Health Promotion International, 2015, Vol. 30, No. S2 ii102–ii115
doi: 10.1093/heapro/dav031

OXFORD

Early childhood development and the social determinants of health inequities

Timothy G. Moore[1,*], Myfanwy McDonald[1], Leanne Carlon[2], and Kerryn O'Rourke[2]

[1]Murdoch Childrens Research Institute, Royal Children's Hospital, 50 Flemington Road, Parkville, Victoria 3052, Australia, and [2]VicHealth, 15-31 Pelham Street, Carlton, VIC 3053, Australia

*Corresponding author. E-mail: tim.moore@mcri.edu.au

'Fair Foundations: The VicHealth framework for health equity' was developed by VicHealth under the leadership of author O'Rourke. It was published in 2013. It is a conceptual and planning framework adapted from work done by the WHO Commission on the Social Determinants of Health (Solar and Irwin, 2010). Social determinants of health inequities are depicted as three layers of influence – socioeconomic, political and cultural context; daily living conditions; and individual health-related factors. These determinants and their unequal distribution according to social position, result in differences in health status between population groups that are avoidable and unfair. The layers of influence also provide practical entry points for action (VicHealth, 2013). Fair Foundations can be accessed at www.vichealth.vic.gov.au.

Summary

Children's health and development outcomes follow a social gradient: the further up the socio-economic spectrum, the better the outcomes. Based upon a review of multiple forms of evidence, and with a specific focus upon Australia, this article investigates the causes of these socially produced inequities, their impact upon health and development during the early years and what works to reduce these inequities. Using VicHealth's *Fair Foundations* framework, we report upon child health inequity at three different levels: the socioeconomic, political and cultural level; daily living conditions; the individual health-related behaviours. Although intensive interventions may improve the absolute conditions of significantly disadvantaged children and families, interventions that have been shown to effectively reduce the gap between the best and worst off families are rare. Numerous interventions have been shown to improve some aspect of prenatal, postnatal, family, physical and social environments for young children; however, sustainable or direct effects are difficult to achieve. Inequitable access to services has the potential to maintain or increase inequities during the early years, because those families most in need of services are typically least able to access them. Reducing inequities during early childhood requires a multi-level, multi-faceted response that incorporates: approaches to governance and decision-making; policies that improve access to quality services and facilitate secure, stable, flexible workplaces for parents; service systems that reflect the characteristics of proportionate universalism, function collaboratively, and deliver evidence-based programs in inclusive environments; strong, supportive communities; and information and timely assistance for parents so they feel supported and confident.

Key words: children, health and social policy, Australia, inequalities in health

INTRODUCTION

In every society, including Australia, differences in socioeconomic status translate into inequities in child development (Hertzman *et al.*, 2010; Strategic Review of Health Inequalities in England post-2010 Committee, 2010; Goldfeld and West, 2014). Discrepancies between children that are based upon avoidable differences in social and economic circumstances are evident as early as 9 months of age in a range of domains, and they grow larger over time (Heckman, 2008; Halle *et al.*, 2009).

It is well established that health follows a social gradient: progressively better health is associated with increasing socioeconomic position (WHO Commission on the Social Determinants of Health, 2008; Bambra *et al.*, 2010). This phenomenon is also evident across a wide range of indicators pertaining to children and families: outcomes for children and families improve progressively the further up the socioeconomic spectrum they are, and worsen progressively the further down they move (Hertzman *et al.*, 2010; Strategic Review of Health Inequalities in England post-2010 Committee, 2010). Hence, poor child and family outcomes are not concentrated exclusively at the bottom of the socioeconomic spectrum in a small group of disadvantaged families but are distributed across the entire spectrum in a graded fashion (Denburg and Daneman, 2010; Strategic Review of Health Inequalities in England post-2010 Committee, 2010; Wilkinson and Pickett, 2009).

The circumstances in which children are born determine their exposure to environments that promote or compromise healthy development. Children's health, development and well-being can be compromised by a number of direct adverse experiences during the prenatal and postnatal periods including: sustained poverty, recurrent abuse and neglect, parental alcohol or drug abuse, homelessness, and family violence. The trends regarding the prevalence of these problems in the families of Australian children are worrying (Moore and McDonald, 2013).

Inequities during the early years (typically defined as the first 8 years of life) are especially concerning because of the nature of early childhood development. During this period, a number of key capabilities and competencies develop (McCain and Mustard, 1999; Shonkoff, 2012), a process that is particularly sensitive to social determinants (Dyson *et al.*, 2010; Hertzman, 2010).

Experiences during early childhood play a major role in shaping later life (National Scientific Council on the Developing Child, 2007; Shonkoff *et al.*, 2009; Currie and Rossin-Slater, 2014). There are three key ways in which the life-long effects of early experiences impact on the later achievements, health and longevity of individuals:

- 'Biological embedding' is a developmental process whereby prenatal and early childhood experiences affect physiological and neurological development in ways that have long-term consequences (Gluckman *et al.*, 2010; Hertzman and Boyce, 2010);
- 'The cumulative effect of adverse experiences' during childhood can lead to toxic stress that influences every aspect of health and well-being in childhood and beyond (Anda *et al.*, 2009; Brown *et al.*, 2009; Shonkoff *et al.*, 2009; Shonkoff, 2012); and
- 'Escalations in risk over time' shape children's development so that exposure to adverse experiences at one stage of the life course increases the probability of similar exposures subsequently (Repetti *et al.*, 2002; Hertzman and Boyce, 2010).

This article focuses on the social determinants of health inequities during these critical early childhood years. The questions we seek to answer are:

1. What are the causes of inequities in health and development during early childhood, and how do these inequities impact upon health and development during this period?
2. What works to reduce inequities in health and development during the early years?

In terms of reducing inequities, we focus upon policies and practices that work—or show promise—in the Australian context or in countries similar to Australia such as the UK, Ireland, the USA, Canada and New Zealand.

The 'layers of influence' outlined in *Fair Foundations: The VicHealth framework for health equity* (VicHealth, 2013) are used to explore each question. According to the *Fair Foundations* framework, there are three layers of influence that lead to inequitable, socially produced, systematic differential health and well-being outcomes:

1. The socioeconomic, political and cultural context, encompassing governance, policy, and dominant cultural and societal norms and values
2. Daily living conditions, which are the circumstances in which people are born, grow, live, work and age; and

3. Individual health-related factors, that is the health-related knowledge, attitudes and behaviours of individuals that result from, and are responses to, their socioeconomic, political and cultural context, social position and daily living conditions.

The socioeconomic, political and cultural context generates a process of social stratification that allocates people to different social positions, with the end result being unequal distribution of power, economic resources and prestige (VicHealth, 2013).

For the purposes of this article, health inequities are defined as differences in health status between population groups that are socially produced, systematic in their unequal distribution across the population, avoidable and unfair (as opposed to health inequalities which can also refer to biological differences between children that impact upon their health, well-being and development and that are not preventable, e.g. a chromosomal abnormality). Secondly, early childhood is defined here as the first 8 years of life and the prenatal period. Our inclusion of the prenatal period is based upon the fact that inequities during this stage can impact upon an individual's outcomes during infancy, childhood and adulthood (Guyer *et al.*, 2009; Shonkoff, 2010).

METHODOLOGY

The search strategy we used for this review combined three different approaches:

1. A traditional database search: a targeted search of electronic databases to identify literature;
2. A search for authoritative summaries, conceptual and theoretical works outlined in various sources including books, grey literature and handbooks; and
3. A search of relevant websites: websites that were likely to have relevant grey literature from developed countries similar to Australia.

A more detailed description of the methodology is provided in Supplementary Appendix 1.

What are the causes of inequities in health and development during early childhood, and what works to reduce those inequities?

The causes of inequities in health and development during early childhood are vast and wide ranging, from macro-level social and economic factors right down to micro-level factors such as parent knowledge regarding health services. As such, reducing inequities in early childhood is likely to be a complex task involving a range of stakeholders, environments, interventions and external influences. What follows is a brief description of the findings of our review, including some key illustrations of how inequities in health and development during early childhood could be achieved. We conclude with a description of the strategies that, based upon the evidence we reviewed, appear to have the strongest potential to reduce inequities during early childhood in the Australian context.

