D Child welfare and development

Key points

- A child's experiences in their first years can have prolonged impacts for development.
  - The continuous interactions provided by primary caregivers are especially important, affecting an infant's ability to 'self regulate' their emotions and 'attend' to the world.
  - But, while learning may become more difficult with age, the brain's ability to learn from new experiences is retained into adulthood for most competencies.
- The evidence on the impacts of non-exclusive parental care on child development is mixed. On balance, however, the evidence is most compelling that exclusive parental care for around six months fosters improved development outcomes. And, there is a reasonable prospect that up to 12 months could be beneficial (particularly if the counterfactual is lower-quality care for extended hours).
  - Although, the few studies looking at policies that increase exclusive parental care beyond 6 months fail to find noticeable improvement in child development outcomes.
- Beyond 12 months, the evidence suggests that many of the risks of non-exclusive parental care become progressively less evident as the age of the child increases (although this is dependent on the quality of, and hours spent in child care and the extent to which parents continue to play an active role in caring for the child).
  - Cognitive gains from high quality child care kick-in around this time, and while some studies find evidence of behavioural problems, these are usually small and short-lived.
- These are 'average' effects across whole populations of families, and outcomes for specific families can be very different.
- Around two-thirds of Australian children are cared for exclusively by their parents in the first year of life. And, for those in non-exclusive parental care (typically to facilitate the mother's employment):
  - It is usually a part-time, informal arrangement (in most cases care by a grandparent).
  - The reduction in hours of parental care is typically not equivalent to the number of hours the mother is in paid work.
- While the quality of child care in Australia appears reasonable compared to some other countries, anecdotal evidence provided to this inquiry suggests that it is of insufficient quality to substitute for parental care of infants under 12 months. The evidence finds that specialised training and stability of carers are particularly important.
- Government programs supporting parents with children under two years are more fragmented and poorly resourced than those for older children. The Commission is uncertain of the desirability of additional support but considers that efforts to better integrate services for parents of young children should be continued.

D.1 Introduction

This appendix looks at the evidence on factors affecting child development in the early years of life. It focuses on the extent to which a mother's return to paid employment, and the use of early child care and education, is associated with health (breastfeeding aside), cognitive and behavioural outcomes for children.

Informed by an expanding knowledge about the biological underpinnings of human development, neuroscientists and developmental psychologists broadly agree about the importance of a child's early years, with experiences during this time thought to affect future learning, educational attainment and job prospects, and the building of strong relationships throughout life. But, how different experiences in the first months and years of life might be expected to influence a child's development in practice remains an empirical question. This is because outcomes for child health and wellbeing are heavily dependent on the context in which a mother makes a return to paid work (and uses child care arrangements).

The quantitative study of early child development is a complex area that is hamstrung by data and methodological issues. As most studies rely on observational data, selection bias problems feature widely (which arise because unobserved factors, which are associated with decisions about parenting, child care and employment, may also have a bearing on child development outcomes). And, while studies usually attempt to control for biases — for example, by using family and child characteristics — the extent to which such variables are included varies significantly (with many not including them). This can limit the meaningfulness of results, since either strong assumptions are necessary in the modelling or only correlations are able to be reported.[1]

While these limitations make it difficult to arrive at firm conclusions, broad trends and directions can be identified from the evidence. That said, while particular types of care might be good for some, or good on average, this does not mean that it will be good for all. It is important to be mindful of the effects for particular groups and individuals.

D.2 The science of early child development

The science of early child development supports the view that both a child's genetics and experiences shapes their brain development. With sophisticated new

[1] A very limited number of studies use data or modelling techniques that enable causality to be established — including, for example, the recent study by Dustmann and Schönberg (2008) employs an extensive data set consisting of broad ranging variables observed both before and after a policy change in paid leave duration.

technologies and focussed research on brain chemistry, much has been learned over the last few decades about the mechanisms through which the capabilities of a young child's brain expands, including the extent to which different types of experiences count towards a child's cumulative development over time (Mustard 2006).

The biology of human brain formation and its bearing on child development

The human brain is made up of billions of neurons that are connected via synapses to create neural pathways that communicate with each other to perform a specific range of functions including, for example, vision, hearing, language and behaviour. The early childhood period is a time of rapid brain development in terms of synapse formation and also when neural pathways (and the expression of genes) are particularly sensitive to the dose and range of experiences provided by a child's environment. This makes early childhood a period of simultaneous opportunity for enrichment and vulnerability to harm.

The richness and appropriateness of experiences that children are exposed to during 'sensitive periods' for brain development (figure D.1) affect the strength of the connections (synapses) formed in neural pathways and, in turn, lock–in the way that the body responds to various intellectual, emotional, psychological and physical stimuli. As the stabilisation, or locking-in, of brain functions is occurring at a faster rate than any other phase of development, synapse development in this stage can have more enduring effects (either positive or negative) than any other developmental period.

Also, the early childhood period is important because each stage of neural pathway development rests on another, so that the complexity of brain circuitry, and in turn, its ability to perform a range of complex functions — such as movement, coping, language, cognition and biological processes — build over time. Because of this hierarchy, if lower level circuits are not wired correctly, the development of higher level circuits may be jeopardised. Research is finding that making corrections at this later stage is often more difficult:

> Getting things right the first time is more efficient and ultimately more effective than trying to fix them later (National Scientific Council on the Developing Child 2007, p. 12).

However, there is also the countervailing effect of 'brain plasticity' to consider — the ability of the brain to change with learning. The ongoing interactions between a child's genetics and new experiences means that neural pathways are likely to be either maintained, strengthened or pruned over time, so that the presence or absence of experiences will either enhance or diminish inborn potential. But, if a child is not exposed to certain 'brain building' experiences during particular developmental phases, there appears to still be scope to intervene to restore a normal brain architecture and mitigate any detrimental effects on future learning (box D.1).

Box D.1 **Clarifying the science**

Redefining critical periods in child development

A 'critical period' in child development is uniquely important for development, such that an experience *must* be had within that time frame for development not to be permanently altered (Waldfogel 2006). This is consistent with a model of development characterised by fixed developmental phases and necessary experiences. But, for human brain development the term has the potential to be misleading since time limited windows of opportunity are exceptional rather than typical, and the brain's capacity for thinking, feeling and adapting is life long (Thompson 2004; *From Neurons to Neighbourhoods 2000*, p. 183). While a 'critical period' may hold meaning in some developmental contexts[2] or as applied to basic processes in animals, for human development and higher-level functions the concept is likely to be less informative (*From Neurons to Neighbourhoods 2000*; Bailey 2002 et al.).

Since finding that some processes formerly believed irreversible (following the stabilisation or locking-in of neural pathways) may not be so entrenched (Bailey et al. 2002; Thompson 2001), the more flexible development model of 'sensitive periods' is now used more widely (see Thomas and Johnson 2008). Nevertheless, while a model of 'sensitive periods' in human development incorporates brain plasticity (the ability of the brain to change with learning), it still recognises that learning new things does become more difficult with age.

Some unfounded assertions in the name of science

The science of early child development is an evolving field of research, characterised by much uncertainty that can sometimes lead to misleading messages entering the public domain. According to the National Scientific Council on the Developing Child:

- There is no definitive scientific evidence that the influence of relationships is more important at one stage of a child's life compared to another.
- There is no credible scientific evidence to support the claim that multiple close relationships with different caregivers (within or outside of the family), especially early in a child's life, interfere with the strength of the young child's primary relationship with his or her parents.
- Although the importance of sustained, reliable relationships within the family is well understood, the need for stable and predictable relationships in child care settings is acknowledged less frequently, and the disruptive impacts of the abrupt changes related to high caregiver turnover are too often disregarded. (NSCDC Working paper 1 2004, p. 4).

