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Synopsis

This report presents an accessible overview of the main concepts behind early child health and development. We summarise the goals of child healthy development in the concept that we call '*Five by Five*'. We describe the 5 basic developmental domains that are achieved in 5 stages.

We describe a child centred system that supports the *Five by Five*, ranging from parenting to the main service support systems (health, schools, child care and early learning, child protection, and non-government organisations).

Finally, we describe different barriers to effective parenting that may be experienced by caregivers, and provide a general introduction to the types of service responses that might better support achieving *Five by Five* for all children.

The *BetterStart* Child Health and Development Research Group is a group of inter-disciplinary researchers from epidemiology, public health, nutrition, paediatrics, biostatistics, and psychology who are trying to better understand how to ensure infants and children have the best start in life that will enhance their health and development over the life course.

For further information contact
Professor John Lynch
john.lynch@adelaide.edu.au

https://health.adelaide.edu.au/population-health/research/grants/echdrg.html

Five by Five

A Supporting Systems Framework for Child Health and Development

SCHOOL OF POPULATION HEALTH | THE UNIVERSITY of ADELAIDE

UCL

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Background to the Five by Five Report

The literature on child health and development is vast and multidisciplinary. There have been many authoritative academic reviews, and government and non-government reports that have laid out the landscape of how children achieve healthy development, why it is important that various societal systems support optimal child health and development through their service provision, and the costs associated with a lack of investments in better starts for all children.

Our goal here was to provide an accessible review of the basics of child health and development, including key milestones that could provide a platform for both research and service provision across the sectors dealing with child health and development to locate their research activities and service practices. What we present here is rigorously evidence-based and that is reflected in our selection of references.

We have summarised the goals of child healthy development in the concept that we call '*Five by Five'* – there are 5 basic developmental domains that are achieved in 5 stages. Each domain and each stage requires specific supports and parenting skills, and implies that different social supporting sectors will take the lead in service provision at different times.

Optimal child healthy development for a society will depend on how well it can provide the resources necessary to support effective parenting. This begins with provision of adequate material, social and economic resources to reduce social disadvantage among those caring for infants and children. It also includes supporting effective parenting through knowledge and capability building, even when things are tough. This will mean dealing with the sometimes enormous barriers to effective care. It will be best supported by an appropriately integrated net of services from conception through the school years, involving the health, early child care and learning, child protection, schooling and non-government sectors.

This report has been produced by the *BetterStart* Child Health and Development Research Group at the University of Adelaide's School of Population Health, in conjunction with collaborators from University College London's Institute of Child Health. We have received support from collaborators at the SA Child and Family Health Service, Department for Education and Child Development and Women's and Children's Health Network but the views expressed here are ours.

Principles Underlying the Five by Five Report

1. All carers want to parent effectively.

2. The goals of healthy child development are the same for all children, and are broadly expressed in the rubric of the *Five by Five*.

3. Effective parenting is a key ingredient to achieving *Five by Five* – parenting that is responsive to the child's needs, and characterised by warm and nurturing interactions that are accepting and mindful of the child.

4. Carers can face multiple barriers that may disrupt effective parenting. At some point, these barriers may reach a point where any parents' ability to continue to be mindful of their child's needs is compromised. This does not reflect that parents no longer want to parent effectively, but that at high levels of barriers there is a threshold beyond which all parents would struggle to cope.

5. Service systems need to recognise and respond to the barriers parents and carers face. The parenting goals implied by the *Five by Five* are universal, but the service responses required in order to support these universal goals may differ depending on both the barriers experienced by carers, and the ability of the carer to engage with services and remain mindful of the child's needs.

Part 1. Describing the Five by Five

The first five years of life are widely acknowledged by international academic research, and government and non-government reports from many countries, as a crucial period for child health and development[1-12]. Attachment, experiences and learning during the first five years of life provide an important foundation for subsequent health and development over the lifecourse[13-18].

The United Nations[19] human rights charter states that every child has a right to develop a strong foundation during the early years, providing them with a solid platform for ongoing health and development throughout childhood and into adult life.

Every child in South Australia has the right to develop strong foundations in the early years

The foundations set in place under five years are not deterministic for future outcomes – later experiences in life surely matter – but the early years under five are especially important because they provide a physical, neurocognitive, and social-emotional substrate for healthy development through childhood and into adulthood. The nature of development in early childhood has been widely described and in great specific detail and we refer interested readers to our selected references from that literature[2, 3, 5-13, 20-22]. Our goal in this report is to distil that extensive literature down to present five dimensions of child healthy development that occur across 5 developmental stages - the *Five by Five.*

The Five by Five

5 dimensions of healthy development:

1. **Physical**
2. **Language**
3. **Attachment**
4. **Social emotional**
5. **Cognitive**

5 stages of healthy development:

1. **Pregnancy**
2. **Post-natal**
3. **Infancy**
4. **Toddlerhood**
5. **Early childhood**

The 5 Developmental Dimensions

Healthy child development can be distilled down into five broad dimensions that capture the major developmental and health milestones from birth to age five:

5 Developmental Dimensions

1. **Physical:** the mother's health and well-being in pregnancy, the absence of disease and physical impairment in the child, nutrition and the biological changes that they experience as they age[21].
2. **Language:** children's ability to communicate and exchange information[23, 24].
3. **Attachment:** the bonding relationship between a baby and its primary caregiver/s[6, 25, 26].
4. **Social emotional:** the development and maintenance of positive relationships between carers and children, and children's ability to express and regulate emotions[27, 28].
5. **Cognitive:** children's ability to think and understand [29-31].

These 5 dimensions of healthy development are broadly consistent with Australia's national census of child development, the Australian Early Development Census (AEDC), during which the Australian Early Development Index (AEDI) is collected[32] (http://www.aedc.gov.au/). These are dimensions that are widely recognised as key to children being ready for school, and with a solid foundation for the next stages of child development[6, 32-35]. Internationally a number of governments use these dimensions (or dimensions very similar to these) to monitor national progress in child wellbeing and to target services locally[33, 36-40].

The goal of supporting systems is to ensure each child has the opportunity to achieve optimal levels of these 5 dimensions of child healthy development from birth to age 5.

The 5 Developmental Stages

Child development is commonly divided into 5 stages from pregnancy through to five years of age. These coincide with the major stages of child development, and also broadly parallel the differing service systems that lead support for the mother, carers and the child. For instance, the health care system dominates pregnancy and the first two years of life, after which there is increasing involvement of child care and early learning systems, which extend into the child attending formal schooling.

