

# OFF TO A BETTER START: WHAT WE KNOW ABOUT EARLY INTERVENTION SERVICES

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## Abstract

In New Zealand and elsewhere, evaluations of early intervention programmes indicate that long-term, positive outcomes can be achieved and sustained by children participating in high-quality early care and education. Recognising the importance of getting children off to a good start in life, the Ministry of Social Development is building capacity throughout New Zealand to provide a variety of early intervention services to families. A review of the international literature on best practices and programme quality revealed that there is much to learn from the experiences of programmes that have been rigorously studied. This paper reports on that review, emphasising eight key elements of early intervention services that can be provided to families to help strengthen the long-term development and wellbeing of children. These factors are programme quality, personnel and staffing issues, range of services, timing of service provision, duration of service delivery, intensity of services, location of services, and engagement and retention of families in services.

## INTRODUCTION

The recent advancement of research on childhood development and intervention strategies that support healthy development has been remarkable and enlightening. The earliest years of life are now recognised as a critical time in human development, and government policies and services are reflecting this knowledge.

The “nature vs. nurture” debate can be put to rest as a result of this research. We now know that as development unfolds it is influenced by both genetic make-up and human experience and, in particular, by the interplay between the two (Shonkoff and Phillips 2000). The debate about the value and effectiveness of early childhood interventions can be put to rest as well. We now have overwhelmingly clear evidence about what children need for healthy development, what puts them at risk for poor life outcomes,

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and what protects them and helps build resiliency (Buddulph et al. 2003, Currie 2000, Gray 2001, 2003, Kalil 2003, Karoly 1998, Masten and Powell 2003, NICHD 2001, Ramey and Ramey 1998, Reynolds 2000, Shonkoff and Phillips, 2000, 2003, Shonkoff and Meisels 2003, Smith 2000, Yoshikawa 1995). We move now to the question of how to assure that all children have opportunities for healthy growth and development from conception onward (Grunewald and Rolnick 2005, Ramey and Ramey 1998, Shonkoff and Phillips 2000).

The bulk of the research on early intervention services has focused on vulnerable families who are less likely to have the opportunities to ensure their children get off to a good start in life. Early intervention services have the potential to turn this around and get those children off to a better start in life, and on a better path to a better future (Gray 2003, Karoly et al. 1998, Ramey and Ramey 1998, Seibenbruner 2002, Shonkoff and Meisels 2003).

Supporting vulnerable families to obtain what is necessary for their children will ultimately benefit these individuals and the wider society as well. In addition to improving the lives of children over time, research suggests that early intervention programmes for vulnerable children have the potential to yield at least four types of savings to government and society:

- greater tax revenues from an increase in participants' earnings and rates of employment later in life
- lower welfare outlays
- reduced expenditure for social services, health and other services – later in life when services are typically more expensive
- lower criminal justice system costs (Karoly et al. 1998).

Decisions regarding where to invest limited public resources confront policy makers on a daily basis. It is their job to ensure that those endeavours have adequate pay-offs and yield high public returns. Taking an economic perspective on the contribution that early childhood interventions can make to a society, Rolnick and Grunewald (2003, Grunewald and Rolnick 2005) report that for the long-term betterment of a society there are few economic development strategies that can yield a higher level of benefit than investing in getting children off to a good start in life.

The Ministry of Social Development is concerned with the process of getting and keeping all New Zealand children on positive developmental trajectories. A critical review of the early intervention literature was completed for the purpose of identifying what has worked in New Zealand and elsewhere to create and sustain improved life outcomes for vulnerable children. This article presents some of the highlights of that review, particularly those that are relevant to public policies linked to improved outcomes for vulnerable children.

## BACKGROUND

Early intervention services include a range of care, support and educational services for infants and young children, in tandem with education and support for parents. The theory behind early intervention programmes is that by providing certain services and supports, the outcomes children achieve over their life course can be significantly improved. The more the “odds are stacked against” a child, the more important interventions become. By helping these children build resiliency, avoid risky behaviours and link to protective supports, the research shows that we are able to support them getting off to a better start in life, and ultimately to better life experiences (Masten and Powell 2003, Seibenbruner 2002).

