BEST START
Evidence Base Project

Best Start for Children
The Evidence Base Underlying Investment in the Early Years (children 0–8 years)

December 2001

Department of Human Services

Acknowledgments

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Contents

1. Introduction

This report was prepared by the Centre for Community Child Health as background reading for the Victorian Government's BEST START project. The Best Start project is jointly auspiced by the Department of Human Services and the Department of Education, Employment and Training (DEET). The overall aims of the BEST START project are to:

- Improve the social, emotional and physical wellbeing of children (0-8 years)
- Improve the capacity and competency of parents and carers
- Assist communities to become more child friendly.

These aims are to be realised through the development of a more accessible, comprehensive, coordinated and flexible universal service platform that will demonstrate the value and best practice of a community-based approach to health and wellness promotion, prevention and early intervention for families of young children (pregnancy to age eight years) in socially disadvantaged areas in rural, regional and metropolitan Victoria.

This paper summarises the important Victorian, national and international evidence that provides robust argument for the investment in pre-natal, postnatal, infant and early childhood periods of life in the interests of improved health and wellbeing of young children and their later educational, health and psychosocial success and wellbeing. The evidence includes research findings, programs and activities known to be effective targeting the child, their parents/carers (including parents to be) and the communities in which they live.

The report is divided into two sections:

- Section A addresses the evidence regarding the early years, including health (physical and mental), child care, early literacy and education, preschool, education, crime prevention, poverty, child abuse and brain development (including the genetic interface).
- Section B focuses on research findings and programs targeting pregnancy through to primary school entry that have proved to be effective in promoting the health and wellbeing of children, building the competency and capacity of their parents/carers, preventing problems arising, and responding in timely and appropriate ways to the early signs of problems

Section A: Evidence Regarding the Early Years

The work of such people as Freud, Bowlby, Winnicot, Piaget and many others has long emphasised that early childhood is an important stage of human development that lays the foundations for later development. The early years of life have been seen as important for both the physical and emotional health of children, for their social and cognitive development, and for later educational achievement and life chances. However, in more recent years research by neuroscientists has re-affirmed the importance of the early years for children's development in all domains and has provided fresh insights into the mechanisms involved in early development.

Thanks to technological advances, neuroscientists have been able to demonstrate the way the brain responds to the environment before and after birth. They have also laid to rest the old debate about the roles of 'nature' versus 'nurture' and have demonstrated that brain growth (nature) occurs in response to the environment (nurture), starting from conception and continuing throughout the life course and with particular relevance to the critical early years of rapid development.

2. Evidence for Investment in the Early Years: Major International Reports

Several major reports have been published in recent years that have brought together the research evidence that underpins arguments for investment in the early years of life. The first of these was in Britain (Ball 1994) with *Start Right: the Importance of Early Learning,* which cited evidence for the benefits of preschool education derived from research, but particularly longitudinal research, and evaluation studies. This report was important in the British context, as many children in that country do not have access to preschools. However, it has less relevance to the Australian and Victorian situation where most children have access to preschools.

The second report, from the United States, *Rethinking the Brain: New Insights into Early Childhood Development* (Shore, 1997) was the result of a conference that examined the implications for policy and practice of the brain development research. The conference was based on the belief that the healthy development and wellbeing of young children is vital to the wellbeing of the nation, not just to parents. Those invited to attend the conference represented experts in many disciplines including developmental psychology, molecular and behavioural neuroscience, psychiatry, cell and structural biology, paediatrics, psychobiology, as well as policy makers and professionals representing key organisations. This report drew to the attention of policy makers, professionals involved in services for children, and

to the public, the importance and implications of brain research for early childhood development. It also reviewed a wide range of intervention programs designed to improve the developmental outcomes for young children and/or parenting. These reviews also indicated the cost savings to the community where possible.

The third major report on the opportunities presented by the early childhood years is *Reversing the Real Brain Drain: Early Years Study, Final Report* (McCain and Mustard, 1999) from Ontario, Canada. This report reviewed the research evidence, including longitudinal research, but especially drew on the evidence from brain research, to argue for the importance of investment in the early years. It has had considerable exposure both among professionals working with children and through the media to the general public across the world.

The Canadian report argues that it is vital to have early childhood development programs that improve outcomes for children's education, health, behaviour and wellbeing throughout their lives. In recognition of the important role of parents, it recommended the setting up of early childhood development centres, which would provide a range of supportive services to parents and young children. Evidence was presented that supporting good nurturing by parents is an economically sound investment. The report recommended a plan of action for Ontario: (i) to provide more inclusive support for parents and children in the early years; (ii) to improve the health and development of children in all domains; and (iii) to improve and support parenting. However, the report also acknowledged that adequate housing and other environmental factors play a major role in children's development. Ontario is now piloting and evaluating several of the early childhood development centres in different locations.

The most recent and also the most comprehensive report is *From Neurons to Neighbourhoods: The Science of Early Childhood Development* (Shonkoff and Phillips, 2000). This report is the result of a large scale project funded by the National Institute of Child Health and Human Development, the National Institute of Mental Health in the United States. The project brought together experts from all relevant disciplines and the most up-to-date experimental, comparative and longitudinal research studies related to child development from conception. It focused on the latest information from brain research and examined the implications for all aspects of early childhood development. It also makes a series of recommendations for policy and practice, research and evaluation, and comments on the challenge of educating the public to enable them to understand the science of early childhood development.

These four reports provide a strong evidence base for investment in the early years of life. This paper draws on these reports as well as information on programs, services and research from other pertinent sources both internationally and within Australia.

3. Children's Development

A brief overview of the way children develop is necessary in understanding the evidence that underpins the argument for investment in the early years of life. Children develop in several interacting domains—the physiological, cognitive and social emotional—and each domain is complex. The rate of development is influenced by the social ecology into which children are born and is not simply dependent on the child maturing over time (Bronfebrenner, 1986). There is a complex interaction of many factors including those existing within the child (Kagan, 1984; Luthar and Zigler, 1991), within the family, within the local community, and within the culture into which they are born and reared (Hayes, Palmer and Zaslow, 1990).

- Influences within the **child** include: their genetic inheritance including temperament (Plomin and Loehlin, 1985; Dunn and Plomin, 1990), gender (Mussen, Conger, Kagan and Huston, 1991), and health factors (Bronfenbrenner, 1991).
- Influences within the **family** include: the quality of overall family relationships in general, level of family conflict (Raschke and Raschke, 1979; Porter and O'Leary, 1980; Ochiltree and Amato, 1984), parent-child relationships (Maccoby and Martin, 1983; Clarke-Stewart, 1988: Bronfenbrenner, 1991), siblings, parenting style and values (Baumrind, 1978), as well as parent's level of education, family income, the occupational status of the parents and parent physical and mental health (Kalinowski and Sloane, 1981; Bronfenbrenner, 1986).
- Influences within the **community** include: the availability and quality of children's services and support for parenting, the quality and security of tenure of housing, safety in the streets and parks, the level of crime, the level of unemployment, and the general feeling of trust among residents (Rutter, 1981; Garbarino, 1982; Burns and Homel, 1984).
- The **culture** into which children are born plays an important part in children's development as there are differences in parenting styles, beliefs and values in different cultures (Edgar, 1992). There may also be different views about how children should be educated.

4. The Evidence from Brain Research

Recent research into the brain growth of infants and young children underpins the current interest in investing in the early childhood years in order to improve the health, educational achievement, and social-emotional development of children, as well as their day-to-day wellbeing.

Neuroscience has demonstrated that children's brains are not fully developed at birth and it is now known that brain growth, both in size and activity,

occurs as a result of interaction with the environment and is not simply genetically determined. Research evidence indicates that brain development begins well before birth and that during the prenatal period the brain needs protection from environmental hazards which can be detrimental to its development (Shonkoff and Phillips, 2000).

Brain research has emphasised the fact that nature and nurture work in tandem. Although brain development relies on experience, it is genetically driven. Appropriate care, nutrition and stimulation affect the actual 'wiring' of neural pathways which are essential to development and learning. Throughout life, new experiences trigger brain growth and the 'rewiring' of existing pathways.

Brain development does not occur simply through the development of an increasing number of neural pathways but also through the reinforcement of existing pathways and the elimination of others in interaction with the environment. This process has been called 'neural sculpting' (Keating and Hertzman, 1999).

4.1 How Experience Affects Brain Growth and Development

Brain development in the prenatal period can be negatively affected by substances in the environment, malnutrition and by infections, such as rubella. Alcohol, tobacco, lead, PCBs, cocaine, mercury and other drugs and toxins are known to increase the risk of impaired brain development (Shonkoff and Phillips, 2000). Premature birth is a significant risk factor for the developing brain as it disrupts normal development that occurs before birth and also poses risks due to illness in the premature infant. Although intervention can mitigate developmental problems associated with prematurity and low birth weight, experts agree that preventing low birth weight is a top priority.

Brain development and learning continues throughout the life cycle but there are 'prime times' or critical periods that are important for children's development (Shore, 1997; Keating and Hertzman, 1999). Brain growth is guided through both experience-expectant and experience-dependent mechanisms which develop synaptic connections or pathways (Shonkoff and Phillips, 2000). Experience-expectant mechanisms are those such as exposure to light, sound and other sensory inputs which the brain is programmed to utilise for normal development. The brain depends on these inputs for normal growth at critical or sensitive periods and deprivation can permanently harm behavioural functioning. Early detection and treatment of any sensory impairment is therefore extremely important if children are not to suffer long term consequences. Before and after critical periods the same experiences will have little or no effect on development.

Keating and Hertzman (1999) argue that, in addition to critical periods, there are also periods of developmental sensitivity, which are associated with the

development of cognitive, social and emotional systems but which are not 'all or nothing' in the way that critical periods are. Delays may make it difficult for children to catch up on some core conceptual structures, which are the base for later development.

The 'experience-dependent' mechanism refers to the encoding of new environmental experiences that occur throughout life and foster new brain growth or refine existing brain structures, and which vary from individual to individual. Experience-dependent brain development is idiosyncratic, plastic and adaptable. This plasticity can lead to adaptation or to vulnerability. Much more is known about the negative consequences of harmful environments than about the benefits of positive environments. More is also known about the effects of pre-natal and peri-natal environments than of later environmental influences.

Abuse and trauma before or after birth can affect areas of the brain involved with anxiety, depression and the ability of children to form secure attachments to others (Shore, 1997). Persistent maternal depression also affects the brain development in children, particularly the area that is involved in the regulation of emotions.

4.2 Genetic Influences on Brain Development

Developmental psychobiology shows that children respond to the environment in ways that are partly dependent on their hereditary predispositions. In other words, brain growth occurs in interaction between the child's genetic inheritance and their specific environment. Heredity predispositions contribute to individual differences in the development of children even when they live in the same family and in the same environment. 'Environmental influences are not just externally 'out there'; a child's responses to the family, the neighbourhood, and the culture hinge significantly on genetically based ways of feeling, interpreting, and responding to environmental events' (Shonkoff and Phillips, 2000, p.55). Children thus respond to the environment in their own individual ways. Parents and professionals interacting with children must, therefore, take into account the individuality of each child.

Twin and adoption studies have shown that environmental influences, including parenting, can moderate the inherited tendencies of children. Brain research demonstrating the role of the environment indicates that early intervention that is tailored to the characteristics of the child can shift the odds to better developmental pathways.

> Environmental interventions – which can include improved education, health care, nutrition, and caregiving – can significantly improve developmental outcomes for children, even though individual differences in those outcomes may be strongly influenced by the genetic process. Heritability does not imply constraints on change. It is

> instead more relevant to appreciating *how* developmental outcomes can be changed. In particular, heritability may be relevant to considering the kinds of interactions that might be most effective in relation to genetically based characteristics of children (Shonkoff and Phillips, 2000, p. 46).

In the future, molecular genetics may possibly identify genetic markers associated with specific behavioural tendencies in children and examine these in relation to environmental factors. Such interaction will be especially important in understanding inherited vulnerability to environmental stresses, which may add to individual psychopathology.