5 Developmental Stages

- ➔ Pregnancy (-9 months to 0)
- ➔ Post-natal (0 to 6 weeks)
- ➔ Infancy (0 to 12 months)
- ➔ Toddlerhood (12 to 36 months)
- ➔ Early childhood (36 to 60 months)

As shown in Figure 1 below the 5 dimensions of child development are cross-cut by the 5 developmental stages, to form the *Five by Five*. Within Figure 1 are the key milestones that occur for each dimension of development, across the 5 stages. Each milestone represents a precursor for moving through the stages and achieving the *Five by Five* with different milestones taking priority in different stages. For example, close contact with the primary caregiver during the post-natal period is an important platform for the development of a secure attachment between the infant and the caregiver during infancy. This secure attachment then supports the infant's developing ability to self-regulate across toddlerhood and into early childhood, which in turn supports the development of literacy and numeracy skills in early childhood[41-44]. So each developmental stage builds on the successful attainment of the previous stage, and that may be why some argue that investment in early life is so important, because without the early platforms, achieving later stages becomes more difficult or delayed.

Nevertheless, it is crucial to recognize that developmental scientists emphasise that there can be great individual variability in the specific timing at which children achieve developmental milestones[45, 46]. For example, while most children will begin to develop language in the early stages of toddlerhood there is great variability in the age at which individual children achieve this milestone, and so what may appear like language delay at an early age in fact has no implications for later language deficits[47]. It is simply natural variation in how children grow, learn and develop.

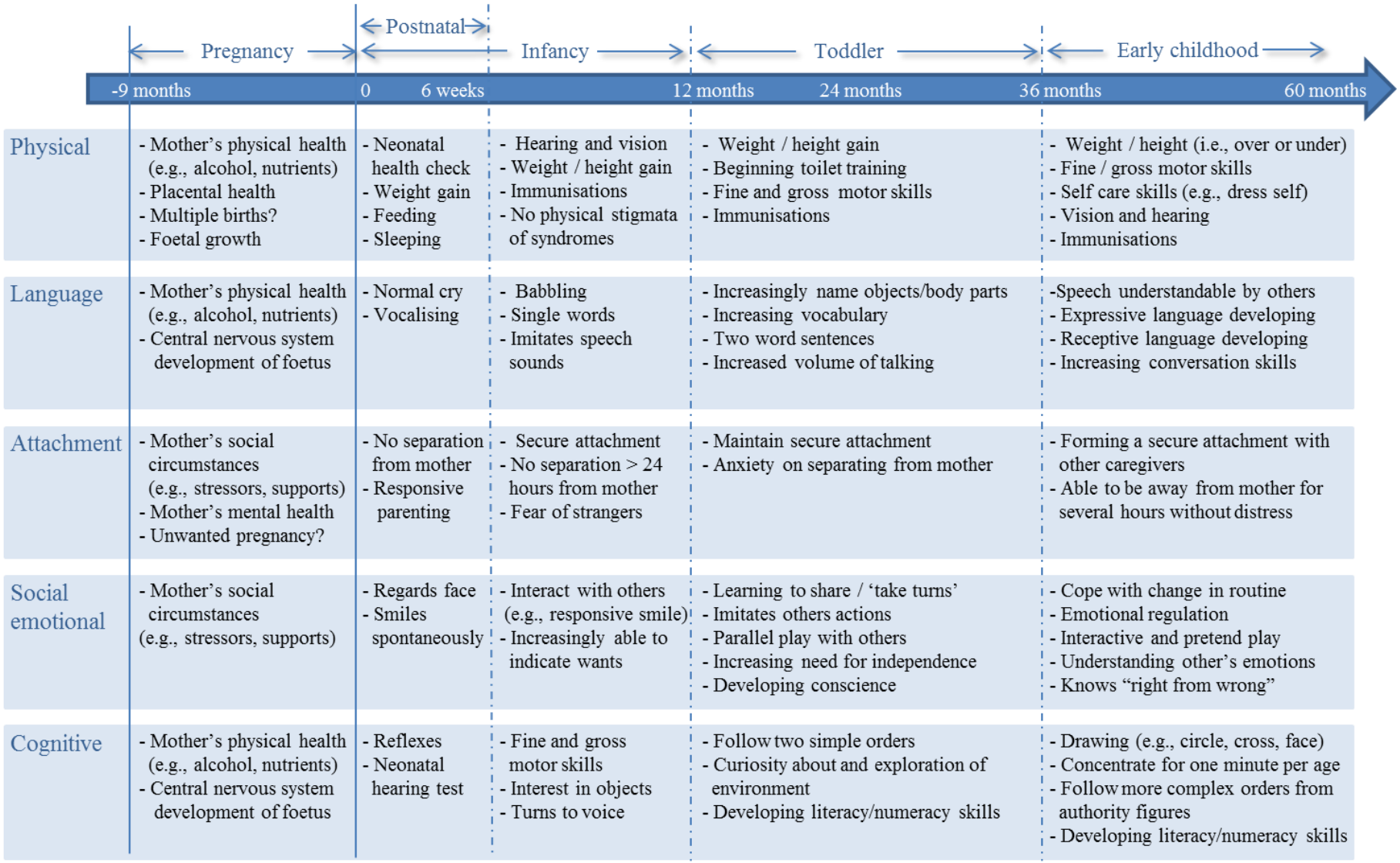

Figure 1: The *Five by Five*: The 5 dimensions of early child development that occur across 5 developmental stages. (Note: After birth, "mother" refers to the primary caregiver(s) who may or may not be the mother depending on family circumstances)

Milestones: Pregnancy (-9 months to 0)

As reflected in the *Five by Five,* a large focus is placed on the ***mother's physical and psychosocial well-being*** as well as the foetus throughout pregnancy. Child development in this stage is chiefly about foetal growth, including central nervous system development, growth of organs and the major physical structures of the body. The patterns of this growth are illustrated in Figure 2 below. Intrinsic to this growth, is the mothers' physical and mental health and social circumstances. For example, a mother's nutritional status and exposure to tobacco smoke and alcohol impacts on the physical and neurological development of the foetus[3, 48-50]. The level of sensitivity of the foetus to teratogens (agents which can cause birth defects, including tobacco smoke and alcohol), varies at different stages of pregnancy, as illustrated in Figure 2.

