



Playgroup
Australia

Cost Benefit Analysis of Community Playgroup

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The authors thank Fiona May, CEO, Playgroup Australia, for assisting with the preparation of this report. Mr Rhys Athaide provided valuable research and editorial support.

The authors acknowledge the Ngunnawal people as the traditional owners and custodians of the Canberra region and recognise the displacement and disadvantage they have suffered as a result of European settlement. We recognise the region's significance, as an important meeting place, to other Aboriginal groups. We respect and celebrate the Aboriginal and Torres Strait Islander people, their continuing culture, and the contribution they make to the Canberra region.

Code of conduct

Economic modelling does not have a formal code of conduct however, this Cost Benefit Analysis meets the necessary requirements of a code of conduct.

As economic modellers we have:

- disclosed who commissioned this work,
- clearly explained our key assumptions,
- provided a sensitivity analysis,
- provided context and comparison, and
- explained our choice of economic model.

We take responsibility for the plausibility of our results, and our full modelling outcomes are included in this Cost Benefit Analysis report.

Daly, A., Barrett, G. & Williams, R (2019) Cost Benefit Analysis of Community Playgroup, Playgroup Australia, Canberra.



Playgroup Australia funded this CBA.

Playgroup Australia was established as the peak body for the state and territory playgroup organisations. Playgroup Australia's vision is 'creating a village through play' and its mission is to support and connect the playgroup community and be a leading voice for families with children learning through play.

Executive Summary

“

*If you want to be a rock star, just
play with your children ... they
love you even more for it.*

”

Tyler - Dad from Playgroup
40 Years of Playgroup - Celebrating Our Story of Connecting Communities

Community Playgroups bring together groups of pre-school children with their parents and caregivers to promote children's play and to strengthen social and community bonds. Community Playgroups have been a feature of Australian society, and a mechanism for social support for over 45 years.

In contemporary Australia, Community Playgroups tackle the diminishing opportunities for children's play. In so doing, they improve the wellbeing of the children, their parents and the wider community. As a result, Community Playgroups improve Australia's health, education and economic outcomes. This provides substantial economic benefits to Australia.

The long-term impacts of Community Playgroup for children are significant. Children who attend Community Playgroups, compared other children, are more likely to finish high school, go on to post-secondary education, to be employed, and less likely to be unhealthy, known to the justice system or child welfare agencies.

These outcomes reflect the role Community Playgroups play in strengthening Australian education, health and employment outcomes while reducing demands on government agencies (such as schools, justice system, hospitals, foster care, etc.). Community Playgroups have improved the life of children and their parents and the wider Australian society.

This report presents a cost benefit analysis of Community Playgroups. Cost Benefit Analysis (CBA) is a powerful tool for determining the economic value of a program or project. It is widely used by governments to evaluate the impact of their policies on the economic wellbeing of their people.

This CBA finds that Community Playgroup delivers a substantial positive net economic benefit to Australia. Community Playgroup returns economic benefits that far exceed their economic costs. Sensitivity analysis shows this is a robust conclusion.

This CBA values the social impacts (society's wellbeing) of Community Playgroup in economic terms. These values are aggregated over time (10 years) using a discount rate (2%) measuring society's trade-off between current

and future consumption. These discounted impacts are compared, using the two decision criteria, Net Present Value (NPV) and Benefit/Cost Ratio, to measure the extent to which Community Playgroup economic benefits to Australia exceed the costs.

This CBA has taken a rigorous approach to identifying and assigning values to costs and benefits arising from Community Playgroup. The relevant costs and benefits have been identified, quantified, and valued using established economic methodologies. Conservative values have been used to derive Community Playgroup NPV and Benefit/Cost Ratio. These valuation and other techniques reveal the substantial economic merit of Community Playgroup.

Our analysis shows Community Playgroup provides a substantial net benefit to the Australian economy. For the ten years from 2019, the NPV of Community Playgroup is measured at \$584 million in 2019 dollars. The measured benefit cost ratio of Community Playgroup is determined to be nearly 4 to 1. This is high compared with other investments. The result validates the economic rationale for government funding for Community Playgroup and its continuation.

All the calculated decision criteria indicate that Community Playgroup is a sound economic investment and worth supporting on economic (efficiency of resource use) grounds. There are no substantial uncompensated costs experienced by stakeholders and therefore distributional issues do not detract from the positive conclusions of this CBA. Community Playgroup is shown to play a key role in improving the quality of life, wellbeing, and output of Australia and is an excellent use of Australian resources.

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Abbreviations

ABS Australian Bureau of Statistics

DSS Department of Social Security

AEDC Australian Early Development Census

FIFO Fly In Fly Out workers

ASD Autism Spectrum Disorder

FaHCSIA Department of Families, Housing, Community Services and Indigenous Affairs

ACTCOSS ACT Council of Social Service

STOs State and Territory Organisations

AIHW Australian Institute of Health and Welfare

NPV Net present value

CBA Cost benefit analysis

PV Present value

Introduction



The research says children learn best through play

Dr Pauline Roberts, Edith Cowan University

Playgroups for dads are not about dads. They're about children and the way they interact with their fathers. But you may just be surprised what you learn about yourself along the way.

Michael Pottinger, Member Dads Together Playgroup
40 Years of Playgroup - Celebrating Our Story of Connecting Communities

When I arrived (in Australia) with an eight-month old I knew no one. It was a good way to meet others.

Parent from France now living in Australia
40 Years of Playgroup - Celebrating Our Story of Connecting Communities



Community Playgroups are community-based gatherings of parents and young children under school age. They typically meet once a week for a one or two hours, and are led by volunteer parents or caregivers (Gregory, et al. 2017, 6).

Playgroup differs from child care or crèche arrangements, as caregivers engage in the delivery of the group, participate in activities with their children and socialise with other caregivers (Hancock, et al. 2015, 3).

Playgroup provides significant benefits for both children and caregivers. For children, Community Playgroup provides opportunities for the development of physical, emotional, social, and language skills through regular play with their caregivers and other children of a similar age and developmental stage. They provide an opportunity for children to learn and develop through unstructured play.

Play is a key mechanism through which young children engage and interact with the world around them (Yogman, et al. 2018), (Ginsburg 2007). Play is fundamental to the pleasure of childhood and an essential component of children's development (International Play Association 2014). Playgroup increases the quantity and quality of children's play (Fabrizi, Ito and Winston 2016), (Weber, Rissel, et al. 2014).

For parents, Community Playgroup encourages and facilitates engagement with other parents and carers to socialise, learn new parenting skills, and seek emotional support from one another. This improves wellbeing and parenting abilities leading to secondary benefits for children.

The collective benefits of Community Playgroup are multiple. Engagement in playgroup improves the wellbeing of parents and children, improves parenting skills and family functioning, and develops stronger communities. They provide stimulating environments where children and their caregivers develop healthy

relationships (East 1998). Participation in playgroup provides better outcomes for parents, children and the wider community.

These benefits include improvements in:

- educational use and outcomes,
- employment outcomes,
- justice system use and outcomes,
- foster care use and outcomes, and
- health care use and outcomes.

“It is great to have a place to bring children and for me as a grandparent, it is great that I can come here and see other grandparents here with their grandchildren as well as share experiences with other, younger mothers.”

Grandparent from Playgroup

40 Years of Playgroup – Celebrating Our Story of Connecting Communities

Purpose of Cost Benefit Analysis

“

Every child has the right to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts.

UN Convention on the Rights of the Child, Article 31

I'm a stay-at-home-dad ... You do get along with the ladies but sometimes you feel a bit 'I can't say that', whereas you would say it to your mates, so this has been a good outlet for me.

Ash Callander, Member Me and My Dad Playgroup

'Men-only playgroup pushes aside gender stereotypes to provide support for dads'

We have no family close by and this is something that we can both come to with our two kids because it is not just for mums.

Young parents from Playgroup

40 Years of Playgroup – Celebrating Our Story of Connecting Communities

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The purpose of this Cost Benefit Analysis is to identify and value the economic impact (costs and benefits) arising from Community Playgroup. The costs of Community Playgroup should be compared against the benefits that they generate. However, the key motivator for government funding of playgroups is not economic but ethical.

A civilized society has an ethical obligation to support the healthy and happy development of its children and this ethical obligation is the principal motivation for government support of Community Playgroup. Australia recognises this ethical obligation in our ratification of the UN Convention on the Rights of the Child. According to this convention, children have the right to play, the right to meet and engage with other young people, the right to an environment that facilitates their development. Community Playgroup is one avenue supported by government to achieve these rights. The government motivation for funding such initiatives reflects the ethical obligation to support the participation of children in society.

However, rights are rarely costless and government needs to account for how it allocates its limited resources. This CBA recognises the primacy of the ethical value of playgroup while measuring its economic value. It gauges whether expenditure on Community Playgroup represents a sound social investment: are the benefits worth the costs when viewed in the light of the many alternative uses of society's scarce resources?

Children are people with rights. But to economists and in a CBA, children are also:

- a cost,
- consumer durables (providing a flow of utility to their parents),
- investment goods (providing income), and
- public goods (providing both positive and negative externalities justifying government support).

Economic analysis (cost benefit analysis) of Community Playgroup justifies the government support of Community Playgroups by identifying the benefits not just for the children and caregivers attending

Community Playgroups but also for the wider Australian population. By valuing the costs and benefits for all society, Cost Benefit Analysis encompasses more than each participant's direct benefits and costs. CBA takes a social view that values all the relevant impacts, direct and indirect.

Community Playgroups provide public goods, positive externalities or spillovers in addition to their direct contribution to each child's development. The wider social and economic value of Community Playgroup as sites of personal development, social support, networking and civic engagement need to be valued for enhanced social and economic policy. The spillovers or social benefits generated when parents and carers participate in Community Playgroup contribute to community strengthening, through outcomes such as increasing trust, connectedness and volunteering, as well as the development and maintenance of knowledge and skills that contribute to informal and formal economies (McShane, et al. 2016, 9).

Relationships forged in Community Playgroup matter and social networks are valuable social capital: assets that make the economy work (Coleman 1988), (Putnam 1993), (Fukuyama 2001), and (Portes 2000). Research finds that individuals with strong social networks are more likely to be "housed, healthy, hired and happy" (Woolcock 2001, 12). These positive economic outcomes for well-connected individuals extend to the broader community, for example reductions in transaction costs and the generation of positive externalities such as norm fostering, information flows and social trust, allow society to function. For example, social epidemiology has identified significant connections between levels of social capital and community health status (Brough, et al. 2007).



My friends and I met at Playgroup about 23 years ago and we are still getting together for dinner every six weeks.

We were a Tuesday afternoon group, taking turns to provide an activity for the children but I think we got at least as much from the groups as the children did. We also took it in turns to bring afternoon tea.

When our children went to school, we started meeting for lunch at each other's homes every 6 weeks or so. Then when some of us started work again we made it dinner and we are still going. Each year we have a special Christmas dinner with our husbands/ partners. We have two grandmothers and one expectant grandmother so far. We often confuse people when we say we have a Playgroup dinner to go to as we obviously don't look as though we have young children, but we still call our meetings 'Playgroup'.

Playgroup Member

40 Years of Playgroup - Celebrating Our Story of Connecting Communities



One substantial public good externality that must be considered is the extra future taxes children and their parents will pay (due to their participation in Community Playgroups), funding the future provision of government goods and services. While we all benefit

from future government services, parents carry most of the costs of providing the future taxpayers (Folbre 1994, 86). This provides an economic justification for government support (subsidised childcare) for children as a public good.



Methodology

This CBA of Community Playgroup is a comprehensive process for determining if, and if so the degree to which, the economic value of benefits exceeds the economic value of costs. Cost Benefit Analysis answers the question:

Do Community Playgroups add to the net economic wellbeing of society?

The evaluation methodology used in this report is a systematic application of Cost Benefit Analysis. It incorporates a desktop review, interviews with key stakeholders, and a review of key documents to identify and value the economic costs and benefits of Community Playgroup.

CBA focuses on quantitative data and so does not fully capture the richness of families' playgroup experiences and interactions. However, the quantitative data used in this CBA is informed by a review of the extensive qualitative research on playgroups and other early childcare interventions. This CBA incorporates this research in a systematic evaluation process allowing comparisons to be made with other economic activities. This CBA report also includes the voices of those who have attended playgroups and these perspectives illuminate the research.

The methodology used in this CBA is consistent with the recommendations of relevant government agencies (Office of Best Practice Regulation 2016), (Western Australian Program Evaluation Unit 2015), (Queensland Treasury 2015), (New Zealand Treasury, 2015), (New South Wales Government 2013), (NSW Treasury 2007), (European Commission 2008), (Department of Finance and Administration 2006), (United States Office of Management and Budget 2003), (HM Treasury 2003), and (Treasury Board of Canada Secretariat 1998). This CBA follows the systematic practices set out in those guidelines.

This CBA encompasses recognised elements for conducting a cost-benefit analysis in an analytical process including:

1. Define the scope of the analysis;
2. Identify program impacts, both costs and benefits;
3. Estimate the value of costs and benefits;
4. Calculate present values and decision criteria;
5. Conduct sensitivity analyses; and
6. Assess the distribution of costs and benefits.

The economic valuation techniques and algorithms used in this analysis are consistent with studies valuing other social interventions, including in Australia, for example (Barrett 1993), (Barrett and Applegate 2011), (Daly and Barrett 2012), (Daly and Barrett 2014), (Daly and Barrett 2016), (Daly, Barrett and Williams 2016), (Daly, Barrett and Williams 2017), (Karoly, et al. 1998), (Chisholm 2000), (Wakerman, et al. 2001), (Browning 2011), (Degeny, Hopkins and Hosie 2012), (Drummond, et al. 2005), (Welsh and Farrington 1999), (Crime Research Centre 2007), (McCausland, et al. 2013), (Price Waterhouse Coopers 2009), and (Price Waterhouse Coopers 2015). These studies, like this CBA, identify the factors that determine the relevant outcome, make plausible estimates from reasoned assumptions and aggregate them to obtain estimates of the selected decision criteria.

The unit values used in this CBA are derived from a desk-top analysis of the research literature and presented in a meta-analysis at Attachment C. Meta-analysis is a set of techniques for analysing and

summarising the findings of multiple quantitative empirical studies (Lipsey and Wilson 2001). The meta-analysis here derives consensus estimates of unit values from professional judgments and knowledge.

Playgroup and other early childhood interventions have been subject to numerous evaluations (Cunningham, et al. 2004), (Farrell, Tayler and Tennent 2002) (French 2005); (Johnston and Sullivan 2004); (Fish and McCollum 1997); (Sneddon, et al. 2003), (Jackson 2005), (Kops 1999), (McBride 1990), (Chen, Hanline and Friedman 1989), (National Dissemination Program 2003), (Plowman 2002), (Erwin and Letchford 2003), (Fagot and Pears 1996), (Rhodes and Hennessy 2000) and (Statham and Brophy 1991). Some of these evaluations are based on the Longitudinal Study of Australian Children (LSAC) (Sanson, Misson, et al.

2005); and (Soloff, Lawrence and Johnstone 2005). While, the above research does not provide economic evaluation, they do describe and estimate the impacts and are used in this report to provide the basis for identifying and quantifying relevant impacts for economic valuation. Most of this research on early childhood intervention is not focused specifically on Community Playgroup, but it is the best evidence available to determine the impact of Community Playgroup.

This report is the first Cost Benefit Analysis of Community Playgroup in Australia. Instead, this sphere is populated by international economic evaluations of early childhood evaluations lacking a strong focus on the role of play. This report is an attempt to fill that gap.

The Bush Kids Playgroup started in 2006.

It was set up in Ambrose – a tiny community between Rockhampton and Gladstone – by mother of five Samantha Tankard, when her first child was six months old and there were no local educational opportunities for young children. The Playgroup has also helped address the isolation, with the next closest playgroups being 60 km away in Gladstone.

“The Bush Kids Playgroup is not just good for the kids, but for mums as well. It gets us out of the house and we talk to other adults. It’s important to have friendships, people you can catch up with outside of playgroup, and to see some familiar faces when you are in town. Playgroups are a real godsend to me.

Ms Peart, Member Bush Kids Playgroup Ambrose Queensland.
‘Playgroup gives bush kids a place to learn and grow’

Economic evaluations of early childhood interventions include:

- Cost Benefit Analysis of several US early childhood interventions serving disadvantaged children and families. The estimates of benefits per child served, net of program costs, range from about \$US1,400 per child to nearly \$US240,000 per child giving a return to society from \$US1.80 to \$US17.07 for each dollar invested (Rand Corporation 2005, 3);
- The Carolina Abecedarian Study provided intensive pre-school services to children in low-income families from infancy to five years of age. Cost Benefit Analysis (Massé and Barnett 2002) calculated that, discounted at 3 % annually, the program yielded an NPV per child of almost \$US100,000 in 2002 dollars, and a return to society of \$US3.78 per dollar invested;
- The Cost Benefit Analysis (Reynolds, et al. 2002) of the Chicago Child-Parent Centers identified improved educational performance and social behaviour, lower rates of grade retention, less special education placement, a higher rate of high school completion, less school dropout, and fewer juvenile arrests. Analysis of the costs and benefits of the program indicated that, discounted at 3 % annually, the program yielded \$US7.10 return per dollar invested;
- A follow up CBA (Reynolds, et al. 2011) of the Chicago Child-Parent Centres using data collected up to age 26 identified a total return to society of \$US10.83 per dollar invested;
- A Cost Benefit Analysis of Canadian childcare (Canadian Population Health Initiative 2004, 54) identifies returns of \$C8 for every \$C1 invested;
- A Cost Benefit Analysis of Winnipeg and Canadian childcare (Prentice and McCracken 2004) found that for every \$C1 invested returned \$C1.38 to the Winnipeg economy, and \$C1.45 to Canada. Three subsequent reports, on rural, northern and francophone regions, identified higher returns, with every \$C1 of spending producing \$C1.58 of economic effects;

- A CBA (Synergies Economic Consulting 2013) of early intervention for children with autism found that every \$1 invested returned \$11.30;
- A CBA (PwC 2019) of early childhood education in Australia in 2017 found that every \$1 invested returned \$2;

The few cost benefit analyses that focus on early childhood intervention (Dalziel, Halliday and Segal 2015), are mostly in North America and none of playgroup in Australia. There have been calls to redress this gap, with a greater number of quality evaluations of the outcomes of playgroup (Dadich and Spooner 2008), (Williams, et al. 2015), and (CFCA 2017). This CBA is seeking to fill that gap. It is a contribution to outcome-focused evaluation in primarily quantitative terms.