4.3 Major Points Emerging from Brain Research

Several themes have been identified from research into the ways in which early experiences affect brain development and these themes have implications for parents, for early childhood programs, and for early childhood services for children and families:

(i) Developmental neuroscience says a great deal about dangers to the developing brain from which young children need to be protected but very little about how to accelerate brain development.

(ii) The brain is open to influential experiences across broad periods of development and although it is remarkably adaptable there are sensitive periods in early childhood.

(iii) Early experiences on which the brain depends for healthy development are typical early human experiences but children with impairments do not have the experiences on which the brain depends and these children need additional attention, support and intervention.

(iv) 'abusive or neglectful care, growing up in a dangerous or toxic environment, and related conditions are manifest risks for healthy brain development. Beyond these extremes, the nature and boundaries of the environmental conditions necessary for healthy brain growth are less well known, partly owing to the complexity and cumulative achievements of cognitive, language, and socioemotional growth. Exploration in this area is cutting edge research' (Shonkoff and Phillips, 2000, p.183).

Shonkoff and Phillips (2000, p. 217) sum up the findings from brain research for young children:

> In sum, the neuroscientific research on early brain development says that the young children warranting the greatest concern are those growing up in environments, starting before birth, that fail to provide them with adequate nutrition and other growth-fostering inputs, expose them to biological insults, and subject them to abusive and neglectful care. Children with undetected sensorimotor difficulties

(whose developing brains may not receive the stimulation they need) also warrant concern. The brain research also reassures that brain development is probably on course for the vast majority of young children who are protected from these conditions and, in many instances, can be affected positively by timely corrective interventions focused on early insults and
deficits.

Shonkoff and Phillips (2000) argue that: 'Perhaps the most important is the unequivocal conclusion that what happens during the first months and years of life absolutely does matter, not because this period of development provides an indelible blueprint for adult well-being, but because it sets either a sturdy or a fragile base for what follows. The early stages of life have the potential for being a rich and rewarding foundation that will support a child all the way to adulthood'.

5. Risk and Protective Factors in Development

Brain research has indicated the danger of particular risk factors in the environment to children's brain growth and development; however, there can also be protective factors that assist development, including brain development. Both risk and protective factors have been identified in research that has studied children's development over time (longitudinal studies).

5.1 Risk Factors

Low socioeconomic status (SES), particularly poverty, has been identified in many studies as a major risk factor which frequently occurs in conjunction with other risk factors. Low SES has been correlated with family conflict, mental illness in parents and parenting difficulties (Yoshikawa, 1994). The Dunedin longitudinal study of children and their families found that ongoing family hardship with multiple risk factors is associated with poorer school achievement and cognitive skills, attention difficulties, behaviour problems, and later delinquency (Silva and Stanton, 1996). Low SES is generally associated with low levels of school achievement, lower cognitive functioning, poorer health outcomes, and more behaviour and social-emotional problems including aggression (Tremblay, 1999). These associations remain even after controlling for other compounding factors, such as parent and family characteristics (McLoyd, 1998; Keating and Hertzman, 1999; McLoughlin and Nagorcka, 2000). There is evidence that in the long term children from low SES backgrounds are more likely to be associated with school drop-out, delinquency and crime, teen pregnancy, unemployment and later psychiatric illness (Silva and Stanton, 1996).

Rutter (1990) has found that risk factors are cumulative and that a combination of risk factors is more likely to have long term developmental effects than a single risk. Rutter's work indicates that it is the number of risk factors experienced by children rather than the type of risk. Children who experience up to six indicators of family adversity have 20 times the risk of adverse cognitive and behavioural outcomes as children exposed to none or only one of these indicators of adversity. The Australian Temperament Study has also found that there are cumulative effects of multiple risk factors (Sanson, Oberklaid, Pedlow and Prior, 1991; Prior, Sanson, Smart and Oberklaid, 2000).

Nevertheless, not all children suffer long term consequences as a result of family disadvantage; some children prove resilient. This resilience is not just an absence of risk factors but an ability to cope successfully with negative factors and the presence of protective factors in their environment. Rutter (1989) points out that both good and bad experiences influence development and that the psychosocial development of children can be enhanced if they cope well with earlier stressful experiences. He cites Elder's longitudinal research on children of the 1930s economic depression where it was found that older children who took on family responsibilities were strengthened by the experience.

5.2 Protective Factors

In a longitudinal study of infants from poor families living on an island in Hawaii, Werner (1989, 1997) and her colleagues found that, despite poverty and family instability, a third of the children reached adolescence and early adulthood as competent and autonomous individuals. However, they also found a number of protective factors in their family environment and within the children themselves. The family factors included: a good relationship with a parent (not necessarily the mother), who set rules at home and who showed respect for the individuality of their children. The individual child factors included: an easy temperament, good health, the ability to relate to positive role models, support from adults in the community (including teachers, neighbours and the parents of friends), a range of interests and good peer relationships.

Research on resilience (Garmezy 1991; Linke 1996; McIntosh 1997) indicates that the major protective factors, despite the presence of risk factors, are:

- An easy child temperament
- An affectionate relationship with the main caregiver in the first year of life
- The presence of a caring adult, for example, a grandparent.
- External sources of support, such a supportive teacher, supportive school environment, which encourage and reinforce coping.

- The ability to emotionally distance self from a bad situation, which cannot be changed.
- Encouragement of participation and connection.
- The absence of any major disability or illness in the child.

Prompted by the renewed awareness of the importance of protective factors for children's wellbeing, there have been a number of attempts in recent years to identify the key experiences that children need to promote their general development (Brazelton and Greenspan, 2000; Greenspan and Lewis, 1999; Guralnick, 1997, 1998; Ramey and Ramey, 1992, 1999; Shonkoff and Phillips, 2000). These accounts suggest that we can best promote children's development by providing them with:

- Close and ongoing caring relationships with parents or caregivers.
- Adults who recognise and are responsive to the particular child's needs, feelings and interests.
- Protection from harms that children fear and from threats of which they may be unaware.
- Clear behavioural limits and expectations that are consistently and benignly maintained.
- Opportunities and support for children to learn new skills and capabilities that are within their reach.
- Opportunities for children to develop social skills through regular contact with a range of adults and other children.
- Opportunities and support for children to learn how to resolve conflict with others cooperatively.
- Stable and supportive communities that are accepting of a different families and cultures.

6. Environmental Influences on Child Developmental Outcomes

Rutter (1989), in reviewing longitudinal studies from childhood, points out that development must be considered in its social context, including cultural heritage of the family. This section examines the evidence associated with environmental influences on young children's development, including the family and community context, poverty and low SES, and child abuse. It also looks at the research evidence on educational influences, including early literacy, and the influence of two major early childhood services – preschools (kindergartens) and child care (long day care).

6.1 Parents and Family

The family and the parent-child relationship has the greatest influence on children's development and is the most enduring. Nurturing relationships from birth are most important to the wellbeing of young children but even before birth babies are part of a social world and can hear their mother's voices and the people around them (Murray and Andrews, 2000, p. 17). 'The mother's level of stress, her diet, whether or not she smokes, her cycles of activity, all become part of the unborn baby's experience. Babies are individuals from birth and there are strong differences in the way they behave, which is often ignored in advice to parents. By about the 36th week of pregnancy, babies have started to develop their own restful and active phases; they will also be noticing more about what is going on around them and will respond to stimulus such as sound.

From birth, babies are ready for social contact with people (Murray and Andrew, 2000). Most infants develop strong emotional attachments to those who care for them (Shonkoff and Phillips, 2000). The preference in infancy is usually for mother but it is the quality of the relationship that counts and the attachment may be to an adoptive parent or occasionally a grandparent or some other primary caregiver. Infants and toddlers are less likely to establish secure relationships with caregivers who are detached, rejecting or intrusive. Young children can also establish close relationships with a number of caregivers but will retain a preference for their primary caregiver. The security of attachment to this person (usually mother) is important for their psychological development but this secure relationship must be maintained as the child grows.

Responsive care by parents and others assists infants and young children to move from almost total dependence on others to self-regulation of such things as sleep and crying and eventually to regulation of the emotions. However, '…as a result of their reliance on the emotional support of their caregivers in understanding, experiencing and managing their feelings, young children may be particularly vulnerable to emotion-linked disorders when parent-child relationships are insecure, coercive, or otherwise troubled' (Shonkoff and Phillips, 2000, p. 109). Maternal depression that extends over time can negatively affect children's early emotional development.

Nevertheless, parenting involves more than establishing an attachment relationship. Parents must be able to manage their lives and homes, assist children with their early learning, particularly reading, and support the child through their early social efforts. Parents need support in this role in modern society. Efforts to improve parenting through interventions involving education and/or support indicate that parent behaviour can be changed but also that it is very difficult to change significantly (Shonkoff and Phillips, 2000).

6.2 Culture

The Victorian population has become more culturally and linguistically diverse in the years since World War II. Victoria has a large migrant population with 21% of Victorians speaking a language other than English at home compared with 15% for the whole of Australia. The proportion is even higher in Melbourne with 27% of people speaking another language at home (ABS Social Trends, 1999). Indigenous people make up only 0.5% of the population but are significant as the original owners of the land. Cultural issues in childrearing are important in the Victorian situation but are often not given the serious consideration that they deserve.

Cultural differences mean much more than speaking another language; they include values and beliefs, ways of child rearing, and rules of non-verbal behaviour (Hartley, 1995; McDonald, 1995). People from the same country do not necessarily form a homogeneous cultural group as there may be different religious affiliations and racial groupings. There are differences in levels of education and there are also likely to be differences in the outlook and experiences of families from rural areas and those from urban areas. Educated migrant families from urban areas in non-English speaking countries are more likely to have been exposed to some knowledge of Western ways and to understand Australian ways to some degree although they may do things differently in their own homes. Parents who are illiterate or semi-literate in their own language are likely to have different beliefs about child rearing and education than those who are well educated. Some parents from non-English speaking backgrounds may speak English quite well but still have family values and cultural norms which are different from the Anglo-Australian community.

Shonkoff and Phillips (2000) argue that culture influences all aspects of human development and is reflected in the childrearing beliefs and practices of parents. 'The effects of culture on child development are pervasive. It prescribes how and when babies are fed, as well as where and with whom they sleep. It affects the customary response to an infant's crying and a toddler's temper tantrums. It sets the rules for discipline and expectations for developmental attainments. It affects what parents worry about and when they begin to become concerned. It influences how illness is treated and disability is perceived. It approves certain arrangements for child care and disapproves others. In short, culture provides a virtual how-to manual for rearing children and establishes the role expectations for mothers, fathers, grandparents, older siblings, extended family members, and friends' (Shonkoff and Phillips, 2000, p. 25).

The literature on the development of children is almost entirely based on studies of middle-class European and American children thus leading to culturally biased expectations of children from different backgrounds. This also makes it difficult in research to untangle the confounding effects of minority group status from other environmental influences such as poverty.

Culture and development are interdependent. Nevertheless, children are not passive products of the culture in which they are brought up. They are actively engaged from birth in adapting to and modifying their environment and as they develop are selective in choosing from the cultural influences to which they are exposed (Shonkoff and Phillips, 2000). The socialisation process is thus not simply transmission of the culture from one generation the next (Skolnick, 1981).

Cultures are not static but change over time and are constantly modified by the people experiencing them. There is an ongoing interaction between people and culture. Groups differ in the extent to which they retain traditional values, and even members of the same family may differ in the degree to which they retain old ways or adopt the ways of the dominant group in society (Garcia-Coll and Magnuson, 2000). This is true of Anglo Australians as well as those of other cultural backgrounds but it is more noticeable in groups that have arrived more recently.

