Early Child Development: A *Powerful* Equalizer

Final Report

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for the World Health Organization's
Commission on the Social Determinants of Health

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Abstract

This document synthesizes knowledge about opportunities to improve the state of early child development (ECD) on a global scale. In keeping with international policy standards, we define early childhood as the period from prenatal development to eight years of age. What children experience during the early years *sets a critical foundation for their entire lifecourse.* This is because ECD—including health, physical, social/emotional and language/cognitive domains—strongly influences basic learning, school success, economic participation, social citizenry, and health. Within the work of the Commission, ECD has strong links to other social determinants of health, particularly Urban Settings, Gender, Globalization, and Health Systems. Areas of common concern with these determinants are discussed throughout this document. Research confirms a strong association between child survival and child development, such that the child survival and health agendas are indivisible from ECD. Our developmental approach to the early years includes the factors that affect child health and survival, but goes beyond these to consider how the early years can be used to create thriving global citizens. Here, we provide a framework for understanding the environments (and their characteristics) that play a significant role in influencing early development. The evidence and its interpretation is derived primarily from three sources: 1) peer-reviewed scientific literature, 2) reports from governments, international agencies, and civil society groups, and 3) a Knowledge Network of experts in ECD that is representative in both international and inter-sectoral terms. The principal strategic insight of this document is that the nurturant qualities of the environments where children grow up, live and learn—parents, caregivers, family and community—will have the most significant impact on their development. In most situations, parents and caregivers cannot provide strong nurturant environments without help from local, regional, national, and international agencies. We propose ways in which government and civil society actors, from local to international, can work in concert with families to provide equitable access to strong nurturant environments for all children globally.

Key Words: early child development; equity; social determinants of health; lifecourse; rights of the child

Political Briefing

Early Child Development: Investment in a Country's Future

The early years of life are crucial in influencing a range of health and social outcomes across the lifecourse. Research now shows that many challenges in adult society—mental health problems, obesity/stunting, heart disease, criminality, competence in literacy and numeracy—have their roots in early childhood. Economists now argue on the basis of the available evidence that investment in early childhood is the most powerful investment a country can make, with returns over the lifecourse many times the amount of the original investment. Governments can make major and sustained improvements in society by implementing policies that take note of this powerful body of research while, at the same time, fulfilling their obligations under the UN Convention on the Rights of the Child.

Research now shows that children's early environment has a vital impact on the way their brains develop. A baby is born with billions of brain cells that represent lifelong potential, but, to develop, these brain cells need to connect with each other. The more stimulating the early environment, the more positive connections are formed in the brain and the better the child thrives in all aspects of his or her life, in terms of physical development, emotional and social development, and the ability to express themselves and acquire knowledge.

We know what kinds of environments promote early child health and development. While nutrition and physical growth are basic, young children also need to spend their time in caring, responsive environments that protect them from inappropriate disapproval and punishment. They need opportunities to explore their world, to play, and to learn how to speak and listen to others. *Parents and other caregivers want to provide these opportunities for their children, but they need support from community and government at all levels.* For example, children benefit when national governments adopt "family-friendly" social protection policies that guarantee adequate income for all, and allow parents and caregivers to effectively balance their time spent at home and work. *Despite this knowledge, it is estimated that at least 200 million children in developing countries alone are not reaching their full potential.*

Political leaders can play an important role in guaranteeing universal access to a range of early child development services: parenting and caregiver support, quality childcare, primary healthcare, nutrition, education, and social protection. In the early years, the health care system has a pivotal role to play, as it is the point of first contact and can serve as a gateway to other early childhood services. To be effective, services at all levels need to be better coordinated and to converge at the family and local community in a way that puts the child at the centre.

These kinds of family-friendly policies and practices clearly benefit children and families, but they also result in economic benefits to the larger society. Globally, those societies that invest in children and families in the early years—rich or poor—have the most literate and numerate populations. These are the societies that have the best health status and lowest levels of health inequality in the world.

Success in promoting early child development does not depend upon a society being wealthy. Because early child development programs rely primarily on the skills of caregivers, the cost of effective programs varies with the wage structure of a society. Regardless of their level of wealth, societies can make progress on early child development by allocating as little as $1.00 in this area for every $10.00 spent on health and education.

Child Survival and Child Health agendas are indivisible from Early Child Development. That is, taking a developmental perspective on the early years provides an overarching framework of understanding that subsumes issues of survival and health. A healthy start in life gives each child an equal chance to thrive and grow into an adult who makes a positive contribution to the community—economically and socially.

Executive Summary

The early child period is considered to be *the most important* developmental phase throughout the lifespan. Healthy early child development (ECD)—which includes the physical, social/emotional, and language/cognitive domains of development, each equally important—strongly influences well-being, obesity/stunting, mental health, heart disease, competence in literacy and numeracy, criminality, and economic participation throughout life. What happens to the child in the early years is critical for the child's developmental trajectory and lifecourse.

The principal strategic insight of this document is that the nurturant qualities of the environments where children grow up, live and learn matter the most for their development, yet parents cannot provide strong nurturant environments without help from local, regional, national, and international agencies. Therefore, this report's principal contribution is to propose ways in which government and civil society actors, from local to international, can work in concert with families to provide equitable access to strong nurturant environments for all children globally. Recognizing the strong impact of ECD on adult life, it is imperative that governments recognize that disparities in the nuturant environments required for healthy child development will impact differentially on the outcome of different nations and societies. In some societies, inequities in ECD translate into vastly different life chances for children; in others, however, disparities in ECD reach a critical point, where they become a threat to peace and sustainable development.