Socioeconomic, political and cultural level

Over the last 50 years, developed nations have experienced rapid and dramatic social changes resulting in significant changes in the conditions under which families are raising young children (Giddens, 2002; Trask, 2010; Bauman, 2011). Although most children have benefited from these changes, a minority have not and experience significant problems across all aspects of development, health and well-being (Stanley *et al.*, 2005; Li *et al.*, 2008).

One outcome of these rapid social changes is that the nature of the problems facing society and governments have altered—they are now more likely to be 'wicked' problems (Weber and Khademian, 2008; Moore and Fry, 2011). Wicked problems are complex and intractable and, as such, cannot be resolved using traditional governance and leadership models, nor by service-driven approaches (Grint, 2010; Moore and Fry, 2011). Some wicked problems (e.g. poverty, child abuse) are not new, but have become more of a concern because of an increasing awareness regarding the adverse consequences of these problems upon child development and the complex nature of their underlying causes.

One 'wicked' problem that has wide-ranging and long-lasting consequences on young children is sustained poverty, which impacts on brain development and health during childhood, and psychological health and educational outcomes in adulthood (Gibb *et al.*, 2012; Blackburn *et al.*, 2013; Duncan *et al.*, 2013). Evidence suggests that policies targeting disadvantaged families—such as welfare-to-work initiatives—can have positive effects for both children and their families (Coley *et al.*, 2007; Millar, 2010). However, the evidence indicates that factors such as mandatory employment requirements and irregular or insecure forms of employment can have a negative impact on children (Strazdins *et al.*, 2010; Cooklin *et al.*, 2011; Coley and Lombardi, 2012). Such social policies have differing impacts depending upon the context within which they are implemented; in the Australian context, the limited research available suggests that welfare-to-work initiatives have largely negative effects (Summerfield *et al.*, 2010; Grahame and Marston, 2011).

International evidence indicates that policies targeting financially disadvantaged families that involve the

provision of additional money through, for example, direct cash payments and tax credits, have a limited effect on the circumstances in which young children from disadvantaged backgrounds develop, or indeed upon child outcomes (Lucas *et al.*, 2008; McEwen and Stewart, 2014). Evidence from the USA suggests that intensive, long-term initiatives that provide a range of support in addition to financial support (e.g. child-care, health care benefits) may be a more effective means of improving outcomes for children living in significantly disadvantaged households [see, for example, the New Hope program (Huston *et al.*, 2005; Miller *et al.*, 2008)]. However, it is unclear whether—and to what extent—these lessons are equally applicable to the Australia where, in comparison to the USA, more generous welfare provisions lessen the impact of poverty on families (Kalil *et al.*, 2012) [It may be that these policies are ineffective (in as far as outcomes for children are concerned) because of the complex nature of wicked problems, or it may be that the amount of money families received was too small to make a significant difference to their daily living conditions (Lucas *et al.*, 2008)].

Although there are a range of interventions that have been shown to improve the absolute position of the most disadvantaged families, evidence pertaining to interventions that have been shown to reduce the relative gap between the best and worst off families is fairly limited. One exception pertains to income-related nutritional disparities among pregnant women: instituting a policy of mandatory fortification of commonly consumed foods with folate reduces income-related nutritional disparities between women, thereby limiting the potential for inequities in foetal tube defects among children (Riccuito and Tarasuk, 2007). One intervention that has been shown to potentially increase inequities between children in the long term is smoke-free legislation designed to reduce children's exposure to second-hand smoke in the home. Evidence demonstrates that such legislation is ineffective at reducing inequities relating to second-hand smoke exposure between children from the highest and lowest SES groups, and may increase those inequities in the long term (Akhtar *et al.*, 2010; Moore *et al.*, 2012a).

In addition to considering the socioeconomic causes of childhood inequity, it is important to also consider the impact of cultural factors. One abiding cultural misperception among Australians is that young children are 'passive absorbers of content' and their lives 'simplified and uncluttered by influences' (Kendall-Taylor and Lindland, 2013). These misconceptions could indirectly maintain or increase inequity in early childhood by influencing how the general public views—and the extent to which they support—government investment in early childhood initiatives designed to reduce inequity [Fenech (2013) provides an example of how a specific view of early childhood can impact upon public support for early childhood initiatives. In Australia, education and care during the early years has typically been viewed as a personal rather than a public concern. As a result, there has been limited public support for universal high-quality early childhood education for *all* children in Australia (Fenech, 2013)]. Government investment in initiatives that seek to improve the quality of learning environments experienced by young children, for example, may be viewed as being of lesser importance than other education investments if young children lives are perceived to be as 'uncluttered by influences.'

Daily living conditions

Early child development

Children's development in both the short- and long term is shaped by the environments they experience in the prenatal and post-natal periods. These environments are not always optimal: common environmental risk factors in pregnancy and early life include: stress, cigarette smoking, alcohol consumption, obesity, poor nutrition, poverty and exposure to environmental toxins (Martin and Dombrowski, 2008; Brown *et al.*, 2011; Robinson, 2013; Platt, 2014; Taylor *et al.*, 2014).

There is now strong evidence that the biological and neurological development of an individual can be shaped by environmental conditions in the womb (Martin and Dombrowski, 2008; Robinson, 2013). One effect of suboptimal prenatal conditions is premature birth, which is associated with greater risk of problems both in the short and in the longer term (Patton *et al.*, 2004; Platt, 2014). One relatively common method for improving prenatal conditions is food subsidy and food voucher programs that target pregnant women experiencing disadvantage. Although these programs may have some direct impact on pregnant women's nutritional levels, there is limited evidence to support a sustainable impact on dietary behaviour (Black *et al.*, 2012). Similarly, there is a lack of evidence to recommend one intervention over another in regards to the cessation of smoking during pregnancy, although those that focus on parent attitudes and behaviours, as opposed to parent knowledge, appear to be more successful (Priest *et al.*, 2008). Targeted motivational smoking cessation interventions and holistic cessation support have demonstrated some promising results among low-income pregnant women in the USA and the UK (Parker *et al.*, 2007; Bryce *et al.*, 2009).

Postnatal environments are also vitally important for health and development, with early caregiving relationships being critical (National Scientific Council on the Developing Child, 2004; Siegel, 2012). Sensitive and

responsive care giving and positive attachments with caregivers are essential for the healthy neurophysiological, physical and psychological development of a child (Cozolino, 2012; Shonkoff, 2012). Workplace flexibility for parents and caregivers (e.g. parental leave schemes) during their child's early years is especially important in this respect as it provides parents and caregivers with greater opportunity to build those critical relationships with their children (O'Brien, 2009).

Caregiving that is inadequate and negligent, and attachments that are weak or disrupted, results in adverse consequences for children's health and development (Waldfogel, 2006; McCrory *et al.*, 2010). Physical and emotional abuse, neglect and family violence can have long-term consequences for the mental and physical health of children, as well as their social adjustment, academic achievements and employment histories in adulthood (Fergusson and Horwood, 1998; Reeve and van Gool, 2013; McLeod *et al.*, 2014). Some parenting programs have been shown to reduce behaviours associated with child maltreatment among parents who have previously abused their children or are involved with child protection authorities (Barlow *et al.*, 2006; Thomas and Zimmer-Gembeck, 2012); however, evidence regarding direct impact (i.e. actual maltreatment) is limited (MacVear *et al.*, 2014).

Early environments vary in the extent to which they support learning: the development of competence and autonomy depend upon the learning opportunities and support provided to the child in their daily home and community environments (Deci and Ryan, 2011; Blair and Raver, 2012; Pianta, 2013). Learning and development are cumulative—the skills acquired early form the basis for later skill development (Cunha *et al.*, 2006; Rigney, 2010). High-quality ECEC programs support young children's learning and, in this sense, play an important role in reducing inequity across the social gradient, because they benefit all children in a range of ways including cognitively, socially, behaviourally and in relation to school readiness (Durlak, 2003; Camilli *et al.*, 2010). The quality of ECEC programs is especially important; high-quality ECEC programs produce better outcomes for children than lower quality programs in both the short- and long term (Sylva *et al.*, 2003, 2012) [The quality of ECEC is determined according to structural factors (e.g. the number of children in a room) and process factors (e.g. the nature of adult-child interactions) (CCCH, 2013)]. Furthermore, high-quality ECEC has been shown to be especially beneficial for children from significantly disadvantaged backgrounds (Schweinhart *et al.*, 2011; Campbell, 2012).