In New Zealand, Parents as First Teachers is an early intervention programme based on the belief that parents are their children’s first and most important teachers. Support is provided to children from birth to three years of age and their families. Workers provide support and guidance to parents individually and in groups. In the New Zealand Family Start programme, early intervention services are targeted to “at risk” families in urban locations throughout the country. Home visits are made by a family/whānau worker who helps both parents and children. The family/whānau worker also serves the family as a coordinator between the other agencies with which the family might be involved.

This literature review concentrated on early intervention services specifically for vulnerable children and their families. “Vulnerable” is defined as those who face greater risk for poor outcomes than the general population. The literature is scattered with various terms such as “at risk”, “disadvantaged” and “fragile”. The term “vulnerable” was chosen for this literature review, although the review covers literature that includes all of these terms (Barrett 2003, Brooks-Gunn 2000).

## Method

The foundation of this literature review was the collection and review of literature from a variety of peer-reviewed journals, along with other high-quality academic publications and government documents. Selection of the literature was based on methodological quality and credibility, which was reviewed for each study, document or institution. As such, only well-designed and implemented research was selected for review. This included qualitative, quantitative and mixed-method research designs. Longitudinal studies were favoured as providing more substantive information on long-term outcomes. Studies of early interventions for young children track various outcome domains, such as increased cognitive ability or reduced behaviour problems. The chosen outcome domains differ from study to study, thus creating a challenge when drawing conclusions over the body of research. Meta-analyses – those using

findings from multiple, similar studies and analysing them together – are helpful in this regard, and were sought for this literature review. Findings that are replicated over time and locations strengthen their validity and increase the likelihood that their application to New Zealand will also be valid.

Researchers and evaluators were contacted directly when their work was of particular interest or if there were questions needing clarification. Internet searches provided additional information on programmes and services that were identified in the literature. Several key books on early intervention research were included in the review.

## PHYSICAL, COGNITIVE AND SOCIAL-EMOTIONAL OUTCOMES

Evaluations of early intervention services generally focus on multiple types of outcomes, including three primary areas of development: physical, cognitive and social-emotional. This section includes findings related to development, and the collective gains that have been achieved by children who have participated in high-quality early intervention programmes. These findings are the foundation for the conclusions regarding societal gains that are mentioned earlier in this article.

### A Starting Point: Brain Development

Much of what we know about the physiological development of the brain comes from experimental studies on animals. Recent neuroscientific developments have advanced techniques for determining the effects that early experience has on human brain development. Obvious ethical issues arise when considering the exposure to, or deprivation of, certain key experiences for human beings. Nonetheless, recent discoveries have allowed researchers to make stronger connections between animal and human brain development research (Farah and Noble 2005, Shonkoff and Phillips 2000).

The brain in the earliest years has more plasticity, or flexibility, than the mature brain. Plasticity enhances the ability to make adaptations and allows the brain to be highly receptive to interventions aimed at boosting development. It also makes the brain more vulnerable (Farah and Noble 2005, Lundy and Grossman 2005, Shonkoff and Phillips 2000)

Healthy development of the brain and nervous system depends on positive early human experience. We know that positive environmental conditions are necessary for healthy brain development, but the necessary elements are not precisely known and likely vary from person to person. We do know that there are certain conditions that pose a risk to the developing brain, and children must be protected from these harmful conditions. Examples include physical and emotional abuse, neglectful caretaking, environmental toxins, chronic stress, poverty, and exposure to violence (Lundy and

Grossman 2005, Shonkoff and Phillips 2000). While these conditions increase the likelihood for impaired development, they do not “seal the fate” of a developing brain. In other words, they put the brain at risk for poor development, but other environmental and genetic factors may protect the brain or help to overcome some level of the risk of the exposure.