Cultural differences do not mean that there is any deficit in parenting and childrearing; rather there is often a mismatch between the ways of the home and those of the broader society (Garcia-Coll and Magnuson, 2000). Whether this mismatch is a source of risk depends on how mainstream society reacts and whether there are other risk factors, such as poverty, involved. It can be an advantage to children to be bilingual so long as they are competent and become literate in at least one of the languages. 'The diverse values that underlie ethnic minorities' approach to family, parenting and community have equal claims to validity, and, in fact, have often existed many centuries longer than the majority Anglo culture. Since diversity exists within the Anglo culture as well, there is likely to be disagreement based on geography, social class, and education (Vincent, Salisbury, Strain, McCormick and Tessier, 1990, p.186).

Different cultural beliefs often impact on migrant women during pregnancy due not only language barriers but also a different set of beliefs and practices. Pranee Rice (1994), in a study of pregnancy, childbirth and childrearing in Asian women, found that their expectations of the birth and post delivery period were very different from those of Anglo-Australian women. Many Asian women expect to be 'mothered' themselves in the period after the birth but unless they have their own mother or mother-in-law available this does not happen. It has also been found that Turkish, Vietnamese and Filipino women are less satisfied with most aspects of their care during pregnancy and birth than mothers from English speaking backgrounds. Fewer Asian mothers in the Brotherhood of St Laurence Life Chances study of children attended pre-natal classes, significantly fewer breastfed their children, and they were less likely than other mothers to have received help after the birth (Taylor, 1994). However, most reported that they used the Maternal and Child Health Service, particularly where the centre had an interpreter present.

Childbearing may also be the first contact that migrant women have with the Australian health system and culturally sensitive support is important because it may set expectations of services in this country, including children's services, and this may have an affect on the health and life chances of their children (Manderson, 1994).

6.3 Indigenous Families

Aboriginal family life is diverse with many now living in towns or on the edges of towns rather than in rural or tribal areas (Bourke and Bourke, 1995). The indigenous population of this country has a younger age profile than the non-indigenous population and childbirth can also be an alien experience for indigenous mothers, even though they live in their own country. Aboriginal mothers often have to bring up their children without their partner because of broken relationships, early death, or because a high proportion of men are in prison. Aboriginal children are more likely to be brought up in poverty than the rest of the population and more than half of Indigenous children (59%) live in families where the main source of income is a government benefit of one type or another (ABS Children Australia, 1999). However, Indigenous children are seen as the responsibility of the entire family and grandparents play a significant role in child rearing (Bourke, 1993). Nevertheless, Indigenous culture is under increasing pressure form western forms of media and the dominant white view of the world.

Indigenous families have many problems due to loss and this affects their child rearing. 'In losing our traditional roles within the family, we have lost our identity. This manifests itself in a number of ways: anger and frustration, low self esteem, loss of confidence and self respect, feelings of isolation and alienation, alcohol and drug abuse, as well as family violence' (Sam, 1992, p.3). Parenting is thus often fraught with family difficulties, including poverty, poor housing, unemployment, health issues and often violent family relationships. Many indigenous children experience a number of risk factors which affect their life chances and developmental outcomes. Cadd (1999) from the Secretariat of National Aboriginal and Islander Child Care argues that resources should be focused on early childhood development as the pathway to successful school achievement but in ways that encourage children to take a pride in their culture.

6.4 Community

Bronfenbrenner's (1986, 1991) ecological model of children's development demonstrates that influences extend beyond the immediate family environment to the services and institutions in the community, the parent's workplace, and the broader societal policies and social values of society. However, it is much more difficult to find research evidence that clearly demonstrates the role of the community on child outcomes. Nevertheless,

there is theoretical evidence that the local community and wider societal values and policies do matter.

Humans are social by nature and children learn to become members of the society in which they live in interaction with their own family and other people with whom their family interacts. Children thus learn to be members of their own specific social group including ethnic group, religious affiliations and so on, as well as to be a citizen of their own country in the broader sense. All families need the support of others in raising children, but over recent years it has become increasingly difficult to maintain a feeling of belonging and connection and to find the social support needed. This may be due to the faster pace of life, and the fact that the extended family rarely lives close by. In her Boyer lectures, Eva Cox (1995) pointed out that social capital, not just economic capital, is necessary for the health and wellbeing of adults and children. Social capital is built out of innumerable relationships and through connectedness and trust that develops out of our formal and informal networks. However, these days families are more isolated than in the past and some families are more isolated than others.

Broad-based neighbourhood studies based on census data in the United States show very little relationship between the quality of the neighbourhood and child problem behaviour and academic achievement at age five or six years, nor in parent mental health and family management practices (Shonkoff and Phillips, 2000). This may be the result of the type of data collected in the census and other population based data. Studies using different measures and collection methods have found effects of neighbourhood. For example, a study in Chicago used a measure of collective efficacy, which combines social cohesion with informal social control (the extent to which neighbours trust each other and the extent to which they can be counted on to monitor and supervise youth and protect public order). The study found that collective efficacy relates strongly to levels of violence, victimisation and murder after controlling for social composition and previous crime (Sampson, Raudenbush and Earls, 1997, cited in Shonkoff and Phillips, 2000). There is also evidence that things such as lead poisoning are disproportionately found in children living in low income areas in cities and in old housing stock. Shonkoff and Phillips (2000) conclude from the neighbourhood evidence that there is more variation in children's development within neighbourhoods than between neighbourhoods. Nevertheless, they also conclude that neighbourhoods matter most when there are other risk factors present, such as poverty, mental health issues and/or violence.

> Yet for children living in dangerous environments, neighborhood conditions may matter a great deal. Such neighborhood conditions as crime, violence, and environmental health hazards constitute potent risk factors for children. Experimental evidence suggests that moving form high-poverty to low-poverty neighborhoods enhances the physical and psychological health of children and reduces violent

> crimes committed by adolescents. We do not yet know whether smaller, more easily achieved changes in neighborhood conditions will produce cost-beneficial improvement for young children's development (Shonkoff and Phillips, 2000, 336).

There is evidence that Australian parents in general have fears about the community, especially in regard to the safety of their children on the streets and in public places such as parks. The Australian Living Standards Study found that parents of primary school aged children feared attacks (44%) or kidnap (51%) on the way to school although crime figures show that attacks on children are relatively rare (De Vaus and Wise, 1996).

There is also evidence that communities in Victoria vary considerably in terms of crime, quality of housing, incidence of unemployment, psychiatric illness and so on. The recent report, *Unequal in Life,* examined the distribution of disadvantage by using a number of indicators available in data collections from various sources, including the Australian Bureau of Statistics, to rank all Victorian postcode areas (Vinson, 1999). Indicators of disadvantage included: unemployment and long term unemployment, low income, the number of unskilled workers in the population, low birth weight babies, the proportion of the population that had left school at 15 years or younger, court convictions, child injuries, mortality, psychiatric admissions, and the number of people dealt with by the courts. The results clearly indicated the most disadvantaged areas in Victoria on its postcode listing, with Braybrook in Melbourne topping the list as the most disadvantaged, followed by Corinella, a rural area, and parts of Broadmeadows third.

7. Poverty

As indicated previously, poverty is a major risk factor for poor outcomes in children. Victoria, like the rest of Australia, is marked by an increasing gap between the rich and poor and it is families with children who are more likely to be at the lower end of the economic spectrum (ABS Children Australia, 1999). The security of home ownership is also less likely in low income families, indigenous families, and families with young children.

According to some estimates, at least one in eight Australian children live in families without adequate income, although figures vary depending on the definition of poverty and there is evidence that the proportion of children living in poverty is increasing (Birrell and Rapson 1997). Over a third of children without a parent in paid employment in 1996 were living in poverty, but more than half of children in poverty actually had a parent working (Harding and Szukalska, 1998; McLelland, 2000). Since 1979 the proportion of Australian families with no member employed and thus living on government benefits, has increased from 11 per cent of families to 16.7 per cent (McLelland, 2000).

Children more likely to be living in poverty are those living in: Indigenous families, single-parent families, families where neither parent is in paid work, NESB families where parents are unemployed or in low income, often casual, unskilled jobs and families in rental accommodation because of high rents, particularly in private rental housing and those in transitory accommodation (McLelland, 2000). Homelessness is closely associated with poverty and throughout the 1980s and 1990s homeless families has emerged as a concern and the long term wellbeing of children is affected by this (McCaughey, 1992; Chamberlain, 1999).

Poverty places infants and young children at risk in relation to their health and development from conception (Halpern, 2000). Risks include:

- Exposure to toxic substances in utero
- Poor birth outcomes including low birth weight
- Subtle central nervous system damage
- Malnutrition
- Post neonatal mortality
- Asthma and other chronic health problems
- Elevated blood lead levels
- Inattentive or erratic parental care
- Removal from home because of neglect or abuse.

Poverty has a profound and pervasive influence on the lives of children and families. Many parents who have themselves come from disadvantaged families marked by adversity and poor early caregiving carry these difficult personal experiences into their parenting and do not have the personal resources to meet the needs of their children (Halpern, 2000). Halpern argues that it is difficult to alter parenting in these circumstances and that often the goals are set too high rather than at modest levels that are achievable.

8. Child Abuse

There has been increasing acknowledgement in recent years of the extent of child abuse and neglect of children. In 1995–96 in Australia, 49 per cent of reported cases nationally were substantiated, 31 per cent were of emotional abuse, 28 per cent of physical abuse, 24 per cent of neglect, and 16 per cent of sexual abuse (ABS Children Australia, 1999). Children under 12 months of age were more likely to be abused than children of any other age. Indigenous children were over-represented in substantiated cases of abuse and neglect, particularly of neglect, and the Indigenous community is concerned that these children are often placed outside the community and fear that these placements put these children at additional risk due to cultural factors.

Child abuse occurs across all economic strata of society and in all religious and ethnic groups, but environmental as well as child, parent and family factors can play a part in child abuse (James, 1994). Environmental factors put a strain on the family and include financial difficulties, insecure housing, poor health, unemployment, underemployment and insecure employment problems, and changes in the stability of the family and its function. In combination with individual factors, these may result in parental difficulties in caring for children and, sometimes, abuse. Stress caused by poverty is associated with higher rates of reported child abuse and neglect. Social isolation and lack of support networks, drug and alcohol problems, physical illness and lack of the ability to empathise with children increase the likelihood of child abuse, both physical and emotional. There is evidence that parents with adequate social supports are less likely to abuse their children; where children are judged as 'at risk' of abuse practical support has been found to be a useful preventative strategy (Thorpe, 1994; Tomison, 1996).

Abusive adults usually lack parenting skills and often over-use physical punishment, sometimes because of their own upbringing. Other characteristics of abusive parents are that they have marital problems and conflictual and sometimes violent relationships, and generally lack interpersonal skills (James, 1994). Inappropriate expectations of children by parents and lack of knowledge of child development also contribute to abuse.

Some children are more vulnerable to both physical and emotional abuse and to neglect depending on other circumstances in the family and to characteristics of their parents. Younger children are more vulnerable because of their size and stage of development, temperamentally difficult children are more vulnerable, infants who are ill or weak, including low birth weight babies who are not strong enough to engage with their mothers in positive way, and disabled children. Studies have also shown that the less parent-child interaction and contact in the perinatal period the more likelihood there is of abuse and neglect (Wolfe, 1991, cited in James, 1994).

8.1 The Effects of Abuse on Children

Child abuse and neglect is associated with both long and short term negative adjustment and developmental outcomes for children. Research has shown that children who are abused are more likely to be aggressive and also, from a very young age, to attribute hostile intent to others (Shonkoff and Phillips, 2000). Children who have been physically abused have lower social competence, less empathy for others, difficulty in recognising the emotions of others and are more likely than other children to be insecurely attached to their parents. Abused children are over-represented among adults involved in violence, although not all abused children become abusive (Malinosky-Rummell and Hansen, 1993, cited in Shonkoff and Phillips, 2000). Abuse that occurs with a range of other adverse circumstances leads to worse consequences. Post-traumatic stress symptoms can be observed in children as young as four years of age and research is ongoing in the US into the

effects of abuse on children under three years of age (Scheering and Zeanah, 1995, cited in Shonkoff and Phillips, 2000). Chronic abuse in childhood is associated with emotional and behaviour problems and is a risk factor for various forms of psychopathology.

