



LOVE GROWS BRAINS

Optimising the development of children aged 0-3 years
A review of key concepts in research, policy and practice

Lori Rubenstein

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Lori Rubenstein from Strategic Futures completed this literature review as part of Logan Together's work to inform delivery of its Roadmap.

The name of this report is a direct homage to the amazing work being undertaken by the New Zealand-based Wright Family Foundation who are dedicated to making a real difference for mothers and children in their community.



INTRODUCTION

At a time when the discourse around early childhood investments is dominated by debates over preschool for four-year-olds, the biological sciences cry out for attending to a missing niche in the field – new strategies in the pre-natal-to-three-year period of children of families facing adversity.

This literature review was commissioned by Logan Together as part of its commitment to improving the health and wellbeing of children from birth to three years of age, especially those from highly disadvantaged families that do not regularly access traditional services. Several interconnected factors are driving this work:

- The fact that in Logan, too many children are not meeting their developmental milestones
- The growing understanding that early child development is influenced in large part by the quality of parenting or caring from others
- The accumulated evidence that appropriate service interventions can promote development, but that a cohort of highly disadvantaged families do not engage with them.

It is now widely acknowledged that a child's earliest years shape their life chances. Therefore, it is troubling that Logan's children experience unacceptably high levels of developmental vulnerability. There are many causes of developmental vulnerability in children: poverty; homelessness; parental mental illness and/or substance abuse; family violence and dysfunction; genetic inheritance; low parental education; social isolation and more. Some of these are more difficult to address than others, such as intergenerational poverty and entrenched disadvantage, which characterise some Logan communities. These social problems seem to defy conventional solutions. Other causes, however, are more amenable to innovative interventions co-designed with parents and communities.

It is also widely acknowledged that the strongest influence on children's development in the early years is the quality of the caregiving they receive. Effective caregiving that includes mutuality and reciprocity can help boost the developmental progress of children aged 0-3 years and simultaneously protect them from life's toxic stresses. However, international research suggests that some parents who have experienced multiple risk factors while growing up may fail to develop the core executive functions that equip adults to make good decisions and manage their lives. There is also evidence that some parents, coping with multiple and complex problems and high levels of stress, simply find it difficult to provide nurturing, stable, responsive environments. In both cases, the adults may be reluctant or unable to seek help. These are the "hidden parents" who may be highly vulnerable and need help the most.

The good news is that we can help all parents support their children in ways that boost their early development and subsequent life chances. Research provides us with evidence-based pathways to help parents interact with their children in more responsive ways. Engaging parents and co-designing innovative supports for them and their families is the focus of Logan Together’s work in this area. This work is urgent, because gaps between the disadvantaged and the advantaged begin to surface very early on in life. It is, therefore, critical to make it possible for every family to access the help it needs at a suitable time and place. In this way, all children can arrive at the school gates on an equal footing.

This summary document will present what we know in six sections:

1. What we know about child and brain development from conception to three years of age;
2. What parents and caregivers can do to support children’s development;
3. What communities can do to facilitate early development;
4. What services can do to strengthen families and promote child development;
5. What design research can do; and
6. What public policy can do.

There is also a companion document developed for researchers, *Literature Review, Optimising the Development of Children 0-3*, which includes a great deal more detail about each of the topics covered in this summary. It also includes descriptions of “model” programs -- that is, programs that have robust evidence of efficacy -- that may be adapted to Logan’s specific circumstances.

I WHAT WE KNOW ABOUT EARLY CHILD DEVELOPMENT

It's all about the brain: the first 1,000 days of life is a time of rapid cognitive, linguistic, social, emotional, and motor development. Along with loving relationships, children need safe communities, secure housing, access to green spaces, environments free from toxins, and access to affordable, nutritious foods. This requires whole-of-society efforts and appropriate investment (Oberklaid, 2017).

We now know a great deal about the developing brain, especially in the first 1,000 days of life – from conception to about three years of age – and we are learning more every day. In the last couple of decades, breakthroughs in science, especially in neurobiology, have drastically altered the way we think about very early child development. We now understand that the period from birth to three years of age is one of vigorous brain development that has consequences for the entire life course. The Center on the Developing Child at Harvard University (2007) summed up the progression of child development in this way:

From the beginning of pregnancy to the first day of school, the ongoing construction of brain architecture and the emergence of increasingly complex behaviours and skills progress at a remarkable pace that is characterized by both continuity and change.... the process of development is continuous and ongoing, but the maximal capacity of the immature brain to grow and change means that the early childhood years offer the ideal time to provide experiences that shape healthy brain circuits.

Rethinking the Brain (McCain and Mustard, 1999)

Old thinking	New thinking
How the brain develops depends on the genes that you were born with	How the brain develops hinges on a complex interplay between the genes that you are born with and the experiences you have
The experiences you have before age three have a limited impact on later development	Early experiences have a decisive impact on brain architecture & adult capacities
A secure relationship with a primary caregiver creates a favourable context for early development and learning	
Brain development is linear: the brain's capacity to learn and change grows steadily as an infant progresses toward adulthood	Brain development is non-linear: there are prime times for acquiring different kinds of knowledge and skills
A toddler's brain is much less active than the brain of a college student	By the time children reach age three, their brains are twice as active as those of adults (brain activity drops in adolescence)

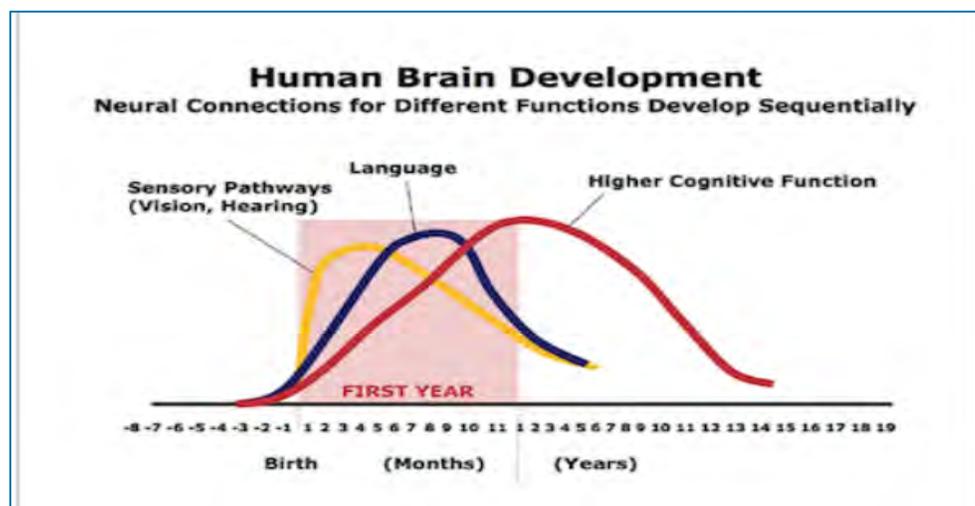
Brain development begins within a week of conception. At birth, a baby has already produced about 100 billion neurons, or brain cells. During the prenatal period, brain cells are busy sending and receiving messages about touch, hearing and movement. The sense of taste, smell and sensitivity to light are also beginning to develop.

During the first three years, your child's brain triples in weight and establishes about 1,000 trillion connections!

While most of the newborn's brain cells are formed during the prenatal period, the brain is not completely developed at birth. Connecting the neurons takes place after birth. The way brain cells connect and develop will be influenced by the newborn's experiences with adults and their environments.

The following figure shows just how important the first year of life is to the development of vision, hearing, language and cognitive functions (Centre for the Developing Child, 2007). Of course, brain development continues into adolescence and beyond, but the biggest and most important leaps are made before age three.

THE MIND IS NEVER EMPTY: STAGES OF BRAIN DEVELOPMENT



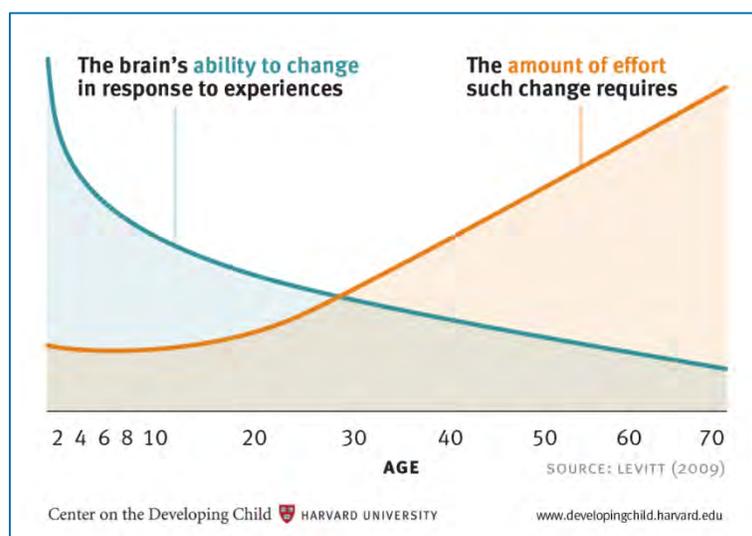
Source: C.A. Nelson (2000). Credit: Center on the Developing Child

Brains are built over time with most of the construction during the early years of life. The basic architecture of the brain is constructed through an ongoing process, beginning before birth and continuing into early adulthood. A strong foundation in the early years increases the probability of positive outcomes and a weak foundation increases the risk of later difficulties.