The early years are marked by the most rapid development, especially of the central nervous system. *The environmental conditions to which children are exposed in the earliest years literally "sculpt" the developing brain*. The environments that are responsible for fostering nurturant conditions for children range from the intimate realm of the family to the broader socioeconomic context shaped by governments, international agencies, and civil society. These environments and their characteristics are the determinants of ECD; in turn, ECD is a determinant of health, well-being, and learning skills across the balance of the lifecourse.

The seeds of adult gender inequity are sewn in early childhood. In the early years, gender equity issues—in particular, gender socialization, feeding practices, and access to schooling—are determinants of ECD. Early gender inequity, when reinforced by power relations, biased norms and day-to-day experiences in the family, school, community, and broader society, go on to have a profound impact on adult gender inequity. Gender equity from early childhood onwards influences human agency and empowerment in adulthood.

Economists now argue on the basis of the available evidence that investment in early childhood is the most powerful investment a country can make, with returns over the lifecourse many times the size of the original investment.

The scope of the present report is fourfold:

1. To demonstrate which environments matter most for children. This includes environments from the most intimate (family) to the most remote (global).
2. To review which environmental configurations are optimal for ECD, including aspects of environments that are economic, social, and physical in nature.
3. To determine the "contingency relationships" that connect the broader socioeconomic context of society to the quality of nurturing in intimate environments such as families and communities.
4. To highlight opportunities to foster nurturant conditions for children at multiple levels of society (from family-level action to national and global governmental action) and by multiple means (i.e. through programmatic implementation, to "child-centered" social and economic policy development).

In keeping with international policy standards, early childhood is defined as the period from prenatal development to eight years of age. The evidentiary base, as well as

Economists now argue on the basis of the available evidence that investment in early childhood is the most powerful investment a country can make, with returns over the lifecourse many times the size of the original investment.

interpretation of the body of evidence, is derived from three primary sources:

1) peer-reviewed scientific literature,
2) reports from governments, international agencies, and civil society groups, and
3) international experts in the field of ECD (including the Commission on Social Determinants of Health, Knowledge Network for ECD) that is representative in both international and inter-sectoral terms.

This evidence-based multiple-sourced approach ensures that the conclusions and recommendations of this report are borne out of the perspectives of a diverse array of stakeholders and broadly applicable to societies throughout the world.

One guiding principle is an "equity-based approach" to providing nurturant environments for children everywhere. Multiple perspectives—from the provisions of human and child rights declarations to the realities reflected by research evidence—make clear the importance of equity. Programs and policies must create marked improvements in the circumstances of societies' most disadvantaged children, not just in absolute terms, but in comparison to the most advantaged children as well.

What is now known is that, in every society, inequities in socioeconomic resources result in inequities in ECD. The relationship is much more insidious than solely differentiating the rich from the poor; rather, any additional gain in social and economic resources to a given family results in commensurate gains in the developmental outcomes of the children in that family. This step-wise relationship between socioeconomic conditions and ECD is called a "gradient effect." However, some societies are more successful than others at "dulling" the gradient effect, thus fostering greater equity. Societies accomplish this by providing a range of important resources to children as a right of citizenship, rather than allowing them to be a luxury for those families and communities with sufficient purchasing power.

Importantly, an equity-based approach is also the successful path to creating high average ECD outcomes for a nation. Societies that demonstrate higher overall average outcomes for children are those in which

disadvantaged children are developmentally stronger than disadvantaged children in other nations, whereas, in all nations, children at the higher ends of the socioeconomic spectrum tend to demonstrate relatively strong outcomes.

In this report we provide a framework for understanding the environments (and their characteristics) that play a significant role in providing nurturant conditions to all children in an equitable manner. The framework acts as a guide to understanding the relationships between these environments, putting the child at the center of her or his surroundings. The environments are not strictly hierarchical, but rather are truly interconnected. At the most intimate level is the family environment. At a broader level are residential communities (such as neighbourhoods), relational communities (such as those based on religious or other social bonds), and the ECD service environment. Each of these environments (where the child actually grows up, lives, and learns) is situated in a broad socioeconomic context that is shaped by factors at the regional, national, and global level.

The framework affirms the importance of a lifecourse perspective in decision-making regarding ECD. Actions taken at any of these environmental levels will affect children not only in present day, but also throughout their lives. The framework also suggests that historical time is critically influential for children; large institutional and structural aspects of societies (e.g. government policy-clusters, programs, and the like) matter for ECD, and these are "built" or "dismantled" over long periods of time.

Socioeconomic inequities in developmental outcomes result from inequities in the degree to which the experiences and environmental conditions for children are nurturant. *Thus, all recommendations for action stem from one overarching goal: to improve the nurturant qualities of the experiences children have in the environments where they grow up, live, and learn.* A broad array of experiences and environmental conditions matter. These include those that are intimately connected to the child, and therefore readily identifiable (e.g. the quality of time and care provided by parents and caregivers and the physical conditions of the child's surroundings), but also more distal factors that in various ways influence the child's access to nurturant conditions (e.g., whether government policies provide families and communities with sufficient income and employment, health care resources, early childhood education, safe neighborhoods, decent housing, etc.).