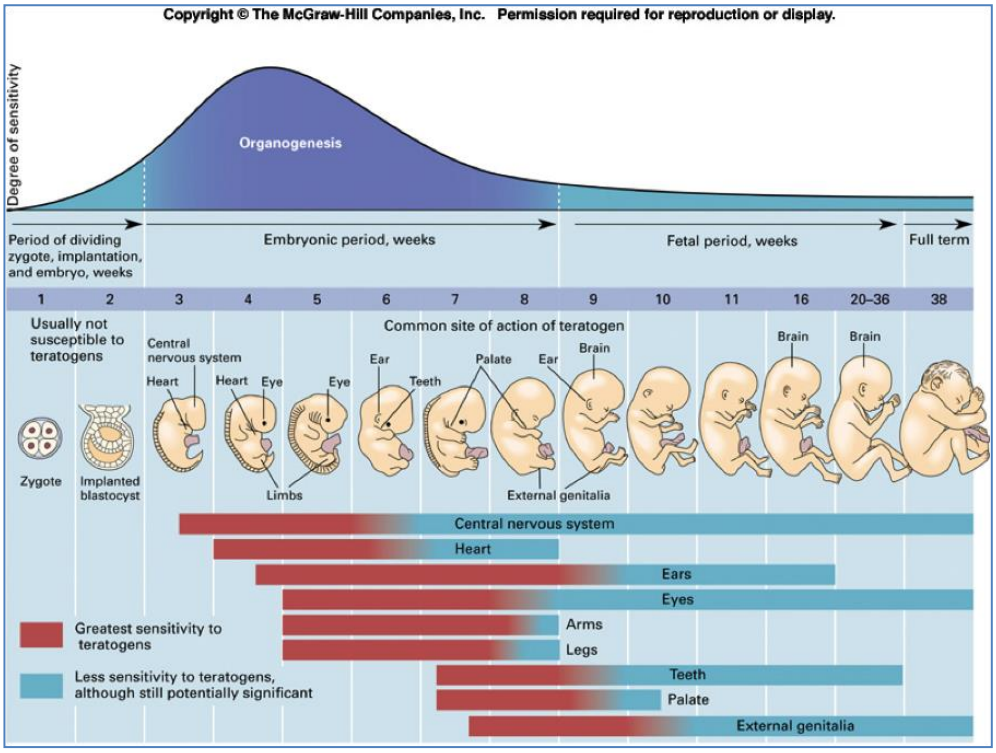

Figure 2: The physical development and growth of a foetus during pregnancy and the sensitivity of the growing foetus to teratogens (sourced from: Santrock JW. *A topical approach to life-span development*. 4th ed. New York: McGraw-Hill Higher Education; 2008. p. 76.)

Pregnancy is a unique stage where aspects of mother's wellbeing are indicators of potential barriers to effective parenting, for example a mother's mental health in pregnancy is predictive of post-natal depression[51]; where a pregnancy is unwanted mothers may have difficulties supporting secure attachment[52].

Milestones: Post-natal (0 to 6 weeks)

Child development during the immediate post-natal stage involves establishing patterns of ***feeding and sleeping and settling***, with the infant gaining weight, normal growth and displaying initial responses to the environment (such as hearing and spontaneous smiling)[9, 21, 47, 53]. Key threats to the infant's health include unsafe sleeping, tobacco exposure, feeding problems or weight loss, ***failure to thrive***, poor hygiene, infection, or problems within the family unit, such as domestic violence and substance abuse[9, 20, 21]. ***Initial attachment*** is strongly supported by not being separated from the primary caregiver, and parenting that is responsive to the infant by touch and speech. Talking to infants is a key support to language development, with children exposed to more words developing language skills more rapidly across the subsequent stages of development[54-56]. During the post-natal stage there are aspects of mother's wellbeing which may be barriers to supporting children's healthy development including ***post-natal depression*** [9, 57-61].

Milestones: Infancy (0 to 12 months)

Infancy is characterised by rapid development across all 5 dimensions. Children become increasingly mobile, respond to simple verbal requests, babble, gesture, and show enjoyment interacting with others[21]. This development is supported by informal learning through interactions with caregivers, from infancy onwards (for example talking to preverbal infants supports the development of language and literacy skills, while counting games and songs promote the understanding of numbers and numeracy skills). As illustrated in Figure 3, children experience rapid brain growth, first with seeing and hearing, then receptive language and by 12 months peaks in synaptic growth in regions associated with higher cognitive functions.

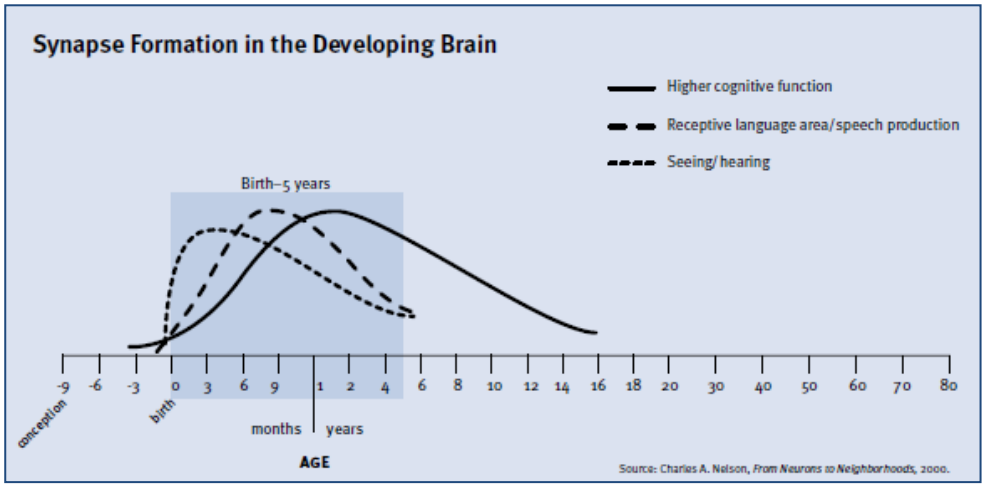

Figure 3: Human Brain development from conception into adulthood (sourced from: Nelson, C.A. In: Shonkoff, J, Phillips, D, editors. From *Neurons to Neighbourhoods* 2000; Huttenlocher, P.R. *Brain Research* 1979; 163 (2): 195-205.)

These phases of rapid growth are sensitive to children's physical and social environment during this period; for example, brain growth is thought to be particularly supported by mutually responsive interactions with a warm and consistent caregiver[6].

The past few decades has seen a growing body of evidence regarding the importance of ***early experiences for brain development***. This has led to the development of many illustrations describing timeframes for children's cognitive (e.g., numeracy, literacy achievement) and socio-emotional skills (e.g., self-regulation). However this is a rapidly developing area[62] with studies in both humans and animal models, and Figure 3 presents some of the best scientific evidence from humans about one of the key processes of early brain development.