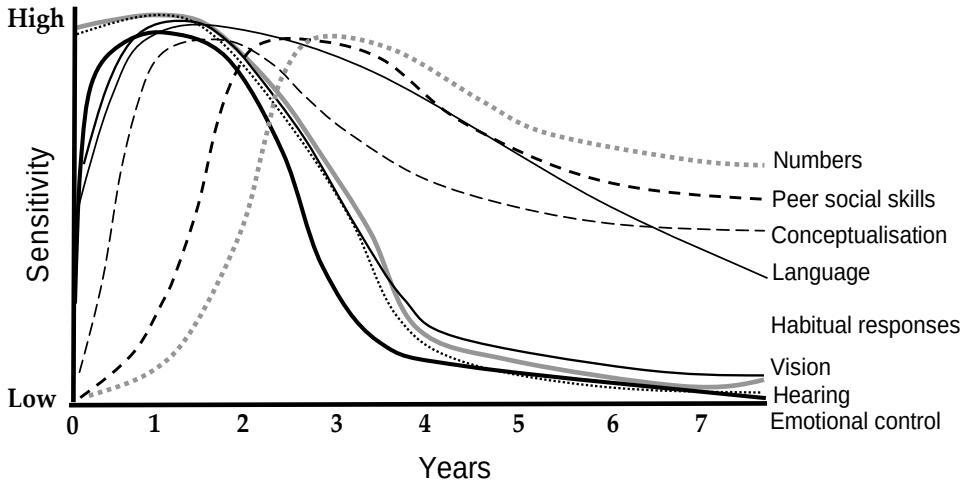
That said, while brain plasticity is retained into adulthood, not all parts of the brain are equally plastic. Some neural pathways that are highly plastic around birth remain so only for a short window of time. But, debate still surrounds which neural pathways and brain functions are characterised by this higher sensitivity to the timing and dosage of experiences. Recent studies have found that some brain formation processes that were

[2] The brain pathway that conveys visual signals from the retina to the visual cortex is often cited as a developmental function requiring critical experiences for normal development. Other critical periods exist for sound and touch (Tessier et al. 1998; Klinke 1999).

previously thought to be locked-in or irreversible after some point in time, may not be so fixed, and there remains the possibility that brain development continues into maturity in yet unknown ways (Bailey 2002; Thompson 2001; box D.1).

In addition, much of what is known about the impact of early experiences on brain architecture comes from experiments on animals (which raises issues about transferability to humans) or human studies of deprivation (the impacts of deprivation do not necessarily mean that enrichment results in measurable benefits). And, even when clear relationships between the nature of early child experiences and developmental outcomes are agreed, the context is often extreme and usually not applicable to the mostly small differences in experiences observed between children in practice.

Figure D.1 **Sensitive periods in early brain development**



Data source: McCain and Mustard (1999); Shonkoff (2000).

The role of caregivers in providing brain building experiences

Current scientific thinking[3] on optimal early childhood experiences focuses on the quality of interactions between an infant and their caregiver(s), and how this provides sensory stimulation affecting early brain development and later mental and physical health. An emphasis is placed on the reciprocal nature of continuous interactions between a caregiver and child, based on shared gaze, vocalisations, touch and smell, so that:

> …both members of the dyad enter into a symbiotic state of heightened arousal. (McCain, Mustard and Shanker, 2007, p. 27)

[3] by developmental psychologists, developmental neuroscientists and behavioural scientists.

The nature of the relationship between young children and their parents (or other primary care givers) is dynamic, and often described as a 'serve and return' process — infants seek out interaction through babbling, facial expressions, words, gestures, and cries to which the adult responds, and the process continues back and forth. These interactions (actions and reactions) are considered most fruitful when they are mutually rewarding to child and adult, and are:

> … embedded in an ongoing relationship between a child and an adult who is responsive to the child's unique individuality (National Scientific Council on the Developing Child 2007, p. 6).

It is via these endless interactions between a child and caregiver that a child's 'self regulatory' system[4] becomes fully functional They are also considered important for the caregiver as their 'mindreading' abilities can 'only be attained through countless caregiver-child interactions that nature designed us to experience in the first year of a baby's life' (Greenspan and Shanker 2004; sub. 234, p. 7).

Of course, experiences can also be negative, including exposure to maternal depression, family violence and poverty, which can affect brain structure and have future implications for the building of relationships and wellbeing more generally. Outcomes that are often attributed later in life to adverse early childhood experiences include, but are not limited to, depression, anxiety, post traumatic stress, aggression, hyperactivity and substance abuse (Teicher 2003).

Some particular combinations of early childhood experiences and genetic vulnerabilities are believed to produce many of the behavioural problems commonly diagnosed in children, such as Attention Deficit Hyperactivity Disorders and autism. The environmental trigger to these problems is not always well understood but, among other things, may include pregnancy and delivery complications or a dysfunctional family environment. Recent studies into autism suggest that it may result from an impaired ability of the brain to process sensory stimulation, ultimately limiting an infant's ability to engage in reciprocal relationships necessary for the development of higher-level neural networks. It is important to note, however, that no link has been established between different types and qualities of early childhood care and the incidence of these types of conditions in young children.

With the expansion in knowledge of how early childhood experiences affect the development of children, developmental psychology and neuroscience have sought to identify ways that positive experiences can be supported. The term 'positive care giving' — care that is sensitive and responsive — is often used to describe

[4] Self regulation refers to the set of abilities that enables a child to control their emotions and behaviour, interact positively with others, and engage in independent learning.

characteristics of care that are thought to provide the building blocks for positive relationships and learning:

- sensitivity is about the appropriateness of the care to the individual child's needs
- responsiveness indicates that the care adapts to changes in the child's needs and status over time.

Characteristics of positive care giving are usually assessed through direct observation of carer behaviour and their interactions with the child. Features of the physical setting can also be assessed (the presence of age-appropriate equipment, books and other stimuli). Other characteristics of child care generally associated with desirable outcomes include care that is individualised, age-appropriate, less-authoritarian, applies consistent disciplinary skills and is routine (Vandell 1996).

D.3 What do the econometric studies tell us?

Econometric analysis provides a useful tool to disentangle the effects of a range of factors potentially impacting on a child's development, including the particular effect of maternal employment and the associated use of child care arrangements. Such analysis enables researchers to discern what is happening empirically on average, but in drawing conclusions it pays to remain mindful that:

> …what is best for one child or the average child may not be best for another child or for all children (Waldfogel 2006).

Long standing policy interest means that there are a large number of studies in the field, but it is a complex area of research, hamstrung by methodological and data limitations that make drawing solid conclusions problematic. There is also some disagreement within the literature, with the direction of effects from maternal employment or child care often not well established and the timing and dosage of 'treatments' yet to be discerned with much reliability. The diverse results are likely to reflect:

- how well selection bias problems (which result from the presence of unobserved factors associated with maternal employment and child care decisions that also account for child development outcomes) are addressed. Those studies that attempt to control for these unobserved factors generally use:
  - background variables in their models to approximate unobserved factors
  - propensity matching techniques (to restrict comparisons to individuals with closely matched characteristics — see, for example, Berger et al. 2005)
  - instrumental variable approaches or other more sophisticated modelling techniques

- the size of the sample and particular groups being analysed
- how well contextual differences are accounted for.

A meta-analysis of 32 studies[5] (Bernal and Keane 2006) found that results often varied depending upon contextual differences, such as the group studied, the timing of maternal employment and the child's age at initiation of child care. Roughly one-third of the studies reviewed reported mostly positive effects from a mother's employment and child care on cognitive development, one-third reported negative effects, and the remaining one-third found varying or insignificant results.

Consequently, the evidence is by no means clear about the effects on child welfare from a mother's employment and associated use of child care. To better distil the impacts, studies need to distinguish more clearly how measures of child development are affected by changes in:

- the timing of a mother's return to employment (and age of entry into child care)
- the quality of a mother's maternal care (and the quality of the child care setting)
- the number of hours that a mother spends caring for her child (and the hours of child care used).

While some studies are able to analyse child development outcomes with attention to many of these characteristics, data limitations mean that it is rare for the full suite of influences simultaneously affecting child development to be included in the modelling.

A snapshot of the evidence

Most of the more recent evidence tends to support the view that the use of *non*-parental care/child care (usually necessitated by maternal employment) when initiated within the first year of a child's life can contribute to behavioural problems and, in some contexts, delayed cognitive development (Han et al. 2001; Hill et al. 2001; Waldfogel et al. 2002; Brooks-Gunn et al. 2002; Baker et al. 2005). Evidence of problems is generally stronger when child care is initiated very early (3 to 4 months or less), when maternal employment is full-time and when the child care arrangement is for long hours and of low quality.