Oates (1986) undertook an Australian study of abused and neglected children mostly aged under five years (a quarter of them five to eight years) on first presentation and identification. In comparison with a control group of matched children, it was found that the abused children had fewer friends, lower self concept scores, lower intelligence scores, lower performances on the verbal language scale and lower reading ages. A significant difference was also found between the abused children and the comparison group on a behaviour scale, with abused children more likely to fall into neurotic or antisocial categories. Children who had been abused also had more school adjustment problems than comparison children. When compared with a group of children identified as in a 'failure to thrive' category, abused children had more adjustment problems and appeared to be more disturbed.

Brain research also indicates that child abuse, both physical and psychological, puts children at risk of poor developmental outcomes (Shore, 1997). An ongoing study in the US compared the brain development of school-aged children who had been sexually abused and had witnessed violence in the home between the ages of two and six years (for approximately three years) with a matched sample of physically and mentally healthy children. The study indicated that the abused children had smaller brain volume than the matched control group and that there were other structural differences within their brains, although the children were no longer in abusive situations. Imaging data also showed that children who had been abused for longer periods showed greater differences from the matched controls than children who had suffered lesser time periods of abuse (de Bellis, Keshaven, Clark, Casey, Giedd, Boring, Frustaci and Ryan, 1999, cited in Shonkoff and Phillips, 2000). Shonkoff and Phillips (2000) argue that because of the plasticity of the brain, children can recover from these adverse affects if their situation is improved as evidenced by studies of the recovery of children who have suffered severe maltreatment in orphanages and have later been placed with loving families.

9. Physical and Mental Health

Life course epidemiological studies over the last decade have provided strong evidence of the relationship between early developmental processes and later development of a range of chronic diseases. When the health trajectory of individuals is graphed across time, the resulting pattern is steep in the childhood years and flattens during adulthood indicating the rapid changes that occur in childhood, particularly in early childhood. Halfon and his colleagues (2000) argue that this research indicates that while health care is important throughout the life course that, because of rapid growth and

development, early childhood offers unique opportunities for interventions that will shape health in adulthood.

In this view, 'investment' in children's health can improve the health 'capital' of the population and involves promoting health through reducing health risks rather than simply treating disease and ill health. Research also demonstrated that there are critical or sensitive developmental periods prenatally or in early childhood when lack of particular experiences, and adverse experiences and biological insults, can have long term consequences in the development of diseases such as diabetes, pulmonary disease, cardiovascular disease, and with psychopathology in later life. Health promotion involves the development of protective factors during childhood that optimise children's health, including their social, physical and emotional health.

There is a strong association between the social and economic distance of members of a particular society and health. Where there are large social and economic differences among individuals and groups in the population, overall health and wellbeing is lower than in societies where there is less distance (Keating and Hertzman, 1999). Thus, even among the wealthy countries, those with highly unequal income distributions have poorer health outcomes than countries with a more even distribution. This effect, known as the gradient effect, relates not only to physical and mental health but also a wide range of developmental outcomes including behavioural adjustment, literacy and mathematics. Social status effects appear quite persistent from birth into old age. Keating and Hertzman (1999), in examining the developmental mechanisms that account for these effects, attribute them to the process of neural sculpting in early development whereby the influence of both the social and physical environments shapes the networks and patterns of the brain.

> Variations in social status are associated with important differences in the quality of the social and physical environment that infants and young children encounter, and these differences in turn produce variability in the specific experiences that contribute to neural sculpting and thus potentially to enduring differences in health, coping, and competence (Keating and Hertzman 1999, 4).

However, this does not mean that early development is totally deterministic, as it is also known from the brain research that there is considerable developmental flexibility and resilience even for children growing up in adverse circumstances.

The pathways model of human development emphasises the cumulative effects of life events on development and the reinforcing effects of differing psychosocial and socioeconomic events. Intervention and prevention strategies that are aimed at important transition points in development have enhanced prospects of success.

9.1 Health in the Perinatal Period

Unlike the United States, Australia has prenatal services available at no cost to all women through public hospitals and community-based prenatal services. General practitioners also provide care both before and after birth as needed and the major costs are generally covered through Medicare. After the birth of a child, Victorian women have access to Maternal and Child Health services, which monitor the health, development and needs of infants and the health and wellbeing of their mothers.

Nevertheless, in recent years there has been increasing recognition that there is often a break in the continuity of care and support needed by women when they move from the hospital to home. Information about the women and their needs is often lost in the transition and some women have difficulty accessing services in the community. The Victorian Maternity Service Program acknowledges the needs of women both before and after the birth of a child and recognises the need to go beyond clinical needs and to take into account the psychosocial needs of women.

The Perinatal Data Collection (1999) indicates that the length of stay in hospital has been declining since the 1980s and by 1998 62 per cent of women were discharged by day four or earlier. However, it is women in the public system who leave hospital earlier: almost 56 per cent of women in public hospital accommodation stay three days or less compared with 6 per cent of women in private hospital accommodation. Women in public hospital accommodation include more women from low SES families. Early discharge from hospital indicates a need for services to support mothers of infants in the early days and weeks after birth and especially to assist in the establishment of breastfeeding, which is known to be good for children's health and wellbeing in both the short and long term.

There has been recent investment in home visiting by the Maternal and Child Health service to women who have greater needs. There is also funding available to provide appropriately for needs of particular groups of mothers who do not usually access services even though they are universally available and free. Included in these groups are teenage mothers, mothers from the Indigenous community, those from non-English speaking backgrounds, and mothers disadvantaged by poverty and with associated difficulties. However, there are limits to the services they can provide due to funding and staffing limitations in the services.

There has also been recognition in recent years of the importance of mothers' mental health, both pre- and post-natally, for the health and wellbeing of infants and also their partners. Depression is the major mental health condition affecting mothers and around half of all episodes of postnatal depression have been found to commence before the baby is born (Gotlib et al., 1989). Postnatal depression can affect mothering and may

harm the infant's development (Kowalenko, Barnett, Fowler and Matthey, 2000). Fathers are also more likely to suffer depression if their partners do. It has been established that domestic violence is more prevalent during pregnancy with the violence often directed at the mother's abdomen and the foetus.

The key risk factors for perinatal mood disorders are:

- Persistent psycho-social distress
- A previous history of depression
- Lack of a trusted intimate
- Presence of a depressed mood
- An unwanted pregnancy (Kowalenko et al 2000).

While there is not a great deal of research assessing the effectiveness of interventions to prevent mood disorders and promote mental health in the perinatal period, there are some studies that have examined universal interventions and others that explore early interventions targeted at individuals and groups of mothers who are viewed as 'at risk' of mental health difficulties (Kowalenko et al 2000). Universal interventions usually involve such things as developing support networks, providing information, enhancing communication skills, and encouraging parenting skills and reflection on parenting experiences. There is evidence from a number of these studies that such strategies mostly, but not always, work to improve the outcomes for women and for couples. Targeted interventions were found to have some limitations as they appeared to assume homogeneity of groups where this was not always true. Those involving home visits and multiple components such as psycho-social support and continuity of care, and which continued for a significant period of time, were more effective.

There is a significant association between parental mental health difficulties and poor child health outcomes. However, the relationship is complex, depending on the mix of risk and protective factors and such things as whether there is an alternative care-giver such as a grandparent involved. A meta-analysis of studies to assess the long term effects of postnatal depression on child development indicated that there were small but significant adverse affects on both the cognitive and emotional development of children older than one year. Studies have also indicated that there is less interaction between depressed mothers and their infants and less optimal behaviour in infants (Kowalenko et al., 2000).

10. Crime Prevention

There is considerable overlap in this section on the relationship between crime and early childhood developmental experiences and the sections dealing with poverty, health and child abuse.

A review of a number of longitudinal studies that have used repeated measures over time has clearly shown that antisocial adolescents and adults have had behaviour problems from a very early age and the lower the SES of the family the more likely a child is to be physically aggressive (Tremblay, 1999). Tremblay argues that these children have failed to learn alternatives for physical aggression, to delay gratification or to use language instead of fists when young and that this has had long-term consequences. Nevertheless, SES is a risk factor only and the family can either exacerbate or protect the child from the effects. If exposed to ongoing violence and physical aggression and other antisocial behaviour in the early years, along with poverty, children are more likely to become physically aggressive themselves. Thus, while poverty can be a predisposing factor, physical aggression is not present in all poor homes, although the incidence is greater than in families where income and status is higher.

Tremblay (1999, p. 71) concludes:

> The origin of these behavior problems can be traced back to fetal development and infancy. Preventive interventions over the first three years of life for at risk families clearly reduce the prevalence and the seriousness of behavior problems. It appears that money invested in well planned early prevention efforts with at-risk families will [give] greater payoffs than money invested in later preventive efforts with the same at-risk families.

Rutter (1989) cites a number of longitudinal studies that indicate that there is a relationship between adult criminality, alcohol abuse and psychiatric disorder and conduct disturbances in childhood. The risk was greatest for boys who were aggressive, hyperactive and had poor peer relationships, although children with multiple problems are few in number. Richman, Stevenson and Graham (1982, cited in Rutter, 1989) found in a longitudinal study of children from age three to eight years that reduction in the marital disharmony of parents did not improve child difficulties, but improved parent-child relationships were associated with benefits to children.

A recent report on crime prevention in Australia has found that the pathways to delinquency and crime in this country start in early childhood and that intervention through supportive services can save the public money in the long term (National Crime Prevention, 1999).

11. Educational Achievement

Influences on the educational achievement of children have been assessed through longitudinal studies that follow children over time and include repeated measures of educational attainment and other aspects of development. These studies provide evidence that low SES, especially

poverty, and living in a poorer, more disadvantaged community are associated with lower levels of school achievement, lower cognitive functioning and increased behaviour and emotional problems. These effects remain, even after taking into account such things as parent and family characteristics (McLoughlin and Nagorcka, 2000).

Risk factors for poorer developmental outcomes for children including educational achievement often co-occur and may have cumulative affects (Rutter, 1985). The Dunedin Longitudinal Study in New Zealand found that ongoing family adversity with multiple risk factors is associated with poor school and cognitive performance, attention difficulties and behaviour problems and, in the long term, with delinquency (Silva and Stanton, 1996). Australian evidence from a number of studies indicates that the higher the family SES, the more likely children are to complete secondary school and enter higher education; however, gender and ethnic origins also play a part (Mukherjee, 1995). A meta-analysis of a large number of studies found that children from high SES families consistently score higher on measures of cognitive ability and achievement than children from low SES families (White, 1982, cited in Amato, 1987).

A broader Australian study, which examined the competence of children in year four at primary school and year nine at secondary school in reading, practical life skills, self concept, self control and independence, found that children with high SES parents were generally more competent than children with low SES parents. It was also found that children's competence was more strongly related to mother's SES than father's SES (Amato, 1987).

However, most studies linking SES with lower school achievement and cognitive ability are of school aged children. An exception is the Australian Early Childhood Study (Ochiltree and Edgar, 1995). This study, which examined the effects of different patterns of caring for children in the preschool years, found that rather than patterns of child care predicting cognitive and social/emotional outcomes for children in the first year of school, it was family background and child variables that were the best predictors of child outcomes. SES was the best predictor of beginning reading ability; whether a language other than English was spoken at home predicted lower language and communication skills, while a positive Child Personality rating (as rated by mothers) was associated with emotional adjustment.

11.1 Early Literacy

Literacy, and particularly reading, is particular aspect of education and the core of any educational achievement. Without literacy skills it is impossible to make the most of schooling even when it is free and universally available. Success and failure in reading affects not only educational achievement but also attitudes and self concept (Hall and Ramig, 1978).