While genetic predispositions and biophysical characteristics partially explain how environment and experience shape ECD, the best evidence leads us to consider the child as a social actor who shapes and is in turn shaped by his or her environment. This is known as the "transactional model," which emphasizes that the principal driving force of child development is relationships. Because strong nurturant relationships can make for healthy ECD, *socioeconomic circumstances, despite their importance, are not fate.*

The family environment is the primary source of experience for a child, both because family members (or other primary caregivers) provide the largest share of human contact with children and because families mediate a child's contact with the broader environment. Perhaps the most salient features of the family environment are its social and economic resources. Family social resources include parenting skills and education, cultural practices and approaches, intra-familial relations, and the health status of family members. Economic resources include wealth, occupational status, and dwelling conditions. The gradient effect of family resources on ECD is the most powerful explanation for differences in children's well-being across societies. Young children need to spend their time in warm responsive environments that protect them from inappropriate disapproval and punishment. They need opportunities to explore their world, to play, and to learn how to speak and listen to others. Families want to provide these opportunities for their children, but they need support from community and government at all levels.

Children and their families are also shaped by the residential community (where the child and family live) and the relational communities (family social ties to those with a common identity) in which they are embed-



ded. Residential and relational communities offer families multiple forms of support, from tangible goods and services that assist with child rearing, to emotional connections with others that are instrumental in the well-being of children and their caregivers. At the residential/locality level, both governments and grass-roots organizations also play a highly influential role. Many resources available to children and families are provided on a community level through local recognition of deficits in resources, problem-solving, and ingenuity. There are, however, inequities in ECD that are apparent between residential communities, which must be addressed in a systematic way.

"Relational community" refers to the people, adults and children, who help form a child's social identity: tribal, ethnic, religious, and language/cultural. Often, this is not a geographically clustered community. Relational communities provide a source of social networks and collective efficacy, including instrumental, informational, and emotional forms of support. However, discrimination, social exclusion, and other forms of subjugation are often directed at groups defined by relational communities. The consequences of these forms of discrimination (e.g., fewer economic resources) can result in discernable inequities. Moreover, relational communities can be sources of gender socialization, both equitable and non-equitable. Relational communities are also embedded in the larger socio-political contexts of society; as such, reciprocal engagement with other relational groups, civil society organizations, and governmental bodies is a means of addressing the interests and resource needs of their members.

The availability of *ECD programmes and services* to support children's development during the early years is a crucial component of an overall strategy for success in childhood. ECD services may address one or more of the key developmental domains (i.e. language/cognitive, social/emotional, and physical development). The quality and appropriateness of services is a central consideration in determining whether existing ECD programmes improve outcomes for children. There are principles of ECD programmes and services that are readily transferable between places; however, many programme features require tailoring to the social, economic, and cultural contexts in which they are found. ECD services may be targeted to specific characteristics of children or families (e.g., low birth-weight babies or low-income families), may occur only in some communities and locales and not others, or may be more comprehensively provided. Each of these is also accompanied by their respective benefits and drawbacks; *however, the overarching goal of the global community should be to find means of providing universal access to effective ECD programmes and services.* Health care systems (HCSs) are key to providing many important ECD services. The HCS is in a unique position to contribute to ECD, since HCSs provide facilities and services that are more widely accessible in many societies than any other form of human service, are already concerned with the health of individuals and communities, employ trained professionals, and are a primary point of contact for child-bearing mothers.

The influence of the *regional and national environments* is fundamental in determining the quality and accessibility of services and resources to families and communities. They are also salient for understanding the levels of social organization at which inequalities in opportunity and outcome may be manifest, and the levels of organization at which action can be taken to ameliorate inequities.

There are many interrelated aspects of *regional environments* that may be significant for ECD: physical (e.g., the degree of urbanization, the health status of the population), social, political, and economic. These aspects of the regional environment affect ECD through their influence on the family and neighbourhood, and on ECD services. In contrast to more intimate environments, such as the family, the significance of large environments, such as the region, is that regions have an effect on large numbers of children. Thus, changing the environment at this level can influence the lives of many children. Much more research and accumulation of knowledge is required regarding *how* regional characteristics can be modified to positively influence ECD.

The most salient feature of the *national environment is* its capacity to affect multiple determinants of ECD through wealth creation, public spending, child- and family-friendly policies, social protection, and protection of basic rights. *The chances that children will face extreme poverty, child labour, warfare, HIV/AIDS, being left in the care of a sibling, and so on, is determined, first and foremost, by the countries in which they are born.*

At the level of the national environment, comprehensive, inter-sectoral approaches to policy and decision-making work best for ECD. Although ECD outcomes tend to be more favourable in wealthy countries than poor ones, this is not always the case. It is clear that a commitment of 1.5–2.0% of GDP to an effective mix of policies and programmes in the public sector can effectively support children's early development. Those nations with less economic and political power are less free to determine their internal policy agendas, and are more influenced by the interests of the international community, including other nations and multilateral organizations. *Notwithstanding this, most of the recommendations in this report are within the capabilities of any national government that meets the international criteria for a "competent authority."*