“It’s 50:50 about the kids getting an educational experience... [and] 50 per cent about the mums being able to have a coffee with another mum and just say, this is what’s going on for me”

McShane et al. 2016:29



Description of Playgroup

Operation of Playgroup

“

Play is a fun activity that reaps serious rewards. It helps improve children's social, emotional, physical and cognitive development.

Telethon Kids Institute

About half our kids in our school don't have a male at home, so it's wonderful for our primary students to see positive parenting by men with young children (at Playgroup).

Michelle Wilson –

Sebastopol Primary School Principal, whose Ballarat school hosts Me and My Dad Playgroup.

[Men-only playgroup pushes aside gender stereotypes to provide support for dads](#)

”

The playgroup movement is supported by the Department of Social Services (DSS), through the funding of Playgroup Australia. Playgroup Australia subcontracts the State and Territory Playgroup Organisations (STOs) to provide support to Community Playgroups. In each state and territory these bodies provide Community Playgroups with a range of support benefits, dependant on the needs of the local community.

For example, the STOs

- Help volunteers negotiate venue costs and assist them in developing their coordination, facilitation, and administration skills,
- help local playgroups with promotional activities, particularly to establish a newly formed Community Playgroup),
- provide Community Playgroups with a range of ideas for play-based activities designed to advance early learning and meet the varying developmental needs of children,
- help local playgroups develop valuable social/peer support networks,
- help parents and caregivers start new playgroups or find an existing playgroup to join,
- provide general support such as information about training and support, insurance, events, fundraising, and assistance with accessing venues and resources,
- raise awareness of the importance of playgroup and foster participation.

Organisational Chart: Playgroup Movement

While this CBA focuses on Community Playgroup, as illustrated in the chart to the right it is important to understand these are embedded in a broader playgroup context, which also includes supported and facilitated groups, including PlayConnect playgroups. These supported playgroup models are initiated and led by a paid facilitator (often an early childhood educator/teacher, family support worker or other human service professional).

The paid facilitator coordinates the playgroup sessions and oversees the planning and activities. Supported playgroups are funded by Federal, State & Territory governments (Boddy and Cartmel 2011), (Centre for Community Child Health 2011), (Jackson 2011), and (Jackson 2013). Supported playgroups are not the subject of this CBA.



Community Playgroup involves a group of mums, dads, grandparents and caregivers coming together to engage with their babies, toddlers and pre-schoolers in interactive and fun play-based activities. Led by parent volunteers, a range of play activities are set up each week to advance early learning and meet the varying developmental needs of the children. Activities range from music and singing, imaginative outdoor play and free play, art and craft, outings and cultural activities. Community Playgroup is primarily funded and run by volunteer parents and carers. Therefore, the most important ingredient of a quality Community Playgroup is the time, effort and resources of the families who attend them (Commerford and Robinson 2016).

Community Playgroup is a localized, low-cost, light-touch model of intervention for families with young children. Program structure is flexible with no specified curriculum content or routine. Community Playgroups come in many different forms, including father playgroups, intergenerational playgroups, rainbow playgroups, Indigenous playgroups, FIFO workers playgroups, and playgroups for a range of language specific and culturally diverse groups. Every Community Playgroup is unique, and reflects the local community and the personalities of participants.

Common elements of Community Playgroup include parents engaging in play with their children, conversations between parents, and sharing a snack-time (Berthelsen, et al. 2012). Some groups engage in

a combination of outdoor and indoor play, while others are conducted indoors only. Indoor activities typically include music, singing, a group story, and free play. Outdoor activities typically include water and sand play, and gross-motor development activities using play equipment (Williams, et al. 2018).

Millions of Australian families have benefited from Community Playgroup since its inception, over four decades ago. Playgroup is a social forum providing substantial benefits for communities, governments, parents/caregivers and children.

Community Playgroup is one of Australia's largest volunteer movements. In 2018, there were 7,560 Community Playgroups that held 285,847 sessions per year. Playgroups embraced over 110,801 families and 8,308 volunteers (Playgroup Australia 2018).

In terms of funding and cost, playgroup sits alongside the Early Childhood Education and Care (ECEC) sector. Total Australian, State and Territory real government recurrent and capital expenditure on ECEC services was \$9.2 billion in 2017-18, compared with \$9.5 billion in 2016-17 (SCRGSP 2019, 3.4). Playgroup is a highly cost effective program, receiving only a few millions of these billions of dollars. Community Playgroup represents a tiny fraction of the cost of raising a child in Australia.

For a more detailed explanation of Community Playgroups see Attachment B.

“

Some of the dads are fulltime stay-at-home, some work part-time, some come and go. The single, unemployed full-time dad with two young children who came to our group a few times was the one I admired most. But the one thing all the dads in our group have in common is a desire to spend more time with their children and to enrich their lives with more social experiences.

Michael Pottinger. Member Dads Together Playgroup
40 Years of Playgroup – Celebrating Our Story of Connecting Communities

”

What is the problem?

“... the downsides of a child falling behind economically are the largest they’ve been in generations.”

Joe Pinsker, The Atlantic, 16 January 2019

The transition to parenthood is challenging for many parents. It brings stress, financial adjustments, life upheavals, new responsibility and sleep deprivation. In addition, many parents report social isolation, weak parenting skills, low self-confidence, limited knowledge of community services, and an inadequate awareness of their child’s needs. The current intensive parenting norm holds the individual mother primarily responsible for child rearing. This cultural norm dictates that maternal led parenting is to be child-centered, expert-guided, emotionally absorbing, labor-intensive, and financially expensive (Hays 1996). These social expectations place additional pressures on families, chiefly mothers.

These pressures are particularly relevant for socially disadvantaged families. Research shows that socio-economic disadvantage reduces parental capacity to engage in positive parenting and early home learning activities that support children’s development both in the short and long term (Walker, et al. 2011). Inequality in access to early childcare perpetuates economic inequality across the generations (Lareau 2011). Widening inequality of children’s opportunities, based on educational credentialing, places great pressure on parents to provide expensive childcare. This is seen in the shift of cultural norms from accomplishment of natural growth parenting (play) to child-centered, time-intensive parenting with high parental investments in children (Ishizuka 2018). The expense of this new parenting norm can exclude disadvantaged families from quality childcare and substantially limit their children’s future opportunities, adversely impacting on

their lifetime health, income and wellbeing. In contrast, playgroup provides low cost access to quality child focused engagement.

The transition to parenthood requires support. Loneliness or social isolation is a problem for many parents (Matthey 2011). Changing community demography has resulted in a loss of traditional support structures. These social changes also impact the environments of childhood development. Compared with previous generations, children are engaging in much less play with other children. This can be attributed to factors such as fewer siblings, fewer neighbourhood children, an increased focus on literacy and numeracy, an increase in passive entertainment, as well as fears about outdoor areas for children’s play. The changing social landscape has created an increased need for community initiatives, like playgroup, to support families with young children (Davies and Harman 2017).

Research demonstrates the benefits of playgroup attendance for parents, particularly mothers, and children. Mothers’ participation in Community Playgroup has been shown to improve social support, increase parenting confidence, and effectively reduce maternal stress, all at a modest cost. Conversely, research indicated poorer friendship outcomes for mothers who not attend playgroup (Small 2009) and (Hancock, et al. 2015).

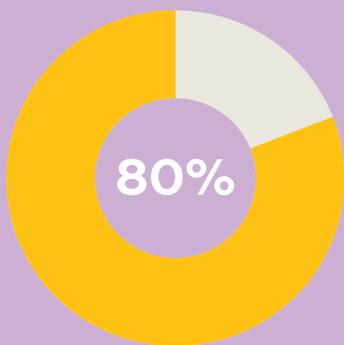
Why Playgroup?

1.75x more likely

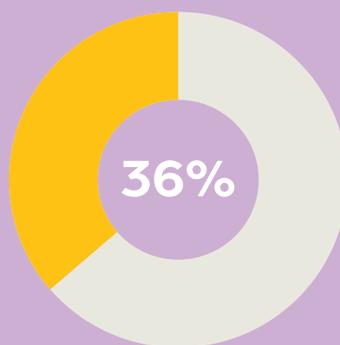
Children who do not attend playgroups prior to school are 1.75 times more likely to be developmentally vulnerable on one of more domains of development at school entry.

All ACEC Domains

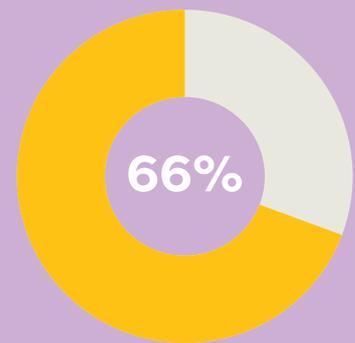
The benefits of playgroups are seen for All ACEC Domains of child development physical, social, emotional, language, cognitive development and communication.



Playgroups operate in 80% of Australian postcodes.



of children in Australia attend Playgroup.



of children from the most disadvantaged families attend playgroup

Based on data collected during the 2012 Australian Early Development Census

“To me, as a grandmother, this playgroup was so important. You go crazy with a kid alone all day. The playgroup was very welcoming, very inclusive.”

Kathy Prohovnik, 61 Grandparent

[‘You go crazy with a kid alone all day’: Mums socially isolated as playgroups find themselves homeless](#)



Playgroup provides children with the opportunities for play and social engagement. Children’s play is essential for their development and well-being, but increasingly, outside of playgroup time, children’s play is consumed by other activities. Reduced play has been shown to adversely impact both physical and mental health, negatively impact educational outcomes and reduce economic productivity. Children who do not attend a playgroup prior to school, are almost two times more likely to be having trouble in their school transition, compared to children who attended playgroup (Gregory, et al. 2017, 5). Governments face rising healthcare, education, welfare and justice costs to deal with these problems.

However, despite research demonstrating that playgroup is universally beneficial to children gaps remain, with 65% of children nationally not attending playgroups. Further, the Perth Telethon Institute

for Child Health has found that children from disadvantaged backgrounds benefit the most from involvement in playgroups but are the least likely to attend.

“The kids who go to playgroup watch less tv, do more things outside the homes so they’re more likely to go to swimming pools, museums, movies, cultural events.”

David Zarb, Playgroup WA’s Chief Executive

What is the response?

“

The playgroup was essential for me to settle in Mosman with my son. I found a place where I could meet the same faces every week and have a cup of tea with the same people. They became my friends – people with the same problems with moving to Australia.

”

[Ludwika Sawicka-Robak, Playgroup Member who moved to Sydney from Poland ‘You go crazy with a kid alone all day’: Mums socially isolated as playgroups find themselves homeless](#)

Community Playgroup addresses the problems of transitioning to parenthood by providing low-cost, but high-quality experiences focused on children’s play. For over 45 years, Community Playgroups have been an important part of early childhood for Australian families.

Over 100,000 and perhaps as many as 200,000 Australian families participate in Community Playgroups each week. Playgroups are one of the most affordable regular play activities that parents can do with their children.

What are the alternatives?

Before the Industrial Revolution it was the whole village that minded the children, not individual parents. In the face of crushing new inequalities, a modern version of that approach is worth trying.

Economist Special Report Childhood, January 5th 2019

Opportunities for outdoor play and immersion in nature are essential to the health and wellbeing of children, helping them to develop to their full potential. Participation in nature play has the ability to enhance children's cognitive flexibility and creativity, boost self-esteem and improve resilience. 'Nature play' includes any unstructured play outdoors such as riding a bike, climbing a tree, gardening, bushwalking and swimming at the beach.

Children that are active in their youth are more likely to be active adults as well.

Rebecca Kelly from Active Canberra speaking about Canberra Nature Playgroups
[Nature Play CBR: Canberra families encouraged to put down the phone and play outdoors](#)

This CBA identifies the incremental costs and benefits, of Community Playgroup, over the likely costs and benefits in their absence. The alternative considered in this CBA is the individual play of each child at home. Therefore this CBA estimates the extra costs and benefits of Community Playgroup compared with individual children playing at home. As the most realistic alternative to Community Playgroup, care in the family home is an appropriate alternative against which the impact of Community Playgroup is determined.

Formal childcare has been ruled out as an alternative. Formal childcare is much more expensive than Community Playgroups. However, this is not to say

Community Playgroup is a cheap substitute for childcare. Community Playgroup is a unique, informal and self-sufficient institution involving the active participation of parents and their young children (Beh-Pajoo 1991, 84). Based on these differences formal childcare is not considered as an alternative to Community Playgroup within this CBA.

Care in the home does not provide the same level of service as Community Playgroup. Comparing the different impacts of Community Playgroup and the care at home is the basis for this CBA. By using the care at home as our comparison (base case scenario), this CBA captures the extra costs and benefits of Community Playgroup.

Identify benefits

“

When I was living in China there was no such thing as Playgroups.

Children went to kindergarten from 3 years of age and were there to learn to read and write. As a teacher, I knew the concept of free play and choices in play but this was not always practical because a lot of the furniture in my classroom was adult-sized.

When I came to Australia, I was surprised to see the rooms with child-sized furniture and areas where children could play on the floor. I took my daughter to Playgroup and couldn't believe all the activities that were there for her to play with. She learnt a lot about playing with other children and choosing what to play with. I feel happy she had the chance to go to Playgroup. I don't know if things have changed in China because it was a long time since I lived there, but if I went back to live there and teach, I'd give children more time to play.

”

Parent from China now living in Australia
40 Years of Playgroup – Celebrating Our Story of Connecting Communities

Our capabilities, incentives, and motivations jointly shape our behaviour. Capabilities emerge early. They are not set in stone and can be fostered. Families and environments play a powerful role in shaping our capabilities (Heckman 2012) and (Feinstein 2000). Community Playgroup cultivates children's capacities with substantial benefits for the children, their parents and their communities.

The benefits of Community Playgroup included in this CBA are:

- reduced costs for governments (resources freed for their next best use),
- more productive employment for Community Playgroup parents and children,
- better educational outcomes for Community Playgroup children,
- better health outcomes for Community Playgroup children and their parents, and
- better child protection outcomes for Community Playgroup children.

The benefits of playgroup and other early childhood interventions are documented in extensive research conducted over the last four decades. For example see: (Schweinhart, Berrueta-Clement, et al. 1985), (Lloyd, et al. 1989), (Barnett 1998), (Daniels 1995), (Maatita 2003), (French 2005), (Dadich and Spooner 2008), (Jackson 2011), (Hancock, et al. 2012) (Needham and Jackson 2012), (McKenzie and Stooke 2012), (New and Guilfoyle 2013), (Sincovich, Harman-Smith and Brinkman 2014), (Hancock, et al. 2015), and (Gregory, et al. 2017).

Confirmation of the benefits associated with playgroup and other early childhood interventions comes from a range of related disciplines, including:

- developmental psychology (Fagot 1997) and (Hill 1989),
- education (Vygotsky 1986), and
- family therapy (McBride 1990).

Benefits from Community Playgroup participation

Impact type	Child	Parent/carer	Society (externalities)
Emotional & cognitive	Behaviour IQ Achievements	Family relationships Home environment	Community networks Trust
Education	Grade promotion Remedial classes Graduation	Continuing education	Education norms School peer
Work	Work & income	Work & income	Employment norms
Welfare	Independence	Independence	Welfare norms
Justice system	Arrests	Arrests	Law abiding norms
Health	Child abuse Medical Care	Family planning Medical care	Family norms Health externalities

Research identifies a broad range of benefits for children regularly participating in Community Playgroup and other early childhood interventions, including:

- an improved sense of wellbeing;
- enhanced self-confidence;
- cognitive, emotional, and/or behavioural competencies;
- a sense of acceptance and belongingness;
- increased access to human services;
- age-appropriate stimulation;
- healthy parental relationships;
- age-appropriate integration;
- increased opportunities for healthy play and creativity;
- enhanced communication and cooperation skills; and
- extended social networks.

See (French 2005); (Gray, et al. 1982); (Chen, Hanline and Friedman 1989); (Farrell, Tayler and Tennent 2002); (Fish and McCollum 1997); (Hinde and Roper 1987), and (Dadich and Spooner 2008).