In Australia *access* to high-quality ECEC is especially important considering young children from traditionally disadvantaged groups access ECEC at a lower rate than other children, and the quality of ECEC in disadvantaged neighbourhoods is generally poorer than other neighbourhoods (Baxter and Hand, 2013; CCCH, 2013). It is important to note that if an improvement in the quality of ECEC results in increased costs for families from disadvantaged backgrounds, there is likely to be increased inequity; children from higher socioeconomic backgrounds whose parents can afford ECEC will reap the benefits and enter school with skills their disadvantaged counterparts will not have had as many chances to develop.

Family environments

While families who are relatively well resourced have benefitted from recent rapid social change, poorly resourced families can find the heightened demands of contemporary living and parenting overwhelming (Gallo and Matthews, 2003; Barnes *et al.*, 2006a,b), with negative impacts on their children. Gaps in family functioning are cumulative: the more advantaged families are initially, the better they are able to capitalize and build on the enhanced opportunities available, so that the gap between them and those unable to do so progressively widens (Social Exclusion Task Force, 2007; Rigney, 2010).

There also appears to be an increase in the numbers of families with multiple and complex needs (Cleaver *et al.*, 2007; Bromfield *et al.*, 2010). Such families are often experiencing a range of external stressors (such as housing instability, poverty and social isolation) and parents within those families may also be grappling with their own experiences of trauma and victimization (Bromfield *et al.*, 2010).

Poor quality or insecure housing, and especially homelessness, negatively affects child health and well-being (Dockery *et al.*, 2010; McCoy-Roth *et al.*, 2012). In Australia, housing is especially relevant to the health inequities experienced by ATSI children, particularly in remote communities where the type of infectious diseases that infants commonly present with are linked to poor housing conditions and overcrowding (Kearns *et al.*, 2013; Jervis-Bardy *et al.*, 2014). Interventions that focus primarily on housing infrastructure do not appear to solve housing inequities in these communities. Housing interventions that aim to improve the absolute position of children in remote ATSI communities require a multi-level, multi-faceted, 'ecological' approach (McDonald *et al.*, 2008; Bailie *et al.*, 2011, 2012).

Physical and social environments

The nature and quality of the physical environment in which children grow up can have a significant impact on their health and development (Evans, 2006; Sustainable

Development Commission, 2008). Key aspects of the physical environment include access to parks and green spaces, the nature of the built environment and exposure to environmental toxins (Louv, 2005; Martin and Dombrowski, 2008; Sandercock *et al.*, 2010). People living in low socioeconomic status communities are more likely to be exposed to toxic wastes, air pollutants, poor water quality, excessive noise, residential crowding or poor housing quality (Evans and Katrowitz, 2002; Currie, 2011).

The nature and quality of the social environment also influence the development of young children and the functioning of families (Kawachi and Berkman, 2003; Pearson *et al.*, 2013). Poor social cohesion, social capital and social support have been associated with increased rates of postnatal maternal depressive symptoms, child maltreatment and concurrent drinking and smoking during pregnancy (Wandersman and Nation, 1998; Surkan *et al.*, 2006; Powers *et al.*, 2013; Eastwood *et al.*, 2014), as well as potentially playing a role in the actual health gradient that exists among children (Vyncke *et al.*, 2013).

One way of responding to poor quality social environments is through area-based interventions that target a specific geographical location and aim to bring about change to a whole community (e.g. Communities for Children, Muir *et al.*, 2010). In the UK and Australia, large-scale area-based interventions have had some positive, albeit typically small, effects on children and families living in disadvantaged communities, although the impact of these interventions typically 'fade out' once children start school (NESS, 2012; Edwards *et al.*, 2014). Experiences in Australia and elsewhere suggest that, when working with indigenous communities, the involvement of Indigenous people in health promotion initiatives is critical (Potvin *et al.*, 2003; Signal *et al.*, 2007; FaHCSIA, 2011).

Community-based, multi-setting, multi-strategy approaches to preventing childhood obesity in disadvantaged communities in the UK and Australia demonstrate promise (Williams *et al.*, 2011; Swinburn *et al.*, 2012; Institute of Health Equity, 2014). A focus upon disadvantaged communities is important considering a social gradient in childhood obesity (Bambra *et al.*, 2013).

Health care and other services

Even in countries with universal health services, there are inequities of access to health care among children and inequitable outcomes in health (Teitler *et al.*, 2007). In part, this is because disadvantaged areas tend to receive fewer services. However, it is also because many vulnerable families find accessing health services, as well as other types of services, a challenge. A minority of vulnerable families make little or no use of existing services (Leurer, 2011; Ou *et al.*, 2011) and it is often those with the greatest need that are least able to access available services (Ghate and Hazel, 2002; Fram, 2003).

The importance of providing accessible, comprehensive universal services for reducing inequity during the early years is underlined by a recent study which demonstrates significant differences in levels of vulnerability among Australian children by jurisdiction. Differences in the availability of universal health services could account for differences in jurisdictional levels of developmental inequity; two of the three states with the most comprehensive universal service coverage during the early years also have the smallest levels of inequity in child developmental vulnerability (Brinkman *et al.*, 2012).

One approach to improving service access is intake promotion and support (e.g. contacting parents prior to appointment to discuss potential barriers to attendance). Pre-intake prompting and support for improving families' registration with and use of services in UK have reported mixed findings (Yuan *et al.*, 2007; Michelson and Day, 2014). The processes of service delivery (i.e. how services are delivered) appear to play a key role in vulnerable families' engagement with services (CCCH, 2006; Moore *et al.*, 2012b).

Another major problem with the current service system is that the planning and delivery of services continues to be heavily segmented, with government departments and their funding streams operating autonomously as 'silos', making it difficult to conduct the joint planning needed to develop and implement a cohesive approach to supporting families of young children, especially those with multiple and complex needs (Moore, 2008). Place-based or 'collective impact' approaches to service delivery—involving a comprehensive, collaborative multi-level effort to simultaneously address all the factors that affect child, family and community functioning in a defined a socio-geographic area—would appear to address at least some of these problems; however, the evaluation of such approaches is still in the early stages (Moore and Fry, 2011).

Individual health-related behaviours and attitudes

The health and well-being of children are strongly influenced by the knowledge, attitudes and behaviours of their parents, caregivers and family (Law *et al.*, 2012; Peters *et al.*, 2013). Parent knowledge regarding child development and nutrition are associated with improved child outcomes (Hess *et al.*, 2004; Campbell *et al.*, 2013). Vulnerable families may not have the same level of access to health information as other families or may not even know that particular health services exist (Carbone *et al.*, 2004; Claas *et al.*, 2011; Leurer, 2011). Migrants and families from non-English-speaking

backgrounds are particularly disadvantaged in this respect (Parvin *et al.*, 2004; Carolan and Cassar, 2007; Boerleider *et al.*, 2013; Clark *et al.*, 2014).

Targeted approaches to providing health-related information, such as text messaging and telephone-delivered health education interventions, demonstrate promise in terms of improving some aspects of maternal and child health among disadvantaged families (Pukallus *et al.*, 2013; Song *et al.*, 2013). Other approaches to improving parents' knowledge regarding infant and child health and development include peer-support interventions. For example, peer-support breastfeeding interventions demonstrate promise in terms of their effectiveness among women living in disadvantaged communities in the UK (Alexander *et al.*, 2003; Dykes, 2005).

Parental child-rearing attitudes and behaviours also shape parenting behaviours, and parent–child relationships are influenced by a range of factors including the parents' own experiences of being parented, the child's behaviour, the parents' cultural background and social norms (Gutman and Feinstein, 2007; Kruske *et al.*, 2012; Prady *et al.*, 2014). One service delivery strategy that has been shown to have had positive effects on the behaviour and attitudes of parents is home visiting. Home visiting is a service delivery strategy that aims to provide a range of supports for families and typically targets significantly disadvantaged children, parents and families (Boller *et al.*, 2010). Until recently, there was little evidence indicating the effectiveness of home visiting programs in Australia (Kemp *et al.*, 2008); however, in recent years, Australian home visiting programs have demonstrated their beneficial effects on a range of outcomes including health behaviours among significantly disadvantaged parents (Kemp *et al.*, 2011).

