search Strategy**



**Study selection.** For inclusion, studies had to relate to an intervention in the form of a payment to primary caregivers of young children and report on the impact of that payment on an outcome or set of outcomes. This review only included payments made to families with newborn children up to the age of three to five (so as to broadly resemble the Best Start tax credit). Studies reporting on prenatal allowances or payments were excluded from the review. While the Best Start tax credit entails repeated payments over a set period of time with the option of a lump-sum payment,

this review includes both one-off only and ongoing only payments to increase the number of studies included in the review. However, to better compare the different types of payments, one-off payments had to amount to at least half of the total annual value of Best Start (eg AUD\$2994.49; US\$2150.91; £1622.78; €1833.52).<sup>7</sup> Studies of publicly-funded paid parental leave policies were excluded. This is due to the important distinction between this specific type of parental support (which is conditional on prior paid employment) and Best Start (which is not).

Only peer-reviewed publications with experimental or quasi-experimental impact study designs were included.

Studies were excluded in the following circumstances:

- if they were not focused on the impact of a post-natal payment
- if the full-text was unavailable
- if they were produced in languages other than English
- in the case of one-off payments, if the intervention amounted to less than half of the annual value of Best Start
- if the study was not experimental or quasi-experimental in design.

**Quality appraisal.** To ascertain that studies included in the review adhered to an appropriate standard of research evidence, studies were subjected to quality appraisal using the Maryland Scale of Scientific Methods (MSSM) (Sherman et al., 1998), using Madaleno & Waights (2016) as a guide to scoring. The results from the quality appraisal were subjected to an internal peer review. In cases where there were discrepancies between the two researchers, additional advice was sought.

The Maryland Scale of Scientific Methods is a five-point scale that classifies the strength of methodologies used in “what works?” studies by ranking studies on overall internal validity. While it was developed within the field of criminology, the scale is considered generic and is therefore frequently applied in other areas (Government Social Research Service, 2009).

According to Sherman et al. (1998) only studies with a robust comparison group design can provide evidence that a programme has caused the reported impact. This is indicated by a level three and above in the MSSM. Following this benchmark, only studies that obtained a score of level three or above were included in the synthesis of evidence.

**Data abstraction.** The data extraction strategy was decided a priori. A single reviewer abstracted data. Data were extracted from all publications that met the inclusion criteria using a pre-specified data-extraction sheet.

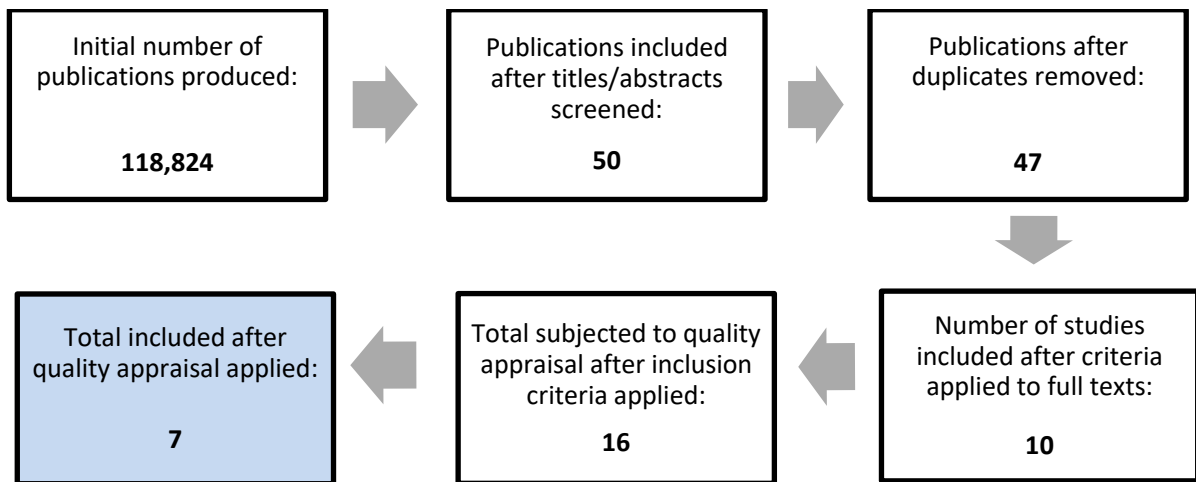
**Overview of studies.** The review of review studies yielded 18,884 search results. After a review of the titles and abstracts no relevant articles were found. In an effort to find a relevant review type study, saturation was increased to 100 consecutive irrelevant results. This still did not yield any relevant publications.

---

<sup>7</sup> No adjustment was made for inflation.

The broader literature search produced 118,824 potentially relevant publications (see Figure 2). After a review of titles and abstracts, 50 full-text articles were retrieved for further consideration. Three duplications were excluded. Following review of the remaining 47 full-text articles, 37 articles were excluded, leaving 10 articles to be included in the present rapid evidence review. The review of reference lists yielded an additional six relevant publications. They included studies published in scientific journals between 2005 and 2018.

**Figure 2: Review of review studies**



## Appendix B: Results of quality appraisal

Studies rated according to the Maryland Scale of Scientific Methods (Sherman et al., 1998), using Madaleno and Waight's (2016) as a guide to scoring.

	Study	MSSM Rating
1	Risse (2010). '...And one for the country' The effect of the Baby Bonus on Australian women's childbearing intentions.	2
2	Sinclair, Boymal, & De Silva (2012). A re-appraisal of the fertility response to the Australian Baby Bonus.	3
3	Brunner & Kuhn (2014). Announcement effects of health policy reforms: Evidence from the abolition of Austria's Baby Bonus.	4
4	Deutscher & Breunig (2018). Baby Bonuses: Natural experiments in cash transfers, birth timing and child outcomes	4
5	Kluve & Schmitz (2018). Back to work: Parental benefits and mother's labor market outcomes in the medium run.	4
6	Jama-Alol et al. (2016). Declining rates of sterilization procedures in Western Australian women from 1990 to 2008: The relationship with age, hospital type, and government policy changes.	2
7	Drago, Sawyer, Shreffler, Warren, & Wooden (2011). Did Australia's Baby Bonus Increase Fertility Intentions and Births?	2
8	Einarsdóttir et al. (2012). The Australian Baby Bonus Maternity Payment and Birth Characteristics in Western Australia.	2
9	Lain, Roberts, Raynes-Greenow, & Morris (2010). The impact of the Baby Bonus on maternity services in New South Wales.	2
10	Fan & Maitra (2013). Women rule: Preferences and fertility in Australian households.	2
11	Milligan (2005). Subsidizing the stork: New evidence on tax incentives and fertility.	3
12	Gans & Leigh (2009). Born on the first of July: An (un)natural experiment in birth timing.	4
13	Lain et al (2009). The impact of the Baby Bonus payment in New South Wales: Who is having "one for the country"?	2
14	Langridge, Nassar, Li, Jacoby, & Stanley (2012). The impact of monetary incentives on general fertility rates in Western Australia.	2
15	Neugart & Ohlsson (2013). Economic incentives and the timing of births: Evidence from the German parental benefit reform of 2007	3
16	Parr & Guest (2011). The contribution of increases in family benefits to Australia's early 21st-century fertility increase: An empirical analysis.	2

### Summary of studies rated according to the Maryland Scale of Scientific Methods.

Maryland Scale score	Number of studies	Percentage
5	0	0
4	4	25
3	3	18.75
2	9	56.25
1	0	0
<b>Total</b>	<b>16</b>	<b>100</b>