Other early childhood research has documented significant improvements over time in:

- cognition (Deutscher, Fewell and Gross 2006), (Evangelou, Brooks and Smith 2007), and (Layzer, et al. 2001);
- behaviour skills (Deutscher, Fewell and Gross 2006), (Evangelou and Sylva 2003), (Freiberg, et al. 2005), (Hackworth, et al. 2013), and (Terrett, White and Spreckley 2012);
- attachment status (Scharfe 2011);
- social development (Nicholson, et al. 2010) and (K. E. Williams, et al. 2012);
- time in outdoor play (Weber, et al. 2013);
- behavioural problems maintained to 6-month follow-up (Robinson, et al. 2009);
- language gains in children with English as a second language (Pelletier and Corter 2005);
- children's social skills and general development (Oke, Stanley and Theobald 2007); and,
- exposing children to learning opportunities and resources (ARTD Consultants. 2008b) and (ARTD Consultants 2008a).

Community Playgroup parents report improvement in their child's social skills, particularly an improved capacity to get along with other children, and in learning to share (ARTD Consultants 2008a), (ARTD Consultants. 2008b), and (DEECD 2012).

Community Playgroup children successfully accomplishing a task as part of their play, build up their feelings of self-efficacy. This is a sense that they are competent, autonomous children who can learn, grow and succeed. Self-efficacy gives a huge boost to overall wellbeing, and psychologists have shown it can have a positive influence in wide range of areas including improved academic achievement.

US research on an early childhood program (Schweinhart, Montie, et al. 2005) follows participants over 40 years (see figure below) demonstrating substantial improvement in justice system interactions, earnings, and schooling over non participants. This program substantially reduced negative behaviours (aggressive, antisocial, and rule-breaking), which, in turn, improved a number of labour market outcomes, health behaviours, and criminal activities (Heckman, Pinto and Savelyev 2013, 3).

“Happiness is infectious and contagious – and it has a positive impact on the health and well-being of everyone.”

(Dowthwaite 2018)

Community Playgroup saves the government substantial resources. In the absence of Community Playgroup there would be a substantial increase in the resources required by agencies such as schools, healthcare, foster care, and the justice system. In the absence of Community Playgroup greater costs to support children and their families will shift to these agencies and will inevitably result in even larger costs for the health and welfare systems.

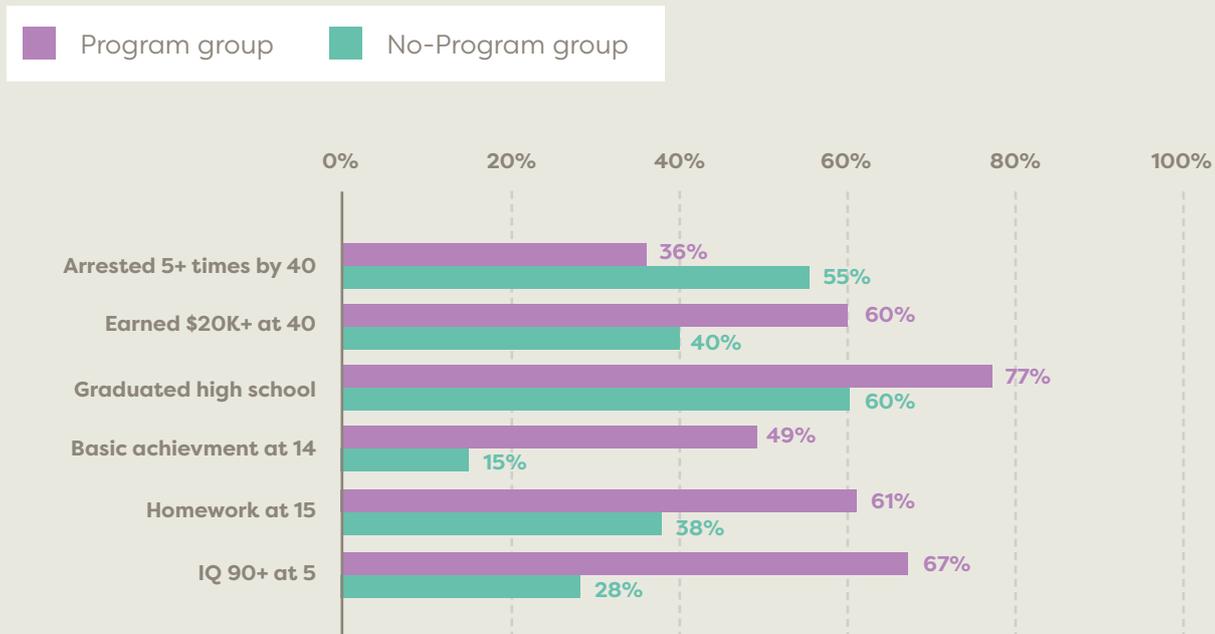
The benefits valued in this CBA are based on Community Playgroup promoting an alternative to home-based childcare; freeing resources for other economic opportunities; and increasing the productivity of children and their families. Community Playgroup reduces the resources required to care for children and raises children’s future productivity as members of the wider community by strengthening their human and social capital. In this way Community Playgroup provides major benefits to the people of the Australia.

43,055

Victoria is home to 43,055 people with Pacific Islander heritage. The Pasifika Language Nest playgroup helps preserve Pacific Islander languages.

Major Findings:

High/Scope Perry Preschool Study at 40



Source: (Schweinhart, et al. 2005, 2)



“When you do not have a community around you, you look for support in other places.

English (the children) are learning all the time so they never lose it because it is spoken everywhere but the mother tongue from generation to generation it gets to the point where they just do not have it anymore. The group could also help parents who were not fluent in their ancestral languages or who were looking for a community that shared their background.

Malia Vaihu,
Playgroup Founder Pasifika Language Nest Playgroup
[A new playgroup for children from Pacific Islander cultures hopes to keep language and culture alive in Cranbourne](#)

Social support from playgroup comprises three types of support:

- tangible or instrumental support (the provision of aid or services);
- informational support (the provision of information or advice) and
- emotional support (being able to confide in and rely on others (Hancock, et al. 2015, 2)).

Social support is based upon personal relationships of communication and mutual obligation where people are cared for and valued (Cobb 1976). Social support is an investment in human and social capital and improves health and wellbeing (Sarason and Sarason 2009), (Vangelisti 2009) and (Berkman, et al. 2000).

Strengthened human and social capital enables:

- better educational outcomes;
- improved health and wellbeing; and
- more productive employment.

Benefits of resources freed for their next best use include:

- medical resources;
- educational resources;
- foster care resources; and
- justice system resources.

Benefits from resources becoming more productive include:

- Community Playgroup children and their families' employment, health, education.

The benefits of Community Playgroups are clearly substantial. These benefits are the logical outcome of the modest inputs used up by Community Playgroups.

Program logic

When Gracie was a baby, I worked out that all my friends ditched me. I had absolutely no friends.

Playgroup actually helped me get out of the house, it helped me meet new people, it gave Gracie a chance to make new friends.

Elicia, Mother from Hobart

[Parents fight isolation with a little help in Hobart's historic Chigwell House](#)

Evaluation needs to be based on a theory of how the evaluated policy creates social change. In the evaluation literature, this is variously referred to as a 'logic model', 'theory of change and action', 'pathways of change' or 'critical path analysis' (Whelan 2009), (Harvard Family Research Project 2009), (Guthrie, Louie and Foster 2006), (Reisman, Gienapp and Stachowiak 2007), (Organizational Research Services 2004), and (Lawton, et al. 2014). Program logic is used in other playgroup evaluations (Mitchell and Mara 2001). The theory of social change is very important as it defines the inputs and outputs of the object of the evaluation, in this case Community Playgroup.

Program logic is a 'theory about the causal linkages among the various components of a programme: its resources and activities, its outputs, its short term impacts and long term outcomes...making a programme's theory of action explicit is the first step towards testing its validity' (Funnell 1997, 5). This CBA uses a LogFrame table and impact chart to make Community Playgroup's logical causation explicit in order to identify the relevant costs and benefits for valuation.



Going to Playgroup straight from mothers' groups is definitely good.

The kids all know each other and get excited to see each other. They get all the different toys to play with. And because nine of us were first-time mums, they didn't have siblings to play with at home. Primarily, it was for us. We desperately needed it. It helps you keep your sanity when you're home with a baby all day.

We've become good friends and are very supportive of each other. If anyone's having a bad day, we might cook up a meal to make things a bit easier. It's good to be able to call a friend when things are tough. You put your troubles in perspective when you talk it over with someone who might be doing it even tougher.



Jen Roberts, Playgroup member
40 Years of Playgroup – Celebrating Our Story of Connecting Communities

The logic model used in this CBA shows how playgroups function and specifies the relationships between resources, activities and outcomes (Lawton, et al. 2014). The playgroup model is based on the logical framework that playgroup support families “when their children’s development is most rapid, through the early years, will have a lasting influence on children” (Jackson 2011, 29). The theoretical basis for the framework is an ecological model of human development known as “ecological systems theory”, or “development in context”, or “human ecology theory”, or “ecological/systems framework” and is based on research by Bronfenbrenner (1979).

A logical framework (LogFrame) validates the causation of social change by specifying the objectives of a project, program, or policy. It identifies causal elements (program logic) of the results chain linking the hierarchy of inputs, processes, outputs, outcomes, and impact. It leads to the identification of performance indicators at each stage in this chain, as well as risks that could mitigate the attainment of the objectives (Clark, Sartorius and Bamberger 2004, 8) and (Team Technologies 2005).

The relationship between Community Playgroup inputs and outputs (cause and effect) is summarised in the Logframe table below. This shows that Community Playgroup has a logical relationship between:

- **inputs** (labour, services, materials, etc) which are used in play activities;
- **activities** (play) to produce a set of outputs/outcomes;
- **outputs/outcomes** (child development, family support, community development) to achieve Playgroups’ purpose;
- **purpose** (better health & education) which achieves society’s goal;
- **goal** (increased wellbeing of Australians).

Using this causal hierarchy helps ensure that only the costs and benefits logically pertinent to Community Playgroup are included in this CBA.

The Logframe identifies the CBA costs as the inputs (resources) used by Community Playgroup. The CBA

benefits are identified as purposes, these are better health and education for children and improved productivity and health for parents/carers.

The Logframe (Table 1) displays the hierarchy of Community Playgroup impacts in the Narrative Summary column. In the table impact-causality rises, that is: impacts below cause the impacts above.

The Measurable Indicators column quantifies how Community Playgroup impacts will be measured.

The Means of Verification column records where the measurement information will be sourced.

The Logframe summarises the risks (shown in the final column) behind the causal relationship of inputs and outputs. These risks could prevent the logical-causality achieving the outputs, purposes and goals. The CBA assumes these risks are avoided and therefore Community Playgroup causality works. Assuming the risks are avoided allows Community Playgroup to move up the logframe table and achieve the goal. These risk assumptions are important for determining what can go wrong with Community Playgroup and therefore the risks to be included in the sensitivity analysis undertaken later in the report.

“As a mum I started attending Playgroup to meet new people and gain support. Once my children had reached school age I returned to Playgroup as a volunteer taking on a role as a coordinator. This role enabled me to attend a range of training workshops relating to Playgroups. This experience enabled me to move on to formal education and skills training for the early childhood industry and I am able to incorporate the skills and knowledge I have gained from my role with Playgroups.”

Playgroup Member
40 Years of Playgroup – Celebrating
Our Story of Connecting Communities

Table 01:**Logframe: Community Playgroup**

Narrative Summary	Measurable Indicators	Means of Verification	Risks
Goal: (Program objective) Increase Australian's wellbeing.	Net present value.	CBA report.	
Purpose: (Aim or impact) More productive employment. Frees education resources. Frees healthcare resources.	End Status Resources saved. More output.	Stakeholder interviews. Research literature.	Value of benefit over-estimated. Discount rate excessive. Measuring error.
Outputs: (Deliverables) Child development. Social skills. Emotional regulation. Early learning. School readiness. Community development: social capital. Social connection. Volunteering skills. Community safety. Community cohesion. Family support parent peer interaction. Knowledge sharing. Reduced social isolation. Entry to service system.	Terms of reference Number of children & parents.	Playgroup annual reports stakeholder interviews.	Appropriate skills education & health systems are functional.
Activities: (Key clusters or work breakdown structure) Play. 285,000 playgroup sessions p.a. Av. 34 sessions per playgroup p.a. 150,000 children attending playgroup. Av. 15 children per playgroup session. Over 7,500 Playgroups. 100,000 playgroup children enter school p.a.	Inputs: (Budget, people, material, time, cost) Labour services materials.	Playgroup annual reports, stakeholder interviews.	Resources are insufficient or inappropriate.



Identify the economic impacts (costs and benefits)



Ashmont Playgroup, in Wagga Wagga, is a Community Playgroup with a strong focus on the preservation of the Aboriginal culture and school readiness for the children.

Before the playgroup was created, most families didn't have exposure to any early learning environments. The Ashmont Playgroup is centrally located at the local primary school. The benefit of this is that the playgroup families begin to develop relationships and familiarity with the school community.

From there, it is possible to provide some essential pre-school education for the children before they start kindergarten. As a result, children have exposure to school readiness activities, which has resulted in positive outcomes when they start their school journey. Moreover, parents are also more involved in the school community.

I love seeing the families grow and watching the connections between the families.

Kellie Murrie, Playgroup Coordinator and Founder Ashmont Playgroup
[Playgroup of the Month: Ashmont Playgroup](#)



As identified in the Logframe analysis Community Playgroup has several benefits and costs.

Community Playgroup costs directly use up (in administration, sessions & training) a set of resources (labour, materials, etc). These resources are therefore unavailable for other uses in society and should be included in cost benefit analysis as an opportunity cost to society.

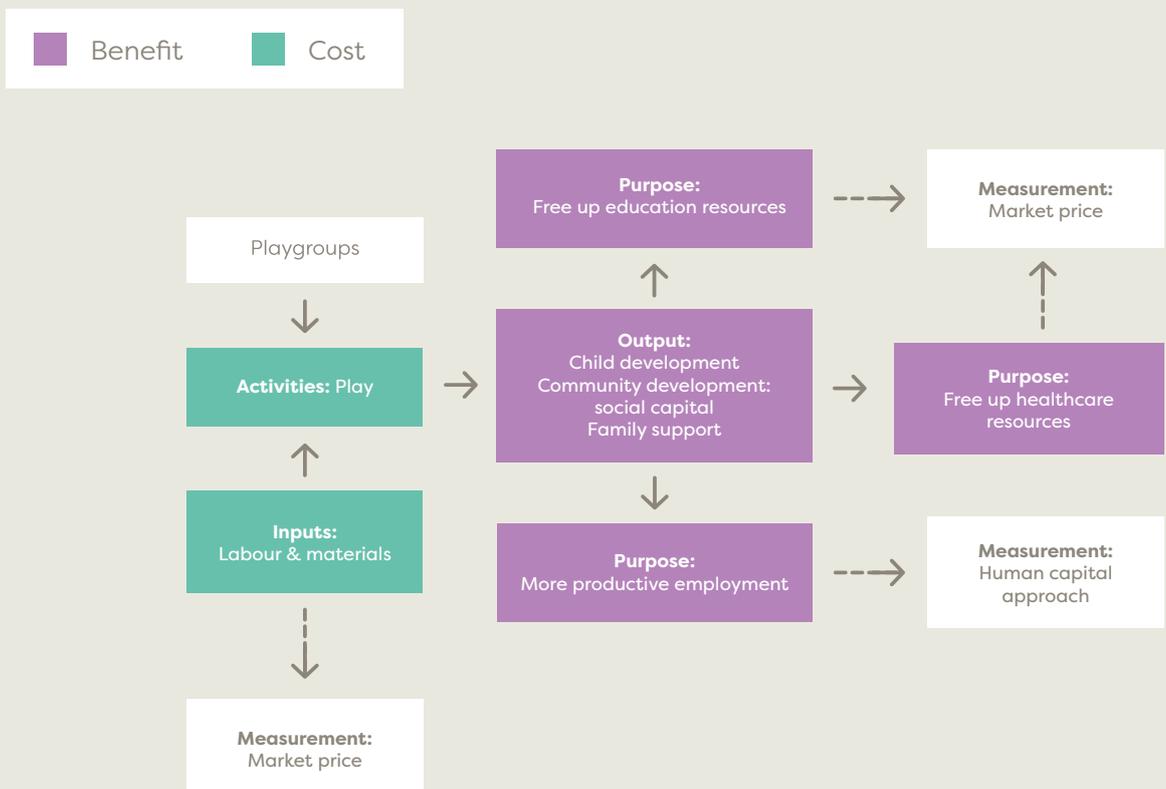
Community Playgroup, through improved community social capital and improved child development, releases resources for their next best use. These resources would have been required if Community Playgroup had not assisted parents and children to improve their skills. Fewer resources are required for education, health, and parenting support programs due to participation in Community Playgroup. These released resources are principally government resources. The benefits valued in this CBA are based on Community Playgroup

reducing the total cost of government policing, courts, prisons, health care, education, etc. by reducing the need for these government services.

In addition, Community Playgroups allow the resources and activities of parents and children to be more productive. For example, Community Playgroups have helped improve school attendance and employment outcomes (see Attachment C). This will raise the productivity of labour and increase the output of the economy.

These impacts are mapped in the impact chart below (Figure 1). The chart uses the Logframe concepts of Inputs, Activities, Output and Purpose to identify the flow of causation in Community Playgroups. The chart also identifies the valuation techniques used to measure the Purposes. This technique verifies that the identified costs and benefits are germane to a CBA of Community Playgroup.

Figure 01:
Community Playgroup Impact Chart



We've been there supporting each other through all our children's different stages – the primary years, the teenage years – and bounced ideas off each other to help us make decisions in exactly the same way we did when they were babies. Through all their stages we've shared the same sort of challenges.