DISCUSSION

Based upon the evidence we identified, the following strategies have the strongest potential to reduce inequities during early childhood in Australia. These strategies are based upon an analysis of what the evidence tells us about the causes and impacts of inequity in early childhood and what the evidence from Australia—and from countries similar to Australia—tells us about what works to reduce those inequities in early childhood. Perhaps the most important point to make about the strategies is that none of them alone are likely to resolve the type of problems that cause inequity during the early years, and many are reliant upon another to be effective. What is needed is a multi-level, multi-faceted response involving all layers of the *Fair Foundations* framework.

Socioeconomic, political and cultural context

1. Because traditional governance and leadership approaches are not an appropriate or effective means for addressing the complex problems that lead to inequity (Grint, 2010; Moore and Fry, 2011) decision-makers (e.g. government, non-government organizations) need to ask questions of and engage communities, service providers and institutions.
2. Because all children benefit from high-quality ECEC, especially children experiencing disadvantage (Durlak, 2003; Sylva *et al.*, 2003, 2012; Camilli *et al.*, 2010), the quality agenda in early childhood education and care needs to be maintained.
3. Because families with young children experiencing disadvantage are less likely to utilize ECEC services (Baxter and Hand, 2013), we need to implement policies that make it easy for families with young children experiencing disadvantage to access high-quality ECEC.
4. Because for young children, the key developmental environments are relational (National Scientific Council on the Developing Child, 2004; Siegel, 2012), we need to implement policies that enable greater workforce flexibility for all parents and caregivers so they can spend more time with their children during the early years.
5. Because employment for parents at any cost could increase inequity (those in the most disadvantaged groups are likely to be employed in the most insecure and instable jobs, and insecure, unstable employment can have a negative impact upon children) (Strazdins *et al.*, 2010; Cooklin *et al.*, 2011; Coley and Lombardi, 2012), we need to implement policies that ensure secure and stable employment for primary caregivers.
6. Because public perceptions of early childhood can impact upon public support for strategies that aim to support young children's learning and development (Fenech, 2013), and because a number of misconceptions about early childhood and ECEC exist among Australia's general public [e.g. young children are 'passive absorbers of content' and ECEC is a 'child minding service' (Kendall-Taylor and Lindland, 2013)], we need to improve public understanding of the importance of the early years and the role of ECEC.

Daily living conditions

7. Because most Australian families are doing well (and will continue to do well if any risks or problems are identified early) and because all families will struggle at some point (and some will struggle more than others) (Moore and McDonald, 2013), we need a

service system that reflects these realities of family life. Proportionate universalism reflects these realities, because it provides a baseline of universal services for all families (i.e. those who are doing well) and additional services according to need (for those who are struggling, including those who are struggling the most).

8. Because there is some evidence to indicate that children in more affluent neighbourhoods of Australia are receiving a higher quality of ECEC than children in less affluent neighbourhoods (CCCH, 2014) and because this has the potential to increase inequities among children (i.e. those who are already worse off receive a poorer quality of care), we need to ensure universal high-quality ECEC in *all* neighbourhoods.
9. Because the prenatal period plays a critical role in biological and neurological development (Martin and Dombrowski, 2008; Robinson, 2013) and inequities during the prenatal period have the potential to lead to inequities in children's development, and subsequent long-term outcomes (see, for example, Patton *et al.*, 2004; Platt, 2014), we need universal high-quality antenatal services.
10. Because the type of problems that cause inequity during early childhood are characterized by complexity and no single organization or sector can resolve those problems alone (Grint, 2010; Moore and Fry, 2011), we need service systems that enable collaboration between professions, between services, between sectors and with communities.
11. Because we need to ensure that the programs we invest in will have the best chance of achieving the desired outcomes in the most efficient way (Bromfield and Arney, 2008), we need evidence-based programs.
12. Because how services are provided is as important as what services are provided (i.e. the characteristics of the service environment will strongly influence the extent to which families engage in the programs services have to offer) (CCCH, 2006; Moore *et al.*, 2012a, b), we need welcoming, inclusive services that employ a strength-based, partnership-based approach.
13. Because informal support from extended family, friends, neighbours and colleagues can benefit families with young children by providing a form of flexible and sustainable assistance, as well as promoting a sense of belonging, and reducing the potential for social isolation (Surkan *et al.*, 2006; Vyncke *et al.*, 2013), we need more supportive communities.
14. Because not all communities will have the resources to participate in new forms of governance and community participation (such as those recommended in strategies 1 and 10) (Skidmore *et al.*, 2006; Adamson and Bromiley, 2008), communities need support to engage in decision-making and collaborative processes.
15. Because knowing what services exist, and what they provide, is a key facilitator of families' engagement with services (Parvin *et al.*, 2004; Carolan and Cassar, 2007; Boerleider *et al.*, 2013), families need information about services and child development in a range of different languages, tailored to differing circumstances and via a range of mediums.

Individual health-related context

16. Because parents need to be able to get support for themselves, their child and their family when it is needed, parents needs to know what services are available, what type of support is offered by those services and feel confident to approach those services (Carbone *et al.*, 2004; Carolan and Cassar, 2007; Boerleider *et al.*, 2013). For some families, the confidence to approach services will rely upon the 'approachability' of those services (see Strategy 12).
17. Because knowledge of child development helps parents understand their child and their child's behaviour (see, for example, Campbell *et al.*, 2013; Hess *et al.*, 2004), parents need to know about child development, the factors that promote positive health and development, and have the capacity to support their child's development.
18. Because a parent's attitudes about parenting mediate how they behave towards their children (Gutman and Feinstein, 2007; Kruske *et al.*, 2012; Prady *et al.*, 2014), parents need to feel confident and supported in their role as parents. Some parents will be confident in their parenting role, some will require reassurance and others may require more intensive support.

CONCLUSIONS

As Urie Bronfenbrenner claimed: 'every child needs at least one person who is crazy about [them]'. But in addition to that one person, children also need a network of support—as do their parents, and their families. They need a service system and broader socio-political environment that facilitates positive parent–child interactions and attachments, high-quality care and learning experiences in all environments and timely, appropriate and effective support when problems arise. If, as a nation, we truly prize children, then we need to work collectively to ensure that the social and economic circumstances of their families and communities—particularly during the antenatal period and the early childhood years—do not compromise their health and well-being, and do not limit who they are, and who they can become.

SUPPLEMENTARY MATERIAL

Supplementary material is available at *Health Promotion International* online.

FUNDING

This work was commissioned by VicHealth.

REFERENCES

Adamson D., Bromiley R. (2008) *Community Empowerment in Practice: Lessons From Communities First*. The Joseph Rowntree Foundation, York, UK. Retrieved June 17, 2014, from http://www.jrf.org.uk/sites/files/jrf/2157-community-wales-empowerment.pdf.

Akhtar P. C., Haw S. J., Levin K. A., Currie D. B., Zachary R., Currie C. E. (2010) Socioeconomic differences in second-hand smoke exposure among children in Scotland after introduction of the smoke-free legislation. *Journal of Epidemiology and Community Health*, **64**, 341–346.

Alexander J., Grant M., Sanghera J., Jackson D. (2003) An evaluation of a support group for breast-feeding women in Salisbury, UK. *Midwifery*, **19**, 215–220.

Anda R. F., Dong M., Brown D., Felitti V., Giles W., Perry G., et al. (2009) The relationship of adverse childhood experiences to a history of premature death of family members. *BMC Public Health*, **9**.

Bailie R. S., McDonald E. L., Stevens M., Guthridge S., Brewster D. R. (2011) Evaluation of an Australian indigenous housing programme: community level impact on crowding, infrastructure function and hygiene. *Journal of Epidemiology and Community Health*, **65**, 432–437.

Bailie R. S., Stevens M., McDonald E. L. (2012) The impact of housing improvement and socioenvironmental factors on common childhood illnesses: a cohort study in Indigenous Australian communities. *Journal of Epidemiology and Community Health*, **66**, 821–831.