Both brain architecture and developing skills are built “from the bottom up,” with simple circuits and skills providing the scaffolding for more advanced circuits and skills over time. Once a circuit is up and operating, it participates in the construction of later-developing circuits. Parallel to the construction of brain circuits, increasingly complex skills build on the more basic, foundational capabilities that precede them. Stated in simple terms, circuits build on circuits and skills beget skills. It is like constructing a house. You start with the foundation, then put up the walls and finally add the roof on top. The table on page 8 shows the pathway along which the brain develops and indicates when certain skills are first expressed.

The figure to the right reinforces the importance of intervening as early as possible, as it is during the very early years that brains can readily adapt to experiences; later in life, it is much more difficult to engineer change.

Cognitive, emotional, and social capabilities are inextricably intertwined throughout the life course, and their interactive relationship develops in a continuous process over time. The brain is a highly integrated organ, and its multiple functions operate in a richly coordinated fashion. All of our capabilities develop through a process that is simultaneous and deeply inter-connected. Thus, emotional wellbeing, social competence, and emerging cognitive abilities are highly inter-related, and together they are the bricks and mortar that comprise the foundation for human development.



Source: C.A. Nelson (2000). Credit: Center on the Developing Child

What Happens, When?

Newborns	<ul style="list-style-type: none"> • Brain stem most highly developed area • Significant development of the vision areas of the brain • Recognise human faces and can discriminate between facial expressions of emotion • Recognise family members' and significant caregivers' voices • Evidence of early sensory motor skills.
Babies	<ul style="list-style-type: none"> • Development of head control and early motor skills such as rolling over and sitting • Visual areas of the brain develop leading to full binocular vision • Significant growth in the areas associated with learning and memory • Language circuits strengthen • Increase in sensory motor skills.
Toddlers:	<ul style="list-style-type: none"> • Rapid development of motor skills • Language areas experience increased development of synapses and interconnection • Significant increase in children's language abilities, vocabulary often quadruples between ages one and two • Increased ability to complete more complex tasks • Development of recognition of the self and self-awareness • Ability to make sense of past events and understanding of consequences of actions improve • Greater capacity for complex thought and cognitive flexibility • Development of brain areas associated with gross motor abilities.

(Source: "Early Childhood Neurodevelopment", KidsMatter, KidsMatter.edu.au)

Genes are important, but only part of the story. Contrary to popular belief, the genes inherited from one's parents do not set a child's future development in stone. Variations in DNA sequences between individuals certainly influence the way in which genes are expressed but it is the environment and experience before and soon after birth that chemically modifies certain genes which, in turn, define how much and when they are expressed. In effect, environmental factors have the ability to alter family inheritance.

The most important active ingredient in building the brain is the quality of children’s relationships with their parents and caregivers. It is all about the “serve and return” nature of these relationships. Young children naturally reach out for interaction through such behaviours as babbling, facial expressions, and words, and adults respond by vocalising and gesturing back at them. The process continues back and forth like a game of tennis or volleyball.



Every time we connect with children, it’s not just their eyes that light up -- it is their brains too. In these moments, half a million neurons fire at once, taking in all the things we say and do. We cannot see it happening, but it is all there, all at work.

The importance of this caregiver/child relationship cannot be overstated: one stable, caring and responsive relationship with a parent, carer or other adult -- the dyad -- can provide the support, scaffolding and protection that buffers children from developmental disruptions and helps build key capacities for planning, regulating behaviour and adapting to changing circumstances.

Parents need a set of core skills to provide quality caregiving. Adults need certain capabilities (that is, higher-order mental skills that allow us to plan and organise, make considered decisions, manage our time and focus our attention) to succeed in life and support the development of the next generation. These capabilities -- focus, self-control, awareness and flexibility -- help us to get and keep a job, provide responsive care for children, manage a household, and contribute productively to the community. Like most skills, people do not come into the world equipped with them; rather, they are learned in the context of parent/child relationships early in life. However, some adults have not developed these core skills because of neglect, adverse life conditions and/or prolonged exposure to toxic stresses while they were growing up or the skills are compromised by the stresses of poverty or other sources of ongoing adversity.

Although developing these skills as an adult takes a great deal more energy, there are some evidence-based strategies. For example, services can include the following: provide training in specific self-regulatory and executive function skills aligned to the environment and context in which they will be used; teach strategies for reassessing a stressful situation and considering alternatives; teach strategies for recognizing and interrupting automatic responses, such as intense anger or frustration, to give more time to activate intentional self-regulation in stressful situations; strengthen intentional self-regulation through specific training techniques that target the skills that can override automatic responses, such as helping adults identify their own motivating goals and support their pursuit; and create a “multiplier effect,” in which helping adults see how small actions and successes will make a difference leads to a reinforcing cycle of positive emotional responses.

Poverty is another active ingredient in child development, but it has adverse effects on brain development, health, and wellbeing across the lifespan. The just-released *The First Thousand Days* (Moore, Arefadib, Deery, Keyes and West, 2017) highlights some of the key links between poverty and adverse child development:

- Poverty in pregnancy is associated with a range of factors shown to increase the likelihood of health and developmental vulnerabilities in children, including exposure to psychological stressors, such as domestic violence and homelessness, which affects the body's normal regulation of hormones during pregnancy and increases the likelihood of foetal growth delay and preterm birth and use of alcohol and other drugs, poor nutrition and obesity
- Persistent poverty in the first 1,000 days has a cumulative negative impact on development
- Relieving poverty in the first 1,000 days reduces the likelihood of negative outcomes later in life
- Economic hardship can contribute greatly to psychological distress in parents and hence negatively affect their caregiving capacity
- Families with greater financial resources have the capacity to make greater investments in the development of their child, whereas disadvantaged families may only be able to invest in the child's more immediate needs
- Children who are born into (and have a prolonged experience of) poverty are more likely to experience prolonged stress.

There is also evidence of a link between the social gradient and parenting. After reviewing a large body of evidence, Michael Marmot (1978, 2003, 2004, 2013), an eminent social determinants researcher, concluded that socioeconomic status does affect parenting, which in turn affects children's developmental progress, which leads to inequities in mental and physical health in adulthood.

To explore this notion further, Marmot (2016) asked mothers of children 0-3 years of age whether it was important to talk to a child. The somewhat startling answer was that about 20 percent denied that talking to a child was important. And this followed the social gradient -- the lower the income the more likely were mothers to deny the importance of talking to a child. Then, the researchers asked whether it is important to cuddle a child. More startling was that again about 20 per cent of mothers denied that this is important. Talking, cuddling, playing, reading and singing showed a social gradient: the lower the income the less frequent these activities.

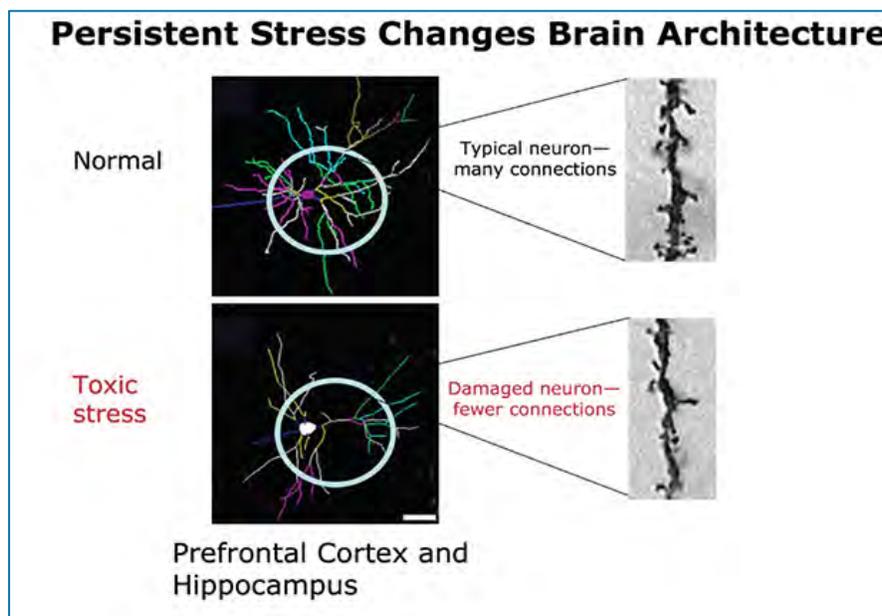
One compelling example is the very strong connection between socioeconomic status, parenting and language development. The higher the socioeconomic level of the family, the more words are spoken to babies and young children in the first four years of life. Children of professional parents had 30 million

more words addressed to them than children on welfare. Not surprisingly, this results in huge inequalities in language proficiency at school entry. This evidence also revealed a strong negative relationship between income and reading, singing and playing activities by mothers with children.

Sustained disruption of “serve and return” in early relationships may be more damaging than physical trauma. Adverse foetal and early childhood experiences can -- and do -- lead to physical and chemical changes in the brain that can last a lifetime. For example, toxic stress and other injurious experiences before birth or in early childhood are not “forgotten,” but rather are built into the architecture of the developing brain. Research now shows that interaction between adverse environments and the genes we inherit can increase the risk for long-term negative mental and physical health outcomes.