Despite the prevalence of print in contemporary society, the way print is used in homes varies (Cairney, 1997). A review of relevant research into literacy points out that the early childhood language and print experiences of some cultural minorities and low income groups do not work to the advantage of children when they go to school (Teale, 1982). Some children have parents with very little education and some parents are themselves illiterate, including those parents from culturally and linguistically diverse backgrounds who had little education in their country of origin. In some families children see their parents use written materials such as newspapers, lists, messages and books as part of everyday life, while other children may not see writing as a means of communication. Concern over literacy levels in Australian schools has led in recent years to programs supporting children in the first years of school so that they do not get left behind and so that other aspects of their education do not suffer.

However, little has been done in the preschool years to make sure that the language and experiential foundations of literacy are available to children who may be missing out. Children are immersed in a world of language from birth and the infant and toddler years are crucial for children's speech and language and lay the foundations for literacy (Cairney, 1997; Willms, 1999). Reading is part of the language process. When children begin to read written material they bring to it their knowledge of the language and subject matter in order to make sense and meaning (Smith, 1978).

There is little evidence in language and literacy studies that heredity is the major factor in children's rate of development (Willms, 1999). The correlation between mother's and children's vocabulary scores is equally strong whether children are reared in biological or adoptive families. Studies have found that while children vary considerably in the rate at which they acquire vocabulary, that this variation is associated with the quantity and quality of mother's speech.

Canadian studies of the relationship between SES and early literacy skills, as measured by the Peabody Picture Vocabulary Test, indicate a strong effect for SES, higher SES is associated with a higher score. However, in breaking down the components of the SES measure, they also found that the educational level of mothers had a statistically significant affect with the higher the mother's level of education the higher the score of children. There was also a significant affect of father's level of education, but it was much smaller. Large scale studies from Canada and other countries have emphasised what small scale studies have indicated in the past—that the quality and quantity of mother's language is the most important predictor of early literacy skills (Willms, 1999).

Willms (1999) indicates that effects on the educational readiness at school entry, including literacy readiness, can be due to segregating low status groups from mainstream society:

> 'Ethnic minorities, people with low incomes, and the unemployed are segregated by their place of residence in most cities world wide. This segregation limits their access to certain labor markets, exposes them to more crime and health risks, and restricts their access to the best schools, hospitals, and other social services. ….. The effects of residential segregation can be either reduced or exacerbated by structural features of the community that determine where certain programs are located and what rules govern access' (Willms, 1999, p. 90).

However, some parents from disadvantaged backgrounds with poor levels of educational achievement value learning even though they have had little opportunity themselves. A number of studies have shown that it is not just SES that counts in educational achievement but what parents actually do with their children (Kalinowsky and Sloane, 1981; Hess and Holloway, 1984).

11.2 Mathematics

Although maths is not as vital to educational achievement as literacy, it can limit the educational opportunities of children in both the long and short term. In an increasingly technological society, maths is an important aspect of education and the foundation of many technical and scientific skills. Infants are born with a natural sensitivity to number (Case, Griffin and Kelly, 1999). Studies of children aged around 4–5 years reveal that they have an extensive set of understandings about number. However, it has also been found that by the time that children from low SES homes enter school, they are less mathematically competent. This is not because of any biological or neurological deficiency but because their early home environment provides less support for numerical understanding than middle-class homes. Schools are not presently equipped to address these differences, which may be regarded as deficiencies, and this has long term consequences for children from low SES backgrounds. However, preschool programs can be designed to overcome this deficit through maths readiness programs (Case, Griffin and Kelly 1999).

12. Evidence from Preschool Services

Preschool is universally available in Victoria to all four year olds and some three year olds, although there is a small cost. Most parents see preschools as educational, as important to the social development of their children and as preparation for school. They are part of the environmental influences on most Victorian children in the year before school.

For children who have not had child care experience, preschools provide an opportunity for social experiences with other children, for learning to share with other children and to relate to adults outside the family (Taylor, 1997). Some child care centres also have preschool programs in their curriculum. In

recent years, shortages of qualified staff, industrial issues and fears that costs may have prohibited children from low income families from attending, have led to concern about the preschool sector and to a recent review of the issues.

Preschools (kindergartens) had their origins in the early 20th century in progressive educational ideas but were also seen as instruments of social reform which aimed to inculcate the children of the poor with middle class values of cleanliness, thrift, industriousness and courtesy (Brennan, 1994). Thus education and reform of the poor were closely linked. As early as the depression years, leaders in the kindergarten movement believed in the important influence of the environment rather than heredity. Kindergartens usually operated for only part of the day and were never intended as a minding service while mothers worked.

The Australian Early Childhood Study by the Australian Institute of Family Studies in the early 1990s indicated that Victorian parents made great efforts to have their children attend preschool even if they were working and their children were in child care (Greenblat and Ochiltree, 1993). Most of the mothers involved in the study thought that the preschool that their child attended was of excellent or very good quality and most mothers reported that their children liked preschool. Mothers thought that the most important thing children learned at preschool was to get on with other children (80%), to accept authority and structure (37%) to learn skills (30%) and to be independent (21%). It is clear that Victorian parents value preschool for their children and feel that children benefit from the experience.

Boocock (1995), in a review of research on the outcomes of early childhood programs in many countries around the world (including France, United Kingdom, Sweden, Germany, Ireland, Japan, Singapore, South Korea, Australia and New Zealand and some developing countries), provides evidence that participating in a preschool program in the short term promotes cognitive development and also prepares children to succeed in school. Furthermore, the evidence indicates that preschool experience has greater influence on the lives of children from disadvantaged families than those from more advantaged families. However, Boocock also points out that the programs differ, and that while Western societies favour a 'child centred' model with an emphasis on learning through play, that Asian countries reject this approach in favour of a more structured and formal approach to learning.

13. The Evidence from Child Care Services

In the last 30 years, the number of women in the paid workforce, especially in the early years of their children's lives, has increased remarkably but still remains much lower than in the United States. As a result, many young children now experience long day care by people other than their own

parents in the years before starting school. However, in Australia, child care services are not universally available and there is a priority index for admission with children of working or studying parents having priority of access. In Australia, less than 50 per cent of women are in the workforce before their children start school and the majority of these work part-time only. Not all children who are eligible for formal child care services attend, either because of the cost or because of waiting lists. As children reach school age more mothers return to the workforce. This increase in the workforce participation of women has led to a much greater need for child care not just in the preschool years but also for after school and vacation care for school-aged children.

Child care has not had such easy acceptance as preschools, which have always been seen as educational and as having a positive influence on children. There has been considerable ambivalence about child care and concern about the possible negative affects on children. There continues to be a split between 'education' and 'care' without recognition by many of the educational role of child care.

The earliest concerns about child care were that non-maternal care would have a negative affect on the security of attachment between mother and child and that this could lead to later social and emotional maladjustment and aggressive behaviour (Ochiltree, 1994; Shonkoff and Phillips, 2000). However, considerable research starting in the late 1960s has indicated that mother remains the primary attachment figure and that the primary influence on the attachment relationship is the sensitivity of the care provided by mother. This remains true even for children experiencing long hours of child care.

Research on the effects of child care over the last 10 years or so has emphasised the powerful influence of the parents on children's early development. Parents' behaviour and beliefs have larger associations with children's development than any aspects of child care arrangements (Ochiltree, 1994; Shonkoff and Phillips, 2000). Shonkoff and Phillips (2000, p. 310) point out that:

> The challenge now facing those who study child care is to clarify when child care protects children from family-based risk (such as poverty, maternal depression, high levels of conflict), when it compounds risk, and when it poses risks to children who are otherwise growing up in supportive home environments.

However, research has indicated the quality of child care is a most important factor for positive developmental outcomes for children (Ochiltree, 1994; Shonkoff and Phillips, 2000). Studies have indicated that the key elements in the quality of care are the sensitivity of the relationship between the caregiver and child, and structural elements of care such as:

- Carer/child ratio,

- Group size,
- The educational level of the caregiver, particularly knowledge of child development.

Community and policy influences, such as level of funding, regulation for quality, planning, staff development and the links with other sectors working with young children and families, are also crucial aspects of quality child care.

Research on the effects of the quality of non-parental child care has shown a range of effects on children's development, including social and emotional development, cognitive and language development. High quality of care has positive associations with early social and emotional development after controlling for the effects of family variables. The stability of carers, as continuity of care is particularly important for young children in all forms of child care, centre-based, family day care and informal care by family members or others, is associated with positive social development (Shonkoff and Phillips, 2000).

There are consistent research findings that high quality centre-based care that provides learning experiences has positive effects on early learning, cognitive and language development and school achievement (Shonkoff and Phillips, 2000). The strongest positive effects are found for the children from the most disadvantaged families. High quality infant and toddler care is also associated with positive cognitive and language outcomes. However, the important component is the language environment of the child care setting and child care providers who provide more verbal stimulation as well as sensitive support have children in their care who are more verbally and cognitively developed.

14. Conclusions Regarding the Early Years

In concluding this section, which has discussed the evidence for investment in the early years in a number of domains, it is worth reviewing early childhood development briefly in the light of the research that has been discussed and as a basis for the next section.

Shonkoff and Phillips (2000) sum up the core concepts involved in development:

- Human development is shaped by a dynamic and continuous interaction between biology and experience—nature and nurture and brain growth is central to this process.
- Culture, including child rearing beliefs and practices, influences every aspect of human development.
- A foundation of early childhood development is the growth of self-regulation which crosses all domains of development.
- Children are active participants in their own development. They have an innate drive to explore and master their environment.
- Human relationships are the building blocks of healthy development.
- Human development is shaped by an ongoing interaction between sources of risk and protective factors.
- Individual differences among young children make it difficult to distinguish between normal variation and delays in development, passing difficulties and enduring impairments.
- Children's development is essentially a process of change unfolding along individual pathways at different rates and involving both continuities and discontinuities as well as a series of significant transitions.
- The course of development can be altered in early childhood by interventions that change the balance between risk and protective factors, thus shifting the odds towards a more positive developmental trajectory.

The implications of these findings for parents of young children and early childhood service providers are as follows:

- Children's development is the result of interactions between a whole range of factors; these include their own characteristics as well as those of the home and community in which they are raised. The wellbeing of the family as a whole is important for the wellbeing of the child.
- Given the right conditions, the vast majority of parents will have little trouble providing the conditions and experiences their young children need to develop well. To enable them to do this job properly, we should

ensure that parents are fully informed about the factors that affect the development of young children.

- Any parents placed under stress for any reason—lack of adequate income, homelessness, lack of social support, ill health, child with a disability—will have more trouble providing the conditions and experiences their children need. Such parents need support and services that directly address the causes of the stress.
- Many of the developmental, learning and behaviour problems that emerge later have their origins in the early childhood years. Supporting families during this crucial period must be a high priority.
- We now know of many effective ways of helping children and families who are experiencing stress during the early years. The challenge now is to use this knowledge in order to ensure the best possible outcomes for all children.

Section B: Evidence Regarding Effective Interventions

This section discusses research findings, usually from evaluations of programs and interventions or from experimental research programs, which have proven effective in promoting the health and wellbeing of children and building the capacity and competence of their parents/carer. These programs provide early and appropriate responses to indications of problems in the domains discussed in Section A of this paper. The research findings and programs included, but particularly the international programs, are widely viewed as important or seminal programs; however, the scope is limited, not exhaustive. They are organised in order of children's development from the perinatal period to the transition to primary school.

Programs discussed consist of those that aim at prevention of problems or poor outcomes through intervention and support. These programs usually include specific interventions that may involve referral, use of existing services including child care, or health services for parents and/or children and support and education. All programs have been evaluated or involve experimental research. Although the programs have specific aims, the domains of development addressed are not necessarily isolated but overlap one with the other. Some programs are not directly aimed at child developmental outcomes but aim to avoid harm in families at risk of one sort or another. However, all programs are based on a knowledge of the importance of early childhood as a time for laying the foundations for further development and reducing risk factors for children and enhancing the competence of parents.