The evidence is mixed however, with some studies not finding maternal employment or child care to be detrimental for various measures of child development across a range of ages, including within the first year of a child's life.

[5] Including 16 studies looking at the effects of maternal employment on cognitive ability using US data; and another 16 studies looking at the effects of child care on children's cognitive ability.

But, the emergence of positive effects (mostly cognitive) from early child care experiences tend to be confined to situations where:

- child care is initiated at least after six months of age (NICHD 2000)
- maternal interactions remain sensitive and responsive (NICHD 2006)
- maternal employment is not full-time (Berger et al. 2005; Gregg et al. 2003).

For children aged one year or older, the empirical work focussing on the effects of maternal employment and child care is more divided about the magnitude, or even direction, of the effects on child wellbeing. Studies do tend to find, however, that many of the potential risks associated with the use of child care for younger children are less evident as the age of the child increases, especially if the care is of high quality:

> …cumulative experience in high-quality, centre-based care starting in the second year of a child's life may be particularly beneficial for cognitive development (From Neurons to Neighbourhoods, p. 312).

What is less concrete from the existing body of evidence is the point in time that these benefits start to kick in. For example:

- maternal employment when children are one to four years old has been associated with small positive outcomes, particularly in reducing anxiety levels in children (Joshi and Verropoulou 2000)
- full-time maternal employment when a child is less than 18 months old has been found to have negative effects on cognitive and behavioural measures of child development, but where employment was part-time or initiated after 18 months, no detrimental impacts were evident (Gregg and Washbrook 2003).

Effects are usually small and other factors are stronger predictors

Even though some studies find evidence of detrimental impacts from a mother's employment and the use of child care, the size of the impact is typically small on average, and often not statistically significant. Variance in child wellbeing is generally more strongly predicted by a range of family characteristics including, for example, household income, maternal education and psychological adjustment, parenting quality and child rearing attitudes (NICHD 2006; Belsky et al. 2007).

But, it is important not to downplay the significance of small negative effects that can have broad scale consequences when experienced by large numbers across the population. In addition, a small *average* negative effect will disguise variations in the effect across different sub-groups. For instance, children facing disadvantage or at risk of less sensitive and responsive care in their home setting may benefit

significantly from early exposure to high quality child care and the extra income generated by their parents employment.[6]

A small negative effect may be particularly significant if it is enduring over time. But, research on the persistence of outcomes over time struggles to ascertain whether differences in developmental outcomes are directly the result of differences in early childhood experiences, or from other factors that are difficult to adequately control for in the modelling.

Consistent with the importance of the family environment and its influence on an infant's child care experiences, co-variation between indicators of parenting quality and that of the child care environment is also observed (NICHD 1997a). This means that a child having a sensitive and stimulating home environment will often be more likely to be placed in a child care arrangement also having those same characteristics. In particular, the influence of family cash resources has been stressed by a number of studies as important for successful cognitive development (discussed below).

Effects on cognitive development

Cognitive development is usually assessed according to IQ as well as levels of general development and the achievement of specific learning and communication skills. Many cognitive skills do not start to develop until around 9 months of age, and these predominately build from the amount of language stimulation.

If maternal employment is full-time in the first year of life, studies generally find negative impacts of child care use on cognitive development. But, there are a number of countervailing influences that mean a child will not inevitably be harmed by entering child care early, this is especially if the care is of high quality and the experiences provided stimulating. Also, maternal education remains a strong predictor of a child's cognitive development, with higher educational attainment tending to offset any negative effects of lower quality care.

For children over 12 months of age, the studies suggest that, on average, cognitive development would not be impeded from child care use; with an increasing potential for positive effects as children get older. The benefits are thought to mainly derive from the amount of language stimulation that a qualified child care teacher provides, which requires particular knowledge and experience of ways of teaching and interacting with young children to foster early language and cognitive skills. Reflecting these carer

[6] Income from maternal paid work, especially the move from low to moderate income, has been shown to have a positive effect on an infant's wellbeing (Brooks-Gunn and Duncan 1997, Mayer 2002). The children of the least educated mothers appear overall not to be disadvantaged when their mothers work, leaving the negative effects concentrated amongst the children of more educated mothers.

characteristics, the type of child care does matter, with mostly positive cognitive effects attached to centre-based child care (NICHD 2000), particularly those having more qualified carers and an emphasis on providing a rich learning environment.

Whether cognitive effects from exposure to early maternal employment are sustained or wear off over time has not been extensively researched, but there is some evidence pointing to their persistence over time. For example, some positive effects of maternal employment were found in the UK for maths and reading performance at age ten; and employment status at age 26 (Joshi and Verropoulou 2000). But studies vary, with a US study by Haveman and Wolfe (1995) concluding that early maternal employment does not have a substantive long-term influence on a child's development, although the authors do identify the benefits of a positive role model and additional income.

Even still, the findings of studies about the persistence of developmental impacts over time remain of limited use because they do not inform at what time the initiation of maternal employment matters for future development, or what characteristics of child care arrangements are associated with better or worse outcomes in later years.

Effects on social and emotional development

While some studies report a relationship between behavioural problems and child care use, the effects are often intermittent over time, emerging and withdrawing within different developmental periods, so that any link is difficult to discern with much confidence. Also, behavioural effects are usually only very small and not diagnosed at clinical levels.

Compounding uncertainty in the empirical results are problems of defining what constitutes good and bad behaviour — gastroenteritis is unequivocally bad, but is shyness? In addition, behavioural variation in children tends to reflect individual characteristics of children more so than maternal employment and child care use, and disentangling these influences can be problematic.

Consequently, assessments of child behaviour rely heavily on value judgements about the criteria used to identify problem behaviour, which is further biased by who reports it. For example, it is generally found that child care workers who observe children in group settings are more likely to report problems than parents. The size of the child care group and instability within the group and among carers is also thought to be related to the development of externalising behaviours in children (Waldfogel 2006). In particular, behavioural problems (often measured by the Behavioural Problems Index) tend to be revealed through a heightened display of aggression and impulsiveness.

Lower child care group numbers and lower child-adult ratios are sometimes associated with fewer behavioural problems and, in turn, are associated with better quality experiences provided in the child care setting. This may be because a child has to compete less for attention and the particular behaviour of a child may be responded to more readily. Nevertheless, if behavioural problems do emerge, many studies find that the effects are short lived and generally not evident around the time of school entry (Han, Waldfogel and Brooks-Gunn 2002; Ruhm 2003).

An Australian study by Harrison (2008) found that for children aged two and three, child care had overall positive effects (albeit that the effects were small and explained less than 0.5 per cent of the variance) on social and emotional wellbeing. Importantly, this study controls for the effects of care quality and found similar results to a number of international studies that attribute higher quality care to more positive socio-emotional outcomes (Love et al. 2003; NICHD ECCRN et al. 2003; Peisner-Feinberg et al. 2001 and Sylva et al. 2003). Harrison's modelling, however,

- relies on self reported data, rather than external measures of care quality
- does not include background controls for family and child characteristics.

Studies that control for family influences generally find a positive association between higher quality child care arrangements and a child's superior:

- ability to self-regulate
- social skills, levels of co-operation and attachment to adults

But the age of entry and intensity of child care use seems to matter. Studies generally conclude that the use of centre-based care (other care settings tend not to show any significant interaction) at less than two years of age will have negative behavioural effects compared to children in exclusive parental care (Loeb et al. 2007). And if centre based care is initiated before one year of age (Loeb et al. 2007), or for extensive hours each day (Belsky 2006), negative behavioural effects are even more pronounced. In addition, children rated as having more difficult temperaments at six months of age tend to be more affected by the subsequent initiation of maternal employment and child care.

Independent of the quality of child care, assessments of a child's ability to form secure attachments are not generally found to be affected by child care use.[7] There is some evidence from the NICHD network to suggest, however, that some children (especially boys) may be slightly more vulnerable to less secure attachments in some low quality child care settings or if maternal care is not sensitive and responsive (NICHD 1997b).

[7] But, research is not clear that a secure attachment in life will guarantee healthy psychological outcomes any more than an insecure attachment will ensure later difficulty (Thompson 2001. p. 26).