The experience of high levels of stress and adversity often present in socio-economically disadvantaged communities can influence the home environment. Alcohol, tobacco and other drug use, unemployment (or patterns of employment that reduce time spent interacting with or supervising children), illiteracy, exposure to violence, abuse and neglect, and lack of connections to social networks, extended family or community support are some of the factors that drive the cycle of poor developmental outcomes.

The picture below shows what ongoing stress can do to the developing brain.



(Source: Neilson, C (2008). National Council on the Developing Child, Harvard University)

Achieving beneficial social outcomes demands that we facilitate healthy development in the early years to establish the building blocks for educational achievement, economic productivity, responsible citizenship, lifelong health, strong communities, and successful parenting of the next generation. Child development is a foundation for community development and economic development, as capable children become the

foundation of a prosperous and sustainable society. The early development of cognitive skills, emotional well-being, social competence, and sound physical and mental health are critical prerequisites for economic productivity and responsible citizenship throughout life. All aspects of adult human capital, from workforce skills to cooperative and lawful behaviour, build on capacities that are developed during childhood, beginning at birth.

2 WHAT PARENTS AND CAREGIVERS CAN DO

Every parent has what it takes to be a brain builder.

Parents and other caregivers matter and they matter a lot to a child's development in the earliest years of life. As indicated in the previous section, parents are critical to child development and health and wellbeing outcomes. One stable, caring and responsive relationship with a parent carer or other adult can provide the support, scaffolding and protection that buffers children from developmental disruptions and helps build key capacities such as planning, regulating behaviour and adapting to changing circumstances.

It is quite encouraging that research indicates that good parenting is so influential, it can moderate the impact of social and economic disadvantage.

All it takes is at least one adult who is unreservedly crazy about the child.

The key message for parents is that the way they connect with their children --the serve and return nature of interactions -- is the most important factor in promoting child development. Virtually all parents have the innate capabilities to engage their children in positive ways; however, many need information and support to make it happen. And, some parents may need to bolster their cognitive and social capacities -- the ability to focus and sustain attention, set goals and make plans, follow rules, solve problems, monitor actions, shift course, defer gratification, and control impulses -- to enable them to care for themselves and their children, run households, seek and maintain jobs, and achieve financial and social stability. Furthermore, these capabilities can be strengthened into adulthood.

Parents have misconceptions about child development.

However, even in the face of the explosion of scientific evidence about the speed and quality of brain development in the first 1,000 days (from conception to about three years of age), it continues to be the case that many parents hold false beliefs about interacting with their very young children. It is important that we determine whether this information about child development is getting to those who need it most.

Every time we connect with a baby, it's not just their eyes that light up—it's their brains too. In these moments, half a million neurons fire at once, taking in all the things we say and do. We can't see it happening, but it's all there, all at work

Zero to Three and the Bezos Family Foundation conducted a study of parents' beliefs and attitudes about parenting in the U.S. (2015). While the U.S. and Australia are different, when it comes to parenting, there are probably more similarities than differences. This survey found that parents consistently underestimated just how early children are affected by experiences:

- Many parents believe that what they do as caregivers only has a lasting effect after the baby is 6 months or older when in fact it starts at birth;
- Many parents believe that reading aloud to children doesn't have an impact until they're 2 years old but in fact, reading aloud to a child builds future language skills starting at 6 months;
- Many parents believe that talking to children doesn't matter until 3 months or older and some don't think it matters until they are 1-year-old when in fact, talking to a child supports growing language skills starting at birth; and
- Many parents think children can only experience fear and sadness starting at age 1 to 2 years but in fact, infants can experience feelings like fear and sadness starting at age 3 to 5 months. Children are affected also by their parent's moods and can sense if they're angry or sad, starting around 3 months of age. Children can also feel distressed by shouting in the home, even when they're asleep, starting at 6 months.

Interestingly, many parents also have unrealistic expectations about what children can do:

- Many parents believe that children under the age of 2 have enough impulse control to resist doing something forbidden when in fact most children do not master this skill until between 3.5 and 4 years of age; and
- Many parents think children can share and take turns before age 2 when in fact this skill usually develops between 3 to 4 years.

These survey results suggest that parents do hold misconceptions that influence their caretaking behaviours. Improving child development, then, requires attention to strengthening the knowledge, capacities and willingness of parents to engage with their children in ways that science tells us will benefit them. This may be especially important when thinking about families coping with limited education, low incomes, high levels of stress, unpredictability and chaos which can impair their ability to provide growth-promoting environments for their children.

While so many of the recent findings from neurobiology focus on the first 1,000 days, there is also some exciting findings about brain plasticity well into adulthood that has profound implications for development of parental caring capabilities. The adult brain is still able to build the complex networks required for executive function and self-regulation. Although there is age-related decline, when it comes to performance, these skills and the brain regions that support them are malleable, and can strengthen depending on how much they are practiced. Science tells us that it is never too late to help adults build up their core capabilities. Not only does this help them create stable, responsive environments for their children, but also equip them to be productive participants in the workforce. Children benefit and so does the economy and civil society.

Encouragingly, there are some evidence-based approaches to support the development of core capabilities in adults. Table 1 below summarises the two approaches -- environmental and individual.

Table 1: Promoting Core Capabilities in Adults

Environmental	Reduce the ways in which systems and services that are designed for adults in poverty overload and deplete their self-regulation skills.
	Pay attention to the style of interaction between caseworkers and those being served.
	Incorporate tools and techniques that help people take greater advantage of available services and build core capabilities. Use service delivery infrastructure to relieve key stressors in families' lives by filling basic needs.
Individual	Provide training in specific self-regulatory and executive function skills aligned to the environment and context in which they will be used.
	Teach strategies for reassessing a stressful situation and considering alternatives.
	Teach strategies for recognising and interrupting automatic responses, such as intense anger or frustration, to give more time to activate intentional self-regulation in stressful situations.
	Strengthen intentional self-regulation through specific training techniques that target the skills that can override automatic responses, such as helping adults identify their own motivating goals and support their pursuit.
	Create a "multiplier effect," in which helping adults see how small actions and successes will make a difference leads to a reinforcing cycle of positive emotional responses.

(Source: "Building Adult Capabilities" Centre on the Developing Child, Harvard)

Parents universally believe that parenting can be learned and they are keen to improve parenting skills. Almost 70 per cent of parents surveyed in the Zero to Three survey indicated that if they knew more about positive parenting strategies, they would use them. Parents do want advice but they are often overwhelmed by the volume of information available and underwhelmed by its quality. Parents have trouble figuring out who to trust.

They do welcome information from all kinds of sources, but seem particularly keen to use media. For example, the majority of parents would like to see TV and other popular media portray typical parenting challenges and helpful solutions. More than 60 per cent indicated that they sometimes or frequently get parenting advice, information and guidance from portrayals of parenting on TV and an equal percentage would like to see more. This will be discussed in Section 4.

Parents can build brains. There are some very simple things all parents can do, such as the five steps to brain building shown in the table below.

Table 2: Building brains

Look		Look babies in the eye and watch where they look to see what interests them.
Follow		Let them lead the way, you follow by responding.
Chat		Babies' sounds and gestures are their early ways of talking. Talk out loud with your child from birth.
Take turns		Engage in back and forth interactions as they are the key to building brains.
Stretch		Ask follow up questions to keep your baby "talking".

Children's life outcomes are dependent on the availability of responsive and supportive relationships that are predictable, contingent, warm, and positive. This is what all parents should strive for -- a constant, responsive presence in the lives of their children -- and the good news is that supporting healthy brain development isn't difficult or expensive. It is the everyday activities like cuddling, reading, and singing that are important for your baby's growing brain. When you rock your baby, her brain strengthens the emotional connections that lead to secure relationships. When you read aloud or sing to her, the brain pathways for language become stronger. These little things make a world of difference in brain development.

Research suggests that these simple things can help to build baby's brains:

- Take care of yourself during pregnancy. The baby's brain starts developing very early in pregnancy. Pregnant women should eat a healthy diet, avoid alcohol, tobacco, and other drugs, and have regular prenatal check-ups;
- Breastfeed if possible. The growing brain needs good nutrition to thrive. Breast milk provides the ideal nutritional balance for a baby. If you don't breastfeed, feed your baby an iron-fortified infant formula. And always hold your baby when you feed him;
- Make baby's world safe. Look at your baby's world from her perspective. Are her surroundings clean? Are there dangers such as sharp objects or choking hazards? Does she always ride in the appropriate car safety seat for her size and age?

- Talk to your child. Make eye contact, smile at him, play rhyming games, read aloud, and sing songs. As he gets older, ask questions and explain things to him. All of this helps strengthen brain connections for language skills and teaches him to be curious about his world;
- Use music. By exposing children to complex musical sounds, they develop the same areas of the brain required for math and spatial reasoning;
- Limit television, and don't use it as a babysitter. Children need interaction with real, live people to enhance their brain development;
- Don't overprotect your child. Parents sometimes protect their child from every disappointment in life. But learning to handle little stresses, like not getting a cookie you want, actually helps the brain be ready to deal with bigger stresses. When little challenges happen, treat them as learning experiences. Talk with your child about how to cope with them;
- Be gently physical. Children need opportunities to move and develop their small and large motor skills. Expose them to a safe variety of physical activities;
- Look for teachable moments. Everyday activities offer many opportunities. For example, when eating, name the foods, their colours and count them. Point out things that are the same, different, bigger, smaller, hot and cold;
- Treat yourself well. Parents who are stressed can pass some of that stress on to their children, and stress can slow brain development. So take some time for yourself. Find people who can support you as a parent. Talk to other parents about their experiences. The better you take care of yourself, the better equipped you will be to care for your baby; and
- Get the information you need. Many resources are available to answer your questions about child development. Talk to friends and neighbours, ask your paediatrician or child care provider, check out online resources.