Diana Fouracre, Playgroup member

40 Years of Playgroup – Celebrating Our Story of Connecting Communities

Identifying stakeholders assists in identifying relevant costs and benefits. The stakeholder table below (Table 2) lists the stakeholders impacted by Community Playgroup. Understanding which stakeholders are directly or indirectly involved in Community Playgroups,

their point of view and their objectives, verifies the costs and benefits identified in the impact chart above. It also provides an input into the Incidence Table (Planning Balance Sheet) used to examine the distribution of costs and benefits (Krutilla 2005).

Table 02:
Community Playgroup - Stakeholders

Stakeholder	Point of view	Objective
Australian governments	National/State	Improve Australian's wellbeing
Children & parents	Individuals	Improve individual wellbeing (health, education, employment)
Community Playgroup	Community group	Provide play for children.
National, state & territory playgroup orgs.	Agency	Support Community Playgroups
Child & youth protection services	Govt. agencies	Fewer notifications, care & family violence
Justice system	Govt. agencies	Reduced use of justice system resources
Schools	Govt. agencies	Reduced use of school resources; Higher pupil attendance & completion
Health care system	Govt. agencies	Reduced use of health care resources

The Incidence Table (or Planning Balance Sheet) (Table 3) summarises the costs and benefits of Community Playgroup stakeholders. Examining the stakeholder groups it is clear that the costs are borne principally by the government funders. Most of the benefits go

to the governments through reduced use of justice, health, housing, family and education agencies. The Community Playgroup children and their families benefit from better health, education, wellbeing and great labour productivity.

Table 03:
The Incidence of Costs and Benefits

Participant	Cost	Benefit
Australian governments	Grant money	Fulfil govt. policy, reducing govt. spending
Playgroup children & families	Time	Play; Better health & wellbeing; Greater productivity
Community Playgroups	Labour, materials, services	Provide play to their children
Child & youth protection services	No extra cost	Fewer clients, freed resources
Justice system	No extra cost	Fewer clients, freed resources
Schools	No extra cost	Pupil attendance & completion
Health care system	No extra cost	Fewer admissions, freed resources

Note: the no extra cost is due to these services experiencing a reduction in use due to Community Playgroup.

Community Playgroup provides governments in Australia with substantial cost savings while improving the wellbeing of Community Playgroup children and their families.



Value the Program's costs and benefits

“

Unable to have my own children, my husband and I decided to foster.

Whilst this can be wonderfully rewarding, the emotional challenge can be gruelling – being allocated a child not knowing how long ‘your’ child will (or will not) be with you... not until Court Orders are finalised. When only four months old, ‘our’ little boy came into our care. Recently (at 10 months) the courts placed him on a five-year order. ... My Playgroup traditionally presents each new mum with a card and bubbly upon the birth of their new baby.

For most mums this is great fun. Imagine my total surprise and thrill to be included in this little tradition last week. Such a small gesture yet you cannot know just how much the acknowledgement of being a mum has meant to be. Thank you ever so much, Playgroup.

Jillian Harburg

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”

This CBA measures the net impact on Australia's economic wellbeing from Community Playgroups. Economic valuation requires assumptions to make complex reality tractable in a rigorous cost benefit analysis framework. As demonstrated in the preceding analysis, this CBA encompasses the relevant costs and benefits.

Community Playgroup has operated for over 40 years and this CBA evaluates the next ten years beginning in 2019. Ten years is an appropriate timeframe to encompass the relevant future benefits and costs. Longer time periods increase uncertainty. The future benefits and costs are standardised by aggregating back to the year 2019 using a discount rate of 2% (as explained below).

The CBA techniques used in this report are in accord with relevant professional practice. Cost Benefit Analysis commonly makes economic valuations based on the research literature. This methodology is known as Benefit Transfer (Office of Best Practice Regulation 2016, 11) and is used in this CBA. Attachment C summarises the relevant research literature to substantiate the valuations adopted in this CBA.

Details of the valuation of the program's costs and benefits are given below. They have been verified with relevant stakeholders, however the estimates remain the responsibility of the authors.

Costs

During grief you often feel as if you're staring in at the world from an outside window. Playgroup actually helped me feel more normal and opened the door to me. For that I'll always be so grateful. I felt comfortable enough with these women to talk about my feelings. ... and many were ready to listen and offer sympathy. There was a kindness and generosity of spirit, which you don't often come across in this world.

Playgroup Member, who had experienced the loss of a child
40 Years of Playgroup – Celebrating Our Story of Connecting Communities

Cost Summary:

Community Playgroups

2019-2028 Total Present Value (2019 dollars discounted by 2% over ten years).

Accommodation	\$85,604,000
Other resources	\$35,968,000
Coordinators' time	\$101,601,000
Total Costs	\$223,172,000

Volunteer Coordinators' Time

Reason:

The time given by volunteers to plan and operate Community Playgroup will not be available for other uses and therefore there is an opportunity cost to society. These costs would not have arisen without Community Playgroup.

Methodology:

The coordinators' time volunteered to playgroups could be purchased in competitive labour markets where wages are a good estimate of economic value. Because the coordinator's time is volunteered, it is unlikely that paid workers are a perfect substitute. The volunteer

coordinators receive a benefit from working for their children and Community Playgroup friends that hired workers would not receive. Therefore, coordinators' time is valued at an imputed wage of only \$40 per week for 34 weeks per year for 8,308 coordinators (Playgroup Australia 2018). This gives a cost of \$112,990,000 for each year of Community Playgroup operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$101,601,000 (2019 dollars discounted by 2% over ten years)

Access to Venues

Reason:

Community Playgroups use accommodation resources (venues, cleaning, storage, rubbish collection, rates, utilities, maintenance, etc.) that have alternative uses and therefore are an opportunity cost to society. These costs are a result of the Community Playgroup.

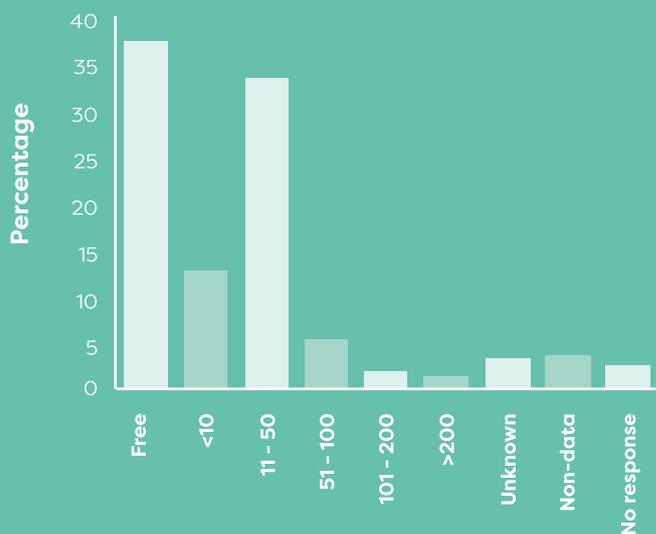
Methodology:

Some of the resources used to access venues will be purchased in competitive markets where prices are a good estimate of economic value. Therefore, these costs are valued at market prices. Some of the resources are not purchased in competitive markets (many are provided free). These resources are valued using prices from competitive markets.

Playgroup Venue Hire

Distribution by \$ per week

Australian playgroups use 3,684 venues (Playgroup Australia 2015, 31). Over 70% of all playgroups meet either once a week or once a fortnight. As shown in the figure above, of the over 50% of playgroups paying a hire fee for their venue, only 8% pay \$50 or more per week (Playgroup Australia 2015, 32). A typical playgroup spends between \$11 and \$50 per week on rent. This CBA assumes the average rent paid is \$30 per playgroup per week. Playgroups receiving free accommodation use an imputed cost of \$30 per playgroup per week to estimate the opportunity cost to society of their use of the accommodation.



Source: (Playgroup Australia 2015, 32).

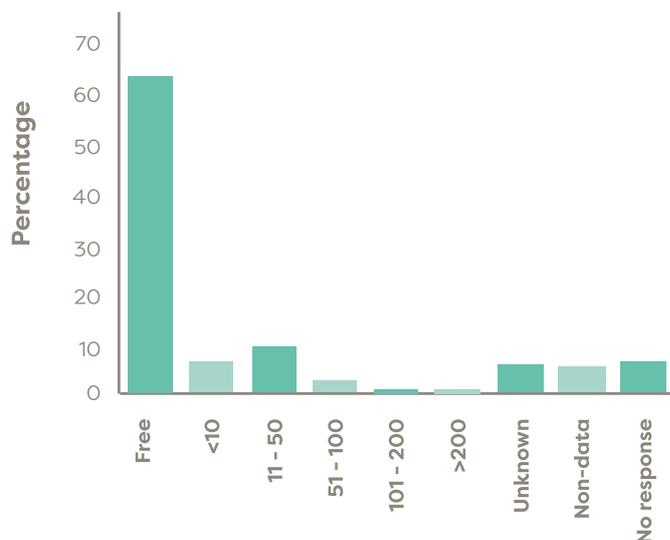
Playgroup Venue Non-Rent Costs

Distribution by \$ per week

Source: (Playgroup Australia 2015, 32).

At least 20% of the playgroups pay an additional amount in addition to their rent for the venue. 63% either have these costs included in their rent or organize volunteer working bees instead of paying additional costs (Playgroup Australia 2015, 33). This CBA estimates \$5 for associated venue costs per playgroup per week.

Totalling venue hire and non-rent costs gives \$35 per week. Applying this to 8,000 venues over 34 weeks per year gives a cost of \$95,200,000 for each year of Community Playgroup operation. See Attachment C for more detail.



2019-28 Total Present Value: \$85,604,000 (2019 dollars discounted by 2% over ten years)

Other resources

Reason:

While Community Playgroup is typically carer-operated, self-managed, and funded through the collection of fees from families attending. Community Playgroups are also supported by their local state or territory playgroup organisation and by Playgroup Australia. State and territory playgroup organisations provide guidance on starting a new playgroup, joining an existing playgroup and running a playgroup.

These playgroup resources include:

- playgroup manuals;
- tools (such as forms, signs, policies or reports);
- promotional material to attract new members;
- training and support to playgroup committees;
- playgroup starter kits, including toys and resources; and
- ideas for play activities and playgroup structure.

These resources are consumed by Community Playgroups and are not available for other uses and

therefore are an opportunity cost to society. These costs would not have occurred without the Community Playgroups.

Methodology:

These other resources are purchased in competitive markets where prices are a good estimate of economic value. Therefore, these costs are valued at market prices based on annual reports of the state and territory playgroup associations. The value of Commonwealth and State government payments to state or territory playgroup organisations and Playgroup Australia is used to estimate the value these resources

This estimate is \$40,000,000 per year of Community Playgroup operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$35,968,000 (2019 dollars discounted by 2% over ten years)

Benefits

Often dads and mums do not have enough time to play with their children. All the dads in our Playgroup are working full-time. Being a breadwinner, however, is not enough. A dad and child share a special bond, one that is not necessarily natural but acquired and strengthened. A great way to do this is to share time to play and grow together, even better if the experience is shared with other children and dads.

Justin Murray, Member ACT Dads' Playgroup
40 Years of Playgroup – Celebrating Our Story of Connecting Communities

Benefit Summary:

Playgroups

2019-2028 Total Present Value (2018 dollars discounted by 2% over ten years)

Output gains	
Play	\$458,592,000
Volunteer employment	\$181,674,000
Children's future employment	\$38,531,000
Resources freed for alternative use (cost savings)	
Education	\$94,416,000
Health	\$17,984,000
Justice	\$14,747,000
Child protection	\$1,349,000
Total Benefits	\$807,293,000

Output gains

The research literature demonstrates that programs such as Community Playgroup increase Australian output by allowing young children and their families to be more productive. Community Playgroup will improve children's and their parents/carer's physical health, mental health, academic achievement. This research is summarised in Attachment C.

Children's' play

Reason:

Community Playgroup provides an opportunity for children to play with each other and parents, increasing the well-being of both the children and their parents. This play is recreation and therefore part of society's output.

Methodology:

Community Playgroups do not charge competitive market prices. Therefore, their prices do not reflect the economic value of play. Typically, in a CBA, prices charged by commercial providers of children's play opportunities (in competitive markets) would be used to value play.

A very conservative value of \$10 per play session is used here. There are 150,000 children attending Community Playgroups per year for an average of 34 weeks.

Using these assumptions, play is valued at \$51,000,000 per year of Community Playgroup operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$458,592,000 (2019 dollars discounted by 2% over ten years).

Volunteer's future employment

Reason:

Community Playgroup provides an opportunity for parents to volunteer as coordinators, treasurers, secretaries and in other roles. This volunteer work is included in this CBA as a cost but it also enables parents develop new skills and to retain their labour skills and contact with the labour market, while on parenting leave. Preserving skills increases society's output when volunteering parents return to work.

Methodology:

The benefits of reducing unemployment and making the employed more productive can be valued by the contribution this makes to output, measured by the impact on average weekly earnings¹. This technique is known as the human capital approach.

In the CBA literature this increased output is often valued at the minimum wage rate (Bauer, et al. 2013). This provides a minimum (i.e. conservative) estimate of a persons' wage (in a relatively competitive employment) and thereby measures the value of extra output (net of other input costs) produced by that person.

The benefit of greater employment is based on the conservative assumption that of the Community

Playgroups 8,308 coordinator volunteers, 100 will return to full time employment (who without playgroup would have remained unemployed) each year. Assuming they earn \$36,000 per year (approximating the minimum wage) for 5 years with an annuity factor of 4.714 gives a benefit of increased output valued at \$16,970,000 per year.

The benefit of high labour productivity is based on a conservatively assumed 1,000 volunteer coordinators who return to work and are more productive due to their volunteering. Assuming a wage of \$36,000 per year, a productivity improvement of 1%, and a remaining working life of 10 years with an annuity factor of 8.983: gives a benefit of increased labour productivity valued at \$3,234,000 per year.

In total the extra output produced by playgroup volunteers moving into the labour market is \$202,040,000 for year of playgroups' operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$181,674 ,000 (2019 dollars discounted by 2% over ten years).

Children's future employment

Reason:

Community Playgroup improves children's educational performance and thereby their lifetime contribution to the labour force. The economic value of output gains from these education-based employment improvements are a benefit to society (increased output) and are included in this Cost Benefit Analysis. The research literature valuing the education's impact on employment output is summarised in Attachment C.

Community Playgroup will reduce children's absenteeism, performance problems and misbehaviour. These are significant predictors of early school leaving (Eivers, Ryan and Brinkley 2000, 8-9) and reduced lifetime contribution to the labour force.

The economic value of output gains due to these employment improvements are a benefit to society (increased output) and are included in this CBA.

1. It also increases the taxation revenue raised by Government and reduces reliance on unemployment benefits, however these are transfer effects rather than a net benefit. Accordingly, taxation benefits are not included as to do so would result in double-counting (Wilkins, Love and Greig 2012).

Methodology:

The number of Community Playgroup children from the most disadvantaged families who without Community Playgroup would experience educational problems is conservatively estimated as 1% of the 100,000 Community Playgroup children entering school each year, giving 1,000 students. Due to Community Playgroup, these 1,000 students will experience less absenteeism, better educational performance and better behaviour thereby improving their educational outcomes.

Based on the research literature summarised in Attachment C, this CBA conservatively estimates the benefits of participating in Community Playgroups to be a 1% increase in lifetime average earnings for Community Playgroup children from the most disadvantaged families. Applying this 1% productivity increase to a minimum wage of \$36,000 per year

over a 20 year working-life with an annuity factor of 16.351 for the 1,000 children gives an increase in future labour production as \$5,887,000 per year of playgroup operation.

The students will not begin working for many years. Therefore, the benefit will not begin until the year of first employment. This CBA assumes a delay of 16 years. Discounting by 2% pa (using a discount factor of 0.728) back to the original year of school attendance values the increased future labour production of the 1,000 playgroup students at of \$42,850,000 for each year of playgroups' operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$38,351,000 (2019 dollars discounted by 2% over ten years).



Resources freed for alternative use (cost savings)

Community Playgroup increases productivity of public services through cost savings: freeing economic resources for their next best use.

Community Playgroup assists parents to find the most appropriate services (health, justice system, accommodation, education, etc). Typically, these appropriate services are less expensive than the services that would be used without the assistance of playgroup. The benefits (net of the cost of the more

appropriate alternatives) flow directly to reductions in government budget deficits or can be used to support other government priorities. The resources freed by this improvement in efficiency are available for other uses in the Australian economy.