The *global environment* can influence ECD through its effects on the policies of nations as well as through the direct actions of a range of relevant actors, including multilateral economic organizations, industry, multilateral development agencies, non-governmental development agencies, and civil society groups. A major feature of the global environment in relation to children's well-being is the element of *power* in economic, social, and political terms. Power differentials between types of actors, particularly between nations, have many consequences, including the ability of some nations (mainly resource-rich ones) to influence the policies of other nations (mainly resource-poor ones) to suit their own interests. Although power differentials may have invidious effects on ECD, they can be exploited for the benefit of children, too. *Requiring a minimum level of government spending on* ECD *and compliance with the Rights in Early Childhood provisions of the Convention on the Rights of the Child, as preconditions for international developmental assistance, are two mechanisms that can be used.* Analogous mechanisms have been used effectively in other areas of international development in the past.

Civil society groups are conceptualized as being organized at, and acting on, all levels of social organization, from local residential through global. The ability of civil society to act on behalf of children is a function of the extent of "social capital" or connectedness of citizens, and the support of political institutions in promoting expressions of civil organization. When civil society is enabled, there are many avenues through which they can engage on behalf of children. Civil society groups can initiate government, non-government organization, and community action on social determinants of ECD. They can advocate on behalf of children to assure that governments and international agencies adopt policies that positively benefit children's well-being. Finally, civil society groups are instrumental in organizing strategies at the local level to provide families and children with effective delivery of ECD services, to improve the safety, cohesion, and efficacy of residential environments, and to increase the capacity of local and relational communities to better the lives of children. *Although research on the direct effect of civil society on* ECD *is limited, the strong statistical association between the strength of civil society and human development in societies around the globe leaves little doubt about its importance to* ECD.

Introduction

The early child period is considered to be *the most important* developmental phase throughout an individual's lifespan. Healthy early child development (ECD)—physical, social–emotional, and language–cognitive—is fundamental to success and happiness not only for the duration of childhood, but throughout the lifecourse. ECD strongly influences well-being, obesity/stunting, mental health, heart disease, literacy and numeracy skills, criminality, and economic participation throughout life—all issues that have profound implications for economic burden on countries. If the window of opportunity presented by the early years is missed, it becomes increasingly difficult, in terms of both time and resources, to create a successful lifecourse. Governments must recognize that effective investments in the early years are a cornerstone of human development and central to the successfulness of societies. Indeed, our planet provides *no* examples of highly successful societies among those who have ignored development in the early years. It is therefore critical for governments, international agencies, and civil society partners to move from knowledge to action in ECD.

Governments must recognize that effective investments in the early years are a cornerstone of human development and central to the successfulness of societies.

ECD is important in all countries, resource-rich and -poor alike, but special attention needs be paid to the potential benefits to the resource-poor, where a child has a four in ten chance of living in extreme poverty and 10.5 million children die before age 5 from preventable diseases. Such children are likely to suffer from poor nutrition and poor health. They are also at high risk of never attending school (UNESCO 2007). The recent Lancet series on ECD estimates that there are 559 million children under 5 in developing countries—including 155 million who are stunted and 62 million who are not stunted but are living in poverty—for a total of over 200 million children under five years of age who are at extreme risk of impaired cognitive and social–emotional development. Most of these children—89 million—live in ten countries (India, Nigeria, China, Bangladesh, Ethiopia, Indonesia, Pakistan, Democratic Republic of Congo, Uganda, and Tanzania) that account for 145 million (66%) of the 219 million disadvantaged children in the developing world. Many are likely to do poorly in school and subsequently as adults will likely have low incomes, high fertility, and provide poor health care, nutrition, and stimulation to their own children, thus contributing to the intergenerational transmission of disadvantage (Grantham-McGregor et. al., 2007). The loss of human potential that the above statistics represent is associated with more than "a 20% deficit in adult income and will have implications for national development" (Grantham-McGregor et. al., 2007, p. 67).

The agenda to improve child survival and health is indivisible from the agenda to improve early child development.

The overarching message of this report to governments, international agencies, and civil society partners is this: the agenda to improve child survival and health is indivisible from the agenda to improve ECD. That is, taking a developmental perspective on the early years provides a comprehensive framework of understanding that subsumes issues of survival and health. A healthy start in life gives each child an equal chance to thrive and grow into an adult who makes a positive contribution to the community—economically and socially. Accordingly, governments should adopt a strategy of investing in ECD in order to meet

the Millennium Development Goals (MDGs) for poverty reduction, education, and health.

Governments should adopt a strategy of investing in early child development in order to meet the Millennium Development Goals for poverty reduction, education, and health.

Economists now argue on the basis of the available evidence that investment in early childhood is the most powerful investment a country can make, with returns over the life course many times the amount of the original investment. Globally, societies—rich or poor—that invest in children and families in the early years have the most literate and numerate populations. These are also the societies that have the best health status and lowest levels of health inequality in the world. Societies with the most successful policies and programmes for ECD spend approximately 1.5%–2.0% of GDP per year on it (OECD, 2006). One study has estimated that every dollar spent to help a child reach school age while thriving can generate up to $17 in benefits to society over the following four decades (even after controlling for inflation) (Schweinhart, Barnes & Weikart, 1993; Schweinhart, 2004).