And, as one researcher (DeBord, 1997) put it: read, read, read.

3 WHAT COMMUNITIES CAN DO

Healthy communities foster development of healthy children. We know that where families live influences their lives. Children's experience of living and learning in the environment around them (social, physical, political) is a very significant factor in their developmental progress and overall wellbeing. Social environments are especially important: as human beings, we strive to connect to others who make us feel safe and to establish trusting relationships with friends, neighbours, institutions and even consequential strangers (that is, people we encounter now and again in our daily lives). Therefore, engaging community is important for a number of reasons:

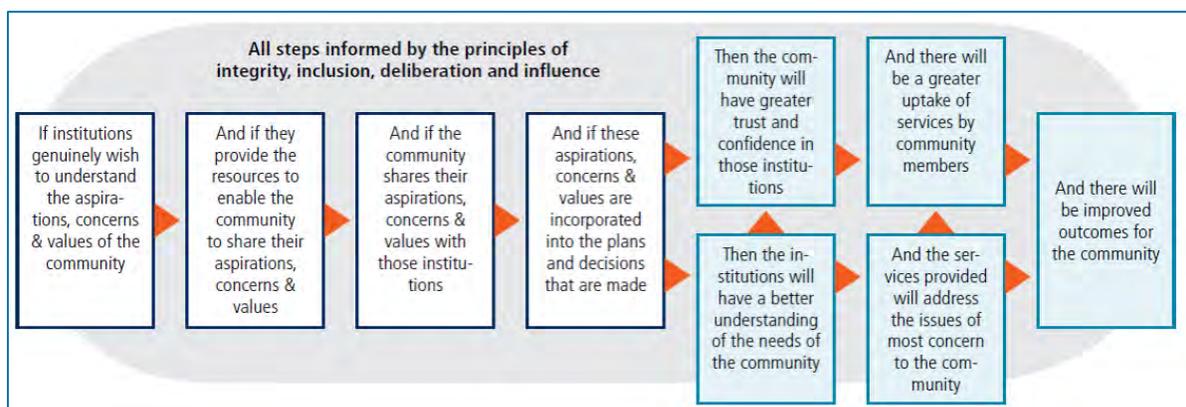
- Social connectedness and inclusion are about making sure that all children and adults are able to participate as valued, respected and contributing members of society. But there are more pragmatic reasons why community engagement should be a central component of improving outcomes for children and families;
- Children's welfare and family functioning are crucially dependent upon the social support available within local communities. When the social capital of a community is high, children and families benefit in a number of direct and indirect ways. Strong, inclusive communities should not just be a passive aspiration; rather, facilitating their development should be a proactive practice that intentionally builds social capital where people live;
- Communities are comprised of people with vast skills and experience that can be harnessed to support parents, especially those with high levels of stress and few, if any, social networks;
- To solve complex, wicked problems, like deep and persistent disadvantage, we need to understand, at a deep and profound level, the social, economic and cultural dynamics of a community - and that only comes from the voices of residents themselves;
- More appropriate and innovative service responses can be created by the people living with stress, disadvantage and multifaceted problems; and
- Non-participation is damaging to health and wellbeing of adults and children.

Informal support is critical. The informal support that families provide for each other is often the most important and potent source of assistance. People often trust their neighbours, who they know, more than professionals who are likely to be strangers. Ongoing support through informal social interactions can help parents sustain the kinds of growth-promoting experiences that build child competence and shape healthy brain architecture. It is also possible for business executives, civic leaders, and government officials at all levels to work together to develop better private sector and public policies to provide parents with more

viable choices about how to balance their work and parenting responsibilities and safe, attractive public spaces where families can congregate and interact.

Involving parents in co-designing services produces better outcomes. Genuine, meaningful engagement of community members needs to be an integral part of any initiative that seeks to improve outcomes for families with young children. In marginalised communities, community engagement is especially important. Meaningful involvement is not the same as ‘consultation’, and it is unlikely to occur if it is viewed as an addendum to the initiative itself. Meaningful involvement entails communities participating in important decisions. For this reason, it should begin as early as possible in the life of the initiative, not after all the important decisions have been made. The following model shows how genuine engagement improves outcomes for children.

Genuine engagement is not easy. It is not part of the toolkit of most service providers, and it will not happen without dedicated expertise and resourcing. But without genuine and respectful community engagement, even the best intentioned new models are unlikely to reach those most disaffected and disengaged from services.



(Source: Moore, T, McDonald, M, McHugh-Dillon, h and West, S (2016). *Community Engagement: A Key Strategy for improving outcomes for Australian families.* Aifs.gov.au.)

Lessons learned from community efforts to support parents. There is much to learn from community-designed and implemented initiatives to engage and support families (e.g., the Family Partnership Model in Tasmania). Arguably, the most important message is that all communities -- even the most socioeconomically disadvantaged -- have resources to support families. Families can support families. Parents can support parents. The belief that “it takes a village to raise a child” may have suffered from overexposure in the last decade or two, but it is still a powerful sentiment for marshalling support for children from every corner.

Put simply, children need love, affection, care and developmental opportunities from people who attuned to and responsive to their needs. They are well supported when they find these not just from their parents, but from other significant adults in their lives and from peers. In turn, adults in children’s lives are better able to nurture children when in supportive communities that take experiences, needs, interest and development of children seriously.

The starting point, therefore, is to gauge what is already happening in the community, building on existing strengths and affirming the value of community initiatives. This also involves looking at the history of social initiatives in the community, their successes and failures. For communities to engage in planning for new strategies or interventions, they need to believe their views will be respected and form the basis for future action.

It almost goes without saying that engaging marginalised communities requires people with the skills and qualities to interact with and animate others in highly respectful ways, rather than people who are focussed on implementing the latest services or programs. Just as with parents and children, strong, trusting relationships are at the heart of engagement. Bringing about changes that facilitate these relationships -- such as changing the culture of the service system to enable shared power between professionals and parents -- is also critical

A review of the Tasmanian Child and Family Centres put it this way:

The notion of working in partnership with parents and communities sounds simple - and some people view it as simplistic - but, in very subtle ways, partnership is a complex process because it challenges the norms of power and power structures that operate in our society.

Community members, service providers and government are all embedded in those structures. Even when empowerment will ultimately benefit someone, they may be resistant to it because they too are embedded in those power structures. Hence, parents may be suspicious of service providers who behave in a genuine and sincere manner -- interpreting their behaviour as “smarmy”. Parents may be unfamiliar with the experience of being treated with respect and, thereby, distrustful of people who treat them that way.

Community initiatives do not work in isolation and are subject to contextual influences like restrictive policies, threats to funding and changes in government support. Therefore, it is imperative to involve

organisations and advocacy groups with the strength to defend the process, until the community has the capacity to defend itself.

Flexibility and willingness to change is, of course, required of everyone; however, this can be challenging when governments are involved as partners because they bring with them inflexible bureaucratic rules and processes.

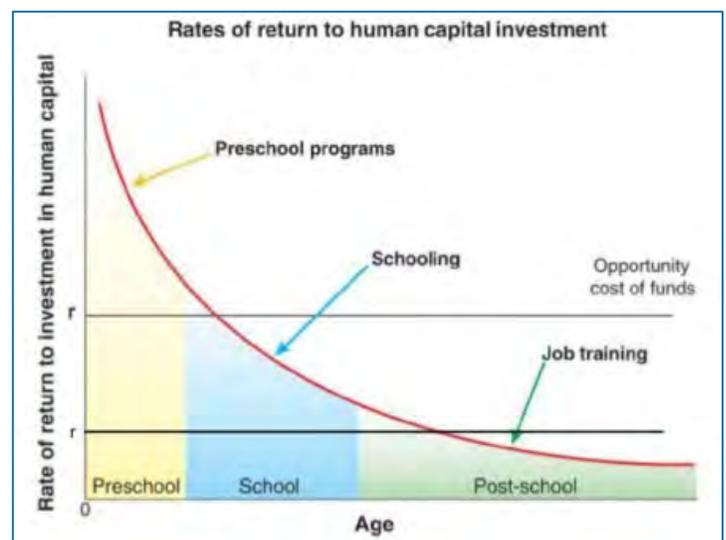
A particularly important reminder from the experience of the Tasmanian Child and Family Centres is that engagement to support parents is an ongoing process that needs to keep expanding -- reaching further and further out to the most vulnerable people in the community. This takes time. The process of engagement cannot be forced. Nor can we treat it as if it is just another task to tick off from a timeline of events.