Effects on child health

The impacts of maternal employment and child care on child health are often linked to:

- visits to health care professionals, routine immunisations and other health checks
- the monitoring of child health by parents
- breastfeeding (initiation and duration).

On balance, the evidence finds that longer periods of maternal (or parental) leave are associated with better health outcomes. The strongest evidence of this is reflected by lower rates of infant mortality, as borne out by cross-country comparisons of parental leave schemes. For example, a study by Ruhm (2000) using aggregate data from 16 European countries between 1969 and 1994 found that more paid parental leave has the effect of reducing deaths in infants and young children and that the estimated effects are substantial (especially where a causal effect of leave is most plausible).

Ruhm found that a 10 week increase in paid maternity leave could reduce infant mortality rates by between 2.5 per cent and 3.4 per cent. Ruhm suggested that one reason for the association between longer leave periods and lower infant mortality was an increase in periods of breastfeeding and additional time afforded by leave for parents to care for their infants. Ruhm concluded that 'parental leave may be a cost-effective method of bettering child health' and that parental time is 'an important input into the well-being of children' (p. 933). Ruhm's study, however, did not control for other social policies, such as support for public health programs, that may have accounted for some (or all) of the effects.

A study by Tanaka (2005) that extends Ruhm's work also find longer periods of paid leave are correlated with reduced infant mortality. Tanaka also finds that while paid leave significantly decreases infant mortality, unpaid leave has no significant effect.

Nevertheless, while the literature has consistently drawn a linkage between the length of leave taken surrounding birth and better health outcomes, the timing of these effects and underlying source of benefits is unclear. Increasingly as scientific knowledge builds, however, breastfeeding is thought to be an important associated factor with enduring effects (appendix H). Other factors, but typically of a more transitory nature, include a heightened risk of illness or infection from child care (especially when children's immune systems are less developed).

Berger, Hill and Waldfogel (2005), looking at the relationship between maternity leave and child health outcomes found that a new mother's return to work in the first six weeks was significantly associated with negative child health outcomes. Effects observed

included being less likely for children to have regular medical check-ups in the first year of life, less likely to receive timely vaccinations and less likely to be breast-fed.

Child care and infectious diseases

Parental leave may result in less exposure to infectious disease. There is some evidence to suggest that children in child care are more likely to get ear infections and upper respiratory infections than children cared for in their own homes (NICHD 2006; Warren, Levy; Kirchner; Nowak and Bergus 2001). Infants tend to be highly susceptible to infectious diseases, having less developed immune systems, and child care centres catering for large numbers of children create a higher risk of transmission (Galtry 2002, Osterholm 1994).

The impact of child care quality on development

Research studies generally find that positive impacts on child development are more likely to result from child care that is high quality (see, for example, Duncan-NICHD 2003; Peisner-Feinberg et al., 2001; Belsky et al. 2007). Similarly, studies that effectively control for the quality of child care in their modelling often find that developmental outcomes for children in child care do not systematically differ from children in exclusive maternal care (NICHD 2000).

But, the positive effects of child care quality are mostly confined to cognitive development rather than behavioural outcomes. For example:

- Gregg and Washbrook (2003), found that the use of centre based care can enhance cognitive development in some cases beyond exclusive care at home by a parent.
- Belsky et al. (2007), found that higher quality centre based care was associated with higher vocabulary scores but more teacher-reported behaviour problems.

But, studies often find both cognitive and behavioural gains from high quality child care for infants in a home environment that places them at risk, with high quality child care serving a compensatory function for less sensitive and stimulating interactions provided at home.

Determinants of child care quality

Key drivers of child care quality are those affecting the ability to provide sensitive and responsive care (individualised care that is adapted over time to the child's changing needs), and will usually be divided into 'structural' and 'process' factors:

- Structural features of child care generally include child-adult ratios, group sizes, staff qualifications and health and safety characteristics.

- Process features of child care are usually informed by direct observation of the child care setting, with particular attention paid to child's interactions with care givers, other children and the activities and materials provided.

Structural features of child care are found to predict process features, which by influencing the daily experiences of the child, impact on child behaviour and development.

The weight of research evidence corroborates that child-adult ratios are significantly associated with the quality of the care provided. Rarely, however, is causality established, so it is not possible to specify exactly how a greater number of carers per child might drive better outcomes for child development, other than improving the probability of more interactions between carers and children. While there is some evidence that the child-adult ratio is a stronger predictor of outcomes for infants than toddlers and older aged children, most studies examine the effect of ratios for children aged 3-5 years and older (Cleveland et al, 2007; de Schipper et al. 2006).

Reducing the ratio of children to adults is usually found to have a non-linear effect on the quality of care and child outcomes, with the most significant improvements observed when moving from a ratio that provides inadequate care for a substantial number of children, to a ratio supporting adequate care (de Schipper et al. 2006). Reductions below 1 adult per 3 children are less frequently associated with any significant increase in the quality of care to foster improved developmental outcomes.

While varying from state-to-state, a ratio of one carer for every four or five infants is typically observed in Australia (box D.2). But, when describing characteristics of high quality care, the Australian Association for Infant Mental Health said:

> …care must be consistent, responsive, nurturing and predictable which means that carers need to have time to be responsive (a child ratio of even 1:3 would make this difficult…) (sub. 25, p. 4).

Similarly, the Australian Family Association discussed what are, in their opinion, some child care deficiencies:

> Child care has not been shown to be a perfectly satisfactory and equivalent substitute to mother care or other care by significant loving attachment figures in a child's life…If we recognise the seriousness of infant needs to be cared for in the context of an attachment relationship, then it becomes imperative that child care be of very high quality providing a care ratio of at the most 1:3 and preferably 1:1 for infants. (sub. 205, p. 24).

Studies consistently find that stability in care providers is strongly related to child outcomes (Loeb, Fuller et al. 2004; Huntsman 2008), mainly because care that is responsive to changes in each child's developmental status is difficult to deliver if caregivers are not sufficiently familiar with the infant's individual needs and signals.

Box D.2 **The quality of child care services in Australia**

Measures guiding the quality of regulated child care services in Australia include state-based licensing regimes, with associated performance monitoring and inspections; and a national quality assurance system that links funding to outcomes (via parents eligibility for the Child Care Benefit). Licensing of providers is the responsibility of State and Territory governments, with minimum regulatory requirements set for safety, staff qualifications, child/staff ratios, and child health and development. However, despite having jointly developed national standards (agreed to be fully implemented by 2000), the way that licenses are implemented and monitored, and the quality of child care that ensues, varies across jurisdictions. For example:

- In some states, long day care centres require a child to carer ratio of 4:1 for 0-2 year olds (including Western Australia; Queensland; and, most recently, New South Wales); all other jurisdictions require a ratio of 5:1. Similarly, some jurisdictions specify a maximum group size (often around 8 for under 2s), while others do not.
- Inspections by authorities are usually announced in all jurisdictions except Victoria (where around 94 per cent are impromptu) and Queensland.
- Based on the Infant Toddler Environment Rating Scale (ITERS: a global rating of quality), the Australian mean score is 5-6 (good or better), but scores also drop as low as 3.3 (minimally adequate).[8] .

Although consistent data is not often available across jurisdictions, indicators of child care service quality as used in the Report on Government Services (PC 2008, p. 3.27) include:

- The proportion of qualified staff:
  - roughly 70 per cent of primary contact staff in Australia have formal qualifications[9] or at least 3 years of relevant experience. But if referring only to staff with formal qualifications, the proportion (53 per cent) is low by OECD standards (OECD, Starting Strong II 2006, p. 270).
- The rate of ongoing staff development:
  - more than 60 per cent of staff in Australian Government approved child care services undertook relevant in-service training in 2006.
- The proportion of services achieving quality accreditation:
  - nationally, over 92 per cent of centres that were fully assessed up to June 2007 were successful at gaining accreditation.
- Performance against the National Child Care Accreditation Council's 10 quality areas and 35 principles:
  - nationally, over 86 per cent of long day care centres were rated as satisfactory or better in 2006-07 according to the NCAC's criterion for 'health, nutrition and wellbeing'

8 Nevertheless, US ratings for infant-toddler care are significantly lower than Australia, at 3.2 to 3.9 on average (Harrison 2008).