Reduced education costs

Reason:

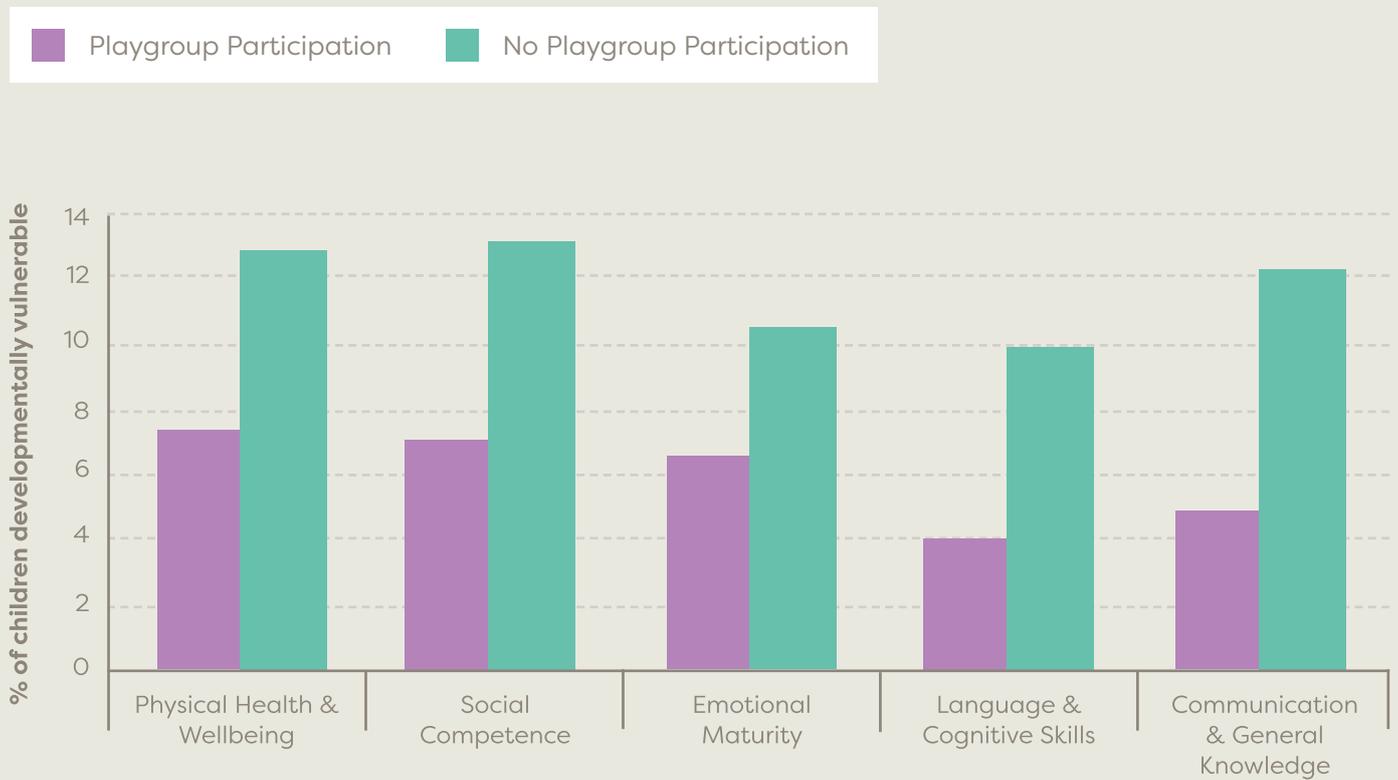
Community Playgroup reduces the cost of running the education system, thereby saving society's resources. Community Playgroups help children of disadvantaged families to prosper in the general education system. Community Playgroup achieves education cost savings. These savings are a benefit to society and therefore are included in the CBA.

Methodology:

Community Playgroup frees education resources for alternative uses and those uses can be valued by the market prices paid for them, principally wages, transport, accommodation, and other services and supplies.

The number of Community Playgroup children from the most disadvantaged families who would without playgroup experience educational problems is conservatively estimated as 1% of the 100,000 playgroup children entering school each year, giving 1,000 students. Due to Community Playgroup participation these 1,000 students will experience less absenteeism, better educational performance and better behaviour thereby reducing the number of students repeating a grade or requiring remedial education.

Children who attend Playgroup are less vulnerable on all Australian Early Developmental Census domains



Based on a review of the literature, this CBA assumes that grade retention costs \$5,000 per year repeated. Therefore, avoiding grade retention by 1,000 students is valued at \$5,000,000 for each year of playgroups operation.

This CBA assumes that playgroup saved special education resources valued at \$500 for each of 1,000 students giving \$500,000 for each year of playgroups operation.

This CBA assumes that by making children more ready for school (greater school readiness) playgroup saved

education resources valued at \$50 for each of 100,000 students giving \$5,000,000 for each year of playgroups operation.

This gives a total of \$105,000,00 for each year of playgroups operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$94,416,000 (2019 dollars discounted by 2% over ten years).

Child protection cost savings

Reason:

Community Playgroup reduces the need for child protection and thereby saves society's resources (lowers costs). Community Playgroup helps parents maintain their families. The alternatives are more costly child protection processes. The resulting savings are a benefit to society and therefore are included in the CBA.

Methodology:

Community Playgroup has freed child protection resources for alternative uses and those uses can be valued by the market prices paid for them.

Based on the research literature summarised in Attachment C, this CBA conservatively estimates a net cost reduction to the public sector of \$3,000 per annum per child that avoids child protection services. This CBA assumes that of the 10,000 disadvantaged children in playgroups there are 50 children that avoid child protection for one year due to playgroups. This achieves a total annual saving of \$1,500,000 for each year of playgroup's operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$1,349,000 million (2019 dollars discounted by 2% over ten years).

Medical cost savings

Reason:

Disadvantage has substantial negative impacts on the health of children and their families. Community Playgroup reduces health costs, releasing resources for alternative uses. Those uses can be valued by the market prices paid for them.

Methodology:

Community Playgroup assists disadvantaged families to gain appropriate healthcare through contact with other parents and better access to formal advice. It is assumed that one visit to a general practice doctor is avoided each year for each of the 10,000

disadvantaged children due to their attendance at playgroup. In addition, it is assumed one of their parents also avoids visit to a general practice doctor. Each visit is valued at \$100 giving a reduction in use of general practice doctor's resources of \$20,000,000 per year of playgroup operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$17,984,000 (2019 dollars discounted by 2% over ten years).

Justice cost savings

Reason:

Disadvantage has substantial negative impacts on the interaction of children with the justice system. Community Playgroup reduces children's interaction with the justice system, releasing resources for alternative uses. Those uses can be valued by the market prices paid for them.

Methodology:

Community Playgroup assists disadvantaged families to avoid contact with justice system. It is assumed that one interaction with police, courts and prison is avoided 10

years after the child begins school (discounted by 0.82) for each of 1,000 disadvantaged children due to their attendance at playgroup. Each interaction is valued at \$2,000 giving a reduction in use of justice system resources of \$16,400,000 per year of Community Playgroup operation.

See Attachment C for more detail.

2019-28 Total Present Value: \$14,747,000 (2019 dollars discounted by 2% over ten years).

Discounting (aggregating over time)

In my country, we do not have Playgroups. Children can play outside their homes and in the village and are looked after by the community... In Africa, we believe that the village helps raise children... When I came to Australia, I did not know about Playgroups or that my children are just my own responsibility. ...Going to Playgroup helped me and my younger children to understand more about play and life here in Australia.

Alizabeth Parent from Sudan now living in Australia
40 Years of Playgroup – Celebrating Our Story of Connecting Communities

The social discount rate measures society's valuation of today's wellbeing relative to wellbeing in the future (Zhuang, et al. 2007). The costs and benefits, identified and valued above, accrue into the future. To make comparisons with other programs, the future values need to be expressed in present day values. This recognises that people value current consumption more highly than the same future consumption. People are, to a degree, impatient. The discount rate measures the degree of impatience.

Discounting future values back to present values requires information about society's rate of time preference. This is the amount of future consumption they require to induce them to give up current consumption. This is revealed in the capital market², where interest payments are the reward for giving up current consumption in return for greater future consumption.

Since the Global Financial Crisis in 2007, interest rates in most markets have fallen to levels close to the inflation rate and therefore discount rates measuring Australian willingness to forego current consumption have fallen sharply. This implies that we have become less impatient or more concerned about the future.

Since 2007, low economic growth rates, with nearly all of that growth accruing to the wealthiest, have led most Australians to expect stagnant or even falling living standards. As future incomes are likely to be more constrained for most Australians, the value of future consumption rises and current consumption becomes less valuable compared to future consumption. This lowers the social rate of discount.

Government recommendations for real discount rates for CBA began falling even before the 2007 global financial crisis: in the UK from 10% in 1969 to 3.5% in 2003; in Germany from 4% in 1999 to 3% in 2004; in France from 8% in 1999 to 4% in 2005; and in Norway from 7% in 1978 to 2.5% in 2012 (Zhuang, et al. 2007, 19), and (Mouter 2018, 399).

Social discount rates, applied by governments to decision-making on behalf of society, reflect the time and risk preferences of all society. Unlike individuals, societies must consider future generations and must

also balance the benefits accruing to different sections of society in current and future periods (i.e. the distribution of income and consumption) In addition, the risks of earning returns are far more dispersed and balanced for society than for individuals and therefore the need for compensation for risk will be lower for society (Moore, et al. 2004), (Falk, et al. 2015), and (Dohmen, et al. 2011).

Interest rates include a reward for risk taking and inflation. Risk is not relevant to Community Playgroup because supporting it is part of government's broad investment portfolio where risk in any single program is cancelled out across the other programs³. Inflation is not relevant because all values used in this CBA are in real terms.

Risk is excluded by using a low risk Commonwealth Government bond. The longest maturity (10 years) is used because this fits this CBA's 10-year time frame. Inflation is removed by subtracting the inflation rate from the interest rate.

In January 2019, the Commonwealth 10-year Treasury Bond interest rate was 2.3% pa (RBA Statistical Tables). Inflation measured by the average CPI for the 12 months to September 2018 was 1.9% pa (RBA Statistical Tables). Taking the inflation rate away from the interest rate and rounding gives the real rate of interest and the discount rate as 0.4%. In comparison, the inflation adjusted Commonwealth Government Indexed Bond interest rate was 1.0% (RBA Statistical Tables). Therefore, the Australian capital markets are indicating that the social rate of time preference was around 1% in late 2018. Based on this capital market information this analysis uses a conservative discount rate of 2% as its base case.

2. It is important to note that capital markets only provide standing to contemporary people wealthy enough to participate and not the poor or future people (Baum 2009).

3. Using high discount rates to account for risk is easy but not appropriate. It is a better solution to address relevant risk specifically for each project through various risk analysis methods, such as quantified risk analysis or sensitivity analysis (Hagen, et al. 2012) as is done in this CBA.

Some authorities vary discount rates according to the type of project. The US government (United States Office of Management and Budget 2003) uses a 7% rate where the project/program would displace private investment, 3% for social projects/programs and 1% where the impacts are intergenerational⁴. Community Playgroup is a social project focused on consumption rather than investment and therefore the 2% discount rate used in this CBA is analogous with the US advice.

Typically, governments recommend the use of a higher discount rate than 2%. In Australia, the standard

government recommended rate is 5% and can be as high as 10% (Harrison 2010). More recently, Terrill and Batrouney (2018) have recommended that Australian governments shift to using a 3.5 and 5% discount rate in economic evaluation of transport projects.

This CBA adopts a 10% discount rate for sensitivity analysis to demonstrate that the conclusions at the 2% rate are robust.

Aggregating cost and benefits

“It (Playgroup) has even taught me to have a greater awareness of my own children. It makes me watch and listen to all my children more, even my older children more.”

Tyler – Dad from Playgroup.

40 Years of Playgroup – Celebrating Our Story of Connecting Communities

4. The 7% rate is an estimate of the average before-tax rate of return to private capital in the U.S. economy, based on historical data. It is a broad measure that reflects the returns to real estate and small business capital as well as corporate capital. It approximates the opportunity cost of capital, and it is the appropriate discount rate whenever the main effect of a regulation is to displace or alter the use of capital in the private sector.

The 3% discount rate is used for evaluating projects that impact on consumption rather than investment. When projects primarily and directly affect private consumption, a lower discount rate is appropriate. The alternative most often used is sometimes called the “social rate of time preference.” The real rate of return on long-term government debt may provide a fair approximation. Over thirty years, this rate averaged around 3% in real annual terms on a pre-tax basis.

Private market rates provide a reliable reference for determining how society values time within a generation, but for extremely long time periods no comparable private rates exist. Projects with important intergenerational benefits or costs, may use a sensitivity analysis with a lower but positive discount rate, ranging from 1 to 3% (United States Office of Management and Budget 2003, 11).

The table below applies the 2% discount rate (using each year's discount factor) to the values estimated above for Community Playgroup. The yearly costs and benefits are given in 2019 dollars. Totals are aggregated as present values (in bold) to calculate NPV and B/C ratios.

Table 5: Economic Costs & Benefits: Playgroups

2019 dollars ('000)												
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total	Total
Cost												@ 2%
Accommodation	9,520	9,520	9,520	9,520	9,520	9,520	9,520	9,520	9,520	9,520	95,200	85,604
Coordinator's time	11,299	11,299	11,299	11,299	11,299	11,299	11,299	11,299	11,299	11,299	112,990	101,601
Other resources	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	40,000	35,968
Total Costs	24,819	24,819	24,819	24,819	24,819	24,819	24,819	24,819	24,819	24,819	248,190	223,172
Discounted @ 2%	24,571	23,851	23,379	22,933	22,486	22,039	21,617	21,171	20,774	20,352	223,172	223,172
Benefits												
Increased output												
Play	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	510,000	458,592
Volunteer employment	20,204	20,204	20,204	20,204	20,204	20,204	20,204	20,204	20,204	20,204	202,040	181,674
Children's employment	4,285	4,285	4,285	4,285	4,285	4,285	4,285	4,285	4,285	4,285	42,850	38,531
Cost Savings												
Education savings	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	105,000	94,416
Healthcare savings	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000	17,984
Child protection savings	150	150	150	150	150	150	150	150	150	150	1,500	1,349
Justice system savings	1,640	1,640	1,640	1,640	1,640	1,640	1,640	1,640	1,640	1,640	16,400	14,747
Total Benefits	89,799	89,799	89,799	89,799	89,799	89,799	89,799	89,799	89,799	89,799	897,790	807,293
Discounted @ 2%	88,881	86,278	84,572	82,956	81,340	79,724	78,198	76,581	75,145	73,619	807,293	807,293
Benefits-Costs												
Undiscounted	64,960	64,960	64,960	64,960	64,960	64,960	64,960	64,960	64,960	64,960	649,600	584,120
Discounted @ 2%	64,310	62,427	61,192	60,023	58,854	57,684	56,580	55,411	54,372	53,267	584,120	584,120
Discounted factor @ 2%	0.990	0.961	0.942	0.924	0.906	0.888	0.871	0.853	0.837	0.820		
NPV @ 2%	584,120											
IRR	na											
B/C ratio	3.6											

Note: values in bold are discounted by 2% pa.



Decision criteria

“I also like my children to play with other children their age. It is good for them to learn how to play together, share things and to learn with their friends. I think that going to Playgroup helps children, especially before they go to kindergarten and school.”

Parent from Finland now living in Australia
40 Years of Playgroup – Celebrating Our Story of Connecting Communities

Cost Benefit Analysis values the impacts (costs and benefits) of Community Playgroup in economic terms (ie impact on society’s wellbeing). These values are aggregated using the discount rate embodying society’s trade-off between current and future consumption. The discounted impacts are then compared using decision criteria.

The findings from a CBA are commonly expressed by three decision criteria:

- The **benefit cost ratio** takes the present value of total benefits and divides this by the present value of total costs. The ratio is useful for comparing the efficiency of programs across different program scales. A ratio greater than 1 demonstrates that there is a net economic benefit to society from the program. Using Community Playgroup estimates from the table above: the PV of total benefits divided by the PV of total costs is \$807,293,000/\$223,172,000. This gives a very high cost benefit ratio of 3.6 to 1.
- In a recent **OECD** publication “A ratio below 1 is considered poor, a ratio between 1 and 1 low, a ratio between 1 and 2 medium and a ratio above 2 high” (Persson and Song 2010, 33). For comparison the World Bank (World Bank 2011, 4) estimates benefit cost ratios for Indonesian urban sanitation programs at 1.1 to 2.4, the Productivity Commission (Productivity Commission 2013, 27) estimates the benefit cost ratio of smart electrical meters at 2.7, the ACT Government (ACT Government 2017, 18) estimates a benefit cost ratio for a container deposit scheme of 1.8, PriceWaterhouseCoopers (PwC 2019) estimates a benefit cost ratio for Australian childcare at 2, Daly and Barrett (2014) estimated a cost benefit ratio of a mediation program in Yuendumu at 4.3 and Infrastructure Australia estimates a benefit cost ratio for the Winchelsea to Colac Road Duplication at only 0.08. In comparison with these estimates, Community Playgroup’s ratio of 3.6 is an excellent result.
- The **Internal Rate of Return** (IRR) is the discount rate where the present value of costs and benefits become equal. IRR cannot be measured for this program due to the distribution of costs over time. IRR requires a pattern of first negative and then positive net benefits. For this CBA net benefits are always positive. Therefore, no IRR can be calculated.
- The **Net Present Value** (NPV) is the amount by which the present value of benefits exceeds the present value of costs. It measures the scale of the net benefit.

Community Playgroup's NPV is \$584,120,000 in 2019 dollars.

Total costs PV	\$223,172,000
Total benefits PV	\$807,393,000
Benefit Cost Ratio	3.6:1
NPV	\$584,120,000

All the calculated decision criteria indicate that Community Playgroup is worth supporting on economic (efficiency of resource use) grounds. The criteria show that Community Playgroup provides Australia with a very high return on its modest costs.

Sensitivity analysis

The impact of Community Playgroup may be sensitive to changing conditions. These could include variance in the assumptions underpinning the CBA. If the NPV is still positive with more conservative assumptions this report's conclusions can be considered robust.

The assumptions made in this analysis were generally pessimistic about the benefits of the program but in order to test the robustness of our conclusions we

assume an unrealistically large 50% reduction in our estimated benefits. Even in this extremely pessimistic case both decision criteria (shown below) indicate that the program provides exceptional worth in economic (efficiency of resource use) terms.