Bambra C., Gibson M., Sowden A., Wright K., Whitehead M., Petticrew M. (2010) Tackling the wider social determinants of health and health inequalities: evidence from systematic reviews. *Journal of Epidemiology and Community Health*, **64**, 284–291.

Bambra C. L., Hillier F. C., Moore H. J., Summerbell C. D. (2013) Tackling inequalities in obesity: A protocol for a systematic review of the effectiveness of public health interventions at reducing socioeconomic inequalities in obesity amongst children. *Systematic Reviews*, **2**, 27.

Barlow J., Johnston I., Kendrick D., Polnay L., Stewart-Brown S. (2006) Individual and groupbased parenting programmes for the treatment of physical child abuse and neglect. *Cochrane Database of Systematic Reviews*, Issue 3. Art. No.: CD005463.

Barnes J., Katz I., Korbin J. E., O'Brien M. (2006a) *Children and Families in Communities: Theory, Research, Policy and Practice*. John Wiley and Sons, Chichester, UK.

Barnes J., MacPherson K., Senior R. (2006b) Factors influencing the acceptance of volunteer home-visiting support offered to families with new babies. *Child & Family Social Work*, **11**, 107–117.

Bauman Z. (2011) *Collateral Damage: Social Inequalities in a Global Age*. Polity Press, Cambridge, UK.

Baxter J., Hand K. (2013) Access to early childhood education in Australia (Research Report No. 24). Australian Institute of Family Studies, Melbourne, Australia.

Black A. P., Brimblecombe J., Eyles H., Morris P., Vally H., O Dea K. (2012) Food subsidy programs and the health and nutritional status of disadvantaged families in high income countries: a systematic review. *BMC Public Health*, **12**.

Blackburn C. M., Spencer N. J., Read J. M. (2013) Is the onset of disabling chronic conditions in later childhood associated with exposure to social disadvantage in earlier childhood? A prospective cohort study using the ONS Longitudinal Study for England and Wales. *BMC Pediatrics*, **13**.

Blair C., Raver C. C. (2012) Child development in the context of adversity: experiential canalization of brain and behaviour. *American Psychologist*, **67**, 309–318.

Boerleider A. W., Wiegers T. A., Mannien J., Francke A. L., Deville W. L. (2013) Factors affecting the use of prenatal care by non-western women in industrialized western countries: a systematic review. *BMC Pregnancy & Childbirth*, **13**, 81.

Boller K., Strong D. A., Daro D. (2010) Home visiting: looking back and moving forward. *Zero to Three*, **30**, 4–9.

Brinkman S., Gialamas A., Rahman A., Mittinty M. N., Gregory T. A., Silburn S., et al. (2012) Jurisdictional, socioeconomic and gender inequalities in child health and development: analysis of a national census of 5-year-olds in Australia. *BMJ Open*, **2**.

Bromfield L., Arney F. (2008) Developing a road map for research: Identifying the priorities for a national child protection research agenda. Child Abuse Prevention Issues, 28, National Child Protection Clearinghouse, Australian Institute of Family Studies. Retrieved July 11, 2014, from http://www.aifs.gov.au/nch/pubs/issues/issues28/issues28.html.

Bromfield L., Lamont A., Parker R., Horsfall B. (2010) *Issues for the Safety and Wellbeing of Children in Families with Multiple and Complex Problems: The Co-occurrence of Domestic Violence, Parental Substance Misuse, and Mental Health Problems (NCPC Issues No 33)*. National Child Protection Clearinghouse, Australian Institute of Family Studies, Melbourne, Australia.

Brown D. W., Anda R. F., Tiemeier H., Felitti V. J., Edwards V. J., Croft J. B., et al. (2009) Adverse childhood experiences and the risk of premature mortality. *American Journal of Preventive Medicine*, **37**, 389–396.

Brown S. J., Yelland J. S., Sutherland G. A., Baghurst P. A., Robinson J. S. (2011) Stressful life events, social health issues and low birthweight in an Australian population-based birth cohort: challenges and opportunities in antenatal care. *BMC Public Health*, **11**.

Bryce A., Butler C., Gnich W., Sheehy C., Tappin D. M. (2009) CATCH: development of a home-based midwifery intervention to support young pregnant smokers to quit. *Midwifery*, **25**, 473–482.

Camilli G., Vargas S., Ryan S., Barnett S. (2010) Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers College Record*, **112**, 579–620.

Campbell F. A. (2012) Adult outcomes as a function of an early childhood educational program: an Abecedarian project follow-up. *Developmental Psychology*, **48**, 1033–1043.

Campbell K. J., Abbott G., Spence A. C., Crawford D. A., McNaughton S. A., Ball K. (2013) Home food availability mediates associations between mothers' nutrition knowledge and child diet. *Appetite*, **71**, 1–6.

Carbone S., Fraser A., Ramburuth R., Nelms L. (2004) *Breaking Cycles, Building Futures. Promoting Inclusion of Vulnerable Families in Antenatal and Universal Early Childhood Services: A Report on the First Three Stages of the Project*. Victorian Department of Human Services, Melbourne, Australia. Retrieved June 13, 2014, from http://www.eduweb.vic.gov.au/edulibrary/public/beststart/ecs_breaking_cycles_best_start.pdf.

Carolan M., Cassar L. (2007) Pregnancy care for African refugee women in Australia: attendance at antenatal appointments. *Evidence Based Midwifery*, **5**, 54–58.

Centre for Community Child Health (CCCH). (2006) *Quality in Children's Services (Policy Brief No. 2)*. Centre for Community Child Health, Murdoch Childrens Research Institute, The Royal Children's Hospital, Parkville, Australia. Retrieved June 16, 2014, from http://www.rch.org.au/emplibrary/ccch/PB2_Qual_childsrv.pdf.

Centre for Community Child Health (CCCH). (2013) *Assessing the Quality of Early Childhood Education and Care (Policy Brief No. 25)*. Centre for Community Child Health, Murdoch Childrens Research Institute & Royal Children's Hospital, Parkville, Australia.

Centre for Community Child Health (CCCH). (2014) *The future of early childhood education and care services in Australia (Policy Brief No. 26)*. Centre for Community Child Health, Murdoch Childrens Research Institute, The Royal Children's Hospital, Parkville, Victoria. Retrieved August 4, 2014, from http://www.rch.org.au/uploadedFiles/Main/Content/ccch/140593%20METCALFE%20Policy%20Brief_web.pdf.

Claas B. M., Ellison-Loschmann L., Jeffreys M. (2011) Self-reported oral health care and access to oral health information among pregnant women in Wellington, New Zealand. *New Zealand Medical Journal*, **124**, 37–50.

Clark A., Gilbert A., Rao D., Kerr L. (2014) 'Excuse me, do any of you ladies speak English?' Perspectives of refugee women living in South Australia: Barriers to accessing primary health care and achieving the quality use of medicines. *Australian Journal of Primary Health*, **20**, 92–97.

Cleaver H., Nicholson D., Tarr S., Cleaver D. (2007) *Child Protection, Domestic Violence and Parental Substance Misuse: Family Experiences and Effective Practice*. Jessica Kingsley Publishers, London, UK.

Coley R. L., Lombardi C. M. (2012) Dynamics of early maternal employment in low-income families. In Kalil A., Haskins R. and Chesters J. (eds), *Investing in Children: Work, Education and Social Policy in Two Rich Countries*. Brookings Institution Press, Washington, DC.

Coley R. L., Lohman B. J., Votruba-Drzal E., Pittman L. D., Chase-Lansdale P. L. (2007) Maternal functioning, time and money: the world of work and welfare. *Child and Youth Services Review*, **29**, 721–741.

Cooklin A. R., Canterford L., Strazdins L., Nicholson J. M. (2011) Employment conditions and maternal postpartum mental health: results from the Longitudinal Study of Australian Children. *Archives of Women's Mental Health*, **14**, 217–225.

Cozolino L. (2012) *The Social Neuroscience of Education: Optimizing Attachment and Learning in the Classroom*. W.W. Norton, New York, NY.

Cunha F., Heckman J. J., Lochner L. J., Masterov D. V. (2006) Interpreting the evidence on life cycle skill formation. In Hanushek E., Welch F. (eds), *Handbook of the Economics of Education*. North-Holland, Amsterdam, the Netherlands.