9 It is estimated that it costs up to $10 000 to train a qualified staff member but reportedly 1 in 5 leave each year (SMH, 2 September 2008).

In addition, some argue that instability in child care providers (particularly in formal care settings with annual rates of turnover around 30 to 50 per cent (Fenech, Sumsion and Goodfellow, 2006)) does not support a child's attachment security and ability to build future relationships. Similarly, adult-child ratios that are too high might also reduce a child's ability to make secure attachments. For example, Sagi, Koren-Karie, Gini et al. (2002) found a greater likelihood of an infant's secure attachment to their mother from an adult-child ratio of 1:3 versus larger ratios.

Caregiver education and training is generally found to be a better predictor of care quality than child-adult ratios (Burchinal, Howes and Kontos 2002). In particular, higher levels of specialised training appears to be the most important contributor for infant children (Howes, Whitebook and Phillips 1992), but the statistical significance of formal teacher education has been questioned by recent studies that find no impacts on pre-reading or maths skills for pre-kindergarteners (Early et al. 2006).

The countervailing effect of income

Studies generally find that a mother's income can offset what may otherwise be a negative effect on child welfare from a mother's early return to employment (see for example, Baum 2003; Gregg and Washbrook 2003). Some studies, including the NICHD Study of Early Child Care and Youth Development (2006), also conclude that family characteristics, such as household economic positions, are often a better predictor of child development outcomes than characteristics of child care.

An important factor associated with the positive contribution that a mother's income makes for child development is the ability to purchase more time saving conveniences, which relieve household responsibilities and enable more time for active parenting. Guryan et al. (2008) find that as parental income and education rises the amount of time allocated to home production (basic household duties) falls and time spent in active parenting increases.

How either higher education or income might enable more time for parenting, or increase the effectiveness of that time for enriching child development, is not always clear. Indeed, the effects of income can easily be confused with the effect of education, and visa versa. Nevertheless, studies that control for maternal education continue to observe mostly positive effects from higher maternal income.

Maternal income also affects the propensity to return to employment after birth, since it reflects the opportunity cost of choosing to remain at home as a primary carer. And while a mother having a higher income will usually be associated with a higher likelihood of making an early return to employment, other sources of

household income may counter this. In addition, a range of other factors will also influence a mother's return to employment including, for example, maternal education — Guryan et al. (2008) finds that more highly educated parents often view their time spent parenting as an investment in which it is important to devote their active attention.

Nevertheless, even though a parent may have a clear preference to stay at home as the exclusive carer of their child, it is still necessary to be mindful of their finances, at least, to avoid worsening their financial situation to the point of financial hardship and poverty. The Commission's proposal for a statutory paid parental scheme will have an incidental impact of relieving the potential for such hardship in the post-natal period — albeit that key objectives of the proposed scheme are to encourage greater parental time at home and stimulate lifetime employment. That said, because there is strong evidence about the detrimental effects of insufficient income or poverty for child health and development, the fact that the scheme helps to alleviate financial hardship is significantly beneficial.

Specific benefits of reduced financial hardship are said to accrue from reduced rates of mortality; lower risk of injuries resulting from accidents or physical abuse/neglect; less respiratory infections and incidence of asthma; less gastro-intestinal problems; better general health and fewer nutritional deficiencies; and improved scores on a range of developmental tests (see for example, Aber et al. 1997; Goodwin 2007).

While the evidence on the effects of very low income is consistent across studies, causality is generally not well established, with only more recent studies specifically addressing the issue (though not in a manner consistent enough for a meta-analysis). Nevertheless, after controlling for other predictors of income poverty, including mediating factors such as education and family structure, income poverty is still found to independently affect child welfare.

The impact of increasing maternal care through longer leave duration

Very few studies analyse the effect of delaying a mother's return to employment (and increasing the period of focussed maternal care) by expanding paid maternity leave duration. Nevertheless, of those studies that have analysed this effect, no noticeable improvement in child development outcomes is generally found.

Baker and Milligan (2008c) looked at the effects of Canada's change in paid maternity leave from six to twelve months. Despite a considerable increase in maternal care (an

extra 3 months on average, or an increase of 50 per cent), no significant developmental benefits emerged, at least as manifested in children by the age of two.[10]

Analysing the longer-run effects (in terms of education and labour market outcomes) of expansions in maternity leave coverage in Germany, Dustmann and Schönberg (2008) found no evidence that any of the policy reforms (1979, 1986 and 1992) improved children's long-term outcomes. In particular, they looked at the effect of policies increasing paid maternity leave duration from two to six months and six to ten months. This is a significant finding, both because a specific objective of each change in leave policy was to improve child welfare, and also because Dustmann and Schönberg used a large data set and are able to imply causality from their results (since observations are recorded pre- and post policy changes).

While it may simply be that many of the benefits arising from expansions in paid parental leave do not feature in the aggregated statistics, based on the small sample of studies available, it does seem prudent to avoid placing too much emphasis on longer periods of parental care as being particularly beneficial for child development.

D.4 Parenting support services

While the quality of child care in an institutional setting is heavily monitored (and the subject of ongoing reform in Australia) to promote positive child outcomes, governments have directed relatively less attention to educating and supporting parents to raise their children, especially infant children under 2 years. This is despite the evidence on the importance of positive interactions between infants and parents, which can have a pronounced influence on the way that children grow and learn:

> Parenting behaviour has an effect on children's behaviour into adulthood and many children learn, develop and establish problem behaviours because parents lack, or inconsistently use, key parenting skills. It is therefore important to provide support for parents and opportunities for them to develop their parenting skills. This needs to be done using evidence based programs that are effective in promoting positive interactions between parents and their children. (Hutchings, Bywater and Davies, 2007)

In the same way that it is accepted that poor nutrition stunts an infant's physical growth, it is believed that parenting behaviour can contribute to the establishment of early onset behavioural difficulties (Hutchings, et al. 2007). Higher rates of problem behaviours in young children are generally connected to:

- a lack of a warm, positive relationship with parents and insecure attachment

[10] The study relied on parent reported data obtained through interviews (which may result in some systematic biases) although the authors did not view this as a significant problem.

- harsh, inflexible, rigid, or inconsistent discipline
- single parent families, parental substance abuse, frequent changes to parental figures, marital problems, poor parenting skills and parental psychological adjustment (especially maternal depression) (Sanders 2003).

There is also some evidence that poor parenting and family conflict are powerful early predictors of behavioural disorders at older ages, including drug abuse, delinquency and academic under achievement (Sanders 2003) and that supportive family relationships and positive parenting can protect against future behavioural problems (Collins et al. 2000). [11]

A statutory paid parental leave scheme will increase the duration of exclusive parental care following birth, and this offers an opportunity to give earlier and more focussed attention to how parents can enhance their confidence and competence in raising young children, and in turn, positively influence their child's development. Recognising this, participants to this inquiry called for further support for parenting:

> Paid parental leave and Parent and Child Centres are two sides to the one coin. The leave gives the parents, especially the primary care-giver, likely the mother, the time to engage with the baby in the endless interactions that facilitate new neutral pathways in the brain that will build the baby's attachment to the mother, and shape the baby's emotional and intellectual development. Parent and Child Centres, with their array of inputs into building support for parenting, help the parental interaction to be most effective, and to assist parents when they need contact with others, reassurance, information and at times direction (NIFTeY NSW, sub. DR386, p 5)

The South Australian Government also said:

> … to achieve strong early childhood outcomes, the interaction of parents with quality programs is of utmost importance. (sub. DR401, p. 4).

Currently, only a minority of parents participate in parent education programs, with participation by parents facing disadvantage particularly low. The arguments for providing parenting support and education include:

- strategies at a population level could reduce the prevalence of behavioural and emotional problems in children and adolescents (Sanders 2003)
- fragmentation of the family structure, often due to geographical separation, limits a new parent's access to the traditional avenues of support and information.
- evidence of improvements in maternal mental health from parent-training programmes (Hutchings et al. 2002; Barlow, Coren, Stewart-Brown 2009).

[11] Australian prevalence surveys indicate that 14-18 per cent of children and adolescents show significant behavioural and emotional problems (Sawyer, Arney, Baghurst et al. 2000).