4 WHAT SERVICES CAN DO

Intervene as early as possible and do it where families are - at home and in community settings - through growth promoting experiences within a web of secure relationships. All of the research on early years' development and its impact over the life course ends with the same conclusion: it is more efficacious and less expensive to intervene early. There is even a growing body of evidence that early interventions can reverse some neurobiological effects of early adversity so there is growing confidence that the effects of early stress are not irreversible. Everyone wins with early intervention: children benefit, families benefit, communities benefit and the economy benefits. There are no losers. But what does it mean to intervene early?

Early intervention means identifying children and families that may be at risk of running into difficulties, and providing timely and effective support to combat the identified risks. An important goal of early intervention is to prevent escalation of emerging problems into full blown crises. Early intervention is about enhancing the capabilities of every parent and caregiver to provide a supportive and enriching environment for their children to grow up in, leading to an intergenerational cycle of positive parenting, relationships and behaviour. Early intervention should begin prior to conception, but at the latest during the ante-natal period and continue through the first three years of the child's life. That is not to say that early intervention stops when a child reaches three; rather, there are a number of points along the life course -- particularly at important transition periods -- where services and supports can prevent poor outcomes.

Along with parents and communities, services have a significant role to play in supporting parenting. While there is a plethora of services for families and parenting education programs, there is still the widespread view that parents are not getting the support they need when they feel overwhelmed or stressed. Some go so far as to claim that the service system for children and families, as currently designed, is not adequate to meet the needs of the most disadvantaged families. This presents a risk and an opportunity. A risk if we do nothing; an opportunity if we provide parents with the kind of support they need when and where they need it.



(James Heckman (2006))

We know a lot about what to do; that is, invest in human capital development from day one, or even before, because these investments really pay off as James Heckman, Nobel Laureate in Economics shows in the graph on the right.

The families that are most disadvantaged by the service system are those that are most vulnerable -- whether because they lack the skills and confidence to negotiate the system, or because they are unfamiliar with the culture and language, or because they are isolated and lack the social networks that would help them find and use the services that are available, or because they have multiple problems and need help from many sources.

[A better service system for parents and children](#). When thinking about how to design a system that will work for all families, there are three important questions that require answers:

- What should be included in the mix of services and supports to help families with young children?
- How should the services and supports be delivered in what settings and by whom? And
- What is required to drive and sustain system transformation efforts?

THE WHAT

The starting point for identifying “what” should be done is to specify an underlying theory of change; that is, an explanation of how we get from the problem to a desired future. In this case, helping babies and young children achieve their maximum potential. As the evidence tell us, parents (or other primary caregivers) are the most important factor in children’s development in the first 1,000 days but parenting is too often compromised by a number of factors, poverty being the most pervasive. With this in mind, the theory of change for this work looks like the table on the following page:

Table 3: Theory of Change

<p>THE PROBLEM: children not thriving</p> <p>CAUSES: parents unable to provide nurturing environments and experiences for their children because.....</p> <ul style="list-style-type: none"> → they lack fundamental knowledge and skills and/or → they have not been able to develop core executive skills themselves and, therefore, do not have the resources or capabilities to facilitate their children’s development and/or → they are so overwhelmed by poverty and the effort to provide the material basics and/or → they are living with high levels of stress. <p>DESIRED OUTCOMES: all children meeting agreed developmental milestones in first 1,000 days</p> <p>EVIDENCE:</p> <ul style="list-style-type: none"> → many parents have mistaken beliefs about how to be effective caregivers → growing up in high stress conditions with multiple risk factors interferes with brain growth and development of basic life skills; → there is a strong socio-economic gradient in parenting behaviours → poor decision-making results from living continuously with high levels of stress <p>THEORY OF CHANGE:</p> <p>IF we can engage parents in co-designing and participating in evidence-informed programs, and</p> <p>IF parents are supported by social networks and community institutions, and</p> <p>IF we enhance the economic wellbeing of families, reducing ongoing stress</p> <p>THEN parents can build fundamental parenting knowledge and skills and core executive functions.</p> <p>IF they develop the knowledge and skills and core executive functions,</p> <p>THEN they can provide nurturing, healthy, responsive environments for their children.</p>

By this analysis, the focus on the service system should be primarily on facilitating the development of high quality caregiving and eliminating poverty or at least mitigating its worst effects. Surely, the service system can -- and in some cases already does -- contribute: to parenting education and skill building; to the development of strong communities; and to the provision of the material basics needed by all families. However, there are gaps, some of which can be filled by social services while others require significant changes in public policy. The latter will be discussed in Section 6.

Even though there is virtually universal belief that early intervention can make the greatest difference in children's development, some people argue that services for 0-3s are still "thin on the ground" - that babies are still an invisible group for serious policy and program development. Once children enter the education system - where there is substantial investment - it is far too late for many. There is a simple axiom for children's development: the earlier, the better.

Given the evidence summarised in this paper, the key focus of the service system should be on parents/caregivers from conception to when their children turn three and, in some cases, well beyond. As indicated earlier, adults who themselves endured difficult childhoods and those beleaguered by financial insecurity may need help developing the critical executive function skills that allow for high quality caregiving. Therefore, services might include the following: provide training in specific self-regulatory and executive function skills aligned to the environment and context in which they will be used; teach strategies for reassessing a stressful situation and considering alternatives; teach strategies for recognizing and interrupting automatic responses, such as intense anger or frustration, to give more time to activate intentional self-regulation in stressful situations; strengthen intentional self-regulation through specific training techniques that target the skills that can override automatic responses, such as helping adults identify their own motivating goals and support their pursuit; and create a "multiplier effect," in which helping adults see how small actions and successes will make a difference leads to a reinforcing cycle of positive emotional responses. These services can help parents be the best caregivers they can be.

It is also important for the service system to "communicate" the message that parenting is hard, and that all parents need help occasionally. Difficulties and challenges should be positioned as natural parts of raising kids along with the idea that children are everyone's responsibility.

Community strengthening should also be a centerpiece of the service system because the environments in which families live also exert considerable influence. Rather than privileging formal services, the system should ensure that parents and families have safe, welcoming, informal spaces in which to interact, build linkages and share social support. This could include community-based "education" activities of relevance to parents in places where parents naturally gather, like shopping centres, playgrounds and even fast food

outlets. It is also the case that parents do not feel comfortable accessing formal services when they need help. It is more likely that they will ask friends and family members for advice. Recruiting and skilling up peers to work with families in community can go a long way to providing a high quality, low cost way to assist parents to understand child development, deal with stress and engage in responsive, nurturing ways with their children.

In the age of the Internet, another gap services can fill is to provide an accessible, reliable “online space” for the dissemination of evidence based material to support parents through the key stages of perinatal health and wellbeing.

From another perspective In the ongoing debate about what constitutes a comprehensive community-based service framework for children and families, Moore and Skinner (2011) provided a summary which can be seen below.

Essential Components of an Effective Service System

- Universal: Based on the provision of a core set of services to all families in all localities;
- Tiered: Provision of additional supports to families and areas identified as having additional needs and/or being exposed to multiple risks;
- Range of services: Individuals and families have access to a broad range of interventions from the practical, material services to more complex work;
- Integrated: All relevant services work together to provide integrated, holistic support for families;
- Multi-level: Able to address all factors that directly or indirectly shape the development of young children and the functioning of their families;
- Accessibility: Services are made as accessible (in all senses, including geographical, cultural, transport and psychological accessibility) as possible;
- Place-based: Integrates services planned and delivered in defined socio-geographic areas;
- Relational: Based on principles and practices of engagement and responsiveness, both at the individual and community level;
- Partnership-based: Based on partnerships between families and service providers and between government and service providers; and

- Governance structure: A robust governance structure that allows different levels of government, different government departments, non-government services and communities to collaborate in developing and implementing comprehensive place-based action plans.

THE HOW

The mix of services available to parents and families provides the foundation, but the way in which services are delivered is just as important in achieving positive outcomes for children.

[Key principles to drive a new service response.](#) There are seven widely accepted principles that should underpin services for children and their families (Workgroup on Principles and Practices in Natural Environments).

Delivering Services: Key Principles

1. Infants and toddlers learn best through everyday experiences and interactions with familiar people in familiar contexts.
2. All families, with the necessary supports and resources, can enhance their children's learning and development.
3. The primary role of a service provider in early intervention is to work with and support family members and caregivers in children's lives.
4. The early intervention process, from initial contacts through transition, must be dynamic and individualised to reflect the child's and family members' preferences, learning, styles and cultural beliefs.
5. Individualised Family Service Plan outcomes must be functional and based on children's and families' needs and family-identified priorities.
6. The family's priorities, needs and interests are addressed most appropriately. By a primary provider who represents and receives team and community support.
7. Interventions with young children and family members must be based on explicit principles, validated practices, best available research and relevant laws and regulations.