Currie J. (2011) Inequality at birth: some causes and consequences. *American Economic Review*, **101**, 1–22.

Currie J., Rossin-Slater M. (2014) *Early-Life Origins of Lifecycle Wellbeing: Research and Policy Implications*. Department of Economics, University of California, Santa Barbara, CA.

Deci E. L., Ryan R. M. (2011) Levels of analysis, regnant causes of behaviour, and well-being: the role of psychological needs. *Psychological Inquiry*, **22**, 17–22.

Denburg A., Daneman D. (2010) The link between social inequality and child health outcomes. *Healthcare Quarterly*, **14**(Sp), 21–31.

Dockery A. M., Kendall G., Li J., Mahendran A., Ong R., Strazdins L. (2010) Housing and children's development and wellbeing: a scoping study (AHURI Final Report No. 149). Australian Housing and Urban Research Institute, Melbourne, Australia.

Duncan G. J., Kalil A., Ziol-Guest K. M. (2013) Early childhood poverty and adult achievement, employment and health. *Family Matters*, **93**, 27–35.

Durlak J. A. (2003) The long-term impact of preschool prevention programs: a commentary. *Prevention and Treatment*, **6**.

Dykes F. (2005) Government funded breastfeeding peer support projects: implications for practice. *Maternal and Child Nutrition*, **1**, 21–31.

Dyson A., Hertzman C., Roberts H., Tunstill J., Vaghri Z. (2010) *Childhood Development, Education and Health Inequalities*. Global Health Equity Group, Department of Epidemiology and Public Health, University College London, London, UK.

Eastwood J. G., Jalaludin B. B., Kemp L. A., Phung H. N. (2014) Bayesian hierarchical spatial regression of maternal depressive symptoms in South Western Sydney, Australia. *SpringerPlus*, **3**, 1–10.

Edwards B., Mullan K., Katz I., Higgins D. (2014) *The Stronger Families in Australia (SFIA) Study: Phase 2*. Australian Institute of Family Studies, Melbourne, Australia.

Evans G. W. (2006) Child development and the physical environment. *Annual Review of Psychology*, **57**, 423–451.

Evans G. W., Katrowitz E. (2002) Socioeconomic status and health: the potential role of environmental risk exposure. *Annual Review of Public Health*, **23**, 303–331.

FaHCSIA. (2011) Northern Territory Emergency Response: Evaluation Report 2011. Department of Families, Housing, Community Services and Indigenous Affairs, Canberra, Australia.

Fergusson D. M., Horwood L. J. (1998) Exposure to interparental violence in childhood and psychosocial adjustment in young adulthood. *Child Abuse and Neglect*, **22**, 339–357.

Fenech M. (2013) Quality early childhood education for my child or for all children? Parents as activists for equitable, high-quality early childhood education in Australia. *Australian Journal of Early Childhood*, **38**, 92–98.

Fram M. S. (2003) *Managing to Parent: Social Support, Social Capital, and Parenting Practices among Welfare-Participating Mothers with Young Children (Discussion Paper 1263–03)*. Institute for Research on Poverty, Washington, DC.

Gallo L. C., Matthews K. A. (2003) Understanding the association between socioeconomic status and physical health: do negative emotions play a role? *Psychological Bulletin*, **129**, 10–51.

Ghate D., Hazel N. (2002) *Parenting in Poor Environments: Stress, Support and Coping*. Jessica Kingsley Publishers, London, UK.

Gibb S. J., Fergusson D. M., Horwood L. J. (2012) Childhood family income and life outcomes in adulthood: findings from a 30-year longitudinal study in New Zealand. *Social Science and Medicine*, **74**, 1979–1986.

Giddens A. (2002) *Runaway World: How Globalisation Is Reshaping Our Lives*. Profile Books, London, UK.

Gluckman P. D., Hanson M. A., Buklijas T. (2010) A conceptual framework for the developmental origins of health and disease. *Journal of Developmental Origins of Health and Disease*, **1**, 6–18.

Goldfeld S., West S. (2014) *Inequalities in Early Childhood Outcomes: What Lies Beneath. Insight Issue 9*. Victorian Council of Social Services (VCOSS), Melbourne, Australia.

Grahame T., Marston G. (2011) Welfare-to-work and the experience of single mothers in Australia: Where are the benefits? *Australian Social Work*, **75**, 73–86.

Grint K. (2010) The cuckoo clock syndrome: addicted to command, allergic to leadership. *European Management Journal*, **28**, 306–313.

Gutman L. M., Feinstein L. (2007) *Parenting Behaviours and Children's Development From Infancy to Early Childhood: Changes, Continuities, and Contributions (DfES Research Brief No: RCB02-07)*. Department for Education and Science, London, UK.

Guyer B., Ma S., Grason H., Frick K., Perry D., Wigton A., McIntosh J. (2009) Early childhood health promotion and its life course health consequences. *Academic Pediatrics*, **9**, 142–149.

Halle T., Forry N., Hair E., Perper K., Wandner L., Wessel J., Vick J. (2009) *Disparities in Early Learning and Development: Lessons From the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B)*. Child Trends, Washington, DC.

Heckman J. J. (2008) Schools, skills, and synapses (NBER Working Paper 14064). National Bureau of Economic Research, Cambridge, Massachusetts.

Hertzman C. (2010) Framework for the social determinants of early child development. In Tremblay R. E., Boivin M., Peters R.DeV. (eds), *Encyclopedia on Early Childhood Development*. Centre of Excellence for Early Childhood Development, Montreal, Quebec, Canada.

Hertzman C., Boyce T. (2010) How experience gets under the skin to create gradients in developmental health. *Annual Review of Public Health*, **31**, 329.

Hertzman C., Siddiqi A., Hertzman E., Irwin L. G., Vaghri Z., Houweling T. A. J., et al. (2010) Bucking the inequality gradient through early child development. *British Medical Journal*, **340**, c468.

Hess C. R., Teti D. M., Hussey-Gardner B. (2004) Self-efficacy and parenting of high-risk infants: the moderating role of parent knowledge of infant development. *Journal of Applied Developmental Psychology*, **25**, 423–437.

Huston A. C., Duncan G. J., McLoyd V. C., Crosby D. A., Ripke M. N., Weisner T. S., Eldred C. A. (2005) Impacts on children of a policy to promote employment and reduce poverty for lowincome parents: new hope after 5 years. *Developmental Psychology*, **41**, 902–918.

Institute of Health Equity. (2014) Farnworth – Targeted Obesity Prevention in Bolton. UCL Institute of Health Equity. Retrieved June 16, 2014, from http://www.instituteofhealthequity.org/projects/farnworth-targeted-obesity-prevention-model-in-bolton.

Jervis-Bardy J., Sanchez L., Carney A. S. (2014) Otitis media in indigenous Australian children: review of epidemiology and risk factors. *Journal of Laryngology and Otology*, **128** (Suppl.S1), S16–S27.

Kalil A., Haskins R., Chesters J. (2012) *Introduction. Investing in Children: Work, Education and Social Policy in Two Rich Countries*. Brookings Institution Press, Washington, DC.

Kawachi I., Berkman L. F. (eds) (2003) *Neighborhoods and Health*. Oxford University Press, New York, NY.

Kearns T., Clucas D., Connors C., Currie B. J., Carapetis J. R., Andrews R. M. (2013) Clinic attendances during the first 12 months of life for aboriginal children in five remote communities of Northern Australia. *PLoS ONE*, **8**.

Kemp L., Harris E., McMahon C., Matthey S., Vimpani G., Anderson T., et al. (2008) Miller Early Childhood Sustained Home-visiting (MECSH) trial: design, method and sample description. *BMC Public Health*, **8**.

Kemp L., Harris E., McMahon C., Matthey S., Impani G. V., Anderson T., et al. (2011) Child and family outcomes of a long-term nurse home visitation programme: a randomised controlled trial. *Archives of Disease in Childhood*, **96**, 533–540.

Kendall-Taylor N., Lindland E. (2013) *Modernity, Morals and More Information: Mapping the Gaps Between Expert and*

Public Understandings of Early Child Development in Australia. FrameWorks Institute, Washington, DC.