### Social-Emotional Outcomes

In sum, the positive relation between child care quality and virtually every facet of children’s development that has been studied is one of the most consistent findings in developmental science. While child care of poor quality is associated with poorer developmental outcomes, high-quality care is associated with outcomes that all parents want to see in their children, ranging from cooperation with adults to ability to initiate and sustain positive exchanges with peers, to early competence in math and reading. (Shonkoff and Phillips 2000:313)

Awareness about the social-emotional aspects of development has lagged behind other areas in which outcomes have been tracked, but recent research has improved our understanding of this area. Generally, social-emotional outcomes include mental health, emotional development, social skills and behaviour.

Competencies in the area of social-emotional development that have been achieved and sustained by early intervention participants include social skills and interactions, regulation of behaviour, cooperation with structure, relationships with peers and adults, and attachment to parents and caregivers (Shonkoff 2004). In addition, reductions in criminal behaviour have been demonstrated well into adulthood in several studies (Raver 2002, Webster-Stratton 1998, Yoshikawa 1995). Long-term outcomes for children who attended several major early intervention programmes in the United States in the 1960s included reductions in behaviour problems, conduct disorders, adolescent delinquency and adult criminality (Barrett 2003, Reynolds 2001, Yoshikawa 1995). Long-term mental health of children has also been directly linked to improved parental mental health and parenting practices (Lundy and Grossman 2005, Sanders 2002).

### Cognitive Outcomes

Indicators of cognitive competencies include improved reading, language and math skills, increased intellectual ability and better long-term academic performance. A higher level of educational qualification was also found among participants of early intervention services compared to non-participants (Barrett 2003, Brooks-Gunn 2000, Currie 2000, Ramey and Ramey 1998).

## Physical Health and Wellbeing

Physical health and wellbeing is the third outcome domain where gains have been made and sustained. Lower morbidity, fewer teen pregnancies and reduced use of tobacco and marijuana have been demonstrated in some studies; reduced alcohol use was also demonstrated in others (Brooks-Gunn 2000, Ramey and Ramey 1998, Reynolds 2000, Smokowski et al. 2004).

### CHARACTERISTICS OF SUCCESSFUL PROGRAMMES

While social-emotional, cognitive and physical gains have been made and documented in studies using control groups of non-participants, the gains are not always consistent across multiple studies – a troubling issue. Some studies have shown certain outcomes are achievable, while other studies are not able to replicate those findings – but do find positive outcomes in other areas (Barrett 2003). In addition, the link between programme characteristics and specific outcomes is not always clear. Consequently, the following sections provide discussion of findings common to many studies and programme characteristics found in the majority of successful programmes.

Methodologically sound studies that track the wellbeing of children from the beginning of service delivery throughout childhood and into adulthood are limited. This is due to the complexity and expense of undertaking extensive research over a long period of time and across many phases of life. In addition, research reveals that not all early intervention services lead to improved outcomes for all children, and some poor-quality programmes have actually caused delays in children's development (Shonkoff and Phillips 2000). The policy implication is that it is critically important to understand the dimensions of effective programmes, as well as those of ineffective programmes.

Eight dimensions of service delivery emerged from this literature review as being linked to achieving and sustaining positive gains, and they are discussed in detail below. Of these eight dimensions, two features have appeared frequently in the literature as contributing significantly towards effective programmes, and these are programme quality and the competence and ability of staff. First and foremost, programmes must be of high quality – in that they revolve around each family's changing needs, rather than being structured around agency regulations and funding mandates. Content of programming for both parents and children should be age-specific, individualised, culturally respectful and relevant. These programmes hire top-quality staff, support and pay them well. These staff are then able to develop positive relationships with families and children and engage them in the ongoing process of service delivery. The other six

key dimensions of service delivery include the timing, duration and intensity of interventions; the location of services; and the availability of a coordinated range of services that families with multiple needs may require. The eight dimensions are discussed in greater detail in the subsections that follow.