[A new way of doing things changes the lives of students.](#) The previous section emphasised the importance of informal approaches to helping parents. This is an education. Drawing on the science of brain development and in consultation with the community, an integrated, place-based approach was developed to provide services from before birth through to grade six on the school grounds of the Challis Parenting and Early Learning Centre in Armidale, WA, a highly disadvantaged area. The Challis model is credited with turning years of crushing academic results and social outcomes around. Given these results,

the Minderoo Foundation commissioned the Telethon Kids Institute to review the Challis model and the evidence supporting it with an eye to replication. Their report, *A Pathway from Early Childhood Disadvantage for Australian Children*, identified the program's key components that contributed to the outstanding outcomes in altering the life course of disadvantaged children:

These key components are summarised below:

- Single-point community-level accountability for outcomes, ensuring local area leadership;
- Delivery commencing immediately after the birth and extending through the early primary years with service integration on a single local site, ensuring supportive local developmental pathways and service continuity with sound linkages to all families;
- Flexible approaches to meeting the needs of parents and children while also giving emphasis to specific, empirically-defined outcomes, ensuring "loose-tight" service accountability;
- A focus on ensuring needed services are reliably accessed by vulnerable children and families at the right time, ensuring an appropriate risk management approach;
- Delivery of tailored "doses" of human services (health, parenting support, education) of sufficient intensity and proximity to address needs, ensuring cost-efficient and cost-effective use of available resources;
- Delivery by highly trained and supported staff, ensuring professional excellence; and
- Working according to a common vision with specific medium- and long-term goals and according to a defined philosophy and pedagogy across the span of the early years, ensuring consistency and fidelity of approach.

Engaging families. Even the best services, however, will not produce the desired outcomes if families do not feel comfortable accessing them. It appears that there are structural, family level and interpersonal barriers that make it difficult for certain families to take advantage of programs and supports that might help.

- Service level or structural barriers include: lack of publicity about services; cost of services; limited availability; failure to provide services that meet parents' felt needs; inability of services to respond promptly to requests for help; rigid eligibility criteria; inaccessible locations; lack of public transport; limited hours of operation; inflexible appointment systems; lack of affordable child care; poor co-ordination between services; and not having an outreach capacity;
- Family level barriers include: limited income; lack of social support; lack of private transport; unstable housing or homelessness; low literacy levels; large family size; personal preferences and beliefs about

the necessity and value of services; physical or mental health issues or disability; and day-to-day stress. Vulnerable parents have to balance competing needs, and sometimes “survival” needs take priority over attendance at a service; and

- Relational or interpersonal barriers include: beliefs, attitudes and skills that can compromise the ability of service providers to engage families successfully; or the ability of parents to seek out and make use of support services. In the case of service providers, relational barriers include insensitive or judgmental attitudes and behaviours; lack of awareness of cultural sensitivities; poor listening and helping skills; inability to put parents at ease; and failure to acknowledge and build on family strengths and to engage families as partners. In the case of parents, relational barriers include: lack of trust in services; fear of child protection services; misperceptions of what services offer; lack of the social skills and confidence to negotiate with professionals; and being easily intimidated or put off by perceived attitudes of staff or other parents.

Research suggests that there are primary or threshold factors that are the preconditions for successful service delivery with vulnerable families. Eight such factors have been identified¹:

1. The quality of relationship between the parent and the service provider;
2. Target goals parents see as important;
3. Establishing shared decision-making choices of strategies;
4. Cultural awareness and sensitivity;
5. Non-stigmatising interventions and settings;
6. Minimising the practical or structural barriers to accessing services;
7. Providing crisis help prior to other intervention aims; and
8. Maintaining continuity of care.

There are also some important guidelines about how to work with families specifically. The table on the following page captures the key methods and the questions to ask while planning how to implement them (McDonald, 2010).

Table 5: Working with Families

	Planning questions
<p>Go to where families are:</p> <ul style="list-style-type: none"> • Families may not attend a program or service if it is unfamiliar, intimidating or in a location that is inconvenient to them. • Going to where families are, such as local shopping centres or parks, rather than waiting for families to attend a program or service, is a way of connecting with families and developing relationships with the local community. • The purpose of going to where families are could be to: <ul style="list-style-type: none"> – provide families with information about a service; – provide families with resources (e.g., information about child development, children's books, information about parenting, information about other services in the local community); – promote a service in the community; – communicate and build relationships of trust within the local community; and – deliver services (e.g., playgroups). 	<ul style="list-style-type: none"> • Where do local families with young children gather (e.g., parks, shopping centres, religious centres)? When are they most likely to be there? • Where do local dads gather (e.g., sporting events)? Is it possible to provide information and/or promote your service at these venues? • Is there a business in the area that employs a large number of local parents? Is it possible to engage with parents through that business? • If your target group uses local childcare facilities are you able to establish a regular presence at these venues so you can provide information and/or promote your service directly to parents of young children? • Is a mobile service, such as a mobile playgroup, mobile library or mobile storytelling service, viable and/or appropriate?

	Planning questions
<p>Promote and deliver services in a non-stigmatising and non-threatening way</p> <ul style="list-style-type: none"> • In practice, a non-stigmatising approach rejects negative labelling of families (e.g., "multi-problem" or "complex" families). • Families may be sensitive to the stigma associated with the concept of "charity" or "welfare". Delivering services in a universal venue, such as a health clinic or a school, may reduce the potential for stigma because these venues are not associated with a specific type of "problem". • A non-stigmatising approach is also demonstrated in practitioners' attitudes. Both parents and children value practitioners who treat them with respect and see them as more than just their "problems". • Some parents may feel threatened in certain situations or environments. For example, young parents may be uncomfortable with parenting programs that replicate a traditional classroom learning style. They may be more comfortable in a learning environment that is casual, informal and fosters social interaction with other young parents. • Some parents may be threatened by centre-based activities and more likely to attend activities in open public spaces such as local parks. • Activities that are free or low cost and one-off events (such as a children's picnic) may also be more appealing to some families. • Indigenous and culturally and linguistically diverse (CALD) families may be intimidated by child and family services and programs because of past experiences and/or cultural difference. 	<ul style="list-style-type: none"> • Is the venue where your program is delivered associated with a particular type of "problem" in the minds of the local community? Is it possible to hold the program in a venue that is more "neutral" in the minds of the local community? • How are you promoting your service? What message are the images in your promotion materials conveying? • Would a less formal word of mouth approach to promotion be more suitable to your target group? • Are the resources you're providing through a service (e.g., information sheets) suitable for the audience? Could they be modified to better meet the needs of the audience (e.g., a DVD or poster)? • Could the setting be at all intimidating to the families you are trying to reach? For example, a program held in a library may be intimidating to people if they associate libraries with a particular level of education. • Could the format of the program be at all intimidating to the families you are trying to reach? • Is your service accessible to families from CALD backgrounds? For example, do you have culturally appropriate parenting resources?

	Planning questions
<p>Employ strategies that empower families</p> <ul style="list-style-type: none"> • The empowerment of families within child and family services not only increases families' level of engagement but also enhances outcomes for participating families. • Empowerment involves enhancing families' ability to solve problems for themselves rather than promoting a relationship of dependency. • The empowerment of families within child and family services could take a number of forms including: <ul style="list-style-type: none"> – encouraging parents to contribute to the planning and development of programs and/or individual sessions, and working with parents to implement their ideas and suggestions; – encouraging participants to take a facilitation or leadership role in a group (e.g., parenting mentor, playgroup facilitator) and supporting them in that role; – encouraging parents to take up further educational and employment opportunities; and – adopting a strengths-based approach to families, that is, focusing on the skills and abilities of families rather than focusing on their shortfalls. • By listening to families about what they need and implementing their suggestions service providers not only empower families but also help to make their service more useful and relevant to families. 	<ul style="list-style-type: none"> • Are parents confident about expressing what they need and want from a program or activity? • Are parents actively participating in decisions about the planning and/or delivery of services? • Are parents encouraged to take on facilitation and/or leadership roles? • Does your program adopt a strengths-based approach with families? How do you, your colleagues and/or staff understand the strengths-based approach? Is further training in a strengths-based approach required?

	Planning questions
<p>Develop relationships</p> <p>There are three types of relationship that are important to child and family services:</p> <ul style="list-style-type: none"> • Relationships with families: developing a relationship of trust between practitioners and individual families is critical to engagement. The following personal qualities can help to build a trusting relationship with a family: <ul style="list-style-type: none"> – a non-judgemental attitude; – a respectful attitude; – an encouraging and empowering approach; – warmth and empathy; and – being authentic. • Relationships with communities: families may be more likely to attend a service if it is known within and recommended by key groups, agencies and/or parents/families within the local community. This appears to be especially important in Indigenous communities. • Relationships with other services: services working in isolation may not be able to meet the needs of families as effectively as services that have relationships with other agencies, particularly where a family has complex needs. Having a relationship with other services can assist in: <ul style="list-style-type: none"> – finding and reaching clients: through, for example, referral practices between agencies; – meeting the diverse needs of clients: by providing access to a range of different types of services; and – building the capacity of other local services and programs: to, for example, more effectively meet the needs of disadvantaged families. 	<ul style="list-style-type: none"> • How does your service build relationships of trust with families? • Does your service have a relationship with local Indigenous networks and/or Indigenous organisations? • Does your service have a relationship with local CALD communities? Who are the trusted representatives of CALD groups within the local community?

Sustaining engagement is also important and there is evidence that vulnerable and marginalised families need services that:

- Help them feel valued and understood, and that are non-judgmental and honest;
- Have respect for their inherent human dignity, and are responsive to their needs, rather than prescriptive;
- Allow them to feel in control and help them feel capable, competent and empowered;
- Are practical and help them meet their self-defined needs;
- Are timely, providing help when they feel they need it, not weeks, months or even years later; and
- Provide continuity of care -- parents value the sense of security that comes from having a long-term relationship with the same service provider.