Kruske S., Belton S., Wardaguga M., Narjic C. (2012) Growing up our way: the first year of life in remote Aboriginal Australia. *Qualitative Health Research*, **22**, 777–787.

Law C., Parkin C., Lewis H. (2012) Policies to tackle inequalities in child health: why haven't they worked (better)? *Archives of Disease in Childhood*, **97**, 301–303.

Leurer M. D. (2011) Perceived barriers to program participation experienced by disadvantaged families. *International Journal of Health Promotion and Education*, **49**, 53–59.

Li J., McMurray A., Stanley F. (2008) Modernity's paradox and the structural determinants of child health and well-being. *Health Sociology Review*, **17**, 64–77.

Louv R. (2005) *Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder*. Algonquin Books of Chapel Hill, Chapel, NC.

Lucas P. J., McIntosh K., Petticrew M., Roberts H., Shiell A. (2008) Financial benefits for child health and well-being in low income or socially disadvantaged families in developed world countries. *Cochrane Database of Systematic Reviews* 2008, Issue 2. Art. No.: CD006358.

MacVear M., Mildon R., Shlonsky R., Devine B., Falkiner J., Trajanovska M., D'Esposito F. (2014) *Evidence Review: An Analysis of the Evidence for Parenting Interventions for Parents of Vulnerable Children Aged up to Six Years*. Parenting Research Centre, East Melbourne, Australia.

Martin R. P., Dombrowski S. C. (2008) *Prenatal Exposures: Psychological and Educational Consequences for Children*. Springer, New York, NY.

McCain M. N., Mustard J. F. (eds) (1999) *Reversing the Real Brain Drain: Final Report of the Early Years Study*. Government of Ontario, Canada.

McCoy-Roth M., Mackintosh B. B., Murphey D. (2012) When the bough breaks: the effects of homelessness on young children. *Child Trends: Early Childhood Highlights*, **3**, 1–11.

McCrory E., De Brito S. A., Viding E. (2010) Research review: the neurobiology and genetics of maltreatment and adversity. *Journal of Child Psychology and Psychiatry*, **51**, 1079–1095.

McDonald E., Bailie R., Brewster D., Morris P. (2008) Are hygiene and public health interventions likely to improve outcomes for Australian Aboriginal children living in remote communities? A systematic review of the literature. *BMC Public Health*, **8**.

McEwen A., Stewart J. M. (2014) The relationship between income and children's outcomes: a synthesis of canadian evidence. *Canadian Public Policy*, **40**, 99–109.

McLeod G. F., Fergusson D. M., Horwood L. J. (2014) Childhood physical punishment or maltreatment and partnership outcomes at age 30. *American Journal of Orthopsychiatry*, **84**, 307.

Michelson D., Day C. (2014) Improving attendance at child and adolescent mental health services for families from socially disadvantaged communities: evaluation of a pre-intake engagement intervention in the UK. *Administration and Policy in Mental Health and Mental Health Services Research*, **41**, 252–261.

Millar J. (2010) Desperately seeking security: UK family policy, lone mothers and paid work. *Family Matters*, **87**, 27–36.

Miller C., Huston A. C., Duncan G. J., McLoyd V. C., Weisner T. S. (2008) New hope for the working poor: effects after eight years for families and children. MDRC. Retrieved June 13, 2014, from http://www.mdrc.org/sites/default/files/full_458.pdf.

Moore T. G. (2008) Supporting young children and their families: Why we need to rethink services and policies. CCCH Working Paper No. 1 (revised November 2008). Centre for Community Child Health, Royal Children's Hospital, Parkville, Victoria. Retrieved June 13, 2014, from http://www.rch.org.au/emplibrary/ccch/Need_for_change_working_paper.pdf.

Moore T. G., Fry R. (2011) *Place-Based Approaches to Child and Family Services: A Literature Review*. Centre for Community Child Health, Murdoch Childrens Research Institute & Royal Children's Hospital, Parkville, Australia.

Moore T. G., McDonald M. (2013) *Acting Early, Changing Lives: How Prevention and Early Action Saves Money and Improves Wellbeing*. The Benevolent Society, Paddington, Australia.

Moore G. F., Currie D., Gilmore G., Holliday J. C., Moore L. (2012a) Socioeconomic inequalities in childhood exposure to secondhand smoke before and after smoke-free legislation in three UK countries. *Public Health & Epidemiology*, **34**, 599–608.

Moore T. G., McDonald M., Sanjeevan S., Price A. (2012b) *Sustained Home Visiting for Vulnerable Families and Children: A Literature Review of Effective Processes and Strategies (Prepared for the Australian Research Alliance for Children and Youth)*. Centre for Community Child Health, Murdoch Childrens Research Institute & Royal Children's Hospital, Parkville, Australia.

Muir K., Katz I., Edwards B., Gray M., Wise S., Hayes A. (2010) The national evaluation of the communities for children initiative. *Family Matters*, **84**, 35–42.

National Scientific Council on the Developing Child. (2004) *Young Children Develop in an Environment of Relationships. NSCDC Working Paper*. National Scientific Council on the Developing Child, Brandeis University, Waltham, MA.

National Scientific Council on the Developing Child. (2007) *The Timing and Quality of Early Experiences Combine to Shape Brain Architecture. NSCDC Working Paper #5*. Centre on the Developing Child, Harvard University, Cambridge, MA.

The National Evaluation of Sure Start Team (NESS). (2012) *The Impact of Sure Start Local Programmes on Seven Year Olds and Their Families*. Institute for the Study of Children, Families and Social Issues, Birkbeck, University of London, London, UK.

O'Brien M. (2009) Fathers, parental leave policies, and infant quality of life: international perspectives and policy impact. *Annals of the American Academy of Political and Social Science*, **624**, 190–213.

Ou L., Chen J., Garrett P., Hillman K. (2011) Ethnic and Indigenous access to early childhood healthcare services in Australia: parents' perceived unmet needs and related barriers. *Australian and New Zealand Journal of Public Health*, **35**, 30–37.

Parker D. R., Windsor R. A., Roberts M. B., Hecht J., Hardy N. V., Strolla L. O., et al. (2007) Feasibility, cost, and cost-effectiveness of a telephone-based motivational intervention for underserved pregnant smokers. *Nicotine and Tobacco Research*, **9**, 1043–1051.

Parvin A., Jones C. E., Hull S. A. (2004) Experiences and understandings of social and emotional distress in the postnatal period among Bangladeshi women living in Tower Hamlets. *Family Practice*, **21**, 254–260.

Patton G. C., Coffey C., Carlin J. B., Olsson C. A., Morley R. (2004) Prematurity at birth and adolescent depressive disorder. *British Journal of Psychiatry*, **184**, 446–447.

Pearson A. L., Pearce J., Kingham S. (2013) Deprived yet healthy: neighbourhood-level resilience in New Zealand. *Social Science and Medicine*, **91**, 238–245.

Peters J., Dollman J., Petkov J., Parletta N. (2013) Associations between parenting styles and nutrition knowledge and 2–5-year-old children's fruit, vegetable and non-core food consumption. *Public Health Nutrition*, **16**, 1979–1987.

Pianta R. C. (2013) Consistent environmental stimulation from birth to elementary school. In Cooper C. L. (ed), *Well-Being: A Complete Reference Guide. Volume I: Wellbeing in Children and Families*. Wiley, Hoboken, NJ.

Platt M. J. (2014) Outcomes in preterm infants. *Public Health*, **128**, 399–403.

Potvin L., Cargo M., McComber A. M., Delormier T., Macaulay A. C. (2003) Implementing participatory intervention and research in communities: lessons from the Kahnawake Schools Diabetes Prevention Project in Canada. *Social Science and Medicine*, **56**, 1295–1305.

Powers J. R., McDermott L. J., Loxton D. J., Chojenta C. L. (2013) A prospective study of prevalence and predictors of concurrent alcohol and tobacco use during pregnancy. *Maternal and Child Health Journal*, **17**, 76–84.

Prady S. L., Kiernan K., Fairley L., Wilson S., Wright J. (2014) Self-reported maternal parenting style and confidence and infant temperament in a multi-ethnic community: results from the Born in Bradford cohort. *Journal of Child Health Care*, **18**, 31–46.