Total costs PV	\$223,172,000
Total benefits PV	\$403,646,000
Benefit Cost Ratio	1.8:1
NPV	\$180,474,000

The choice of a discount rate can sometimes have a large impact on the decision criteria. The unusual current global financial conditions may mean that the base case discount rate of 2% is lower than the actual social rate of time preference it attempts to measure.

A standard maximum discount rate is 10%. As can be seen below, raising the discount rate by five times has little impact on the net worth of the program. The conclusions of this CBA are not sensitive to the choice of discount rate.

Total costs PV	\$152,488,000
Total benefits PV	\$551,602,000
Benefit Cost Ratio	3.6:1
NPV	\$399,114,000

The purpose of sensitivity analysis in this case is not to compare alternative program scenarios for selection of the best program design. Here we are using sensitivity analysis to test the robustness of our conclusions regarding the value of Community Playgroup. As Community Playgroup can absorb a 50% reduction

in the already conservative estimates of benefits, the conclusion that it is a worthwhile program is strong. The sensitivity analysis shows that the estimates are very robust as is the conclusion that Community Playgroup provides a substantial net benefit to Australia.

Distribution

The distribution of benefits and costs is important. The connections between distribution and public health, reveal that life expectancy, illness and other health factors are closely related to the structure of a given society, and that variations in health within a population are primarily related to socio-structural factors, including income inequality, educational differences, lack of opportunity and racism (Kawachi & Kennedy 1997).

The distribution of benefits and costs is important to the political viability of an instrument of public policy. Policies with stakeholders facing substantial negative outcomes are likely to face opposition.

Gainers and losers are identified in the distributional incidence table given previously (Table 3).

Community Playgroup children and their families gain play and access to more appropriate services improving their employment output, health and wellbeing. Parents

volunteering lose their time but the cost of this is less than the benefits gained. Therefore, there are no adverse distributional impacts on children and their parents/carers.

Government service providers gain cost savings as children access less expensive and fewer services.

Commonwealth, State and Territory governments (as the funders) provide modest funding. However, these costs are more than fully compensated by the shift to lower cost services.

The Australian community gains in welfare from a more equitable and inclusive society.

Overall, distributional impacts of Community Playgroup children and their families are positive. Losers are compensated for their loss, leaving the gainers with a net improvement and therefore distribution is not a critical issue.



Conclusion

Armadale in Western Australia is one of the most disadvantaged communities in Australia.

Many of the children starting school weren't answering questions in full sentences, they weren't able to label their basic body parts, and they weren't able to share and take turns according to school principal Lee Musumeci. So in 2004 the independent public school established a small playgroup in an effort to connect with parents and kids earlier and achieved results that are inspiring others to copy their example.

The results were extraordinary. Up to 95 per cent of the children who have been through the early intervention program are out-performing the children who have not had exposure to the program

Lee Musumeci School Principal
[Successful Armadale school program being rolled out across WA](#)

This CBA verifies that Community Playgroup delivers substantial economic benefits far exceeding their costs. This CBA provides a strong support for continued investment in Community Playgroup. All the calculated decision criteria indicate that Community Playgroup is worth supporting on economic (efficiency of resource use) grounds. More efficient resource use allows improvements in society's wellbeing. Further, this CBA supports a wider use of Community Playgroups. Community Playgroup delivers a net benefit of around

\$584 million to Australia over the next ten years. With a benefit cost ratio of 3.6:1 (or a \$3.60 return for every dollar spent). Community Playgroups are a very efficient use of the Australia's resources.

The sensitivity analysis indicates that these conclusions are very reliable. The distributional analysis shows that Community Playgroups do not damage stakeholders and compensation is not required.

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Attachments

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Attachment A

Glossary

Australian Early Development Census (AEDC)	A national census of early childhood development conducted once every three years on all children in their first year of full-time schooling.
Benefit transfer	A practice used to estimate economic values for use in Cost Benefit Analysis by transferring information available from studies already completed in one location or context to another.
Cost-benefit analysis (CBA)	A method to evaluate the net economic impact of a project. Expected benefits are estimated, and monetised and offset against project costs. The approach is most commonly used to inform decisions to invest in major infrastructure projects.
Cost-effectiveness analysis (CEA)	This method is used where monetising outcomes is not possible or appropriate, most commonly in health. Common measures include quality adjusted life years. Organisations that use it include the World Health Organisation, which has developed a series of tools and software to aid analysis.
Economy	Minimising the cost of resources used for an activity, while having regard to appropriate quality.
Efficiency	An efficient activity maximises output for a given input, or minimises input for a given output and, in so doing, pays due regard to appropriate quality.
Effectiveness	Successfully achieving the intended outcomes from an activity.
Human capital approach	Values the economic productivity of human life as the present value of expected future earnings.
Longitudinal study of Australian children	A longitudinal study with a dual cohort cross-sequential design. It tracks development pathways of Australian children exploring family and social issues, and addresses a range of research questions about children's development and wellbeing. Information is collected on the children's health, education, and development, from parents, child carers, pre-school and schoolteachers and the children themselves (Sanson, et al. 2002).

Merit goods and services	Create positive externalities when consumed and these 3rd party spill over (externality) benefits can have a significant effect on social welfare. Market failure occurs when merit goods and services are under-consumed under free market conditions.
Qualitative	Refers to data that consists of words, or communication (whether that is text, voice, or visual).
Quantitative	Refers to data that are counts or numbers.
Outcome	Measures the change in behaviour or resource use in relation to goal of the project.
Outputs	Products or services delivered as part of the project's activities (eg. workshops, audits, brochures).
Reliability	A reliable measure is one that, when used repeatedly under the same conditions, produces similar results.
Replacement cost	Valuing a non-market cost or benefit by an equivalent in a market.
Social capital	The features of social organisation, such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit.
Social capital	The store of value generated when a group of individuals invests resources in fostering a body of relationships with each other (a social network) which generates benefits in later periods (Ogilvie 2004).
Social return on investment analysis (SROI)	A method that quantifies project outcomes and impacts, usually in monetary terms. It measures value from the bottom up by including the perspectives of different stakeholders.
Validity	A valid measure is one that measures what it is intended to measure.

Attachment B

Playgroup: background

Playgroups are community-based, are not-for-profit, are run by the people who attend them, and have multiple benefits for both children and their adults. Playgroups benefit children and their carers by providing developmentally appropriate play opportunities for children and opportunities for carers to develop social and support networks and peer support (FaHCSIA 2011).

The Early Years Learning Framework for Australia (DEEWR 2009, 6) defines play-based learning as “a context for learning through which children organise and make sense of their social worlds, as they actively engage with people, objects and representations”. Children who frequently take part in positive play experiences are more likely to have advanced memory skills and language ability. They tend also to socially adjust their behaviour, which serves to aid school adjustment and improve academic performance.

Children’s experiences in their first few years of life shape the way their brain develops. When young children experience something again and again (for example when they hear particular sounds) the brain pathways used in processing that information are reinforced. For example, a child who is surrounded in a rich language environment will develop complex brain mechanisms for processing language. A child who is surrounded with challenging play experiences will develop complex problem-solving brain mechanisms. Conversely, children who grow up in settings where they do not experience thought provoking learning opportunities will not develop the complex brain mechanisms necessary for them to participate equally in society as they mature.

Children’s solo play, throughout the early years, requires the development of complex cognitive processes such as:

- selecting,
- focusing,
- choosing,
- deciding,
- exploring,
- discovery,
- identifying,
- recalling,
- imitating,
- comparing,
- problem solving,
- inventing,
- examining,
- practicing,
- imagining,
- interpreting,
- concluding and more.

These are all forms of thinking.

Play with others involves mastering social activities such as:

- joining in,
- leaving,
- dramatic pretense,
- role playing,
- making rules,
- leading,
- following,
- emulating,
- cajoling,
- persuading,
- cooperating,
- helping others,
- turn-taking,
- negotiating,
- departing and many more crucial social skills.

Since spontaneous social play is essentially interactive, children also make rapid progress in language and communication; they need to use language to:

- greet others,
- take leave,
- draw attention,
- name,
- request,
- suggest,
- describe,
- question,
- explain,
- clarify,
- argue,
- agree,
- dissent,
- correct,
- object,
- refuse,
- direct,
- gain cooperation,
- excuse,
- apologise, and so on.

In terms of attaining **emotional maturity**, positive play experiences develop positive emotional well-being. When children feel secure, safe, successful and capable, they acquire important elements of emotional resilience. Through imaginative play, a child can fulfil wishes and overcome fears of unpleasant experiences. Play helps the child master the environment. Sharing play experiences also can create strong bonds between parent and child, child and siblings, and with peers and teachers. Other emotional benefits of interactive play include acquiring emotional discipline, and learning to share, to create meaning with others and to take risks in a secure environment (Cross 2013) and (Hancock, et al. 2015).

The Playgroup Principles

Core characteristics of high quality playgroups (Commerford and Hunter 2017).

The nine key principles underpinning high quality effective playgroups are listed below. Each principle outlines a core characteristic of playgroup.



Playgroups are about play

Offer high-quality, fun, structured and unstructured play experiences for children and parents/carers and provide opportunities for play-based learning to support positive child development. Play should be freely chosen, be largely self-directed, intrinsically motivated, spontaneous and pleasurable (Brockman, Fox and Jago 2011). Play is recognised to offer a range of benefits to children.



Playgroups are child-focused, child-inclusive and developmentally appropriate

Understand and acknowledge children's needs and individual perspectives and experiences. Support child development by providing developmentally appropriate activities in a supportive, collaborative environment, where carers participate and further develop skills in supporting children's growth.



Playgroups are about connection

Provide opportunities for carers to connect with other parents/carers, for families to connect with their local community, and for carers and children to connect with each other through play.



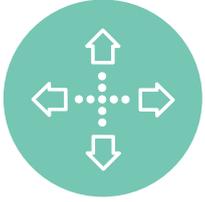
Playgroups are safe and welcoming

Ensure that the playgroup provides a culturally, physically and emotionally safe and inclusive space that is child safe. Ensure that it is warm and welcoming, accessible, and located in regular and consistent venues that are easily accessed (Wanless 2016).



Playgroups are culturally safe

Be adaptive to the needs of different cultural groups. Honour their cultural heritage and the needs of their children to be respected and supported in their culture (Warr, Mann and Forbes 2013).



Playgroups are flexible

Be flexible, responsive and adaptive to the needs of parents/carers and children and the local community. Be dynamic and ready to change as the needs of families change. Be adaptive and able to focus on the specific needs of the group (Williams, et al 2015).



Playgroups are both strengths-based and strengthening

Recognise and value the strengths, skills and knowledge of parents/carers while also offering a space to build on their strengths and capacities. Acknowledge the role of the parent/carer as the child's first teacher. Build on parents/carers' strengths and create opportunities for parents/carers to contribute. Be collaborative and co-design the group with families.



Playgroups have organisational level support and governance

Support individual playgroups with an adequately resourced organisation that provides oversight and assistance (e.g., in the establishment of new groups, recommending activities, venue hire, insurance, and resolving issues).



Playgroups draw on skilled facilitators to engage families and link to local services (for supported playgroups)

Utilise volunteer co-ordinators (for Community Playgroups) or paid staff with the qualifications, skills and/or qualities to build relationships and facilitate engagement between the families in the group. Playgroups are best supported by a facilitator (for supported playgroups) with local knowledge who can foster relationships and connectedness.



Numbers in Community Playgroups

Data on participation in Community Playgroups is not collected by all Community Playgroups. Some families participate in Community Playgroups but do not formally join the organisation. Therefore, there are a range of estimates of Community Playgroup participation.

In 2011, approximately 145,000 children from 105,000 families in 8,500 Community Playgroups were affiliated with State and Territory Playgroup Associations.

More than 200,000 families with preschool-aged infants and children attended a Community Playgroup each week (Playgroup Australia 2015, 7).

In July-December 2016, Community Playgroups supported 95,250 clients attending 6,192 different Community Playgroups across Australia (Playgroup Australia 2015) as reported to the Department of Social Services' Data Exchange (DEX). It is likely that there are 50,000 children participating in Community Playgroups that have not been included in the recent DEX submissions.

In the 2017 financial year, there were 150,000 Community Playgroup sessions.

In 2018, there were 7,560 Community Playgroups who held 285,847 sessions per year. Including all playgroups there were 110,801 registered families and 8,308 volunteers (Playgroup Australia 2018).

This CBA assumes 150,000 children attend Community Playgroup each year for an average of 34 weeks per year.

More than 40% of families surveyed in the Longitudinal Study of Australian Children (LSAC) participated in playgroups when the study child was aged less than one. There was a high rate (78%) of continued engagement as the child transitioned from baby to toddler. Furthermore, 54% of the sample participated in playgroups when their child was aged 2 – 3. Playgroup participation then declines as the child transitions to formal kinder programs and school (McShane, et al. 2016, 8).

Playgroup participation, % of Australian children

Year	Age	Attending	Retained*
2004	0-1	42	-
2006	2-3	47	74
2008	4-5	54	79
2010	6-7	26	41
2012	8-9	2	4

Based on McShane et al, 2016:24.

Source: Longitudinal Study of Australian Children

Note: *from previous period.

Using the Australian Early Development Census, (Gregory, et al. 2017, 15) estimates that of the total number of children in their first year of full time schooling (290,000 in 2012 and 302,000 in 2015) around 100,000 had previously attended a playgroup (104,000 in 2012 and 107,000 in 2015).

This CBA is based on 100,000 children from Community Playgroups entering school each year from 2019 to 2028.

Based on the above information, this CBA assumes:

- 285,000 playgroup sessions p.a;
- Av. 34 sessions per playgroup p.a;
- 150,000 children attending playgroup;
- Av. 15 children per playgroup session;
- Over 8,000 Playgroups;
- 100,000 playgroup children enter school p.a.

Attachment C

Economic costs and benefits of early childcare focusing on playgroups: review of the literature

Cost Benefit Analysis is a comprehensive way of determining the degree to which the economic value of society's benefits from Community Playgroup exceeds the economic costs to society. Cost Benefit Analysis answers the question

Do Community Playgroups add to the net economic wellbeing of society?

This attachment summarises the relevant research literature underpinning the valuations adopted in this CBA. Cost Benefit Analysis typically estimates economic valuations based on the research literature. This methodology is known as Benefit Transfer (Boutwell and Westra 2013). Where available we use meta-analysis, or the "study of studies", to provide a more thorough and statistically valid value estimate for use in a benefit transfer.

Most economic valuation focuses on areas that can be easily measured, avoiding assessment of difficult and problematic interventions (Wood and Leighton 2010) and (Teles and Schmitt 2011) such as Community Playgroup. However, by accounting for the broader social impacts of Community Playgroup it is possible to estimate its economic value.

Community Playgroup is a merit good⁵. The value of a merit good is based on the concept of social need, rather than ability and willingness to pay of the consumer. To value a merit good it is necessary to look at the individual consumer's willingness to pay for the good, but to also include the benefits that accrue to the wider society (externalities). Cost Benefit Analysis provides the framework for this more comprehensive valuation. Public and philanthropic funding for childcare reflects its value as a merit good and measures the importance that society places on equality and social inclusion (Ver Eecke 2003) and (Ver Eecke 2007).

Community Playgroup is not provided in a market where price balances suppliers and consumers. It is provided as a right with a low non-market price. This presents challenges for the economic valuation of Community

5. Merit goods and services create positive externalities when consumed. These third-party spill over (externality) benefits can have a significant effect on social welfare. A merit good is under-consumed (and under-produced) in the free market economy. This is due to two main reasons:

1. When consumed, a merit good creates positive externalities (an externality being a third party/spill-over effect which arises from the consumption or production of the good/service). This means that there is a divergence between private benefit and public benefit when a merit good is consumed (i.e. the public benefit is greater than the private benefit). However, as consumers only take into account private benefits when consuming merit goods, it means that they are under-consumed (and so under-produced).
2. Individuals are myopic, short-term utility maximisers and do not take into account the long-term benefits of consuming a merit good and so they are under-consumed.

Playgroup services. Many of the benefits of Community Playgroup services are difficult to measure. However, by focusing on how Community Playgroup services change people's lives it is possible to identify tangible and measurable impacts for economic valuation (Wood and Leighton 2010).

Despite the concerns noted above, it is possible and often even mundane to estimate economic values for the impacts of Community Playgroup. There are several

Joy of play

The enjoyment children gain from play is obvious in their faces, voices and behaviour. While the value children gain from play is clear to see, quantifying that value is less obvious, but is achievable.

Community Playgroups do not charge competitive market prices. Therefore, their prices do not reflect the economic value of play. However, it is possible to purchase play in relatively competitive markets. This payment measures the willingness to pay for play by the children's parents/carers. Commercial play centres

methods relevant to assessing the economic value of Community Playgroup, including cost effectiveness analysis (CEA), cost benefit analysis (CBA), and social return on investment (SROI) (Fleming 2013).

Community Playgroup impacts on recreation, education, health care, mental health, employment, etc. and are amenable to economic valuation in a Cost Benefit Analysis framework.

in shopping malls typically charge around \$10 per child per session and in some around \$4 per parent.

At 150,000 children in Community Playgroups per year for 34 sessions per year valued at \$10 per session totals to \$510 million per year of Community Playgroup operation.

Over the ten years 2019-28, discounted by 2% per year, \$510 million per year gives a Total Present Value of \$458,592,000 in 2019 dollars.

Parent/carer and community wellbeing: building community social capital

Many studies identify that playgroups are a highly valued service by parents (ARTD Consultants 2008a); (ARTD Consultants. 2008b); (Berthelsen, et al. 2012); (Eddy 2003); (Jackson 2005), (Jackson 2011); (Playgroup Australia 2010); (Shulver 2011); (Dadich and Spooner 2008); (McBride 1990); (Harman, Guilfoyle and O'Connor 2014); and (Gibson, Harmon and Guilfoyle 2015).