### Programme Quality

Links between high programme quality and good outcomes for children are made throughout the literature. There is general consensus about what “high quality” consists of, but it is not easy for programmes to achieve. Elements of quality include:

- having a strong and accurate theoretical foundation on which the programme operates, so that the link between the stated goals and the methods used to achieve those goals are clear to everyone
- flexibility
- being non-stigmatizing
- utilization of significant parent and community involvement
- low staff-participant ratios
- a strengths-based focus
- a good match between family needs and the services provided
- the availability of a comprehensive range of services
- services that are easily accessible both physically and financially
- programme content that matches the needs of the child
- well-educated and well-paid staff that are supported by good management
- staff that are culturally sensitive, responsive and appropriate to the needs of the family (Barrett 2003, Davies 2003, Kalil 2003, Ramey and Ramey 1998, Shonkoff and Meisels 2003, Smith 2000, Yoshikawa 1995).

Poor-quality childcare as well as poor-quality early intervention programmes have been shown to do harm, by setting children backwards on their development trajectories. These programmes do not have the qualities mentioned above and include activities such as unsupervised play and long periods of television watching (Kalil 2003, Gray 2003, NICHD 2001, Shonkoff and Phillips 2000, Smith 2000).

### Personnel and Staffing Issues

Programme staff have a great deal of influence on how a child fares in the programme, and ultimately the outcomes the child is able to achieve. This relates to a number of dimensions of the staff member’s training and qualifications, their ability to form and maintain a relationship with the child and his/her family, as well as how effectively the family engages – and therefore stays with and benefits from – the programme. The

literature reflects a direct link between well-educated, well-paid and strongly supported staff and children's ability to achieve positive outcomes (Currie 2000, Shonkoff 2000, Smith 2000). Although para-professional staff have not demonstrated the same link to gains in children's improved outcomes, in some programmes they have shown a stronger ability to engage families in programming and services, which is an obvious and fundamental step in achieving good outcomes (Barrett 2003, Currie 2000, Gray 2001, Ramey and Ramey 1998, Shonkoff and Meisels 2003).

### Range of Services

Vulnerable families typically have a range of needs related to their vulnerability, and having a corresponding range of services to address those needs has been shown to be important. These include "ongoing health and social services, transportation, practical assistance with meeting urgent family needs, individualised neurodevelopmental therapies as needed, and parent services and training, as well as a strong educational programme for children" (Ramey and Ramey 1998:117). Obviously all services do not have to be located "on site", but linkages must be in place for families. Multidisciplinary collaboration means that families do not experience fragmentation and duplication with these services. Parents generally recognise the need for and want both parent education and parent support services (Miller and Sambell 2003, Wood and Baker, 1999).

When providing services to a child and family, the range of needs varies by age. For example, while the entire family may have mental health needs, providing those to a child will be very different from providing them to a parent. The range of services should account for these individual needs (Barrett 2003, Brooks-Gunn 2000, Davies et al. 2003, Ramey and Ramey 1998, Raver 2002).

### Timing of Service Provision

In general, "early" is a key concept in intervention services. There are differing views on what this means, such as whether the years from birth to three are more vital than others in early childhood years (Davies 2003, Shonkoff and Phillips 2000). While it is "never too early and never too late" to intervene, interventions prenatally, at birth or in infancy are more likely to lead to positive long-term outcomes. However, interventions any time in the period including pregnancy to school entry have been shown by various studies to be successful in achieving long-term gains (Barrett 2003, Currie 2000, Davies et al. 2003, Kalil 2003, Ramey and Ramey 1998, Shonkoff and Phillips 2000, Shonkoff and Meisels 2003).



### Duration of Service Delivery

How long services should be provided to a family depends directly on the changing needs of the family. Families with greater needs benefit from longer interventions (Shonkoff 2000, 2003, Smith 2000). Longer interventions also allow time for the critically important relationship between the family and the provider to develop and strengthen. The length of intervention in a number of successful programmes ranged from two to five years (Yoshikawa 1995).