A major feature of brain development during this period is the rapid formation of synapses (connections between neurons) in the infant brain[63-65]. The time course of this development differs by brain region. As shown in Figure 3 areas in the auditory cortex, associated with hearing, reach peak synaptic density at approximately 3 months of age, while areas in the pre-frontal cortex, associated with higher cognitive functions, reach peak density later at approximately 15 months of age. During this time brain development is affected by environmental experiences[66]. It is known that severe sensory deprivation associated with extreme neglect (e.g., minimal exposure to language, touch, or social interaction) can interrupt the organisation of neural systems of the brain during this period[66, 67]. However, there is evidence that children can 'catch up' to some extent on development in later stages as the brain continues to go through developmental processes throughout childhood, and has ongoing functional plasticity into adulthood[68-70]. The earlier in infancy children are removed from extremely neglectful environments and placed in consistent and nurturing environments the greater the catch up across all dimensions of development[66, 68]. In contrast, much less is known about the impact of enriched environments during this period on human brain development and children's subsequent abilities (see [71-73] for studies of the effect of enriched environments on brain development in rats).

Secure attachments are formalised in this stage at approximately 6 to 9 months. At this stage infants will show increasing fearfulness of strangers and awareness of the absence of their primary caregiver(s)[25, 26]. They require close contact with their primary caregiver(s) to be soothed and begin to use their primary caregiver as a secure base from which to explore the world around them. Secure attachment is the platform from which the child can begin the journey toward exploring their world and later independence. Effective parenting to support attachment is characterised by maternal sensitivity, attunement between parent and infant during interactions, and the mother's "mind-mindedness" ("the mother's proclivity to treat her infant as an individual with a mind, rather than merely as a creature with needs that must be satisfied" p.638)[74].

Children with secure attachment tend to be more cognitively and social-emotionally competent in later life, while children with poor attachment are at increased risk for emotional and behavioural

problems, and aggressive behaviours in later life[67, 75-77]. Developing a secure attachment between the infant and their primary caregiver is a priority milestone during infancy as a secure attachment enables children's development of ***self-regulation*** during toddlerhood, which supports later numeracy and literacy, and academic achievement in early childhood[41-44, 78]. It is important to note that ongoing effective parenting is required to maintain secure attachment across subsequent stages of development[79].

Infancy is also a stage characterised by ***rapid physical growth***, and the development of vision and hearing, and gross and fine motor skills. At around the age of 6 months, changes in the child's nutritional needs mean the ***introduction of solids*** into the diet[20, 80, 81]. Some children will start to have teeth emerge in this stage and so ***early oral health*** routines should be established[53, 82]. Infection immunity is ensured by a program of ***vaccinations*** to protect children against infection from diseases, including hepatitis, whooping cough, polio, meningitis and diphtheria, which threaten the future development and wellbeing of the child[53, 83, 84].

Milestones: Toddlerhood (12 to 36 months)

As rapid gross motor development occurs, ***children begin to become mobile***, and require greater supervision. Awareness of the increased risks in this age group, and preventive measures such as the installation of safety gates and window locks, ***help to protect from injury*** [85]. Further ***vaccinations*** are required to ensure immunity against diseases such as measles and chickenpox [53, 83, 84].

Major milestones in toddlerhood also include toilet training, beginning to use two-three word sentences, and learning to ***share, play and interact*** with others[47]. The development of basic numeracy and literacy skills continue to be supported by informal learning through interactions with caregivers. As the child enters toddlerhood they will be eating the same food as adults, starting to feed themselves, and experimenting with different tastes and textures[46]. More time will be spent away from their primary caregiver (for example in child care or play groups), and while they will start to ***exert some independence***, the child will still need substantial parenting and engagement to support their healthy development across the dimensions[21].

Temper tantrums and oppositional behaviour are common in young children between 18 months and three years of age[86, 87]. Research suggests that 70% of 18-24 month old children have tantrums[88]. For most children, tantrums are a normal part of development and usually a result of children asserting their developing independence and individuality. Behaviours can range from crying, screaming, and hitting to head banging. Although such behaviours are frustrating and may cause parental concern, if they are not occurring frequently or at extreme levels, then these behaviours are extremely unlikely to represent the beginning of serious antisocial behaviour or psychopathological disorders[87].

Milestones: Early Childhood (36 to 60 months)

Early childhood is characterized by slowing in the pace of physical growth but greater language, cognitive, social and emotional development. Major milestones for the child include: clearly understandable speech, ***increasing vocabulary***, and greater understanding of verbal communication with others. The child begins to understand others emotions and can follow more complex instructions from authority figures, and they start to take charge of their own self-care needs, for example going to the toilet, brushing their teeth, and getting dressed[46, 47]. Children's fine motor skills are also developing, including the ability to use pincer grip to write with pens and pencils and to eat with utensils.

There is a growing awareness in research and policy[1, 7, 89-93]of the importance of children's ongoing ***development of self-regulation*** during this stage. Self-regulation includes children's ability to control their own emotions, persist in tasks, and inhibit inappropriate behaviours[78]. This enables the child to adapt to the formal schooling environment as they move towards the end of this stage of development. Self-regulation is also an important milestone for children as there is evidence that these skills support the development of literacy and maths skills, and academic achievement during this stage of development and into later childhood[41-43].

The ability to separate from the primary caregiver is also an important milestone, enabling a smooth transition into kindergarten and formal schooling. Booster immunisations are recommended to ensure the child's immunity as they enter child care settings and school[53, 83, 84].

Part 2. Supporting the Five by Five for All Children

The most immediate support for achieving the *Five by Five* is effective parenting[28, 94, 95]. We think of ***effective parenting*** as parenting that is responsive to the child's needs, and characterised by warm and nurturing interactions that are accepting and mindful of the child's needs. Effective parenting provides the nutritional, health, material, psychological, cognitive and social necessities, and encourages children to explore and engage with the world, while still providing boundaries and limits[6, 48, 78]. Parenting takes place in the context of wider supports for the *Five by Five* that include services for children, communities, and cultural, political and societal influences[28, 34, 94-97].

There are ***large social inequalities*** in the resources required to enable effective parenting, and some parents will face ***barriers that hinder the provision of effective parenting*** to children. Barriers to parenting can include those related to physical health of the parent or child (for example chronic illness or physical disability), psychosocial wellbeing (for example post-natal depression or lack of social support) and socioeconomic disadvantage (for example, low income, poor housing, or limited access to services).