While the academic and grey literature provides compelling evidence about the importance of the early years, in practice, ECD is not at the centre of international, national or local policies, programming and practice. Despite the strength of the evidence, adequate investments in ECD have been slow, particularly, in resource-poor countries where the greatest number of vulnerable children would benefit the most.

Within the work of the Commission on Social Determinants of Health (CSDH), ECD has strong links to other social determinants of health, particularly Urban Settings, Gender, Globalization and Health Systems. Areas of common concern with these determinants are made clear, though implicit, throughout this document. Moreover, we argue that Child Survival, Child Health, Education for All, and Child Rights agendas are indivisible from ECD. Again, taking a developmental perspective on the early years provides a framework of understanding that incorporates issues of survival and health as well as education and rights.

SCOPE OF WORK

This work includes evidence related to infants and children, from prenatal development through to eight years of age, specifically considering how social determinants influence health across the lifecourse. It is of relevance to children on a global scale. We discuss the limitations to the application of these ideas where appropriate.

PURPOSE

The purpose of this document is to synthesize knowledge to inform the CSDH about opportunities to *improve action* on a global scale in the area of ECD. The evidence assembled here focuses on priority associations between social determinants of health and health inequities across different country contexts. It comments on the extent to which the social determinants of ECD can be acted upon; is intended to *stimulate societal debate* on the opportunities for acting on social determinants of health and to inform the application and evaluation of policy proposals and programmes in the area of ECD—nationally, across regions and globally. The areas of focus for each of the Commission's Knowledge Networks—Globalization, Social Exclusion, Health Systems, Gender, Urban Settings, Employment Conditions, Priority Public Health Conditions and Evidence & Measurement—are critical to understanding the social determination of ECD, and as such are integral to this review.

CONCEPTUAL FRAMEWORK

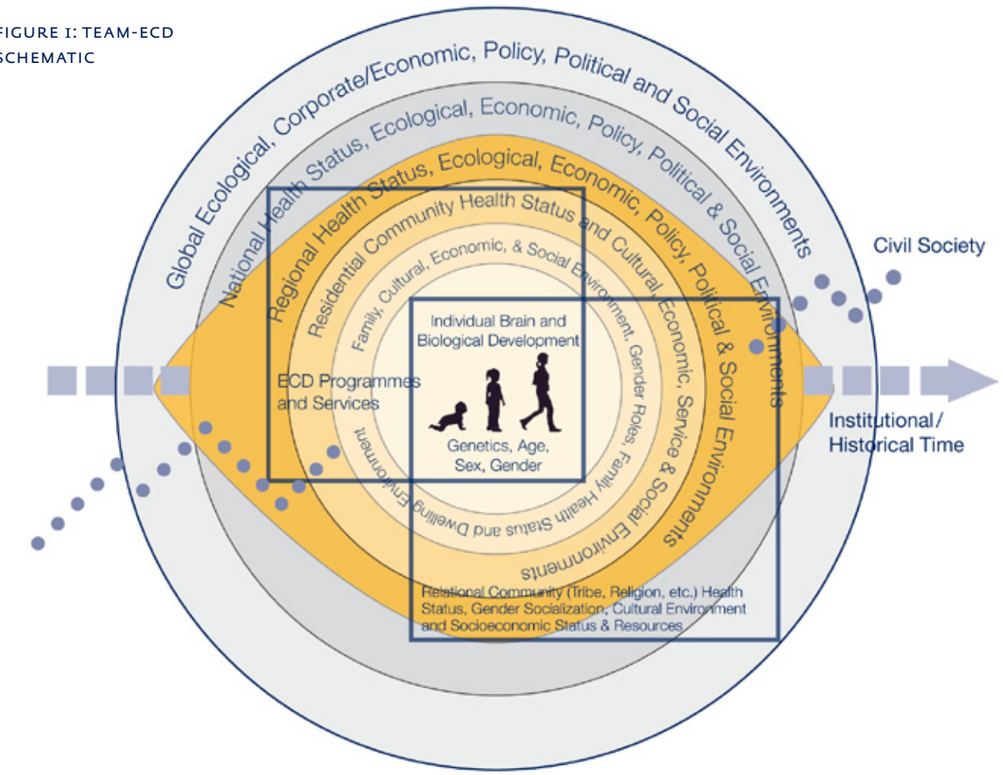
The Total Environment Assessment Model of Early Child Development (TEAM-ECD) has been developed for the CSDH as a means of framing the types of environments (and therefore experiences) that are integral to healthy ECD, and linking these to the biological processes with which they interact

to shape children's outcomes (Siddiqi, Irwin & Hertzman, 2007). The TEAM-ECD model builds on a diverse literature, including previously described frameworks that have addressed ECD from a social environmental perspective. These sources include Urie Bronfenbrenner's Bioecological Model (1986); developmental psychology perspectives on ECD (Brooks-Gunn, Duncan & Maritato, 1997); notions of "biological embedding" (Hertzman 1999); frameworks of understanding regarding social epidemiology and social determinants of health (Dahlgren & Whitehead, 1991; Emmons, 2003); research regarding social relations in human society (Putnam, 2000; Weber, 1946); a vast literature in the political economy domain (for a review of this literature, see Siddiqi, Irwin & Hertzman, 2007); and the World Health Organization (WHO) Framework on Social Determinants of Health (Solari & Irwin, 2005). Because the WHO Equity Team framework considers ECD as a determinant of health, it becomes crucial here to address the factors influencing ECD itself. By expanding the notion of environmental spheres of influence, adding a temporal component, and placing children's well-being at its centre, TEAM-ECD offers the strongest means of understanding (and therefore acting upon) social determinants of ECD.