Driving system transformation. Underlying all of these approaches to system change are the people, structures and processes that underpin systems and the political will that drives change. Given the immensity of the challenge -- transforming governance and bureaucracy, engaging all key stakeholders effectively (community, service industry, government), creating and using databases for monitoring short-, medium- and long-term outcomes --“change needs to be bold and radical”. Frieberg, Homel, Branch and Barber (2008) identified some of the ideas that have emerged from successful efforts to develop and implement comprehensive, ecological, integrated approaches to facilitating the optimum development of children:

- **Developing the political will for change:** It is not uncommon for social change activists to say, “we know what to do, but it still isn’t happening”. There is simply a huge chasm between knowing and doing. Filling that chasm is about creating political will, the collective commitment to stay the course in addressing complex, wicked social problems. How that happens is part planning, part luck. Linking the importance of investing in child development to whatever has the attention of the government and the public is one way. Another crucial way, is the use of good evidence, which can create the resolve to adopt operationally challenging and resource-intensive strategies.
- **Overcoming bureaucratic barriers:** Support at senior levels of government is crucial to transforming the way bureaucracies work with communities. Bureaucratic culture with its silos, hierarchies, categorical funding structures and reporting requirements often act as barriers to co-design and collective impact processes that strengthen communities while solving specific problems. Some strategies suggested to overcome these barriers include: shared funding arrangements; place-based rather than program-based approaches that cross sectoral; and departmental lines and outcomes-based budgets

- Creating a process for coordination and collaboration: To work within an ecological approach, a broad range of skills is required to identify issues, develop and implement solutions, and assess outcomes. Seldom do these skills exist in one service, one department or one organisation. Bringing the necessary knowledge, skills and capabilities together is central to success. While it is easy to talk about collaborating and coordinating efforts to solve complex problems (and it would be difficult to find anyone willing to argue against working together), it is quite difficult to execute.

It appears that one effective approach is to set up forums and create dedicated time for joint planning --both across portfolios and also together with local service and community groups to arrange collective responses to locally identified issues. Such forums also provide an opportunity to build and sustain strong relationships. In a similar vein is the establishment of policy-practice-research partnerships to provide policy-relevant information, act as knowledge brokers and to sustain a cohesive vision.

It also takes responsive, thoughtful, flexible leaders to facilitate the process of collaboration. There is no clear preference for a particular leadership structure but there is some support for creating temporary project-specific groups to which representatives of the three key stakeholder groups (community, government and service industry) can be seconded. Literally working alongside each other with a common agenda and set of outcomes is a promising way to overcome siloed thinking and disparate accountabilities.

Finally, it is important to attract and engage the “right” people with the “right” competencies, knowledge, experience, motivation and buy-in through thorough recruitment and development processes.

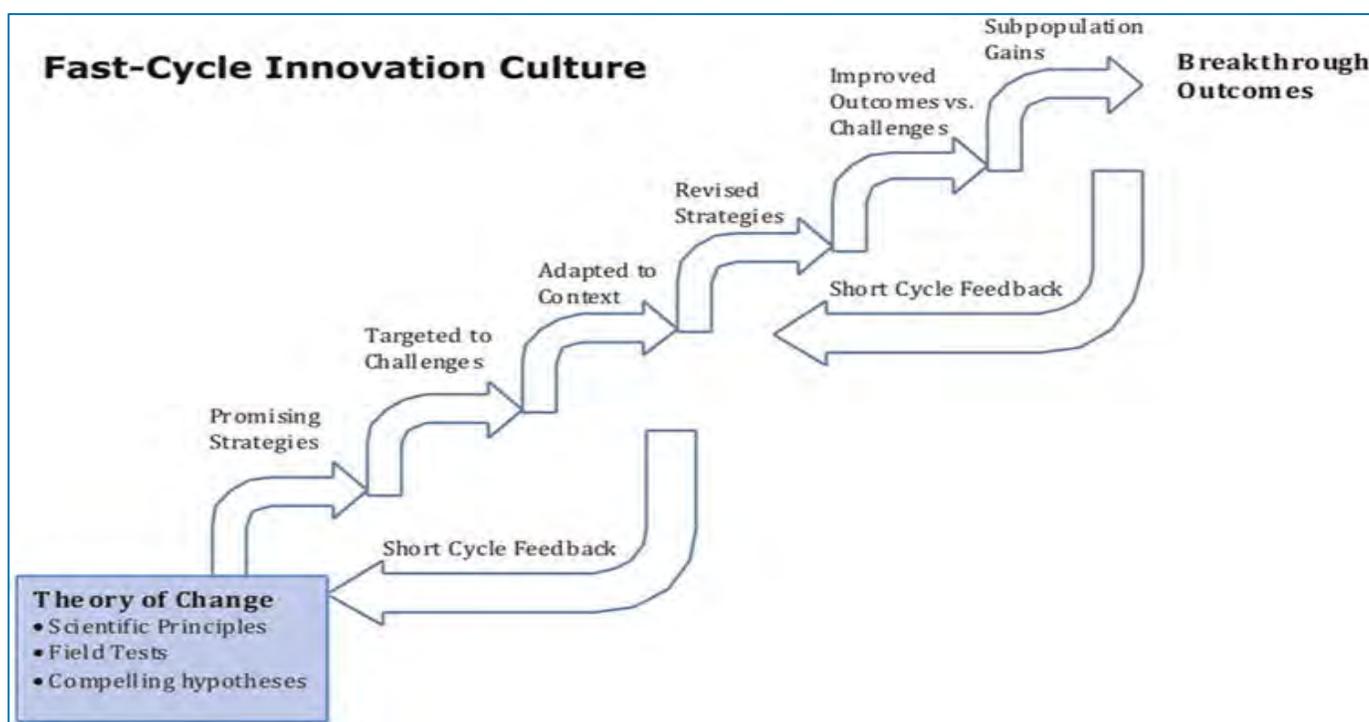
- Outcomes, strategic learning and evaluation: There appears to be furious agreement that focusing on outcomes rather than outputs is crucial to achieving sustainable change. Linking performance to achievement of outcomes can encourage collaboration and integration. However, it is not easy to measure the outcomes of community-driven long-term interventions as they often are not apparent for many years. Keeping everyone’s eyes on the prize is essential, but interim measures are also needed to help all stakeholders understand what progress is being made. Developmental evaluation and a fidelity to good practice approach can be very useful tools in supporting the innovation and adaptation so crucial to solving complex, wicked problems.

Developmental evaluation is about balancing critical and creative thinking. It is a continuous basis of testing new ideas, surfacing issues, asking critical questions, using data and logic to inform planning, tracking progress, making sense of what is happening and making adaptive changes in real time.

Fidelity to good practice is about assessing whether an initiative is proceeding in a way that is congruent with what we currently know about achieving sustainable change for children in complex, disadvantaged communities. It requires the establishment of a set of principles or benchmarks of good practice against which to measure an initiative's progress.

5 WHAT DESIGN RESEARCH CAN DO

It is apparent that there are few, if any, off-the-shelf models that can be used in Logan. Rather, innovation will be the key. Driving innovation depends, in part, on short cycle sharing, which requires a flexible approach to planning, funding, and action that promotes quick turnaround time for information exchange, encourages rapid discovery in the context of continuous change, and embraces the value of learning from failure. Typically, this involves multiple shifts in course within a single year. The short-cycle nature of the innovation process feeds on the continuous sharing of findings along the way, similar to the use of embedded developmental evaluation in organisations seeking innovative solutions to wicked problems.



Harvard Center on the Developing Child (2017)

The Harvard Center on the Developing Child has taken this approach a step further. It is called Frontiers of Innovation's IDEAS Impact Framework (FOI). It is included here because of the potential it has to drive system transformation. Here is how they describe the process.

Within FOI network, researchers, practitioners, and community members co-create and evaluate new ideas in a diversity of project settings. The work of FOI is guided by the theory that it is necessary to build the capabilities of adults in order to achieve significant outcomes for the children in their care. These same capabilities also enhance adults' employability and increase the economic and social stability of the family, thereby further reducing sources of family stress. Expanding an adult's capabilities also improves their

capacities as caregivers, enabling them to help young children build effective coping skills to overcome adversity and strengthen the foundations of lifelong resilience. Building on this evolving theory of change, the communities in which families raise children are important contexts for designing and testing new strategies for enhancing protective factors and reducing identified sources of toxic stress that impose enormous burdens on parents of young children.

Using the IDEAS Impact Framework facilitates exploration of exactly how an approach works:

- What about it works? If we understand the key ingredients, we can replicate them;
- How does it work? Being specific about the underlying mechanisms can help us increase the impact;
- For whom does it work, and for whom does it not work? When we know who is and isn't responding, we can make targeted adaptations to improve the outcome; and
- In what contexts does it work? By evaluating the context in which a program is implemented, we can adapt it for other settings.

There is also a core set of guiding principles. These concepts and approaches guide the work within the model and represent ways of working that make this approach unique in the field.

- Precision in program definition and measurement, which allows us to:
 - Identify who benefits most and least (Segmentation);
 - Develop strategies to address specific needs/issues within larger programs (Modularity);
- Fast-Cycle Iteration: testing, learning, and refining rapidly;
- Co-Creation: bringing together expert knowledge from science, practice, systems, and community; and
- Shared Learning across a network using common measures.