Communities and the five key Australian systems (schools, health, child protection, child care and early learning and non-government organisations) must work together to reduce these barriers and ensure the *Five by Five* for every child, in every family and every caring situation.

Every child deserves a strong start in life. Achieving the *Five by Five* enables children to enter the school years ready to benefit from the opportunities of more formal, structured learning. It also influences a child's ability to fulfil their potential as they move into adulthood, influencing an individual's experiences of relationships, employment opportunities, and physical and mental wellbeing in later life[13-18]. However, not all children have an equal start in life. Geographic and demographic disadvantages in child development are already evident in Australia at the start of school; for example the proportion of children who are vulnerable on one or more domains of the AEDC varies by state, and is higher in Aboriginal and Torres Strait Islander children and those living in more disadvantaged areas[36]. These inequalities arise because the resources and supports to achieve the *Five by Five* are not equally distributed across the population [15, 16, 24, 28, 34, 36, 50, 94, 98-100].

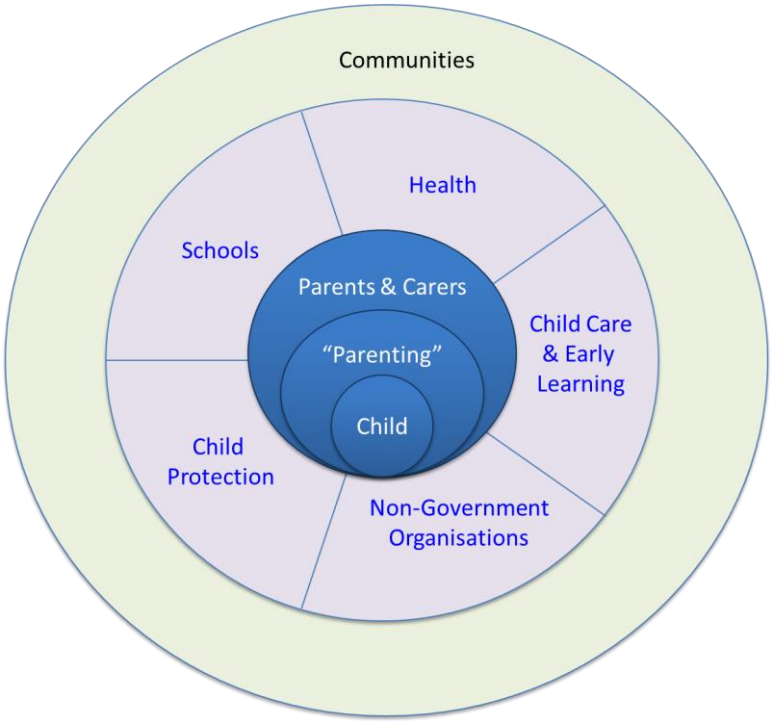

Figure 4: A child centred approach for social system support of the *Five by Five*.

Adapted from the UCL Institute of Health Equity report "An Equal Start: improving outcomes in Children's Centres"[101].

The child must be at the centre of the systems, as the *Five by Five* is the right of every child[19]. However, as illustrated in Figure 4, the *Five by Five* operates within a system of wider influences[100-103]. Parenting is the most immediate support for early child development[30, 102]. Next are parents and carers, who are the main providers of parenting. Figure 4 differentiates between parenting and parents themselves, because parents may face barriers to parenting, which relate to their own health and social and economic circumstances[101]. Surrounding this are five main support systems in Australia, which intersect to support the *Five by Five*: schools, health, child care and early learning services, child protection, and non-government organisations. All of these supports sit within a wider community context, which is a source of social infrastructure and civic support. Community structures, such as informal networks and public transport systems, can buffer against barriers to parenting and enable parents to access and benefit from services[100, 103, 104].

Supporting Parenting

The main and most immediate support for children's development is parenting. Parenting refers to the interactions between the child and their caregivers, and is particularly important in the first few years of life[28, 94, 97]. Parenting is dynamic and multifaceted, and the nature of child-carer interactions will change across the 5 developmental stages. Effective parenting involves meeting the child's basic emotional, physical and material needs. It is characterised by warm and nurturing interactions that are accepting of the child, and encouragement to explore and engage with the world, while providing appropriate boundaries[6, 48, 78]. The child is provided with appropriate feeding and caring routines, and a caring environment that is free from physical threats and

neglect. Parents and caregivers are the main providers of parenting, however not all parents and caregivers will have the necessary supports to help them in their parenting role. It is therefore essential to consider the characteristics of parents and caregivers, and the barriers they may face.

A protective factor for children's development is parents' ***developmental literacy*** (i.e., parents' knowledge and understanding of children's normal development). Where parents have better knowledge and understanding of children's normal development it is likely that they will be better able to identify problems early and seek early intervention. While there is no research evidence to support the importance of parental developmental literacy for children's development, there is evidence that better knowledge of mental health problems allows early identification of problems and access to intervention[105]. It is likely that these processes for mental health literacy work similarly for parent's knowledge of child development and identification of developmental problems.

Supporting Parents & Carers

The main providers of effective parenting are parents and caregivers (Figure 4). A parent's or carer's ability to effectively parent can be compromised by a number of barriers related to material deprivation, social exclusion, and psychosocial stress[26-28, 105, 106]. For example, some families may find it hard to afford some material resources required to ensure the *Five by Five* for their child, including adequate food, medical care, winter clothing, waterproof shoes, or a home which is not in a state of disrepair and is appropriately warmed or cooled[104]. Families that lack social connections and the ability to participate in society may find it hard to develop informal supports and benefit from community services[104]. Life events, such as domestic violence, relationship breakdown, the loss of a job, or the onset of a chronic physical or mental illness, may also affect a parent's ability to provide effective parenting, through increasing the risk of material deprivation, eroding self-esteem and inciting feelings of powerlessness[104]. These barriers are in turn associated with child development. For example, recent research in Australia shows that children who live in workless households have worse cognitive and behavioural outcomes than children whose parents are in paid employment[106]. Furthermore, where parents experience domestic violence, children are found to have poorer developmental outcomes[104].

Some parents are more likely to experience barriers to parenting than others. Individuals with low educational attainment or who are unemployed, lone parents, individuals living in rural areas, those from Aboriginal and Torres Strait Islander backgrounds and refugees and asylum seekers may be more likely to experience material deprivation, social exclusion and negative life events[34, 104]. In addition, they are more likely to experience multiple barriers (multiple disadvantage) and to endure them over longer periods of time (persistent disadvantage), that may further compromise their ability to parent effectively. Often disadvantage is transferred across generations[104]. For example,

lone parents are more likely to have grown up in a one parent family themselves; and educational achievement has been shown to track from one generation to another[104]. However through intervening in the early years, and ensuring that every child achieves the *Five by Five*, it is possible to break this cycle of disadvantage[1].