SPHERES OF INFLUENCE ON EARLY CHILD DEVELOPMENT

In this schematic (see FIGURE 1), a variety of interacting and interdependent spheres of influence are instrumental for development in early childhood. They include the individual, family, and dwelling; residential and relational communities; ECD programmes and services; and regional, national and global environments. In each sphere of influence, social, economic, cultural and gender factors affect its nurturant qualities.

FIGURE 1: TEAM-ECD SCHEMATIC



Methods

Methods

The process of synthesizing the available evidence raised the question of what counts as evidence. We paid attention to the quality of the source, the context of the research, the nuances of particular programmes and populations served, and the ecological factors associated with the studies. Accordingly, our evidentiary base is derived from three primary sources:

1) peer-reviewed scientific literature,
2) reports from governments, international agencies, and civil society groups and
3) international experts in ECD (including the CSDH Knowledge Network for ECD that is representative in both international and intersectoral terms).

This Final Report is a summary of a broader comprehensive evidence document entitled, like the model, *TEAM-ECD* (Siddqi, Irwin & Hertzman, 2007), so when in-depth information is at issue, we to refer back to TEAM-ECD. Although there is a wealth of literature related to ECD, only a limited number of studies focus upon ECD in resource-poor countries. In addition, although we believe that qualitative research findings contribute a unique and important source of information to a review such as this, the availability of studies employing qualitative methods was limited. There is also a heavy weighting of evidence in the literature for "at risk" or special populations, but these studies are also concentrated in resource-rich nations.

We took a broad view of what literature was relevant to ECD (see Appendix A), investigating databases from multiple disciplines, including medicine, developmental psychology, sociology, nursing, population health, economics and anthropology. For each, evidence that pertained to any aspect of children's well-being was included. In addition, papers addressing the interconnectivity of family, residential, relational and broader societal contexts were reviewed, even when these papers did not make direct reference to effects on children. Whenever possible we used "causal evidence" in the scientific sense and complemented it with practical and personal experiences drawn from a wide variety of sources. While we have used the highest quality research evidence available, we are also aware that not all high-quality research is of practical significance or equally applicable in all global contexts. This multi-source, multi-method approach helped to ensure that the conclusions and recommendations of this report are consistent with the perspectives of a diverse array of stakeholders, and are broadly applicable to societies throughout the world.

We acknowledge both the limitations posed by many of these studies being focused in resource-rich nations, and the many challenges that limit the extent to which experiences, programmes and research findings from one global context[2] can be applied to others.

[2] Efforts aimed at universalization of knowledge and practices have been based on dominant Anglo-American values, goals and norms (Nsamenang, 2005). Our best example of this is breastfeeding. For many years in the past, European and American organizations and corporate entities advocated for formula feeding (Gussow, 1980). They have now introduced a global call for mothers to commit to "exclusive" breastfeeding for six months (WHO, 2003). In this case, the value of breastfeeding in nations of Africa and Asia was already known through years of tradition and experience, but was trumped by "wisdoms"

Results: TEAM-ECD Spheres of Influence

Spheres of Influence: The Individual Child

The Individual Child

The earliest years of life are characterized by the most important development that occurs in a human lifespan. There are several bases for the bold and unequivocal nature of this statement. The early years are marked by the most rapid development, particularly of the central nervous system. The "critical periods" for the development of the brain almost exclusively occur during this time. During these early years, the experiences (e.g., good quality nutrition) and the environmental exposures (e.g., attachment to a caregiver) that a child receives will be instrumental in the successful development of early brain function. Not only will the child be shaped by these experiences physiologically, but the child will also shape these experiences. The development that occurs in the early years provides the essential building blocks for a lifetime of success in many domains of life, including economic, social and physical well-being.

BIOLOGICAL EMBEDDING

The interaction that occurs between individual characteristics (genetic and physiologic) and experiences and exposures drawn from the environment are basic to the development of the child. The human brain, in particular, is the "master organ" of development. Early in life, genetically programmed sensitive periods occur in the brain, during which time the developing child is disproportionately sensitive to the influences of the external environment (Barker, 1992; Bronfenbrenner, 1986; Wadsworth, 1997). *The interplay of the developing brain with the environment is the driving force of development*; its legacy is a unique configuration of synapses in the brain that influences cognitive, social and emotional functions thereafter. The process of early experience becoming solidified and influencing health and development over the long-term is known as *biological embedding* (Hertzman, 1999).