Research has found the impact of early interventions such as playgroup benefitted parent participants by:

- increased time in physical play with children (Weber, et al. 2013),
- better health for women pre- and post-natal (Schaffer and Lia-Hoagberg 1997),
- lower rates of depression and stress (Manuel, et al. 2012) (Leahy-Warren, McCarthy and Corcoran 2012), and (Barclay, et al. 1997),
- increased parent self-efficacy (Leahy-Warren, McCarthy and Corcoran 2012); (Scharfe 2011),
- more secure mother-infant attachments (S. B. Crockenberg 1981),
- enhancement of the quality of parent-child interactions and higher quality in care-giving environments (Evangelou, Brooks and Smith 2007); and (Eddy 2003),
- more positive parental perceptions of children (Terrett, White and Spreckley 2012),
- improved parent mental health and positive parenting behaviours (Nicholson, et al. 2010) and (Williams, et al. 2012); and (Gray, et al. 1982),

- increased parenting confidence, competence, decreased stress, greater wellbeing (Bohr, et al. 2010); (ARTD Consultants 2008a); (Oke, Stanley and Theobald 2007); (Playgroup Australia 2010); and (DEECD 2012),
- decreasing social isolation for parents, opportunity to debrief with fellow parents and caregivers (Jackson 2013); and (French 2005),
- providing peer support (ARTD Consultants 2008a) (ARTD Consultants. 2008b); (Jackson 2011); (Playgroup Australia 2010); and (Shulver 2011),
- supporting newly arrived refugees and immigrants in overcoming social and cultural barriers (New 2012),
- increased facilitation of children's learning (Hackworth, et al. 2013),
- higher responsiveness, lower directedness, and higher language facilitation (Deutscher, Fewell and Gross 2006),
- providing important developmental information to parent participants (Jackson 2005); and (Shulver 2011),
- increased access to training and educational opportunities that extend beyond the parental domain (McBride 1990); (Turner and Bredhauer 2005); and (McDonald, Turner and Gray 2014), and
- building social capital for the family (Shulver 2011).

Research identifies that social support can improve physical and psychological wellbeing and health outcomes by fulfilling basic social needs, enhancing social integration, mediating the effects of stress on health and providing some protection from the harm that may occur from acute stressful events (Hanna, et al. 2002), (La Rosa and Guilfoyle 2013), (Berthelsen, et al. 2012), (Mulcahy, Parry and Glover 2010), (Wilkinson and Marmot 2003) and (Kawachi and Berkman 2001).

The transition into motherhood is more socially isolating in modern times than in the past, due to factors such as increased workforce participation, increased geographic mobility, distance from family members, and higher levels of lone parenthood. Mothers of young children use playgroup attendance to form friendships, build a supportive network, and increase their sense of community connectedness (Strange, et al. 2014). This is demonstrated by the 68% of families had contact

with other playgroup families outside of the playgroup session (Berthelsen, et al. 2012).

Research (Hancock, et al. 2015) found that persistent playgroup participation was a protective factor against mothers having no support from friends in helping to raise their child. This was measured both when children were aged 4–5 years and four years later at 8–9 years. Compared to mothers whose child participated in playgroup at both 3–19 months and 2–3 years, mothers whose child did not participate in playgroup, or who participated for only one of the periods, were almost twice as likely to report not receiving support from friends when their child was 4–5 years old, and twice as likely when their child was aged 8–9 years. These findings were independent of confounding variables including the mother's initial attachment to friends and ability to obtain social support, education level, employment status, household income, family structure, language spoken at home and mental health status.

Community Playgroup provides important community development opportunities. They develop community capacity and strengthen community networks. This improves the community's social capital. Community Playgroup is a form of social capital that creates community cohesion, both while parents attend, but benefits also outlive direct participation, particularly an increase in social trust. Participation in playgroup increases social trust by around 3% (McShane, et al. 2016, 44).

Community Playgroup supports neighbourhood cohesion and the quality of social relationships of community members and of individuals and organisations providing support to parenting.

Connections with family, friends, neighbours and local professionals, improves parent's ability to cope when problems arise, providing opportunities to seek advice and assistance (Tomison and Wise 1999). Being part of a healthy community, strong in social capital, provides benefits through 'collective socialisation' (Fegan and Bowes 1999). Children and young people are taught norms and sanctions regarding acceptable social behaviour and absorb the community's expectations for children (for example, the importance of education,



of obtaining a 'good job'). Communities set norms of appropriate parenting behaviour, support parents who are under stress, and provide additional professional and lay resources (Garbarino and Kostelny 1992). People who feel part of a vibrant, healthy community are themselves more likely to see that they can contribute something worthwhile to that community (Kaufman and Poulin 1994). Community Playgroups are part of a cycle of positive support and enhanced community life where individuals and the wider social group reap the rewards.

Community Playgroup builds community capacity and supports the development of new volunteers. Playgroups act as key sites for building community capacity through developing community connections, skill building and creating leadership pathways. Playgroup committee participation is often a parent's first foray into community volunteering, and provides a path to future community leadership, particularly in kindergarten committees of management and primary school councils. Local governments, schools and other community organisations that rely on volunteer committees benefit from Community Playgroup fostering future community leaders (Keam, et al. 2018).

Playgroup makes an important contribution to the community's social capital particularly in the informal or non-market economy:

- they are important sites of trust, reciprocity and knowledge exchange,
- playgroup members contribute to local community fundraising and other civic activities, and provide valuable services (transport, meals) for families in perinatal settings,
- playgroups are an important pathway to volunteering in other settings - in some instances, playgroups provide members with their first volunteering experience, and provide a training and development function in this area,
- playgroups boost human capital formation, by developing or maintaining personal skills in areas such as organization and leadership, finance and ICTs,
- Playgroup enhances productivity when playgroup members participate in or re-enter the paid workforce,

- Playgroup provides skill maintenance and development bridging informal and formal economies, particularly boosting female participation in the labour market (McShane, et al. 2016, 7),
- Playgroup reduces isolation for mothers with young children (Strange, et al. 2014) (Strange, et al. 2016), (Hancock, et al. 2015) (Keam, et al. 2018),
- Playgroup improves parent-child relationships promoting extended family networks,
- Playgroup provides greater opportunities for human services (including health care, dental care, mental health care, drug and alcohol services, and speech therapy) to work with people outside their typical catchment (Banwell, Denton and Bammer 2002), (Jackson 2013) and (Gray, et al. 1982).
- Playgroup improves links with educational facilities, bring together schools and homes before children commence school (Crowe 1973),
- Playgroup engages families with community development efforts, including community activism (French 2005),
- Playgroup links with community groups like churches that provide in-kind support to the playgroups.

In Ireland, Community Playgroup is recognised as making an important contribution to Irish society by building a caring community (Daly 2003). Irish studies demonstrate that having a Community Playgroup in a village or estate encourages people to help their neighbours as well as themselves, building social capital (Douglas 1994).

Community Playgroup reduces families' needs for services through regular access to support and advice from other parents and visiting professionals (DEECD 2012).

Research (ARTD Consultants 2008a); (ARTD Consultants. 2008b); (Berthelsen, et al. 2012); (Oke, Stanley and Theobald 2007); (Playgroup Australia 2010); and (Warr, Mann and Forbes 2013) demonstrates that parents increased their knowledge about the availability of other services and viewed playgroup as a gateway to other services. Community workers place a high value on the role of playgroup within the

community in terms of connecting parents with services and supporting important family transitions (Evangelou, Brooks and Smith 2007); (Dockett, et al. 2008); (Jackson 2013); and (Eddy 2003).

Playgroup is a catalyst for engaging with other institutional and social settings:

- The social networks and leadership experience acquired through playgroup encourages active contribution to children's 'educational journey', including their transition to school, and the participation of parents in children's schooling and school governance;
- Playgroup adaptability has led to innovative partnerships, including with aged care homes, libraries, and schools;
- Playgroup is an important part of the early childhood continuum of care, particularly in their connections with maternal and child health services, other forms of pre-school care, and the formal education system.

Research on Australian supported playgroup, identified the important role that the playgroup had in supporting the successful transition to school for Aboriginal and Torres Strait Islander children. Specifically, playgroups were held at the schools, allowing families to become known at the school and for families to become more comfortable with the school environment and processes. Relationships made through playgroup attendance were maintained into the school years (Dockett, et al. 2008).

In this CBA it is assumed these positive impacts on parents/carers will improve both their health and productivity in later employment. This is clearly a very conservative estimate because community social capital improves the well-being of the wider community.

Community Playgroup social capital and employment

Community Playgroup enables parents to retain their labour skills and contact with the labour market, while on parenting leave. Preserving skills increases society's output when volunteering parents return to work. This CBA values the benefits of reducing unemployment and making the employed more productive by using the contribution this makes to output, measured by the impact on average weekly earnings. This technique is known as the Human Capital Approach.

In the Human Capital Approach literature increased output is often valued at the minimum wage rate (Bauer, et al. 2013). This provides a minimum (i.e. conservative) estimate of a persons' wage (in relatively competitive employment) and thereby measures the value of extra output (net of other input costs) produced by that person.

The benefit of greater employment is based on the conservative assumption that of the 8,308 Community Playgroup coordinator volunteers, 100 will return to full time employment (who without playgroup would have remained unemployed) each year. Assuming they earn

\$36,000 per year (approximating the minimum wage) for 5 years and using an annuity factor of 4.714 gives a benefit of increased output valued at \$16,970,000 per year.

The benefit of higher labour productivity is based on a conservatively assumed 1,000 volunteer coordinators who return to work and are more productive due to their volunteering. Conservatively assuming wage of \$36,000 per year, a productivity improvement of 1%, and a remaining working life of 10 years with an annuity factor of 8.983: gives a benefit of increased labour productivity valued at \$3,234,000 per year.

In total the extra output produced by playgroup volunteers moving into the labour market is \$202,040,000 for year of Community Playgroup operation.

Over the ten years 2019-28, discounted by 2% per year, \$202 million per year gives a Total Present Value of \$181,674,000 in 2019 dollars.

Community Playgroup social capital and health

As discussed above Community Playgroup has a positive impact on children, parents/carers and community social capital. These positive impacts in turn improve the health outcomes of children and parents/carers. Community Playgroup develops the personality and cognitive traits promoting health. Community Playgroup improves children's educational outcomes and this is a stronger determinant of health than either income or occupation (Grossman and Kaestner 1997), (Grossman 2008), and (Grossman 2015).

This CBA values these improved health outcomes by estimating the value of resources saved from fewer visits to healthcare providers.

Community Playgroup assist disadvantaged families to gain appropriate healthcare through contact with other parents and better access to formal advice. It is

assumed that one visit to a general practice doctor is avoided each year for each of 10,000 disadvantaged children due to their attendance at Community Playgroup. In addition, it is assumed one of their parents also avoids a visit to a general practice doctor. Each visit is valued at \$100 giving a reduction in use of general practice doctor's resources of \$20,000,000 per year of Community Playgroup operation.

Over the ten years 2019-28, discounted by 2% per year, \$202 million per year gives a Total Present Value of \$181,674,000 in 2019 dollars.

Child protection

As discussed above Community Playgroup has a positive impact on children, parents/carers and community social capital. These positive impacts in turn improve the behavioural outcomes of both children and parents/carers (Olds 1997). Community Playgroup provides community involvement which helps prevent child abuse and the need for foster care. Community Playgroup reduces the number of children dropping out of education who often become trapped in the care and protection and juvenile justice systems.

Community Playgroup reduces the need for child protection and thereby saves society's resources (lowers costs). Community Playgroup helps parents maintain their families. The alternatives are more costly child protection processes. The resulting savings are a benefit to society and therefore are included in the CBA.

Community Playgroup has freed child protection resources for alternative uses and those uses can be valued by the market prices paid for them.

This CBA conservatively estimates a net cost reduction to the public sector of \$3,000 per annum per child that avoids child protection services. This CBA assumes that of the 10,000 disadvantaged children in playgroups there are 50 children that avoid child protection for one year due to playgroups. This achieves a total annual saving of \$1,500,000 for each year of Community Playgroup operation.

Over the ten years 2019-28, discounted by 2% per year, \$1,500,000 per year gives a Total Present Value of \$1,349,000 in 2019 dollars.

Education system savings

Community Playgroup contributes to future academic achievement beyond the playgroup setting (Daniels 1995). Due to improved education outcomes, Community Playgroup children benefit from higher lifetime incomes. Society gains from better educated children who are more productive, healthier, and have reduced levels of delinquency and crime. Governments benefit financially from higher tax revenue and reduced outlays for social welfare programs and the criminal justice system

According to parents, playgroup creates new opportunities for their children to learn. Parents report that their children had become more actively engaged in play and more confident. Both parents and facilitators noted improvements in children's speech and the learning of new behaviours through playgroup role modelling (DEECD, 2012; ARTD Consultants, 2008a; ARTD Consultants, 2008b).

Community Playgroup improves school outcomes including:

- fewer resources spent on grade repetition or special education classes, and
- higher educational attainment and subsequent economic success in adulthood.

Child development benefits of playgroup include physical, social, emotional, language and cognitive development, and communication. Children who attend playgroup during early childhood have significantly better development when they start school compared to those who do not attend playgroup. Australian children who did not attend a playgroup prior to school are almost two times more likely to be having trouble in their school transition compared to children who attended playgroup (Gregory, et al. 2017, 5).

The transition to school can be a challenging time for children and their families, and children who have attended playgroups prior to school benefit during this transition. These children have more opportunities to develop social skills such as co-operation, sharing, and taking turns, be more able to manage their emotions

such as worries, sadness and frustration through repeated opportunities to practice these skills with other children, have better conversational skills such as waiting for a turn, and expressing themselves, and have developed friendships with other children who will also be starting school at the same time (Gregory, et al. 2017, 8).

Research has identified an important role for playgroup in supporting children in the transition to school or kindergarten (Dockett, et al. 2008); (Jackson 2013); and (Oke, Stanley and Theobald 2007). Community Playgroup provides a gradual transition from home to a full day at school, thus reducing the physical and emotional exhaustion often associated with ill-preparedness (Chen, Hanline and Friedman 1989); (Farrell, Tayler and Tennent 2002); (Fish and McCollum 1997); and (Hinde and Roper 1987). Therefore, Community Playgroup complements other more formal early childhood education (Ramsden 1997).

There is a large literature demonstrating that play is associated with the development of language and literacy (Deutscher, Fewell and Gross 2006); (Evangelou and Sylva 2003); (Hackworth, et al. 2013); (Terrett, White and Spreckley 2012); (Christie and Roskos 2006); and (Roskos and Christie 2004), sociability (Berk, Mann and Ogan 2006); and (Elias and Berk 2002), and mathematical ability (Ginsburg 2006).

Research into the benefits of play has identified benefits to education from improved verbalisation, vocabulary, language comprehension, attention span, imagination, concentration, impulse control, curiosity, problem-solving strategies, cooperation, empathy, and group participation. In the US, exposure to a preschool experience such as kinder or playgroup, has a significantly positive effect on national curriculum assessments for seven year olds, across the subjects of reading, writing, maths and science (Daniels 1995).

UK research (Sylva 1993) identifies that all social groups benefit from early childcare services, but the impact is strongest in children from disadvantaged backgrounds.

The most important skills from early childhood services are aspiration, task commitment, social skills and feelings of efficacy. Children who have attended high-quality early childhood services are better prepared for school, better able to learn and have fewer emotional difficulties. Early childhood years are the most important for child development (Comprehensive Spending Review, 1998).