Ways of delivering education and support services to parents

Education and support services to parents are delivered in a number of ways — including group classes, home visits, online, phone hotlines and mass media strategies (box D.3).

Box D.3 **Delivering education and support services to parents**

- *Informal supports, such as family and social-based networks*: these are an important source of on-going information and assistance to parents. Informal networks have the benefits of broad reach for the dissemination of messages and reduced reliance on professional services. It is also easier to target community based networks than individuals, so if there is a need for more specific intervention services, networks can effectively connect parents to more specialist services.
- *Home visits by trained parent educators*: these can be effective at delivering non-medical care and helping to correct family and child problems (particularly for disadvantaged families likely to drop out of other programs). But, improved language and behavioural development from home visits are mostly confined to programs for 3 years olds and older, with small positive or inconsistent impacts on development found for programs targeting 0-3 year olds. Subgroup analysis for different cultural groups has often found more positive results (around a 1 month developmental improvement in children for every 10 home visits), but these are often associated with more intensive interventions.
- *Telephone advice (including help lines and telephone triage services staffed by paraprofessionals)*: these have the advantage of being relatively cheap to deliver and avoid parents having to make appointments and travel sometimes large distances from rural and regional locations. But use of telephone services is typically limited among lower income and less educated families. Telephone services are unlikely to be a useful measure to impact parenting skills and child welfare on their own, but by linking callers to further help and information they may provide a useful arm to a multi-pronged strategy. There are currently 11 national, toll free parenting hotlines in Australia, plus additional hotlines in each State and Territory.
- *Mass media strategies*: these have broad population reach but are usually a high cost option and have a level of effectiveness that is difficult to gauge, particularly in terms of increasing knowledge and creating behavioural change. In the health domain there is some evidence that they may be useful to raise awareness (Sanders 2003), but retention of the message being delivered is often low, so campaigns conducted over a longer period are sometimes more effective. For example, in New Zealand a 13 week television series containing a weekly 5–7 minute Positive Parenting Program (box D.4) segment was used as part of a mass media strategy to address child health and behaviour problems. Randomised trials of the effectiveness of this strategy reported significant reductions in child behaviour problems post-treatment (Sanders, Montgomery and Brechman-Toussaint (2000)).

Continued next page

Box D.3 **(continued)**

- *Online parenting resources*: these have become a popular mode of delivering information to parents and linking them to more targeted support services, but such material has to be reputable and accurate, so government endorsement is usually valued by parents. Evidence of the effectiveness of web-based material is not yet well tested, so the effectiveness of changing parent behaviour and child outcomes is not known. Several parenting websites operate to assist Australian parents, and the Raising Children website[12] stands prominent among these.
- *Parent training classes*: these are mostly conducted over a series of weeks or months and can be highly effective at creating long-term change in parenting behaviour, especially if programs are tailored to the specific needs of the class. For example:
  - Parents of children identified as having Attention Deficit Hyperactivity Disorder may benefit from a focussed program that teaches them strategies to address the particular needs of their child.
  - Prenatal classes have been found effective at producing healthy birth outcomes, particularly those programs targeted to 'at risk' mothers (Landis, 2006). Prenatal care and education programs typically provide advice and counselling about nutrition, alcohol and drug use, rest and stress management and basic post-partum care of the baby.
  - A meta-analysis by Barlow and Parsons (2009) found some evidence that group parent-training programmes can be effective at improving emotional and behavioural adjustment in 0-3 year old children.
- *Written information and handouts*: these have been found particularly useful for delivering more complex messages and teaching skills that involve multiple steps (such as behavioural management in children). Presentation of the information is important, however, and is best delivered with a personalised approach that engages parents' interest and motivation and is mindful of literacy levels. Written material can be useful to reinforce messages from mass media campaigns.

Source: Centre for Community and Child Health, Parenting Information Project, 2004

Since late 2007, the Australian Government has distributed a 'Parent Pack' to all parents of newborns. A variety of communication methods are used in the Pack, including written information about day-to-day parenting and child care skills, demonstration graphics, a comprehensive DVD and information about telephone hotlines and other sources of information and support for parents. For parents of newborn babies, the Parent Pack is a good platform to inform parents about their

12 The *Raising Children* website is supported by the Australian Government to provide the best available information about the science of parenting, child health and development. It is guided by nearly 100 expert reviewers and input from a range of stakeholders (including health, education and child care professionals and parents), and provides online links to a range of parent support services.

role and the variety of supports that are available to assist them. It is not a direct means of changing parent behaviour but is a useful tool to connect parents with the resources that they are likely to need down the track. While there is little evidence on the efficacy of DVD-based communication with parents, from the DVD, 21 per cent of a sample of parents either used a service or joined a group as a direct result of the information provided on the Parent Pack DVD (Maternal and Child Health Nurses' Conference, October 2008).

Other State and National programs that provide education and support for families of infant children include the national *Good Beginnings* program; the NSW *Families First* early intervention and protection strategy; and the Victorian *Best Start* program.

But how effective are parenting programs?

Despite growing investment in policies relevant to parenting, there is a paucity of evidenced-based research on the effectiveness of programs at raising parents' skills and improving child outcomes (Shulruf et al. 2008). Evidence is especially thin for programs targeting parents of children 0–2 years, and much of the research that identifies positive outcomes of parenting programs is confined to randomised controlled trials and is yet to be replicated using real life programs (Scott et al. 2001; Hutchings et al. 2007).

To help overcome this, program funding is increasingly tied to program evaluation agreements, and so it is expected that greater clarity about the effectiveness of a range of parenting programs will be revealed in the coming years. In particular, there are several randomised control studies in progress internationally; including one to assess the relative merits of the *Incredible Years, Triple P and Strengthening Families Strengthening Communities* programs. It is important, however, that the effectiveness of programs be assessed for different developmental periods (including newborns, infants, toddlers, preschoolers and beyond), since the expected returns to policy interventions for these groups would be expected to vary.

Nevertheless, there is some international evidence that parenting skills training (as used by the Positive Parenting Program (box D.4) and the Incredible Years program) reduce child behaviour problems, with post evaluations finding that these outcomes are generally maintained over time (Sanders, Markie-Dadds and Turner 2003; Antcliff 2007). The strongest effects are found for more targeted interventions (mostly directed at disadvantaged or 'at risk' families), with the usefulness of brief and universal parent-child support programs less clear and still the subject of ongoing research.

Box D.4 **The Positive Parenting Program (Triple P)**

Triple P is the most widely available, evidenced-based parenting and family support program in Australia and is also used widely overseas. Developed by the Parenting and Family Support Centre at the University of Queensland, the program is supported by 25 years of clinical research into ways that parents' skills, confidence and teamwork can be enhanced to prevent severe behavioural and emotional problems in children. 5 core principles underpin the program, each addressing specific risk and protective factors associated with developmental and mental outcomes in children. These include a safe and engaging environment; a positive learning environment; assertive discipline; reasonable expectations, and taking care of ourselves as parents.

There are 5 levels of intervention, starting with a universal media and communications strategy to raise community awareness about parenting resources, with subsequent levels progressively targeting children most at risk of problems. Triple P interventions are also made age appropriate; with a range of interventions specifically designed for infants.

Methods of delivering Triple P include broad-based media strategies, face-to-face contact, group programs, self help programs, or a combination of formats. This enables parents to participate in ways that suit their individual circumstances, regardless of their geographical proximity to services.

Source: Sanders 2003; Sanders, Markie-Dadds and Turner 2003.

Current arrangements for delivering support services to parents

In Australia, government policies and programs directed at better equipping parents to raise their infant children are in a transitional phase of development and delivery. All levels of government have shown a greater commitment to the early childhood area in recent years, and broad changes to the delivery of parent-child support services are continuing, mainly to better coordinate services and to improve access by parents.

While the delivery of on-going, local support services to parents is largely a joint state/territory government and local council concern, the Australian Government also has an important coordinating role in guiding a more national approach to parenting skills development and capacity building. The broad direction of early childhood policies at the state, territory and national level is coordinated mainly through the Council of Australian Government's National Agenda for Early Childhood, which recognises that supporting families is central to ensuring longer term outcomes for children. But, a national framework for the early childhood area is still being consulted on, and differences in the funding streams of state and federal

governments[13] means that a national approach to parent training programs is yet to become operational (Antcliff 2007).