15. Issues in Programs and Interventions

Shonkoff and Meisels (1990, p. 3), in a discussion of the benefits of intervention in early childhood, point out that traditional disciplinary boundaries are not useful in supporting the needs of young children. Although they are discussing specific interventions, the same qualification applies to the needs of most young children and their families:

> Although the contributions of multiple professional orientations continue to influence the delivery of early intervention services, current conceptualisation's of the process of early childhood development underline the futility of attempting to divide the needs of young children into discrete components defined by traditional disciplinary boundaries. Debates about the demarcation between health concerns and educational interests, for example, generally become exercises in semantic frustration. If a 2-year-old has recurrent

> otitis media with fluctuating hearing loss and associated deficits in communication, is this a medical problem, an educational problem, or perhaps a combination of the two? What about the 800-gram neonate who was born after a 29 week pregnancy to a 15-year old mother who is living alone supported only by public assistance? Are the needs of the infant primarily medical, educational, or developmental, or are they more appropriately classified within the realm of social service? And what about the 3-year-old with a poor attention span and aggressive disorganized behavior who poses significant management problems in a Head Start program? Are these problems essentially educational? If the child is found to be malnourished and anemic, do the problems become medical? If the child has been physically abused or severely neglected, are we now more likely to consider the problems as a mental health or social service concern?

Shonkoff and Phillips (2000, p. 338) argue that early childhood intervention is a concept rather than a specific program:

> Much of its diversity is related to differences in target groups – from the broad-based agendas of health promotion and disease prevention, early child care, and preschool education to the highly specialized challenges presented by developmental disabilities, economic hardship, family violence, and serious mental health problems, including child psychopathology, maternal depression, and parental substance abuse. Within this context, the diversity among and within subgroups is as great as that across the general population.

In other words, the target groups addressed by early childhood intervention are heterogeneous rather than homogenous with a great deal of variation in their composition. For example, children with developmental disabilities comprise a wide range of impairments and differences in the severity of the condition. In addition, developmental difficulties may be secondary to a hostile caregiving environment and are associated with poverty, violence and/or parental mental illness and so on. Nevertheless, there is a common concern about the development or behaviour of all children considered for early intervention programs and a belief that such programs can increase the probability of more positive outcomes.

There are differing views of what is meant by 'early'; whether it means in infancy or just before entering school often depends on the disciplinary perspective (Shonkoff and Phillips, 2000). Interventions differ according to the perspective of the discipline, but at its best, early intervention should involve multidisciplinary collaboration.

The service sector providing early interventions is also diverse and differs from country to country, state to state and, to some degree, from locality to locality, particularly in Australia where there are three levels of government—Commonwealth, State and Local. Services may be child-focused or family-

focused or a mixture of both; policy and practice may adopt home-based models of intervention or centre-based interventions or a combination. However, these days, with growing awareness of the important role of the family and its context, interventions are usually multi-layered and involve to a greater or lesser degree not only the child, but also the family, the community and often advocacy on behalf of the target group involved. It is the diversity of the early intervention field that poses the challenges of service coordination, evaluation and policy development.

Successful interventions are assisted by theoretical models of change that specify the association between the goals of the intervention and the strategies used to accomplish them. However, the theoretical model underlying a particular intervention may not always be made clear and at times it is implicit in the strategies used. Shonkoff and Phillips (2000, p. 341) argue that these models of change converge and apply across diverse programs and policies in early childhood intervention in the United States and have a number of important characteristics. They are:

(i) All strategies of intervention are based on normative theories of child development.

(ii) All developmental domains are shaped by the interaction of genetic predisposition and individual experience.

(iii) The relationship between the young child and their primary caregiver is the building block for cognitive, linguistic, emotional, social and moral development and is most viable if it is warm, nurturing and responsive to the individual child.

(iv) The environment of young children is physical and social and is mediated through the kind and quality of the experiences and interactions with people in their daily lives both in the home and outside the home.

(v) Caregivers respond to the individual needs of children depending on their own personal internal resources such as their level of psychological wellbeing, health status and education, as well as to external factors such as their economic security, employment circumstances, social networks and so on. Multiple risk factors and stress can jeopardise the abilities of caregivers to promote healthy development in children.

(vi) Programs can be designed to affect children directly through child-focused interventions or indirectly through caregiver-focused interventions.

(vii) Deciding appropriate outcomes for child and family requires an appreciation of individual differences in children, of the extent to which the caregiving environment is changeable and a realistic appraisal of the resources available for the proposed intervention and the extent to which they make the goals possible.

(viii) Successful interventions are decided by the integrity and fit of the strategies used, the extent to which they are acceptable to the target group, and the quality of the process and carriage of the intervention program.

15.1 Programs To Improve Parenting

Many of the interventions to improve parenting and child developmental outcomes include not just practical support and information for parents but also some form of parenting education to improve parenting skills, knowledge and parent-child relationships. Depending on the program or project, these may involve modelling positive parenting behaviour, information about child development, and other information or support as decided by parents and/or program staff as needed or prescribed in the program model. However, some programs include parent education strategies that have been developed and trialed and are available in kits, books or videos or are presented by trained parent educators. These are less likely to be used or useful for parents from disadvantaged backgrounds.

A review of the literature on the effectiveness of parent-training programs in improving behaviour problems in children was undertaken in Oxford (Barlow, 1997, cited in McLoughlin and Nagorcka, 2000). Although there were methodological problems in many evaluations and no conclusions could be drawn about which types of programs were suited to which parents, it was concluded that programs using a behavioural approach were effective in improving child behaviour and based on Adlerian theory to a lesser degree. Community-based group programs were seen to be more effective and cost-effective than individual approaches. However, the review concluded that more research was needed.

In a comprehensive review of parent education programs by Thompson, Grow, Ruma and Burke (1993, cited in Hamner and Turner, 1996), they assess the strengths and weaknesses of each, and examine the underlying theories and strategies used to achieve desired goals. They point out that given programs and strategies do not suit all cultures and socioeconomic classes and that many parenting programs have not been successful with low-income parents. They also indicate that where parenting programs have been successful with disadvantaged families they have been specially designed for these families. They have involved such things as modelling and role playing rather than discussion, lecture or reading approaches. Financial incentives have also helped to keep parents in attendance till the completion of the program and parents have been found to remain in programs if family management training is first in the sequence of activities.

Hamner and Turner (1996) discuss parent education programs more broadly in their comprehensive research-based book *Parenting in Contemporary Society.* They take into account the diversity of families in contemporary society and the changing nature of parenting and warn that it is simplistic to

take a 'cookbook' approach to parenting education. They argue that, even when based on sound theory, because relationships within families and between parents and children are complex and multi-faceted, such programs will not serve parents adequately and that there needs to be multiple approaches:

> …the expectation that the specifically prescribed behaviors for parents will result in predictable behavior in children fails to consider the complex nature of the parent-child relationship and other variables that undoubtedly affect that relationship. There it seems that more emphasis must be placed on putting into the hands of parents child development literature that is understandable (Hamner and Turner, 1996, p.148).

Shonkoff and Phillips (2000) argue that while parenting is open to change it is difficult to achieve and that there is little empirical evidence that non-specific family support programs can achieve changes in parenting behaviours in high risk families:

> These families are likely to require more intensive services than the typical parenting intervention program provides, interventions that go beyond the enhancement of parenting skills to address the serious life issues (e.g., poverty, hopelessness and depression, substance abuse, troubled relationships) they face and involve adults other than just the mother and utilize program staff who are specifically qualified to work with multi-problem families. The growing diversity of families with young children also raises profoundly important questions about how best to match programs to the needs, values, and goals of various ethnic and cultural groups. A final challenge is posed by the demographics and circumstances of working parents, for whom finding the time to participate in these programs is exceedingly difficult (Shonkoff and Phillips 2000, p. 263).

16. Programs and Interventions To Improve Outcomes in the Perinatal Period

A number of programs involving home visiting in conjunction with other interventions have been developed to support mothers and infants from low income and disadvantaged groups. Some programs have specific aims to reduce premature births and low birth weight, some aim to reduce the incidence of child abuse, to promote child development, and so on. Many, but not all, of these programs were developed in the United States and it must be noted that women in these schemes, unlike Australia, do not have access to free and universally available health services prior to birth nor to maternal and child health and parenting services after the birth and in the early years of children's lives (Ochiltree, 1999; McLoughlin and Nagorcka, 2000).

A recent edition of *The Future of Children* (1999) was devoted to evaluations of major home visiting models, all of which had slightly different aims but all of which involved interventions and were concerned with the promotion of:

> good parenting skills, the prevention of child abuse and neglect, the promotion of healthy child development and school readiness, and, sometimes, the improvement of mother's lives (for example, deferral of subsequent pregnancies, and promotion of maternal education and employment). Despite these varied goals, these programs all focused on the importance of children's early years, a belief that parents play a pivotal role in shaping children's lives, and a sense that one of the best ways to reach families with young children is by bringing the services to them, rather than expecting those families to seek assistance in the community.

The majority of the programs were evaluated as successful within the context in which they were offered.

16.1 Home Visiting To Improve Pregnancy Outcomes

The Nurse Home Visitation Program (NHVP) in the United States involved three research-based trials, over a 20-year period, which aimed to improve pregnancy outcomes, to promote children's health and development, and to strengthen families' economic self-sufficiency through home visits (Olds, Henderson, Kitzman, Eckenrode, Cole and Tatelbaum, 1999; Kitzman, Olds, Sidora, Henderson, Hanks, Cole, Luckey, Bondy, Cole, and Glazner, 2000). Two were randomised trials and the third an ongoing trial at the time of writing. Home visits by nurses started prenatally and continued until the children the children were 24 months of age. The samples in three locations were drawn from disadvantaged families because the study was designed to address problems such as poor birth outcomes, including low birth weight and prematurity, child abuse and neglect, and the difficulties that many parents in these groups found in becoming economically self-sufficient.

The aim was to modify risk factors that are associated with the negative outcomes addressed by the study. Nurses helped the women to establish supportive relationships with family members and friends and also linked the women and other family members with appropriate services as needed. They also promoted improvements in women's health behaviour, and the health and development of children.

It was found that the neediest families—low income unmarried women—gained the greatest benefits from the home visiting program. Both the women and the children in this needy population benefited: the program reduced the incidence of child abuse and neglect, the women were less likely to have short spaced successive pregnancies, and they were more likely to become economically independent. The only affects on birth outcomes were for the children of smokers who had higher mental development scores at

three and four years of age than the comparison group. It was found that the children benefited long term and by the time they were 15 years of age they had fewer arrests, drank and smoked less, and had fewer sexual partners.

16.2 Social Support To Improve Birth Weight

Anne Oakley's (1992, 1996) research in Britain emphasises the importance of social support and connectedness to specific short and long term health outcomes for both mothers and children. Low birth weight babies are associated with family disadvantage and with poorer outcomes for the children. Oakley's (1996) study, which was designed as a randomised control trial, aimed at reducing the incidence of low birth weight babies by providing social support during pregnancy to women who had already had a low birth weight child. Women identified at risk were randomly assigned to the treatment or control group.

The research midwives in Oakley's study worked directly with mothers in the treatment group by providing support and collecting data. Clinical care was provided by hospital services not by the research midwives. The midwives made three home visits, two telephone calls, had a 24-hour contact number, made referrals, provided information as required, gave practical advice and made additional visits as required. The support was restricted to pregnancy with only one brief postnatal visit.

Oakley (1992) found that the social support provided was successful in improving health outcomes compared to the control group. Mothers involved in the research felt positive about the support they had received and there were:

- Fewer low birth weight babies born in the treatment group.
- The babies required less neonatal and intensive care and their health was generally better in the early weeks of life.
- The mothers' health was also better than that of control group mothers.
- Although partners were not included in the project, the partners of the women in the treatment group were reported as being more helpful in the home (although this did not continue to the one year follow up).