Through segmentation, we can systematically generate that precise knowledge about who benefits most (and least) and in what contexts, and more closely match programs with the needs of specific subgroups and contexts. Segmentation specifies salient characteristics of the individuals involved in the program beyond the usual variables such as race, family income, parent's education level, or whether a program is home- or centre-based. These additional characteristics—which might include factors like a child's attention skills, a parent's mental health status, or a teacher's knowledge of child development—allow us to clearly identify for whom a program works—and for whom it doesn't.

Modularity is the degree to which the components of a program can be separated and re-combined.

Modular programs can be implemented with ease in existing programs or service structures because teams can incorporate the specific components that make sense for their programs. This approach offers a practical and cost-effective pathway to targeted scaling. Understanding why different programs or their

components are effective for different populations can help us identify a program’s “key ingredients,” which can then be incorporated, in suitable mixes, into broader service systems. This contrasts with the conventional approach, which involves implementing the full package of a program, without understanding the specific impacts of each component.

Fast-cycle iteration is a process for quickly incorporating what we’ve learned back into the design of the program. In contrast to more traditional randomized control trials, which involve high numbers of participants over several years, project teams using IDEAS Impact Framework fast-cycle iteration start with a series of low-cost, relatively small-scale pilot tests that enable them to establish feasibility and begin to explore the program’s theory of change. Each fast-cycle iteration, which can take place over weeks or a few months, is an opportunity to make refinements to the program based on what is and isn’t working, and to move toward higher levels of evidence at a faster pace.

Co-creation refers to bringing together different parties to produce a mutually valued outcome. The FOI approach to innovation brings together researchers, practitioners, and community members in order to develop, implement, test, and adapt ideas. This process increases the likelihood that the programs will meet communities’ unmet challenges, are relevant to real-world contexts, and can be scaled.

The principle of **shared learning** is also critical in the IDEAS Impact Framework. The FOI network is a community of innovation, with opportunities for multidisciplinary learning across programs and sites. To help facilitate this cross-project learning, IDEAS Impact Framework-engaged projects use common measures and share de-identified data from each program trial with a centralized data repository, allowing for greater aggregation across multiple programs and contexts. Finally, learning from failure as well as success, and sharing this learning with a committed and multidisciplinary community, is an essential and valued part of the work.

Using the framework, all individual projects include three components:

- **Theory of change (TOC):** a detailed set of beliefs about specific observable changes that are expected to result from an intervention. A clear and concise TOC supports fast-cycle iteration by helping to pinpoint why, how, and for whom an intervention works or doesn’t work. It also facilitates shared learning and guides decisions related to program development and materials as well as evaluation. Within FOI, all project teams work from a common TOC template;
- **Program and Materials Development:** High-quality, comprehensive materials are a program’s blueprints and include all of the information needed for teams to implement the program effectively, including guidance on strategies, targets, population, setting, duration, etc. These materials are closely aligned with the intervention’s TOC, facilitate ongoing development and adaptation, and increase program feasibility and scalability. Each program’s materials will be unique, but may include items

such as training materials for interventionists, handouts for participants, implementation checklists, and fidelity scales; and

- Evaluation Plan: An evaluation plan details the exact measures and processes that will be used to evaluate a program's impact, and is closely tied to the TOC. In addition to the measures used for each intervention, IDEAS Impact Framework-engaged projects use a common set of core measures, which allows for data aggregation and data sharing across intervention sites. Data is shared and synthesized within a centralized data repository.

6 WHAT PUBLIC POLICY CAN DO

...promoting 'optimal conditions' in early life is the best hope we have of hardwiring 'healthy' physiological, structural, immune, metabolic and behavioural-response patterns (Prescott, 2015).

The starting point is for all governments and policy makers to recognise children as rights holders and full members of society, capable of participating in their social worlds through their relationship with others.

These rights, expressed in the United Nations Convention on the Rights of the Child (1989), are:

- The right to life and development;
- The right to be heard;
- The right to non-discrimination; and
- The right for the best interests of the child to be upheld.

UNICEF, the world's leading organisation working to protect and improve the lives of all children in over 190 countries, calls for governments to take the following six actions:

- 1 Invest urgently in services that give young children, especially the most deprived, the best start in life;
- 2 Expand access to effective and essential early childhood development services in homes, schools, communities and health clinics;
- 3 Make family-friendly early childhood development policies a national priority – and a private sector imperative;
- 4 Collect data on essential indicators of early childhood development and track progress in reaching the most deprived;
- 5 Provide dedicated leadership for early childhood development programmes and coordinate efforts more effectively across sectors; and
- 6 Drive demand for high-quality early childhood development services.

However, to make real progress, we must recognise the vast changes that have occurred in the last fifty years and their impact on families and the development of children. The new report, *The First Thousand Days: An Evidence Paper* (Moore, Arefadib, Deery, Keyes & West, 2017) sums up this task:

The rapid social, economic and technological changes that have occurred over the past half century or so have been enormously beneficial in many ways. There have been dramatic improvements in longevity, standards of living, and health care, along with reductions in violence. But these gains have come at a cost that we are only just beginning to recognise --in the form of the epidemics of non-communicable diseases that threaten to reverse the longevity gains, the growth in inequalities and the corrosive effects these are having on social

trust and capital, the emergence of wicked / complex problems, and even climate change. This is the ‘social climate change’ story – how the dramatic changes that have occurred in our societies over the last half a century have affected the conditions under which families are raising young children, and therefore children’s developmental and health outcomes. While some of these changes are for the better, some appear not to be. Our task is to understand the mechanisms that underpin development, learn how these can be disrupted by adverse experiences and exposures, and identify the environmental changes that are having these adverse effects so we can address them.

What we need is a policy of societal stress reduction in the form of broad social policies that have the goal of buffering the ubiquitous socio-environmental and economic chronic stressors faced by so many. (Blackburn and Epel, 2017)

The conclusions of *The First Thousand Days: An Evidence Paper* are worth including in full as they provide guidance about future actions²:

- Holistic approach: Humans are complex systems and no single factor affecting health and development should be seen in isolation. Most chronic disease processes are characterised by multi-causality and complexity, and understanding such processes requires a more holistic approach that focuses on systems;
- Multilevel approaches: Conditions such as obesity are multifactorial, and prevention strategies need to address the individual, the family, the physical environment, the social environment, and social policy. To improve long-term outcomes for children experiencing significant levels of disadvantage, a multilevel, ecological approach is required involving actions at three levels: program level interventions delivered directly to children and families; community and service system level interventions that seek to build more supportive communities and better co-ordinated and effective service systems; and structural and societal level interventions that address the structural (e.g. government policy) and wider social factors (e.g. attitudes and values) that influence child and family outcomes. Key elements of this approach include service systems based on principles of progressive or proportionate universalism;
- Flexible and responsive service systems: In addressing complex and ‘wicked’ problems, service systems need to become more agile and responsive than they have been traditionally. This means engaging families and communities as partners and co-producers in determining what local conditions need to be addressed, the goals being sought and what strategies are to be used to achieve them; and
- Prevention: The value of prevention as a general strategy in human services has been recognised for decades and has been highlighted several times in this review as being critically important during the first

² The citations have been removed from this quotation, but can be accessed in the original paper.

1,000 days. A true prevention approach addresses the underlying causes of problems and seeks to improve the conditions under which families are raising young children. As Prescott (2015) states, “promoting optimal conditions in early life is the best hope we have of hardwiring ‘healthy’ physiological, structural, immune, metabolic and behavioural-response patterns in order to prevent so many avoidable diseases”.

7 CONCLUSIONS

Where to from here? Given the evidence, the obvious starting point is the science of brain development. Shonkoff and Fisher (2013) highlight two of the most profound findings: above all else caregiver relationships matter most and caregivers need a set of core competencies that can be learned:

...the development of young children unfolds in the context of their relationships with the important adults in their lives leads to a natural conclusion that effective interventions for disadvantaged infants, toddlers, and pre-schoolers ought to include significant engagement with parents and other caregivers.

There is a growing consensus that the search for more effective strategies to improve the lives of vulnerable young children ought to include greater attention to strengthening the capabilities of their caregivers and addressing the material needs of their families in order to assure a more appropriate balance between providing enriched experiences and facilitating protection from adversity. This means helping parents and other adult caregivers across the socioeconomic spectrum to build the core competencies (the ability to focus and sustain attention, set goals and make plans, follow rules, solve problems, monitor actions, shift course, defer gratification, and control impulses) needed to enable them to care for themselves and their children, run households, seek and maintain jobs, and achieve financial and social stability.

We know what it takes to “grow the brains” of babies and young children.

We know how to improve adult core skills and parenting behaviours.

We know how to scaffold communities to build social capital and to care for each other.

We know how to build flexible and responsive services systems that are equipped to deliver preventive interventions and respond effectively to emerging issues and challenges, which can lead to population-level improvements.

We know how to support innovation with rapid prototyping.

We know what key policy responses can make a difference.

Now is the time to turn our knowledge into action by bringing together parents, communities, services and governments to engage in a co-design process to create innovative responses to directly address the specific and unique needs and aspirations of Logan’s communities.

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