While the greater level of interest by governments has driven a general improvement in the range of parenting education and support services available, opinions differ about the adequacy of these services and some participants to this inquiry expressed discontent about funding (Australian Breastfeeding Association, sub. DR391, p. 3). In addition, the availability of services and the way that they are delivered varies, both from state-to-state and between rural, regional and urban centres, and it is claimed that support is generally orientated to 'at risk' families only (Australian Breastfeeding Association, sub. DR391, p. 3; Shulruf et al. 2008). It has also been found that the level of awareness about the availability of support services and information for parents is generally low (FaCS 2004).

In response to concerns about the range and adequacy of parent-child support services, along with some dissatisfaction from parents about early childhood services being inaccessible, fragmented and out-of touch (Taylor et al. 2005), some States and Territories have undertaken extensive reviews. Most commonly identified by these reviews is poor coordination between services, resulting in gaps and overlaps, less cost effective service provision and constricted access by parents. In particular, feedback from consultations and focus groups consistently reveal that parents want streamlined provision of early childhood services, perhaps brought together by a single, universal access point for all child health and development, education, child care and parenting support services.

Similarly, an interim report by the National Health and Hospitals Reform Commission (NHHRC 2009) has identified:

- significant inequities in access to early childhood health services among families
- a fragmented early childhood health system, reflecting a combination of Commonwealth, state and territory government and privately funded and delivered health services, with services generally operating as separate systems and no sharing of information across services
- that some families may fall between the gaps and receive conflicting advice (p. 107).

In response to these shortcomings, the interim NHHRC report proposes a number of changes to how the health system meets the needs of young children and their parents, commencing at the antenatal period. This includes a tiered, national system of universal, targeted and intensive care and support programs (weighted towards the first three years of a child's life). In particular, the report suggests that a

[13] For example, Australian Government funding has traditionally been restricted to time-limited initiatives rather than on-going service delivery.

universal home visit take place at least within 2 weeks of a baby's birth — monitoring child health, development and wellbeing (including a child's socio-emotional wellbeing and parent-child attachment), family risk factors, disease prevention and the need for more targeted support. Visits would act as a pathway for more targeted allied health care and specialist services where need arises and provide early support for parenting. This would include support for parents facing maternal depression (affecting around 15 per cent of women in the perinatal period, affecting the wellbeing of both mother and child (DHA 2008)).

Integrated parent and children centres

All levels of government have started to act on advice to reduce fragmentation of parent-child support services. This has variously taken form through a range of cross-agency and community-driven initiatives — mainly through the creation of all-in-one centres that provide a single entry point to a full range of services relevant to newborns, preschoolers and sometimes school aged children.

Policy activity by State and Territory Governments is varied. Some have focussed their attention on improving the coordination of their dedicated early intervention and prevention programs in particular (for example, the *Families First* program in NSW). Other States have directed their efforts at better integration of services and programs made universally available to all parents and children. For example, South Australia now has 24 *Children's Centres* either in operation or in-train, providing universal access through a one-stop facility to a complete range of child care, education, health and family support services (sub. DR401, p. 4). Queensland has similarly started to integrate its early childhood services through *Child and Family Support Hubs*, which provide a universal entry point to services including parenting education, family support, resource libraries and pre- and post-natal health care (sub DR302, p. 10).

Following the 2020 summit in 2008, the Federal Government flagged its plan for all-in-one centres to be made universally available for all mothers and babies. While yet to be detailed in policy, the idea is that these centres provide an 'education passport' for children's parents, similar to the current 'immunisation passport',[14] but with more detailed information covering broader issues facing parents with young children, including practical, tangible advice for parents (Department of Prime Minister and Cabinet, 2008).

The policy activity of Australian governments is consistent with international approaches, including those adopted in the UK (Sure Start Children Centres) and

[14] This tracks the various vaccinations administered to a child over time, regardless of the patchwork of clinics and venues used to deliver the required immunisations.

Canada (Ontario Early Years Centres) (NIFTeY NSW, sub. DR386, p. 4). And, there is some international evidence to suggest that parent education programs, provided by a single point of access to a range of services, can improve child outcomes[15] (Antcliff 2007, p. 45; Benevolent Society, sub. DR302 p. 10).

In summary, changes are in-train to the way that education and parenting programs are delivered in each jurisdiction. And, while there are some obvious deficiencies in the way that many services are co-ordinated, the Commission is unconvinced that there is a need for further services. This is notwithstanding that equipping parents with the appropriate skills and supports can positively influence their child's development, but strong evidence about the effectiveness in practice of universally available education and support programs is lacking.

D.5 How do Australian families balance work and parenting?

Maternal employment

Around one-third of Australian mothers with infants aged between six to eight months participate in paid employment. This figure increases with the age of the infant so that towards the later stages of infancy (at 19 months) around half of mothers will be in paid employment, albeit to varying degrees (FaCSIA 2007).

The leave taking behaviour and employment patterns of mothers surrounding birth reflect a range of factors including individual preferences, education and occupation, beliefs about the risks of maternal employment, access to child care, and other family characteristics such as the number of siblings. Family finances also play a role, with the labour supply literature finding that women with children are generally more responsive than many other groups to the financial incentives attached to paid employment. Indeed, the reliance on a dual income structure within the family budget has significantly increased in recent decades, often tied to long-term financial commitments such as mortgage payments.

Maternal employment or study commitments are the main reasons that parents use non-parental care (either formal or informal child care arrangements), however, the extent that parents substitute between paid employment and undertaking parental care responsibilities varies across families. For example, around one-third of parents balance work and parenting without regular use of child care (although this is

[15] However, the parenting programs used overseas are primarily targeted towards disadvantaged communities, which may not significantly raise parenting skills for the broader population.

usually enabled by the mother working short part-time hours and is less common during the initial months of a child's life), and single parents tend to rely on child care arrangements more than coupled parents.

A mother's employment will often have less of an impact on the amount of time and interactions spent with her children than might be expected (Bittman, Craig and Folbre 2004; Nock and Kinston 1988; Bianchi 2000). Survey data indicates that one hour of employment does not mean a child will receive an equivalent reduction in maternal time and have fewer interactions with their mother. In fact, the reduction in a mother's time with her infant due to employment is only 2 hours per day on average. This is because mothers tend to restructure their time when balancing work and family, usually by working reduced hours and focusing on particular types of interactions with their children. For mothers working full-time, each hour of employment is associated, on average, with around half an hour less time with their child, resulting in a daily reduction in time spent with their infant of 3.7 hours. (Baxter et al. 2007).

Notwithstanding what seems in many instances (particularly if employment is part-time) to be a relatively small impact of a mothers' employment on maternal care time, the possibility of increased maternal time pressures may be a cause for concern, especially if a father's time-use makes less of an adjustment to his partner's employment. But surveys generally find that a mother's return to work is accompanied by greater participation in household responsibilities by the spouse, as compared to if the mother stayed at home as the full-time primary carer (Darling-Fisher et al. 1990; Lamb 1999)

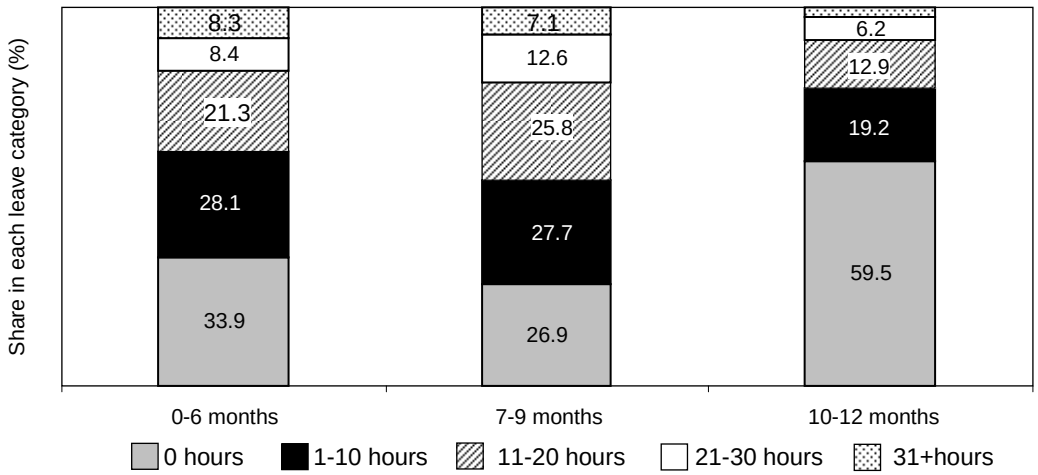
The timing of a mother's return to employment will also be affected by financial imperatives, and these vary significantly from family-to-family. For example, according to LSAC data, a significant proportion (22 per cent) of mothers on very low average weekly wages return to work within 3 months of birth, which is more than double the proportion of mothers earning $1,000–$1,500 per week. But the effect of finances on return to work patterns is not straight forward — for example, although nearly a quarter of mothers earning less than $300 per week return to employment within three months, this earnings group also has the highest proportion of mothers not at work 18 months after birth.