NUTRITION

Children's optimal growth and development requires adequate nutrition, and receiving adequate nutrition is a fundamental right of children (see General Comment #7 on the Convention on the Rights of the Child [CRC] [United Nations Office of the High Commission for Human Rights (CRC), 1990]) and begins *in utero* with adequately nourished mothers. During the first months of life, breastfeeding plays an important role in providing children with the necessary nutrients. In fact, exclusive breastfeeding is thought to reduce the chances of early post-natal stunting (Smith et al., 2003). Breastfeeding carries with it the dual role of adequate nutrition and healthy infant development through stimulation and attachment as part of the breastfeeding process. Despite what the evidence—both scientific and traditional—tells us about adequate nutrition for infants and children, there are approximately 150 million children under the age of five years in the developing world alone who suffer from malnourishment. Children who are malnourished are more likely to

150 million children under the age of five years in the developing world alone suffer from malnourishment.

suffer the consequences of poor physical and mental development; have poorer school performance (Pelto, Dickin & Engle, 1999; Powell et al., 1998; Winicki & Jemison, 2003); be susceptible to the effects of infection; have more severe diarrhoeal episodes; have a higher risk of pneumonia; have lower functioning immune systems; and often have low levels of iodine, iron, protein and

Spheres of Influence: The Individual Child

thus energy, which can contribute to chronic illness (UNICEF, 2006). **As women remain** the primary caregivers for children, when they have greater influence in household decisions, women can significantly improve their children's nutritional status (Smith et al, 2003). Educating women has also been shown not only to improve their children's nutritional status, but it also results in multiple benefits for children by improving children's survival rates and school attendance (Smith et al, 2003).

Nutritional deficiencies at all stages of growth have long-term damaging effects on the intellectual and psychological development of children.

Malnutrition is also implicated in more than half of all child deaths worldwide. Although this is a worrisome figure, it is also essential to recognize that nutritional deficiencies at all stages of growth have long-term damaging effects on the intellectual and psychological development of children: unacceptable loss of human potential (Grantham-McGregor et al., 2007). Malnutrition is therefore one of the most important factors in poor development and loss of development potential for children. We know that stunting as a result of chronic malnutrition is shaped by a complex combination of environmental, social and economic factors, which begin *in utero* and affect both physical growth and mental development. *Here is a prime example of where child survival, food security, ECD, education and gender equity agendas converge.* It is essential to reduce malnutrition globally, especially in 0 to 3 year olds, but this requires systematic action at the local level in the areas of maternal health (including adequate nutrition) and health care; food security, with adequate micronutrient intake; safe water; access to education for all; and protection from illness such as provided by immunization programmes. While attention to these factors is important, it is equally important to ensure the presence of a systematic, community-based follow-up and support for malnourished children and their families—especially the most vulnerable children.

RELATIONSHIPS

Although adequate nutrition is essential for development, the quality of relationships is equally important for children's development. Existing literature leads us to consider children as social actors (Boyden & Levison, 2000; Irwin, 2006; Irwin et al., 2007; Irwin & Johnson, 2005; Mayall, 1996), who are not only shaped by their environment but, in turn, shape it as well. A child's individual development is transactional, reciprocal and mutually constituted. Young children develop best in warm, responsive environments that protect them from inappropriate disapproval and punishment, environments in which there are opportunities to explore their world, to play, and to learn how to speak and listen to others (Ramey & Ramey, 1998). Notwithstanding the complexity of ECD, the many factors that influence ECD come down to these simple attributes of the child's day-to-day experience. *Improving the quality of children's day-to-day experience through relationships needs to be a primary goal of all initiatives regarding of parenting, childcare, and monitoring rights in early childhood under the CRC.*

THE SCIENCE OF PLAY

The central role of play in children's development is not always appreciated. Play processes influence synaptic formation and are linked to secure attachment with caregivers and relationships with other children. **Play** provides an important socializing function, beyond the merits of being physically active, in which children learn about and negotiate identity and the social subtleties of relationships (James, 1993). **Play may vary according** to individual children's temperaments, gender, culture or their families' parenting and caregiving practices, but the impact of play on developmental processes is universal across cultures (Bornstein et al., 1999). Play can be structured or unstructured; it can be done alone, with a caregiver or in a group; it evolves over time; it requires, at a minimum, a safe environment and developmentally appropriate resources. **Stimulation (e.g., mothers** and children playing with homemade toys) has an independent effect on perceptual motor development outcomes among stunted children, over and above nutritional supplementation (Grantham-McGregor et al., 1997). McArdle suggests that "play is marginal to the plans of governments and local authorities" (2003, p. 512) and not viewed as a "serious" activity. *Potentially, one of the most efficient strategies for improving ECD is to find ways to convince parents and caregivers of the importance of play and the ways they can promote it.*

KEY MESSAGES: THE INDIVIDUAL CHILD

1. Health, nutrition, and well-being of the mother is significant for the child's development.
2. Three broad domains of development—physical, social–emotional and language–cognitive— are interconnected and equally important.
3. Children shape their environments as well as being shaped by them.
4. Social determinants shape brain and biological development through their influence on the qualities of stimulation, support, and nurturance available to the child.
5. Play is critical for a child's overall development.