Another important consideration about the length of service duration is that the gains made in early childhood are likely to be lost over time without the provision of routine follow-through services. These are sometimes referred to as “booster services” in the literature, since the concept is similar to an immunisation booster. Schools have been identified as the most likely place to provide this type of monitoring and support (Currie 2000, NICHD 2001, Ramey and Ramey 1998).

### Intensity of Services

Intensity mainly involves the hours per day, the days per week and the weeks per year that services are provided. The level of need of a family, which changes over time, should guide the level of intensity of service provision.

Overall, families with greater needs achieve better outcomes when services are more frequent, longer lasting, and provided to both parents and children (Brooks-Gunn et al. 2003, Brown 2000, Currie 2000, Gray 2003, Karoly et al. 1998, Ramey et al. 1992, 1998). This combination of services to parents and children is also a facet of the level of intensity, and leads to better results for families with high-intensity needs (Brooks-Gunn et al. 2003, Currie 2000, Gray 2003, Karoly et al. 1998, Ramey et al. 1992). In particular, the combination of early childhood care and education with family support and education is linked to preventing antisocial behaviour and delinquency (Yoshikawa 1995).

### Location of Services

The location of the service is dictated to some degree by the age of the child. During infancy, home visits are more effective (Gomby 1999, Olds 2002). Once the child is a little older, home visits combined with centre-based care have shown the strongest results in many studies. Home visits alone have not shown strong results in many studies but, when provided by skilled nurses in intensive, high-quality programmes, good outcomes have been achieved (Olds et al. 1999, Tableman 1999–2000a,

1999–2000b, Wagner et al. 2000). Centre-based care has demonstrated the strongest results for children, once they are old enough to benefit from the service. Groups for parents have been shown to be effective for building support and providing education (Brooks-Gunn 2000, Currie 2000, Ramey and Ramey 1998).

### Engagement and Retention of Families in Services

Engagement is a cornerstone of serving families effectively. When families engage, they “buy into” the value of the service, and attend, participate and actively engage in learning and making beneficial changes for their family’s wellbeing. Without engagement, there can be no positive outcomes. However, the reality is that families that do not have adequate resources (e.g. food and housing) are generally focused on meeting their daily needs and may have little energy to focus on their children’s learning and development (Gray 2001, 2003, Raver 2002, Zeedyk 2002).

The process of engagement is not something that happens quickly. For some families, engaging in services and committing to making necessary changes may take years. Engagement is not something that happens only once, nor is it something that only happens “up front” in the process. Rather, it is important for providers to continually address engagement throughout the service delivery process. This means making efforts at different stages, including attracting families to the programme or service, encouraging committed and consistent participation, and motivating families to achieve change over time (Greenstein 1998, Miller and Sambell 2003). Engagement is facilitated by developing early intervention programmes in ways that parents and communities feel a true sense of ownership for the initiative (Zeedyk 2000).

### Targeting Low-income Families

Finally, a word about the children and families who have been targeted for early intervention services in this literature. In most of the programmes that have been well studied, the best results have been achieved with children who experienced the most disadvantage in their daily lives. The definition of vulnerability certainly includes families who are in poverty, but also includes those who do not have the level of resources that “better-off” families do (Davies 2003, Biddulph et al. 2003). Many of the programmes covered in this review specifically targeted families living in poverty. As such, the literature indicates that better outcomes can be achieved in early interventions services with families with fewer resources (Brooks-Gunn 2000, Currie 2000, Davies et al. 2003, Mayer 2002, Ramey and Ramey 1998).

## CONCLUSIONS

The current status of the early intervention research provides a solid foundation of information about the effectiveness of early childhood interventions in English-speaking countries of the world. We now know a good deal about what works, for whom, when, how and under what conditions. However, the issue of transferability to New Zealand must be considered before policy makers and service providers in New Zealand can reliably build upon this foundation. While many of the interventions and much of the research have been done in other parts of the world and at other points in time, these data offer a solid starting point for exploring what is likely to be effective in New Zealand.

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