At follow up at one year (by postal survey) and again at seven years (also by postal survey), there were continued health gains for both mothers and children. Intervention mothers also used health services more and had more close friends. Oakley (1996, p. 7) concludes that:

> The results confirm the health-promoting effect of social support, and the importance of providing supportive care within the routine maternity services, not only as a means to improve women's pregnancy experiences but in order to promote their and their children's health and development throughout childhood.

16.3 Improving Continuity of Care between Hospital and Community

The Victorian Local Links, which provides a model for pregnancy and parenting support, is a three-year pilot project which builds on Anne Oakley's work on social support and its effects reported above (Hartley and Ochiltree, 1999, 2000). The project was a joint effort between the Royal Women's Hospital (RWH) and Dianella Community Health Centre located in Broadmeadows. It involved women who came from three postcode areas in Broadmeadows and had their babies at RWH. The aims of the program were:

(i) To enhance women's experience of pregnancy and early motherhood by reducing social isolation.

(ii) To improve their skills, access to information and emotional wellbeing.

(iii) To strengthen links between RWH and community service providers to ensure continuity of care.

(iv) To enhance the quality of services provided at RWH.

Local Links was conceptualised as a specific community development project and women were recruited at RWH or at the satellite clinic at their first trimester visit. The majority of women were from non-English speaking backgrounds and the project employed two bilingual workers from the major language groups Turkish and Arabic. The project aimed to work with these women according to their needs from recruitment until the child was two years of age—the perinatal period.

The key components of the work of Local Links were:

- A holistic approach to pregnancy, parenting and health, which acknowledged the social, psychological and physiological factors involved.
- A preventive approach which involved early identification and intervention where there were problems in pregnancy, childbirth and early parenting.
- Ways of working that involved working with individuals, groups, community services and agencies, and community workers.

The project was evaluated over each of the three years using both a qualitative action research approach as well as quantitative data collected by the project team, the hospital, local services where appropriate and data from the Perinatal Data Collection. A report was made available each year so that the project team and steering committee could reflect on progress as part of the ongoing evaluation process.

Evaluation indicated that the project was successful in enhancing women's experience of pregnancy and early motherhood, it succeeded in reaching many isolated women and both group work and individual support succeeded in providing women with access to information and services (Hartley and Green, 2001). Bilingual workers and group work based on women's needs in

community settings, in the women's own languages and providing both transport and child care, met the needs of these women who would not normally access community services.

The aim to ensure continuity of care during pregnancy and early motherhood was met to some degree but not entirely. Support and information provided before and after births helped women understand and access local services; new partnerships were formed between RWH and service providers in the community; and there was improved understanding of the needs of women from culturally and linguistically diverse communities. However, continuity of care is affected by factors often outside the control and influence of workers in a small pilot project such as this. Within the larger hospital system it was difficult to assess the impact of the small Local Links project from other influences, although there were clear indications that there was an impact on the availability of cultural and language specific childbirth information.

16.4 Good Beginnings: Improving Parenting from Birth

Good Beginnings is an Australian project that uses home visiting by trained volunteers and provides a range of programs at seven locations across Australia (McLoughlin and Nagorcka, 2000). All families can join the project at any time from the birth of the child until it is five years of age, but it is particularly aimed at disadvantaged families. It aims to support parents in the role of caring for their children, improve access to local resources, increase opportunities to strengthen health and wellbeing, involve communities and facilitate strong links between agencies and services that serve children and families and create environments where children can achieve their full potential. Most families join for a year. The program involves home visits by trained volunteers with a coordinator facilitating, support and information groups including fathers, new babies groups for mothers, and community building initiatives including the production of resources and a professional development learning package. The program involves weekly or fortnightly contact of about two hours.

The pilot phase of Good Beginnings has been evaluated and found that mothers and referring agencies were satisfied with the program and mothers believed that they had received support and companionship and acquired parenting skills. Referring agencies believed that the program had a positive impact on the families. The training of volunteers was found to be of high standard and the project contributed to improved community networks.

17. Programs Preventing Child Abuse and Neglect and Promoting Child Development

A number of programs have been developed over the years to reduce the risk of child abuse and neglect. Hawaii's Healthy Start Program (HSP) was

designed to prevent child abuse and neglect and to promote child health and development in families with newborn infants at risk of poor child outcomes. Vulnerable families were identified before the day-to-day stresses of their lives gave rise to neglect or abuse. They were identified through examination of their medical records for risk factors such as unemployed partner, unstable housing, no telephone, marital and/or family problems, inadequate income, history of abortions, substance abuse and so on, and interviews with the mothers. The program was intended to improve parent and child outcomes in at-risk families by providing direct services and promoting the use of early intervention and preventive services. The program involved home visiting by trained para-professionals.

The program was offered at 14 sites. Two years after commencing, evaluations of three agencies providing HSP indicated that it was successful in linking mothers to paediatric medical care, improving maternal parenting and decreasing stress, promoting the use of non-violent discipline and decreasing injuries from partner violence at home.

However, the evaluations also indicated that there were many areas where there were no positive program impacts, including child maltreatment, the child's home learning environment and parent-child interaction. There were agency specific positive program effects on several outcomes including parent-child interaction, child development, maternal confidence in adult relationships and partner violence.

It was concluded that the significant differences between the three administering agencies had implications for family participation and involvement and most likely for the outcomes achieved. They advised that in future faithfulness to the program model should be monitored and comparison groups used to determine impacts.

Another study which set out to investigate whether the presence of domestic violence limits the effects of nurse home visits as intervention to reduce substantiated reports of child abuse and neglect involved a 15 year follow up of a randomised trial of 400 socially disadvantaged pregnant women with no previous live births (Eckenrode, Ganzel, Henderson, Smith, Olds, Powers, Cole, Kitzman, and Sidora, 2000). The original sample was recruited between 1978 and 1980 in a semi-rural community in upstate New York. The follow-up study included 324 of the original sample mothers and their children. At the time of the interventions women had been randomly assigned to one of three groups: the control group, which received routine perinatal care; the first treatment group, which received routine care plus nurse home visits during pregnancy only; and the second treatment group, which received routine care plus nurse home visits during pregnancy and until the child's second birthday.

The main outcome measures were the number of substantiated reports of abuse of the study child over the 15-year period, regardless of the identity of

the perpetrator and/or reports involving the mother as perpetrator regardless of the identity of the child. These substantiated reports were taken from State records and analysed, taking into account the original treatment group and level of domestic violence in the home as measured by the Conflict Tactics Scale.

Fifteen years after the interventions, it was found that families receiving home visitation during pregnancy and infancy had significantly fewer child maltreatment reports involving mother as perpetrator or the study child as subject than families that had not received home visitation. Where mothers had received home visitation during the pregnancy only, the number of maltreatment reports was no different from the control group. Where mothers had received home visits up to the child's second birthday, the long term effectiveness of the treatment was found to be related to the level of domestic violence in the home at the time. The long term treatment effect decreased as the measured level of violence at the time of data collection increased. Seventy-nine per cent of home visited mothers had reported 28 or less incidents of domestic violence and these mothers had significantly fewer child maltreatment reports over the 15 years than mothers not receiving the longer term home visiting intervention. However, the intervention did not significantly reduce the reported incidence of child maltreatment among 21 per cent of mothers in this treatment group who had reported more than 28 incidents of domestic violence. The researchers concluded that the presence of domestic violence may limit the effectiveness of home visiting interventions in reducing the incidence of child abuse and neglect.

18. Enhanced Child Care Programs To Improve Educational Outcomes for Children

There is research evidence that enhanced child care services, designed specifically to improve the educational competence of children from disadvantaged backgrounds, are effective. The Carolina Abecaderian project, which used an experimental design with treatment and comparison groups, combined early intervention for children of poor and minority families with child care (Ramey and Campbell, 1987; Ramey and Campbell, 1991).

Using a randomised control design, children were assigned to treatment and control groups at birth. The basis for selection and equating the groups was a High Risk Index for family risk factors. Just before their entry to primary school, the children in the preschool intervention/treatment group and those in the control group were re-randomised into equivalent pairs of children on their Stanford-Binet IQ scores. In other words, both the preschool intervention group and the control group were split into two equivalent groups of children, making four groups in all for the school stage of the experiment. The first group received intervention from birth to age eight, both preschool and at school; the second group received preschool

intervention but it did not continue into school. The control group was split in two for school entry and one group received intervention from school entry up to eight years of age and the other half of the original control group remained as a control group, receiving no intervention. The experiment, which started in 1972, extended for eight years of children's lives.

The program provided long day care and an educational preschool program for children from mainly black high risk families. The preschool treatment group started before the children were three months of age. The parents were encouraged to take part in parent groups that offered parenting information and family development. They also had access to the project social worker who assisted with issues such as housing, personal counselling and practical, social and emotional support. The program for the treatment group of children was designed to enhance cognitive and linguistic development and to enable the children to experience mastery and success in a safe and sensitive environment (Ramey and Campbell, 1987, 1991). It was found that the preschool treatment group had a higher level of academic outcomes in association with higher IQ scores and retention in grade with comparison groups. The school age only treatment group did not achieve this level of success. The preschool treatment group effects continued into the second year of school, particularly for the group of children who continued to receive additional assistance at school. Ramey and Campbell (1987, p. 138) concluded that: 'The intellectual and academic achievement results suggest to us that a preschool comprehensive program coupled with a school-aged follow through program contains much promise'. The follow-through program in primary school avoided the decline in intellectual gain that had been found in other preschool intervention programs. However, intervention at primary school only was not as effective in improving intellectual competence as the preschool intervention which was preventative and associated with improved outcomes.

18.1 Early Head Start

A number of early intervention experimental research studies, such as the Abecaderian study in the 1980s and 1990s, provided evidence that early intervention for children from low income families is most successful and most enduring when children are younger. They also indicated that good quality day care programs have positive affects on children's intellectual development and that their language skills and social development are enhanced (Ramey and Campbell, 1987, 1991). The influential Carnegie Task Force report, *Starting Points: Meeting the Needs of Our Youngest Children* (1994) pointed out the importance of the first three years of life and argued that, in light of recent research, if the Head Start program was to be most effective in alleviating the effects of disadvantage, it needed to start with children in the period from birth to three, and even earlier with their mothers.

The social context for the original Head Start program in the United States (which is discussed in the next section) had changed since it began in the 1960s. Government policy is now to encourage the poor into the workforce rather than to remain recipients of welfare benefits. Encouraging economic self-sufficiency in families is thus seen as an important aim for programs. Head Start programs have had to adapt to these needs and provide full day care for children and accommodate parent involvement in ways and times that are suitable for the parents who are involved in work or training programs.

In response, Head Start initiated Early Head Start programs, which are two-generational and involve services that begin before children are born and focus on supporting families during the crucial first three years of the child's life and enhancing the child's development (Head Start website, 2001). The key elements of these programs are much broader than the original Head Start programs for older children:

- An intensive focus on all aspects of child development: social and emotional, cognitive and language, physical health and resiliency.
- Family development including family relationships and functioning and family health and economic self-sufficiency.
- The involvement of parents as partners in the development of their children as both caregivers and teachers.
- Support for parents in their efforts to become self-sufficient.
- Staff development.
- Community development including integration of services to support families with young children and improved child care quality.

Early Head Start programs include:

- Home visits to families with infants.
- Parent education and activities involving both parent and child.
- Parent support through case management and peer support groups.
- The use of both centre-based and home-based child care for children.

The first Early Head Start commenced in 1995 and by early 2001 there were 650 funded programs which served 55,000 families. A national evaluation has been planned as well as 16 site-specific research studies. This evaluation of Early Head Start and the specific research will be the foundation for a series of longitudinal studies. The Early Head Start Research and Evaluation Project has five major components:

(i) An implementation study designed to provide important information on program implementation and context.

(ii) An impact evaluation which examines the effects of programs on children, parents and families in depth, and descriptive analysis of outcomes for program staff and communities.

(iii) Local research studies to learn more about pathways to desired outcomes for children, parents and families, staff and communities.

(iv) Policy studies to respond to relevant policy and information issues.