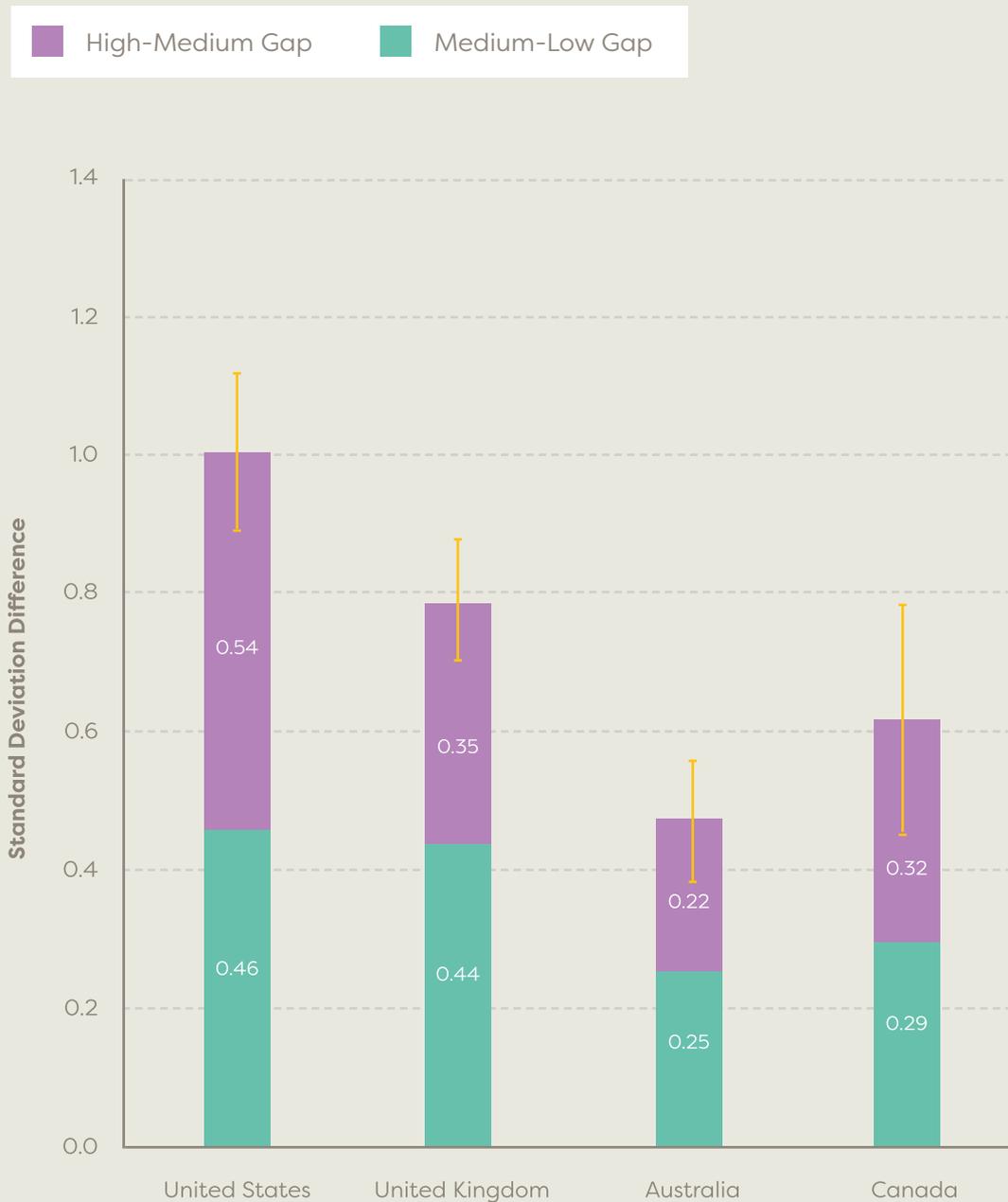
Children, from American disadvantaged families, participating in early childcare have better learning and social outcomes than those who do not attend. Both boys and girls from disadvantaged families who attend early childcare scored 3–4% higher in learning competence than those who did not attend. Girls from disadvantaged families who attend early childcare scored 5% higher on social and emotional functioning than those who did not (Hancock, et al. 2012).

Inequality in language/reading skills, at ages four and five, is less in Australia than in other comparable countries. Community Playgroups are more common in

Australia and are likely to be important in driving down the gap in educational achievement identified between parental education levels and shown in the Figure below.

Community Playgroup has a substantial and positive impact on parenting style. The parental educational levels (in the figure below) are a proxy for parenting styles. US research (Waldfogel and Washbrook 2011, 5) identifies parenting style as the single largest explainer of the poorer cognitive performance of low-income children relative to middle-income children, accounting for 21% of the gap in literacy, 19% of the gap in mathematics, and 33% of the gap in language. Community Playgroups improve parenting and thereby improve educational achievement particularly of disadvantaged families.

Language/reading skill gaps by parent's education level and country



Notes: The figure shows the gaps in average language and reading test scores between children from families with different levels of parental education. The “high-medium gap” is the difference between children with a college-educated parent and those whose parents have only some college. The “medium-low gap” is the difference between children with a parent with some college and children whose parents have no more than a high school degree. The total length of each bar is the “high-low gap”—the difference between children with a college-educated parent and those whose parents have no more than a high school degree. Test scores are standardized in all countries to have mean zero and unit variance. Black lines are 95 percent confidence intervals for the high-low gap (the total length of the bar). **Source: (Bradbury, et al. 2015, 13).**

In Australia, playgroup attendance substantially reduces the proportion of children entering school with development vulnerabilities as measured by the AEDC⁶. This is shown in the Table below where playgroup attendance provides a nearly 12 percentage point reduction in the number of children starting school with at least one development vulnerability. This means that Playgroup attendance has shifted around

12,000 children (12% of the 100,000 children attending Playgroup) out of one or more of the vulnerable development domain classifications with substantial impacts on schooling effectiveness, child health, etc. This CBA makes the conservative assumption that each year 10,000 children from disadvantage families enter school after participating in Community Playgroups.

Children with development vulnerabilities

% of all children

Attended Playgroup	Yes		No		Playschool difference	
	2012	2015	2012	2015	2012	2015
Year of first schooling	2012	2015	2012	2015	2012	2015
AEDC Developmental domain vulnerability						
Emotional Maturity	5.7	6.6	9.6	10.9	3.9	4.3
Physical Health & Wellbeing	6.8	7.4	12.3	12.9	5.5	5.5
Social Competence	6.4	7.1	11.9	13.2	5.5	6.1
Language & Cognitive Skills	3.7	3.9	10.1	9.8	6.4	5.9
Communication & General Knowledge	5.1	5.2	12.3	12.3	7.2	7.1
Summary indicators						
Vulnerable on 1 or more domains	15.8	16.6	27.5	28.0	11.7	11.4
Vulnerable on 2 or more domains	6.9	7.5	14.7	15.6	7.8	8.1

Based on (Gregory, et al. 2017)

6. Australian Early Development Census. For each of five domains, children receive a score between 0 and 10 with higher scores representing better development. In addition, children are classified into one of three categories based on national benchmarks set in 2009 during the first national census. In 2009, national benchmarks were set so that children receiving scores below the 10th percentile were classified as "developmentally vulnerable", children scoring between the 10th and 25th percentile were classified as "developmentally at risk" and children scoring above the 25th percentile were classified as "on track". In 2012, the same benchmarks were used to allow monitoring of whether developmental vulnerability for the population of children entering their first year of full time school is improving over time or not.

The AEDC surveys five areas or 'domains' of early childhood development (see figure below). These domains are predictors of good adult health, education and social outcomes. Children are

classified into three categories ('developmentally on track', 'developmentally at risk' or 'developmentally vulnerable') with vulnerable being the most unsatisfactory (DEET 2016).



Physical health and wellbeing

Children's physical readiness for the social day, physical independence and gross and fine motor skills.



Social Competence

Children's overall social competence, responsibility and respect, approach to learning and readiness to explore new things.



Emotional Maturity

Children's pro-social and helping behaviours, and absence of anxious and fearful behaviour, aggressive behaviour and hyperactivity and inattention.



Communication and skills and general knowledge

Children's communication skills, and general knowledge based on broad developmental competencies and skills measured in the school context



Language and cognitive skills (school based)

Children's basic literacy, interest in literacy, numeracy and memory, advanced literacy and basic numeracy.

Note: Australian Early Development Census (AEDC) based on teacher's assessment of vulnerability at school entry.

Australian research demonstrates that children who did not attend playgroups were over 1.7 times more likely to be developmentally vulnerable in one or more AEDC domains, after adjusting for socioeconomic

and demographic differences (Gregory, et al. 2017). As shown in the table above, all the development domains of children are improved by playgroup attendance. Playgroup attendance reduces proportion of children with communication and general knowledge vulnerability by the most (7%) and emotional maturity by the least (4%).

The 2015 AEDC included a teacher assessment regarding which students were making good progress in adapting to the structure and learning environment of the school. This was assessed as true for 82% of students who had attended playgroup but only 70% of students not attending playgroup. Only 18% of students who had attended playgroup were assessed as not or only partly making progress but 30% of students who had not attended playgroup were not or only partly making progress. Clearly, playgroup is having a substantial positive impact on children's adaption to school. Therefore, of the 100,000 children entering school each year who attended Playgroup 12,000 children (12% of 100,000) are making good progress in adapting to the structure and learning environment of the school who would not have does so without attending playgroup.

Research (Brinkman, et al. 2013) has shown that Australian children who are developmentally vulnerable when they start primary school are much more likely to have problems with literacy and numeracy skills throughout their schooling. Children who were

developmentally vulnerable on one domain when they started school were 2.3 times more likely to receive a low score in NAPLAN Reading in Grade 7, than children who were not developmentally vulnerable on any domains.

Children who have attended playgroup have had more opportunities to develop social skills such as co-operation, sharing, and taking turns, are more able to manage their emotions including worries, sadness and frustration through repeated opportunities to practice these skills with other children, have better conversational skills such as waiting for a turn, and expressing themselves, and typically have developed friendships with other children who will also be starting school at the same time.

The educational impact of Community Playgroup can be measured by a reduction in grade repetition and special education. Research in the US (Barnett and Camilli 2002) demonstrates that early childhood education reduces grade repetition by 8-15% and special education by 5-20% (see table below).

Average effects of model and public school/Head Start programs on grade repetition and special education placements

Outcome	Model Programs Estimated Effects			Public School/Head Start Programs Estimated Effects		
	M	SD	N	M	SD	N
Reduction in percent repeating at least one grade	14.9**	9.8	14	8.4**	5.4	10
Reduction in percent ever in special education	19.6**	14.6	11	4.7**	5.3	9

*p<.05, two-tailed t test with unequal variances

**p<.01, two-tailed t test with unequal variances

Source: Barnett & Camilli (2002)

Other research into US early childhood interventions (Barnett 1998), (Massé and Barnett 2002), and (Reynolds, et al. 2011) show similar improvements in grade repetition, special education and graduation (see table below).

Outcomes and cost-benefit analysis of the US early childhood interventions

	Perry Preschool	Carolina Abecedarian	Chicago Child-Parent Centers
Outcomes			
Increased short-term IQ	Yes	Yes	Not measured
Increased long-term IQ	No	Yes	Not measured
Increased long-term achievement	Yes	Yes	Yes
Special education	37% v. 50%	25% v. 48%	14% v. 25%
Retained in grade	35% v. 40%	31% v. 55%	23% v. 38%
High school graduation	65% v. 45%	67% v. 51%	50% v. 39%
Arrested by 21	15% v. 25%	45% v. 41%	17% v. 25%
Benefit-Cost Results			
Cost	\$16,264	\$36,929	\$7,417
Benefit	\$277,631	\$139,571	\$52,936
Benefit/Cost Ratio	17.07	3.78	714

Source: Barnett (1993, 1998); Masse & Barnett (2002); Reynolds, Temple, Robertson & Mann (2002); Schweinhart et al. (2005)

Community Playgroup saves educational resources by reducing grade repetition, reducing special education classes and increasing graduation levels. Research (Royce, Darlington and Murray 1983) shows children who participate in early education are considerably more likely to graduate high school (65%) compared to 53 percent for other children.

Grade repetition is harmful to a student's chances of academic success. Research finds that students who repeat a year are more likely to drop out of school prior to completion. In an Australasian context, it has been found that repeating a year is associated with negative academic, social and emotional outcomes. Retention often leads students to have negative feelings about school, as well as low self-esteem when it comes to the ability to perform well academically. Some children find the fact that they have been retained embarrassing and may feel ashamed about being separated from their age-grade peers.

Research (Lazar and Darlington 1982) shows children who participate in early childhood education have a median rate of grade retention of only 25 percent compared with 31 percent for other children, a 6% reduction. Based on that research, the impact of Community Playgroup of a 6% reduction in the number of children experiencing grade retention from the 10,000 children from disadvantaged families entering school after attending Community Playgroup. This is 600 years of remedial education avoided and substantial resources saved for other uses.

Annual costs of schooling vary widely according to school size, location and demographic composition. The average cost of primary and secondary education in Queensland in 2011-12 was \$11,513. The average cost of service to students with disabilities was \$26,881 (Queensland Government 2011). If costs are estimated at \$8,000 per student per year based on the average funding provided to a student in a mainstream school in Victoria, excluding fixed costs such as those associated with maintaining school infrastructure. This gives a saving of \$5 million per year. This is the same as the estimate used in this CBA (\$5 million, see below). Research (Lazar and Darlington 1982) shows children who participate in early education are considerably less

likely to be placed in special education, with a median rate of assignment to special education (between the third and twelfth grade) of 14 percent compared to 29 percent for other children, a 15% reduction. Based on that research, this the impact of Community Playgroup is a 15% reduction in the number of children experiencing grade retention from the 10,000 children entering school after attending community playgroup or 1,5000 children avoiding special education. The cost of special education per child in New South Wales is \$27,500 and in Victoria is \$21,000 (Patty 2011). Assuming a cost saving of only \$10,000 for each of the 1,5000 children avoiding special education saves \$15 million per year. In comparison, the estimate used in this CBA (\$500,000 see below) is extremely conservative and represents a minimum valuation.

While all children attending playgroup are likely to have improved school performance this improvement will be greatest for the 10,000 children identified as most vulnerable and likely to experience problems transitioning to school. Their participation in Community Playgroup should reduce the need for school resources for remedial classes and grade retention.

Community Playgroup reduces the cost of running the education system, thereby saving society's resources. Community Playgroups help children of disadvantaged families to prosper in the general education system. Community Playgroup achieves education cost savings. These savings are a benefit to society and therefore are included in the CBA. Community Playgroup frees education resources for alternative uses and those uses can be valued by the market prices paid for them, principally wages, transport, accommodation, and other services and supplies.

The number of Community Playgroup children from the most disadvantaged families who would without playgroup experience educational problems is conservatively estimated as 10% of the 10,000 playgroup children from disadvantaged families entering school each year, giving 1,000 students. Due to their Community Playgroup participation these 1,000 students will experience less absenteeism, better educational performance and better behaviour thereby reducing the number of students repeating a grade or requiring remedial education.

Based on the review of the literature summarised above, this CBA assumes that grade retention costs \$5,000 per year repeated. Therefore, avoiding grade retention by 1,000 students is valued at \$5,000,000 for each year of Community Playgroup operation.

This CBA assumes that Community Playgroup saved special education resources valued at \$500 for each of 1,000 students giving \$500,000 for each year of Community Playgroup operation.

This CBA assumes that by making children more ready for school (greater school readiness) playgroup saved education resources valued at \$50 for each of 100,000 students giving \$5,000,000 for each year of Community Playgroup operation.

This gives a total of \$105,000,00 for each year of Community Playgroup operation.

Over the ten years 2019-28, discounted by 2% per year, \$105,000,000 per year gives a Total Present Value of \$94,416,000 in 2019 dollars.

Valuing education's impact on children's future employment

Economic theory recognises that education is both a consumption good that confers immediate benefits and an investment good that confers personal and social benefits well into the future (Becker 1964); (Haveman and Wolfe 1984); and (Wolfe and Haveman 2001). It is typical for positive returns to emerge fifteen to twenty years after the initial investment, when children move into adulthood (Meadows 2011, 24). Economists recognise that investments in human capital depend on the human capital foundations laid down earlier in childhood, and that without suitable foundations the later investment has very low returns (Heckman 1998), and (Heckman and Masterov 2007). These future benefits of education can be measured by changes in earnings over children's lifetime (Miller and Hornseth 1967); (Brooks-Gunn, Magnuson and Waldfogel 2009); and (Kilburn and Karoly 2008). Community Playgroup improves children's educational performance and thereby their lifetime contribution to the labour force. The economic value of output gains from these education-based employment improvements are a benefit to society (increased output) and are included in this CBA.

US research demonstrates that preschool program participants earned 14% more per person than they would have otherwise—\$156,490 more over their lifetimes in undiscounted 2000 dollars. Male program participants cost the public 41% less in crime costs per person—\$732,894 less in undiscounted 2000 dollars over their lifetimes (Schweinhardt, et al. 2005, 4).

The number of Community Playgroup children from the most disadvantaged families who would without Community Playgroup experience educational problems is conservatively estimated as 1% of the 100,000 Community Playgroup children entering school each year, giving 1,000 students. Due to Community Playgroup these 1,000 students will experience less absenteeism, better educational performance and better behaviour thereby improving their educational outcomes.

Based on the research literature summarised above, this CBA conservatively estimates the benefits of participating in Community Playgroups to be a 1% increase in lifetime average earnings for Community Playgroup children from the most disadvantaged families. Applying this 1% productivity increase to a minimum wage of \$36,000 per year over a 20 working-life with an annuity factor of 16.351 for the 1,000 children gives an increase in future labour production as \$5,887,000 per year of Community Playgroup operation.

The students will not begin working for many years. Therefore, the benefit will not begin until the year of first employment. This CBA assumes a delay of 16 years. Discounting by 2% pa (using a discount factor of 0.728) back to the original year of school attendance values the increased future labour production of the 1,000 playgroup students at of \$42,850,000 for each year of Community Playgroup operation.

Over the ten years 2019-28, discounted by 2% per year, \$42,850,000 per year gives a Total Present Value of \$38,351,000 in 2019 dollars.

Justice system cost savings

Community Playgroups assist disadvantaged families to avoid contact with justice system. Research demonstrates that early childhood education reduces adolescence substance abuse, delinquency, and violence (Webster-Stratton and Taylor 2001). Increases in schooling reduce most types of crime during late adolescence and early adulthood (Lochner and Moretti 2004). By improving school retention Community Playgroup will reduce children's interaction with the justice system.

Disadvantage has substantial negative impacts on the interaction of children with the justice system (Lee, Aos and Miller 2008). Community Playgroup reduces children's interaction with the justice system, releasing

resources for alternative uses. Those uses can be valued by the market prices paid for them.

It is assumed that one interaction with police, courts and prison is avoided 10 years after the child begins school (discounted by 0.82) for each of 1,000 disadvantaged children due to their attendance at playgroup. Each interaction is valued at \$2,000 giving a reduction in use of justice system resources of \$16,400,000 per year of Community Playgroup operation.

Over the ten years 2019-28, discounted by 2% per year, \$16,400,000 per year gives a Total Present Value of \$14,747,000 in 2019 dollars.





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