Supporting Social Systems for Healthy Child Development

Five main systems support the *Five by Five*: health services, schools, child care and early learning[i], child protection, and non-government organisations (e.g., The Smith Family, Uniting Communities). The services within these systems are child focussed, in order to support the *Five by Five*. However, they also provide support to those parents who may face barriers to parenting. Parents who face barriers to parenting are also more likely to experience barriers to the services designed to help them (known as the 'Inverse Care Law'[107]). Therefore systems also strive to ensure that every family is aware of and can benefit from their services[9]. The role of these services is not only to prevent problems and to overcome barriers, but also to identify windows of opportunity for positive change. For example, secure attachment between the child and their caregiver[24, 76], parental employment[106, 108], and good quality childcare[109, 110] are all potentially amenable factors that can benefit later child development.

Each of the five systems supports the *Five by Five* in its entirety, but each will have different priorities across the 5 dimensions of development (for example health services understandably focus more on physical and social emotional development than child care and early learning). The nature of the services will also shift across the 5 stages of development; for example, health services play a prominent role during pregnancy and infancy, whereas schools exert more influence in later stages. Furthermore, the level of involvement of each system will vary according to need; some providing universal services (such as access to good developmental information or schooling) while others will provide support under a specific set of situations (child protection) or when need is especially high (for example the charity Uniting Communities provides alcohol and drug services and emergency accommodation, and The Smith Family provides educational supports to disadvantaged children).

Supporting Communities

Early childhood development and parenting, and the services that support these, all sit within a wider community context, which is a source of social infrastructure and civic support. Communities can shape positive social norms, and through providing social connections, enable information sharing and the development of informal support networks. Thus, positive community contexts can

[i] This system is referred to as 'child care and early learning' to highlight that supporting learning and development in the early years is the responsibility of childcare providers as well as preschool settings.

help to ameliorate barriers to parenting. However, communities may also create or exacerbate barriers to parenting. For example, interviews with residents in a number of deprived neighbourhoods in Australia (including Mansfield Park, Adelaide) indicated that poor neighbourhood safety and lack of public transport infrastructure may prevent parents from accessing the supports that exist within their local community[111]; similarly high unemployment rates may foster low aspirations within communities, which can erode expectations and feelings of empowerment[104, 111].

Communities are influenced by macro-level factors, such as prevailing economic, cultural, political and societal characteristics[34, 103]. Parents and caregivers are increasingly experiencing a number of wider barriers to effective parenting, including the diversification of family types (for example a rise in lone parent families), and balancing work and family life[24, 78, 94]. Political, economic and social structures can help to support parents and carers[7, 78, 94, 97]; through, for example the provision of accessible and good quality childcare, financial support and incentives (such as tax credits), paid maternity leave, and rights to flexible working. Common engagement across services and communities is essential to tailor responses to the needs of local populations and ensure coordinated approaches[7, 24, 95, 112, 113].

Part 3. Parenting Support at the Population Level

Part 3 of this report provides an overview of the South Australian population according to our best estimates of the increasing barriers to effective parenting and a general introduction to the types of service responses that might support different levels of need. As described in the previous section, a number of services in the community work to support the *Five by Five.* In the following section we focus on how these services can work to support effective parenting, which is the most proximal support to the *Five by Five*.

The underlying principle is that supporting effective parenting requires reducing barriers faced by parents or carers, and so supporting the child's development of the *Five by Five*[114]. The barriers to effective parenting will differ across the population, and may include depression[115, 116], substance abuse and high levels of economic and social disadvantage.[117, 118] Within South Australia, both universal and targeted services are available to support effective parenting and ensure the health and wellbeing of young children.

Estimates of Barriers to Effective Parenting in South Australia

Approximately 20,000 children are born every year in South Australia[119]. We have noted throughout the report that factors such as poor mental health, unemployment, substance abuse and domestic violence are barriers to effective parenting. The following provides a general description of the prevalence of these barriers in the South Australian population. It should be noted that these data refer to the general population and are not specific to parents with young children.

- Results from the 2007 National Survey of Mental Health and Wellbeing estimated that 14.4% of Australians aged 16–85 years had an anxiety disorder (e.g., generalised anxiety disorder, panic disorder), 6.2% had an affective disorder (e.g., depression or bi-polar disorder) and 5.1% had a substance use disorder in the past 12-months [120].
- In 2014, labour force statistics show that South Australia's unemployment rate was 6.7%, representing one of the highest unemployment rates nationally [121].
- While experiences of income poverty can be short-lived, it is estimated that 10% (2 million) of Australians experienced relative income poverty (<50% national median) for five or more years and 5% (1 million) for 7 years or more[104].
- In 2006, an Australian Bureau of Statistics survey reported that 17% of women had experienced violence by a partner across the lifespan and a further 17% experienced sexual violence [122].

- In 2012-2013, there was 2740 intervention orders (under the Prevention of Abuse Act 2009) lodged with the South Australian Magistrates Court[123].

While nobody yet knows the true levels of barriers faced by different segments of the population, Figure 5 provides our best estimates of the South Australian population according to increasing barriers to effective parenting.