(v) Formats for continuous improvements to guide Early Head Start programs (Head Start website, 2001).

The evaluation aims to learn as much as possible about the early implementation of new programs and the multiple challenges involved in serving low income families with infants and toddlers. In the light of earlier Head Start successes and the evidence from research such as the Abecaderian study, as well as the evidence from brain research discussed earlier, these programs appear particularly promising.

18.2 Even Start

Intergenerational literacy programs, more commonly known as 'family literacy' programs, aim to assist parents who have literacy problems overcome their difficulties and at the same time assist them to rear literate children. Most programs that aim to directly improve literacy in children and/or parents are located in school systems. However, as discussed in the section on the Early Head Start program and enhanced child care, there has been increasing recognition that the early childhood years, as discussed in Section (a) of this paper, provide an appropriate time to improve later literacy outcomes for children.

The Even Start program in the US started on this basis in 1988 with Federal funding to provide family literacy programs for disadvantaged families with children under the age of seven years (Hannon, 1996, cited in McLoughlin and Nagorcka, 2000).

Even Start programs work in three dimensions: adult education, parenting education, and early childhood education. By 1995 there were more than 500 local projects. An evaluation of this program involving pre- and post-testing of participants found that children made greater gains in readiness for school than would be expected just from maturation and they also made gains on language development measures (Tao, 1997). Fifty per cent of parents improved two grade levels in reading and maths. Parenting education was associated with improved cognitive and emotional support to children. However, the evaluation indicated that children from the most disadvantaged families made the least gains. It is thought that the reason that this finding differs from programs involving centre-based interventions was because it is home-based and involves shorter time periods of instruction. The overall finding was that Even Start improved parents' academic skills and children's language development.

19. Enhanced Preschool Programs To Improve Educational Outcomes for Children

The effectiveness of preschool services for children was discussed in Section A. Preschool programs that have been 'enhanced' by the addition of services to improve the educational outcomes for children and parents from poor and minority families have proved successful.

The most well known of the enhanced preschool programs are those that were part of Project Head Start. There are also a number of preschool programs that were planned as longitudinal research projects to gather data about the extent to which preschool interventions could improve developmental outcomes for children from poor and minority groups. Both Head Start programs and the research based longitudinal studies provide useful evidence of the effectiveness of enhanced preschool programs for these children and, to some extent, for their parents.

Head Start has traditionally offered preschool programs with a program enhanced by offering additional services to parents and families. Head Start had its origins in the 1960s in the United States War on Poverty and targeted a specific group—the children of poor and minority families. There was considerable research evidence available at the time that these children had lower scores on IQ tests than children from middle class and advantaged families. The first Head Start program was an eight-week part-day summer program. However, because of enthusiasm for the project it was quickly changed to a year-long program for three and four year olds (Condry, 1983). The health aspects of the program were particularly important as in the United States most health cover is provided by employers and the poor have little or no health cover. Components of the program for parents included information on child development, parenting, nutrition and educational issues. Parents were also encouraged to take part in most Head Start programs and some trained to be aides and workers in the programs.

While there were a number of influences on the initial Head Start program, a specific influence was McVicar Hunt's book *Intelligence and Experience* (1961) (cited in Condry, 1983) which argued from research findings that intelligence was not genetically fixed from birth but was essentially a product of the environment. The author argued that IQ scores could be raised as much as 50 to 70 points by changing the environmental experiences of children. Early childhood was seen as an ideal time for intervention because it was believed that the environment had the greatest effect during periods of rapid growth, such as occurred in early childhood development. It was a period of great excitement about the possibilities and the part that interventions could play in improving the cognitive and social-emotional development and the life chances of children from low income families.

The Head Start program is seen by many as a program that aimed to increase children's IQ; however, it was always much more than that. It took a 'whole child' approach and the interventions included education and encouragement of language skills, self-reliance and self-esteem; a health program to provide medical and dental examinations and immunisation; a program of parental involvement as teacher aides, and support groups for parents on a range of subjects including parenting, English language for those who needed it, a nutrition information program and meals and snacks for children; and referrals that gave families access to social and psychological services (Ochiltree, 1994). Nevertheless, there was a widespread naive belief that children could be 'inoculated' against the negative effects of poverty and minority group situations through a short intervention before starting primary school (Zigler, 1991).

The first evaluations of Head Start in 1969 concentrated only on the intelligence and cognitive gains in children as measured by standardised tests. These evaluations found that, although there were early gains, these faded with time in comparison with control groups over the first three years of school (Condry, 1983). Despite the general disappointment of these findings and the supposed failure of the project, parents expressed strong approval for the programs.

Later evaluations were better designed and examined outcomes associated with the broader aims of Head Start. These evaluations found that the early evaluations of Head Start were premature and that there were longer term more subtle gains for children. Examination of the cognitive and social-emotional development of the children involved continued to show that early cognitive gains were not sustained over time, but that Head Start children were less likely to be in special education classes or retained in grade. In addition, Head Start had helped families by providing health, social and educational services and had linked them into other services in the community.

19.1 Longitudinal Research-Based Enhanced Preschool Studies To Improve Educational Outcomes

The longitudinal research-based early intervention preschool projects in the United States that started at about the same time as the early Head Start programs had similar aims, but were better designed for the collection of data over time. These have shown both short and long term positive effects on the development of children. A later meta-analysis of the pooled data from these studies indicated lasting effects of preschool education, not simply on IQ but on actual school performance and progress; these children were less likely than controls to have been assigned to special education classes or to have failed a grade. There were also positive effects on children's social, motivational and emotional development and behaviour. They also did better in the labour market when they left school.

19.2 The Home Instruction Program for Preschool Children (HIPPY)

This is a franchised program which originates from Israel and operates in a number of countries around the world including Australia and New Zealand. The HIPPY program is designed to provide educational enrichment and promote school readiness in four and five year olds from families where parents have little formal education. The emphasis is on improving learning and, in particular, language and cognitive development. The program builds parents' skills as educators in the home. The materials used in this program are highly structured and the program continues over a two-year time period. Parents meet with the coordinators and tutors as a group every second week. Tutors visit parents in their homes on alternative fortnights and work through the worksheets with them.

Evaluations of HIPPY suggest that there is a high drop-out rate of mothers. In programs in the United States there were four patterns of attrition: in the first month; between the first and second year of the program; others were due to life circumstances of the families involved; and attrition due to turnover of home tutors (Baker, Piotrkowski and Brooks-Gunn, 1999). Half of the mothers in the New Zealand program dropped out (New Zealand Ministry of Health, 1997). Evaluation of the New Zealand program suggests that it is not suitable for use with highly stressed families who need other supports.

Mothers who remained in the New Zealand program felt satisfied with the progress of their children and with the program. Teachers were more circumspect about the progress of children but outcome measures indicated that, compared with a comparison group, the children had improved their language skills and there was a trend to improved reading ability. Evaluations of HIPPY programs at a number of sites in the United States found inconclusive results on a range of standardised tests. This program is being implemented and evaluated by the Brotherhood of St Laurence with disadvantaged families. Although the evaluation is not yet available, it is reported that it is progressing well and that families are finding it useful and satisfying.

19.3 Enhanced Preschool Programs and Cost-Effectiveness

Rutter (1989) argues that the impact of some factors in childhood are not direct and may lead to little immediate change, but to a chain of effect. In this view, Head Start and similar preschool programs may help to keep the door open to a steady progression through school rather than to failure and led to more positive outcomes as children progress into the job market and adulthood. Head Start and related enhanced preschool programs have also been shown to be cost-effective long term.

The Perry Preschool program, which was one of the longitudinal studies discussed above, found that the positive effects of the early intervention through a preschool enrichment program continued into early adulthood.

Children in this program attended half-day programs for either one or two years before they started school and there was one home visit a week. Children in the program were less likely to fail a grade, less likely to be placed in remedial classes, more likely to graduate from high school, less likely to be involved in delinquency or teenage pregnancy, and had improved likelihood of employment and less likelihood of being on welfare (Gramlich, 1986; Barnett, 1993). A cost benefit analysis indicated a seven to one return on the costs of a year of preschool. The cost benefits were found to be greater for the community than for the individuals taking part in the program.

19.4 Parents and Enhanced Preschool Programs

Parents are generally approving of and satisfied with enhanced preschool programs for their children, particularly when they are involved themselves. The evidence indicates that Head Start has also been successful in improving the lives of many parents from low income and minority groups who have been supported through the program. Many of the teaching staff are from low income families. A third of the staff are former program parents and many parents have received training and qualifications through the program and have thus increased their earning capacity (Haskins, 1989; Collins, 1993).

The Australian Mount Druitt project in the mid-1970s provided a year of preschool intervention for children from disadvantage families living in a low income housing area in one of four centre-based programs or a home-based program. It was found that parents approved of the project. The children were followed through to the end of the first year of school. It was found that initial gains in school achievement were no longer in evidence by the end of the first year. However, the parents involved in the home-based program had developed a strong group support network, which organised educational, social and welfare activities, although this was not an aim of the project.

20. Transition To School and Improving Educational Outcomes

An evaluation of a project in the United States that supports Head Start children in the first years of primary school has provided evidence that continuing support through this transition period is effective in improving educational achievement for children from disadvantaged backgrounds.

Because former Head Start children, like other children from poor families, were seen to be at risk of poor school achievement even though they had support in the preschool years, Congress authorised a major program to enhance the transition to primary school. The Public School Transition Demonstration Project commenced in the 1991–92 school year and has

recently been evaluated (Ramey, Ramey, Phillips, Lanzi, Brezausek, Katholi, Snyder and Lawrence, 2000). Thirty-one Transition Demonstration programs were funded in 30 States and the Navajo Nation and 450 public schools were involved. The study used an experimental design with random assignment of schools to the Transition Demonstration Group or the comparison group and 7,515 former Head Start children took part. However, there were also many other non-Head Start children attending the Demonstration schools.

Each Transition Demonstration program implemented major programs involving:

- Parent participation activities.
- Educational enhancement and continuity in children's experiences.
- Family and social support services.
- Health and nutrition support.
- Close collaboration between public schools and Head Start programs.

Each transition program was designed to be responsive to local community needs and evolved over the seven years of implementation. Program implementation data indicated that:

- All sites experienced multiple obstacles and barriers.
- Competent and stable leadership was associated with strong local programs.
- Only about 20 per cent of sites implemented strong programs, and six of the 31 sites were rated as excellent.
- Many features of the programs were valued by schools and families and there were plans to continue these after program funding ended.
- Collectively, the demonstration program schools and Head Start programs and communities affirmed the value of these transition programs in the early years of school.

The evidence at child data level indicates that Head Start children start school ready to learn. Former Head Start children showed good progress in reading and maths skills in the Demonstration program schools and not only maintained gains from their earlier experience but actually accelerated their progress in both areas. Teachers, parents and children reported positive school adjustment in skills areas each year to the end of third grade. Parents valued highly the success of their children in the school setting and the children reported positive early school experiences. The majority of former Head Start children were also rated positively for social skills.

However, at school data level, the Transition Demonstration programs differed in only small ways from those in the comparison group of schools and, although they showed small positive differences in academic and social

skills, the differences were not statistically significant. Reasons suggested for this lack of difference at this level are that: only a fifth of the Transition Demonstration programs were implemented at consistently high levels; the comparison schools often set up additional supports and programs similar to the Transition Demonstration schools; and the children in both the Demonstration school programs and those in the comparison schools benefited greatly from their school experiences.

21. Conclusions Regarding Effective Interventions

The programs included in Section B are examples only of projects and interventions that have improved outcomes for children and families and have enhanced the competence of parents in the early childhood years, from the prenatal period to the early years of primary school. The programs are not an exhaustive listing. Most programs are complex and multi-layered and involve support and intervention with parents and/or children, depending on program objectives. Many are from the United States and so have developed in a different policy context and with very different provision of services to parents and young children. However, the United States has had more money provided for research and experimental intervention programs than Australia and can, therefore, provide more research-based information.

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