Priest N., Roseby R., Waters E., Polnay A., Campbell R., Spencer N., et al. (2008) Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke. *Cochrane database of systematic reviews*. Issue: 4, Art. No., CD001746.

Pukallus M., Plonka K., Kularatna S., Gordon L., Barnett A. G., Walsh L. et al. (2013) Cost-effectiveness of a telephone-delivered education programme to prevent early childhood caries in a disadvantaged area: a cohort study. *BMJ Open*, **3**.

Reeve R., van Gool K. (2013) Modelling the relationship between child abuse and long-term health care costs and wellbeing: results from an Australian community-based survey. *Economic Record*, **89**, 300–318.

Repetti R. L., Taylor S. E., Seeman T. E. (2002) Risky families: family social environments and the mental and physical health of offspring. *Psychological Bulletin*, **128**, 330–366.

Riccuito L. E., Tarasuk V. S. (2007) An examination of income-related disparities in the nutritional quality of food selections among Canadian households from 1986–2001. *Social Science and Medicine*, **64**, 186–198.

Rigney D. (2010) *The Matthew Effect: How Advantage Begets Further Advantage*. Columbia University Press, New York, NY.

Robinson M. (2013) How the first nine months shape the rest of our lives. *Australian Psychologist*, **48**, 239–245.

Sandercock G., Angus C., Barton J. (2010) Physical activity levels of children living in different built environments. *Preventive Medicine*, **50**, 193–198.

Schweinhart L. J., Montie J., Xiang Z., Barnett W. S., Belfield C. R., Nores M. (2011) The High/Scope Perry Preschool Study Through Age 40.

Shonkoff J. P. (2010) Building a new biodevelopmental framework to guide the future of early childhood policy. *Child Development*, **81**, 357–367.

Shonkoff J. P. (2012) Leveraging the biology of adversity to address the roots of disparities in health and development. *Proceedings of the National Academy of Sciences USA*, **109** (Suppl. 2), 17302–17307.

Shonkoff J. P., Boyce W. T., McEwen B. (2009) Neuroscience, molecular biology, and the childhood roots of health disparities: building a new framework for health promotion and disease prevention. *Journal of the American Medical Association*, **301**, 2252–2259.

Siegel D. J. (2012) *The Developing Mind: How Relationships and the Brain Interact to Shape Who We Are*, 2nd edition. The Guilford Press, New York, NY.

Signal L., Martin J., Reid P., Carroll C., Howden-Chapman P., Ormsby V. K. et al. (2007) Tackling health inequalities: moving theory to action. *International Journal for Equity in Health*, **6**.

Skidmore P., Bound K., Lownsbrough H. (2006) *Community Participation: Who Benefits?* The Joseph Rowntree Foundation, York, UK. Retrieved June 12, 2014, from http://www.jrf.org.uk/system/files/1802-community-network-governance.pdf.

Social Exclusion Task Force. (2007) *Reaching Out: Think Family. Analysis and Themes From the Families At Risk Review*. Social Exclusion Task Force, Cabinet Office, London, UK.

Solar O., Irwin A. (2010) *A conceptual framework for action on the social determinants of health. Social determinants of health discussion paper 2 (policy and practice)*. World Health Organization, Geneva, Switzerland.

Song H., May A., Vaidhyanathan V., Cramer E. M., Owais R. W., McRoy S. (2013) A two way text-messaging system answering health questions for low-income pregnant women. *Patient Education and Counseling*, **92**, 182–187.

Stanley F., Prior M., Richardson S. (2005) *Children of the Lucky Country?* Macmillan Australia, South Yarra, Australia.

Strategic Review of Health Inequalities in England post-2010 Committee. (2010) Fair Society, Healthy Lives (The Marmot

Review). Strategic Review of Health Inequalities in England post-2010.

Strazdins L., Shipley M., Clements M., Obrien L. V., Broom D. H. (2010) Job quality and inequality: Parents' jobs and children's emotional and behavioural difficulties. *Social Science and Medicine*, **70**, 2052–2060.

Summerfield T., Young L., Harman J., Flatau P. (2010) Child support and welfare to work reforms: the economic consequences for single-parent families. *Family Matters*, **84**, 68–78.

Surkan P. J., Peterson K. E., Hughes M. D., Gottlieb B. R. (2006) The role of social networks and support in postpartum women's depression: a multiethnic urban sample. *Maternal and Child Health Journal*, **10**, 375–383.

Sustainable Development Commission. (2008) *Health, Place and Nature. How Outdoor Environments Influence Health and Well-Being: A Knowledge Base*. Sustainable Development Commission, London, UK.

Swinburn B., Herbert J., Virgo-Milton M., Malakellis M., Moodie M., Mavoa H., et al. (2012) *Be Active Eat Well: Three-Year Follow-Up*. Deakin University, Geelong, Australia.

Sylva K., Melhuish E., Sammons P., Siraj-Blatchford I., Taggart B., Elliot K. (2003) *The Effective Provision of Pre-School Education (EPPE) Project. Findings From the Preschool Period (Research Brief, Brief No. RBX 15-03)*. Institute of Education, University of London, University of Oxford and Birkbeck, University of London, London, UK.

Sylva K., Melhuish E. C., Sammons P., Siraj-Blatchford I., Taggart B., Toth K., et al. (2012) Effective preschool, primary and secondary education project (EPPSE 3–14). Final Report from the Key Stage 3 Phase: Influences on Students' Development from age 11–14 (Research Brief DFE-RB202). Institute of Education, University of London, London.

Taylor C. M., Golding J., Emond A. M. (2014) Lead, cadmium and mercury levels in pregnancy: the need for international consensus on levels of concern. *Journal of Developmental Origins of Health and Disease*, **5**, 16–30.

Teitler J. O., Reichman N. E., Nepomnyaschy L., Martinson M. (2007) A cross-national comparison of racial and ethnic disparities in low birth weight in the United States and England. *Pediatrics*, **120**, e1182–e1189.

Thomas R., Zimmer-Gembeck M. J. (2012) Parent-child interaction therapy: an evidence-based treatment for child maltreatment. *Child Maltreatment*, **17**, 253–266.

Trask B. S. (2010) *Globalization and Families: Accelerated Systemic Social Change*. Springer, New York, NY.

VicHealth. (2013) Fair Foundations: The VicHealth framework for health equity. http://www.vichealth.vic.gov.au/Publications/Health-Inequalities/The-VicHealth-framework-for-health-equity.aspx (last accessed 10 February 2014).

Vyncke V., De Clercq B., Stevens V., Costongs C., Barbareschi G., Jonsson S. H., et al. (2013) Does neighbourhood social capital aid in levelling the social gradient in the health and well-being of children and adolescents? A literature review. *BMC Public Health*, **13**, 65.

Waldfogel J. (2006) *What Children Need*. Harvard University Press, Cambridge, MA.

Wandersman A., Nation M. (1998) Urban neighborhoods and mental health. *American Psychologist*, **53**, 647–656.

Weber E. P., Khademian A. M. (2008) Wicked problems, knowledge challenges, and collaborative capacity builders in network settings. *Public Administration Review*, **68**, 334–349.

WHO Commission on Social Determinants of Health. (2008) *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health. Final Report of the WHO Commission on Social Determinants of Health*. World Health Organisation, Geneva, Switzerland.

Wilkinson R. G., Pickett K. E. (2009) *The Sprit Level: Why More Equal Societies Almost Always Do Better*. Allen Lane, London, UK.

Williams K., Trenchard-Mabere E., Shaw C. (2011) Tower Hamlets Healthy Borough Programme. Phase 1 Progress Report: Executive Summary. Tower Hamlets & the NHS. Retrieved June 12, 2014, from http://www.instituteofhealthequity.org/projects/tackling-the-social-and-environmental-causes-of-obesity-in-tower-hamlets/tower-hamlets-healthy-borough-progress-report-summary.pdf.

Yuan S., Kerr G., Salmon K., Speedy P., Freeman R. (2007) Evaluating a community-based dental registration program for preschool children living in areas of high social deprivation. *European Archives of Paediatric Dentistry: Official Journal of the European Academy of Paediatric Dentistry*, **8**, 55–61.