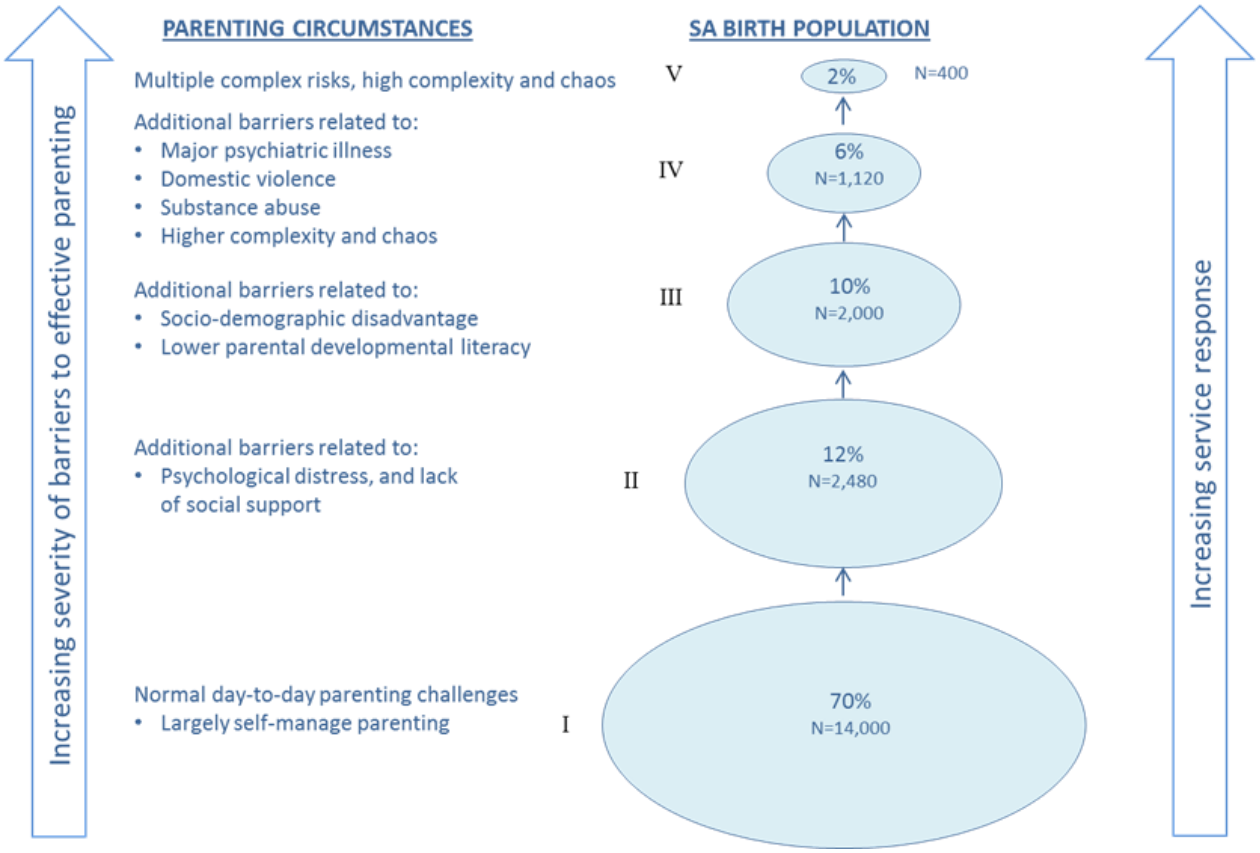

Figure 5: The distribution of the population according to increasing barriers to parenting.

As it is difficult to definitively characterize parenting needs in the community, our population estimates have been informed by research, service system data, and the current service system response.

The centre of the figure illustrates the five levels of parenting need in the population. The proportion of children represented at each level decreases in size as the barriers to effective parenting increase. As illustrated on the left of the figure, higher levels are characterised by increasing barriers to effective parenting. As these barriers increase a greater service response is required to support effective parenting.

At the highest levels, services use clinically assertive engagement to support parents faced with multiple barriers and targeted program responses to address specific needs. Ultimately, at each level the child's right to be safe and develop healthily[19] are at the centre of the service response.

It is important to acknowledge that the extent to which barriers compromise effective parenting will differ depending on individual variation in parents' ability to continue to be mindful of their child's needs in the face of the barriers. That is, the level of parenting support required is not only determined by the type of barriers faced (such as those described for the different levels below) but also the impact of these barriers on individual parents' ability to parent effectively. At high levels of barriers however, it is likely that all parents no longer have the resources to keep their child in mind and more comprehensive supports are required.

The following is a description of each of the five levels of parenting need.

Barriers to Effective Parenting: Level I

- Level I contains the majority of parents, estimated at about 70% of births, or about 14,000 children in SA.
- At this level parents experience normal day-to-day parenting challenges, but are able to self-manage these barriers.
- Parents may face specific time-limited problems (e.g., infant feeding or sleeping difficulties) but have the resources, including developmental literacy and social support that enable them to seek further assistance from services like Child and Family Health Services or their family doctor when needed.

Barriers to Effective Parenting: Level II

- Parents face level I barriers plus additional barriers including mild to moderate psychological distress, in combination with more limited social supports. As a result parents may require additional but focussed time-limited service responses to support effective parenting.
- This level specifically recognises the effect of perinatal depression and poor mental health on the ability of some mothers to provide effective parenting.

Barriers to Effective Parenting: Level III

- Parents face level II barriers plus additional barriers such as socio-demographic disadvantage, and lower parental developmental literacy. These barriers, and associated characteristics, can be used to identify children who may who go on to experience problems. For example, research using South Australian perinatal data indicates that gender, parental occupational status, parity,

and smoking in pregnancy can be used to help identify children who are vulnerable on two or more domains of the AEDC (physical well-being, social competence, emotional maturity, language and cognitive skills and communication skills, and general knowledge).

- At this level a service response characterised by moderately clinically assertive engagement and more intensive interactions over time is required to support effective parenting (e.g., nurse-led family home visiting services[124]).
- Services work in partnership with parents in order to challenge behaviours to affect change; addressing their aspirations and goals, and ability to goal set.

Barriers to Effective Parenting: Level IV

- Parents face the level I, II and III challenges but will have multiple, highly complex barriers to effective parenting such as major mental illness, domestic violence, and substance abuse.
- Parents have insufficient resources and social supports.
- At this level families will receive intensive support from multi-disciplinary, well-integrated teams led by appropriate agencies.
- Serious concerns around the child's welfare are registered by services in contact with these families.

Barriers to Effective Parenting: Level V

- Barriers experienced by parents are such that parenting is compromised to the point where the child may be at risk of harm (sexual, physical or emotional) or neglect (to the extent that the child has suffered, or is likely to suffer, physical or psychological injury detrimental to the child's wellbeing[125]).
- If the child is deemed to be at immediate risk they will be removed, by the authorities, from the family.
- In these situations services work together to reduce the barriers to parenting experienced in these families, to allow preservation of families and reunification where possible.

Part 4. Proportionate Universal Support Systems

From a child's perspective the most proximal support to the *Five by Five* is effective parenting, regardless of circumstances and the barriers that parents face. The key ingredients of effective parenting are the same for all children – parenting that is responsive to the child's needs, and characterised by warm and nurturing interactions that are accepting and mindful of the child. Effective parenting provides the nutritional, health, material, psychological, cognitive and social necessities, and encourages children to explore and engage with the world, while still providing boundaries.

However, carers can face substantial barriers to effective parenting, and as barriers increase, some carers may require additional supports. This approach to designing supporting systems and services is known as proportionate or progressive universalism.

… proportionate universalism means support is provided for everyone, but with greater support going to those with greater need.

While it is widely agreed that proportionate universalism is an effective approach … research exploring the right mix of universal and targeted programs is in its infancy.