Child care use in Australia

Despite an overall increase in child care use over the past decade in Australia, this trend has not been evidenced for infants under 1 year and it remains that around two-thirds of children are cared for at home by their parents in the first year of life (ABS, 2005c). Nevertheless, a significant proportion of children will be placed into various child care arrangements early in life, and sometimes for extensive hours each week. For example, over 8 per cent of children entering child care at less than 6 months of age will experience more than 31 hours in care each week (figure D.2, box D.5).

Figure D.2 **Leave duration and child care use**

Months of leave taken by weekly hours in child care for first ever placement



Data source: LSAC Data, Wave 1.5

Mostly informal child care settings are used for young children under 1, and particularly if the mother's return to work is part-time. Informal child care arrangements are unregulated and typically include care from grandparents, friends, neighbours, baby sitters or nannies. But care by grandparents has been decreasing in recent years, in part, reflecting that they are often less available, either because of distance obstacles or their own work commitments (NIFTeY, sub. 55). Often a combination of formal care (regulated) and informal arrangements will also be used, but less than seven per cent of children will be cared for using formal arrangements alone, such as long day care centres (used for less than 5 per cent of children under one year of age).

The use of child care is much more prevalent for children over 1 year of age, with around 60 per cent of children aged between 1 and 2 participating in child care (ABS 2005). And while there is greater use of formal care arrangements (usually centre-based day care) at this age, formal care use is at its highest for children aged two to three, with just over 70 percent of these children placed in formal care arrangements.

The point to emphasise about this is that most formal care occurs in long day care centres, often involving extensive hours. While this may not pose a risk for children aged two to three years if the centre provides a stable and stimulating learning environment, there may be risks for infants under 1 year of age, particularly if the care is for long hours and not of high quality.

Box D.5 **Some facts about early child care use in Australia**

- For infants whose mothers return to employment within 6 months of child birth:
  - 62 per cent are either not placed in child care or are in care for not more than 10 hours per week.
  - 8 per cent are in child care for more than 31 hours each week.
- The type of arrangement that parents use as their infant's first child care placement seems to reflect the number of hours required:
  - If over 20 hours is used per week, use of centre-based day care tends to increase.
  - If less than 20 hours are needed, grandparents are used most popularly, particularly by mothers returning to work within 6 months of child birth.
- For families where the mother makes a return to work 6 months after child birth, household income[16] may relate to the length of time away from work and a reliance on longer hours of child care:
  - If household income is greater than $100 000 per year, around 43 per cent of infants will be in child care for more than 20 hours per week, compared to 29 per cent when household income is between $50 000 and $100 000. If income falls below $50 000, it is less common that extensive hours of child care are used.
- A mother's return to employment, will not always require the use of child care. Often interim arrangements within the family unit and flexible employment conditions enable a mothers (usually part-time) return to work, with the use of child care not occurring until some months later:
  - 22 per cent of infants with mothers that return to employment within 6 months of birth will not be placed into child care before they are 1 year old.

Source: Productivity Commission estimates, LSAC Wave 1 and 1.5.

D.6 What can we conclude?

For child health outcomes, the evidence consistently finds that longer periods of focussed parental care are associated with better outcomes. Many of the negative health effects related to child care, however, are transitory and arguably less of a long term concern, while the main health benefits from exclusive parental care stem from increased breastfeeding and lower rates of infant mortality.

The evidence is less clear, however, about how maternal employment and child care impact on a child's cognitive and behavioural development. On balance, the

16 Before tax, superannuation and the Medicare levy, but including pensions and allowances from government.

evidence points to a greater potential for negative effects on child development if exclusive parental care is not provided for at least 6 months, and a greater potential for positive effects if exclusive parental care continues for around twelve months. But the evidence is inconclusive about a mother's return to employment (and the use of non-parental care arrangements) between six and twelve months. Refining this window of uncertainty which is not informed by the current evidence requires more precise knowledge in an Australian context of:

- How the child development benefits of additional parental care might be expected to accrue beyond six months in leave duration (or beyond 6 months of exclusive care by a primary caregiver)
- What impact the quality of child care (box D.2) can have in substituting for reduced maternal time.

And, although the evidence is not always consistent, studies tend to find that many of the risks of non-exclusive parental care become progressively less evident as the age of the child increases (although this is dependent on the quality of, and hours spent in child care and the extent to which the parents continue to play an active role in the care of the child). So, while the most compelling evidence is that exclusive parental care for at least 6 months fosters improved developmental outcomes, there is a reasonable prospect that a period of up to 12 months could also be beneficial (particularly if the counterfactual is lower-quality care and care is for extended periods of time).

But, at some point (likely to be around 12 months depending on the context), developmental gains (mostly cognitive) from child care can kick-in, although the evidence is not consistent about the point in time that development benefits start to emerge. The evidence on the behavioural effects of child care is even less clear, and likely to be more dependent on a range of other factors including individual characteristics of the child and their family.

It should be emphasised that these are 'average' effects across whole populations of families, and that outcomes for specific families can be very different. This stresses the importance of understanding the effect of maternal employment and child care use for different groups in Australia. For instance, the effect of maternal employment and child care on child development is found to vary depending on — poverty and household income; maternal depression; mother's education; and child rearing beliefs. There is consistent evidence that finds children facing disadvantage or at risk of less sensitive and responsive care in their home setting may benefit significantly from early exposure to high quality child care and the extra income generated by their parents employment.

In addition, differences between groups of women making an early return to employment would affect how maternal care would respond to a policy change. This means that the

expected impact of introducing a period of paid parental leave needs to be clearly understood for different groups of women (chapter 9), especially since it appears that those mothers making an early return to employment are not of similar characteristics — usually having either especially high or low incomes prior to birth.

The Commission recognises that breaking down the uncertainty about how the benefits of longer leave periods might accrue in an Australian context is a worthwhile undertaking (especially since a large number of children are likely to be affected by returns to employment occurring six to twelve months post birth). But, it is a task that is presently hamstrung by a paucity of data on the quality of Australian child care. If, for instance, generally high quality child care is available, it would be less likely to impede the development of young children and, in turn, would tend to detract from arguments for longer periods of exclusive parental care. Anecdotal evidence provided by participants to this inquiry suggests that child care for infants under 12 months in Australia is not generally of sufficiently high quality (largely reflecting child-adult ratios) to substitute for parental care. The evidence suggests that adult-child ratios are associated with the quality of care provided (particularly for infants, although rarely is causality established), but that caregiver education and training is a better predictor of care quality than child-adult ratios. Stability of care providers is also strongly related to child outcomes.

In the Commission's view, government programs to help educate and support parents of children under two years appear more fragmented and more poorly resourced than those aimed at older children. But, while there may be scope to improve the coordination of services, the apparent 'messiness' of arrangements nationally may not be a problem if it reflects differences in each communities priorities and needs. And, given the relative newness of these types of programs, variations in resourcing and program types across Australian jurisdictions may well be the kind of experimentation that reveals the best programs. Re-consideration of the issue since the draft report has not changed this position. It is not appropriate to specify additional resourcing requirements or directions for policy without a robust evidential base.