Proportionate Universal Systems

Proportionate universal, also known as progressive universal, service systems are recommended to support early years health and development[28, 95, 126]. Proportionate universal systems offer some form of services to 1) all members of the population with 2) service responses increasing for those in greater need or facing more barriers to effective parenting. Some of these barriers are depicted in Figure 5. More intensive support responses are offered to individuals who are identified as being at increased risk of poorer outcomes, based on some selection of characteristics that are risk or protective factors for particular outcomes. So proportionate universalism[9, 28, 34, 127] means support is provided for everyone, but with greater support going to those with greater need. However, what comprises a universal program offered to all, versus a more intensive program offered to some, has not been well articulated in the literature[127]. So while everyone agrees that a proportional universal system is the best to support the *Five by Five*, the elements that comprise an appropriate universal service and a more intensive service are unclear, and may differ greatly from context to context. That is currently the case across the states and territories of Australia where there are large differences in the way proportionate universalism has been operationalized in the systems to support child health and development.

In South Australia a progressive universal approach is used to support the *Five by Five*, whereby services are designed to provide universal programs and a more intensive system response based on client needs and barriers to effective parenting. Universal services, such as an immediate post-

natal contact with a child and family health nurse, child health checks, childhood immunisations, and information to promote developmental literacy are available to all parents across the population, regardless of barriers to parenting. As shown in Figure 5 parents in level I are able to parent effectively using the universal services that are available (e.g., parental help line, clinic visits). As barriers to parenting increase, so does the intensity of services provided. For example, at level III (Figure 5), parents will receive more intensive support services, such as nurse home visiting[124].

Targeting

Another term that is commonly used in this context is "targeting" which is the process of deciding which population sub-groups are eligible for a more intensive service response. It is inherent to a proportionate universal system because some process must be used to decide who would most benefit from a more intensive support response.

The process for targeting more intensive services requires establishing a threshold of benefit for eligibility for the additional service response and balancing this against resources and logistical restraints. An approach for identifying eligibility for additional services is screening. Screening tools for targeted public health interventions usually assess a range of risk factors that are known to be predictive of relevant outcomes. For example predictive risk models have been developed, and are widely used to identify patients at risk of cardiovascular disease, using characteristics such as blood pressure, smoking and cholesterol[128].

However, identifying risk and protective factors that are predictive of child health and development outcomes remains challenging. For example, a preliminary analysis of linked data in South Australia seeking to predict vulnerability on the AEDI identified six characteristics which were associated with vulnerability[129]. At birth 48% of all girls had one or more of these risk factors, and this criterion identified 75% of girls who were vulnerable on the AEDI. So while a large proportion of those who were vulnerable at the start of school were identified, a relatively large proportion of the population would need to be targeted to receive services. If the intervention was low cost, non-stigmatising, and easily implemented then targeting a large proportion of the population may not be problematic; however in practice this is rarely feasible. Through raising the threshold of need to 3 or more risk factors, the study found that a lower proportion of girls were deemed at risk (8%), however this meant that just 23% of vulnerable girls would be identified within the population (a similar pattern of results was observed for boys). For more information see our Research Series No 3[129]. A major challenge for implementing early childhood interventions is balancing several factors including screening accuracy, the number of individuals deemed to be at risk, and the resources available to provide more intensive supporting services.

An alternative approach is to identify need based on geographical, rather than individual-level characteristics. The rationale behind this approach is not only that area-level characteristics are linked with outcomes, but also that areas or communities will often have unique needs. A widely known example of an area based intervention is Sure Start, which was introduced into the UK in 1998, with the aim of improving outcomes for young children and their families (and with a particular focus on those families with greatest need)[130]. Sure Start centres were set up in the 20% most deprived communities in the country, each offering a core set of services, including outreach and home visiting, support for good quality play, learning and childcare experiences, and primary and community health care and advice. However, similarly to the difficulties of screening accuracy, individuals living in the target area who have lower levels of need may also be exposed to the intervention, and in fact may benefit from it more so than the at risk groups living in those areas[131]. Children's Centres established by the South Australian Department for Education and Child Development (http://www.childrenscentres.sa.gov.au/) over the last few years are also located with a view to serving more disadvantaged communities.

In addition to individual or area-based risk assessment, clinical judgement remains indispensable in offering more intensive services to those who may benefit most. In South Australia, the universal contact visit is usually carried out in the family home, allowing nurses to assess a wide range of characteristics, from the home environment to parental relationship quality, which will not be captured accurately by screening tools. In doing so nurses are able to make individual judgements about the extent to which effective parenting is compromised by the barriers being faced. Depending on the setting, screening tools might be improved through combining them with clinical judgment and case reviews[132].

While it is widely agreed that progressive universalism is an effective approach for the improvement of population health, it is important to explore the right mix of universal and targeted programs, and research evidence in this area is in its infancy[127]. Intervening in early childhood poses many challenges to service implementation and ongoing research. However, early intervention is widely advocated, including by Nobel Prize winning economist James Heckman as one of the most cost-effective ways of ensuring good outcomes across the life-course[89].

Part 5. A Learning Support System Informed by Research

There is growing political and community interest in supporting early childhood development in Australia[7, 38, 127]. However there is a need to build practical evidence, specific to the Australian context, regarding how childhood programmes and services can best support effective parenting and achieving the *Five by Five*[7, 133].

This will require academic research that is fundamentally oriented to answering questions of practical significance to the systems that support the *Five by Five.*

Achieving integration across the sectors that support the *Five by Five* has been widely discussed. This will require a common vision and structural supports, such as central funding and management and effective communication systems. However, these steps alone are unlikely to be enough for improving outcomes[134]; integration of services will only be successful if the programmes integrated are effective[132]. In order to achieve this, services will need to be innovative - continually developing and improving upon services and evaluating their effectiveness in robust ways.

This will require collaborations between researchers, policy makers and practitioners, and engagement across a spectrum of innovative and creative approaches. Researchers and services should work together to:

- design more effective interventions
- routinely conduct pragmatic randomised trials to evaluate the effectiveness of existing and new programmes[135] and policy changes[136, 137]
- make better use of administratively collected data to measure the long term impacts of these services with this whole-of-population observational data[138]
- capitalise on this data to better understand early childhood development for the population of children living in South Australia using advanced statistical methodology to emulate randomised control trials - the gold standard for evaluating causal effects[139-142]
- build information systems that provide clinicians and practitioners with relevant performance feedback in close to real time

Some of these issues will be the topic of subsequent editions of the *BetterStart* Research Series.

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