Spheres of Influence: The Family

The Family

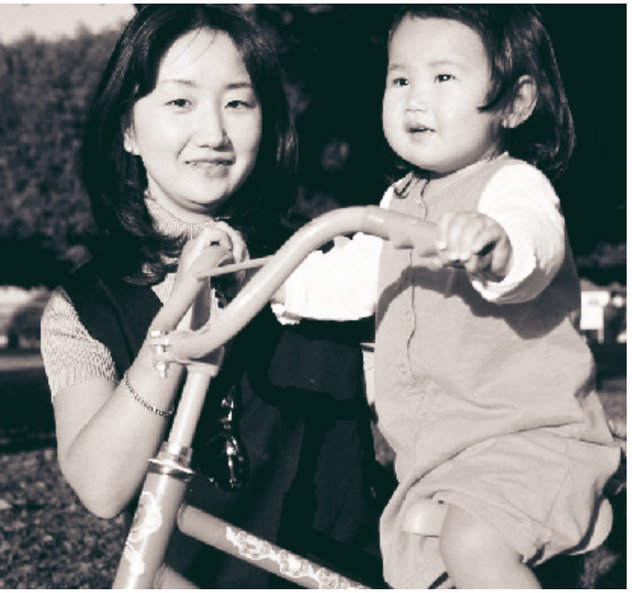
The family is the primary influence on a child's development (UNICEF, 2007) ("Family" is defined here as any group of people who dwell together, eat together, and participate in other daily home-based activities together). The new CRC General Comment #7 on Early Childhood restates the CRC's position on family as,

> the "fundamental group" and the "natural environment" for growth and well-being but recognises that the concept of family extends well beyond the "nuclear" model. Parents and caregivers are identified as principal actors in the construction of identity and the development of skills, knowledge and behaviours, and as duty-bearers in the realisation of the young child's rights. (GC7 para.15). (White, 2006, p. 2)

Family members provide most environmental stimuli for children, and families largely control a child's contact with the distal environment (Richter, 2004). The most salient features of the family environment are its social and economic resources. Social resources include parenting skills and education, cultural practices and approaches, intra-familial relations, and the health status of family members. Economic resources include wealth, occupational status and dwelling conditions. Social and economic resources for children are highly intertwined, yet imply different strategies for intervention

RELATIONSHIPS

A strong body of research demonstrates the significance of primary caregivers (and by extension, families) on children's long-term development (Shonkoff & Phillips, 2000). Those factors that facilitate healthy social bonds and the character of caregiving practices that matter most for children are now well understood. A key requisite for healthy ECD is secure attachment to a trusted caregiver with consistent caring, support and affection early in life (Bowlby, 1969). Securely attached infants and toddlers use their emotional and physical security as a base from which to explore their environment. Successful attempts at exploration increase



The gradient effect of family resources on ECD is the most powerful explanation for differences in children's well-being within societies, and these resources profoundly affect all other aspects of the family environment.

the child's self-confidence and encourage more exploration. Thus, the child begins to learn about and master his or her environment and to gain in both competence and self-confidence. All families need some support to learn how to develop and apply sensitivity and responsiveness in their childcare practices. There are, however, both biological and environmental factors that can negatively impact on attachment. These include low birth weight, malnutrition and infections, poverty and its associations, conflict and domestic violence, and mental health problems such as maternal depression. In these instances, external support for families is particularly important.

SOCIOECONOMIC STATUS

So consistent is the association between socioeconomic status (SES) and a variety of development and health outcomes throughout the lifecourse, that it has been termed a "gradient effect." The gradient effect of family resources on ECD is the most powerful explanation for differences in children's well-being within societies, and these resources profoundly affect all other aspects of the family environment (Siddiqi et al., in press). A recent study by Houweling, Casper, et al. (2005) found a striking association between socioeconomic status of families and under-5 mortality in a population of children from 43 resource-poor countries. This same study suggested that, among these nations, socioeconomic inequality in child mortality was increasing (the gap was widening) as the overall economies were growing. Family SES has an impact on outcomes as diverse as low birth-weight, risk of dental carries, poorer cognitive test scores, difficulties with behaviour and socialization, and increased odds of disengagement from school (Brooks-Gunn, Duncan & Maritato, 1997).

Social and economic resources influence ECD through several mechanisms. For instance, low levels of education and literacy affect the knowledge and skill-base of children's caregivers; feeding and breastfeeding practices also vary according to SES. Children born into poor families are more likely to be exposed to—and affected by—conditions that are adverse for development (e.g., crowded or slum living conditions, unsafe neighborhoods) (Dipietro, 2000). SES can also influence children through its effects on parental stress. Lower-income parents have been found to be at increased risk for a variety of forms of psychological distress, including negative feelings about self-worth and depressive symptomatology. It is thought that this arises through a combination of greater exposure to negative life events and having fewer resources with which to cope with adverse life experiences (Shonkoff & Phillips, 2000).

There is a demonstrated link between socioeconomic circumstances and language and cognitive outcomes in young children, based largely on the richness of the language environment available to the child (Hart & Risley, 1995). Family SES is also associated with ability to provide other resources, such as health care and high-quality childcare, that exert a profound influence on developmental health (Hertzman & Wiens, 1996).

FAMILY HEALTH

Family health conditions have a particularly strong impact on ECD. Any chronic problem, either physical or mental (especially of the mother or primary caregiver), such as intimate-partner violence (Anda et al., 2006; Fettelli et al., 1998), maternal depression (Shonkoff & Phillips, 2000), and chronic illness, can have a deleterious effect on child development. In situations involving maternal depression, extreme poverty, or high levels of family stress, important parent-child interactions may be impaired, resulting in fewer opportunities for learning experiences in the home (Willms, 2003). The severity and chronicity of maternal depression are predictive of disturbances in child development (NICHD, 2002).

A major health issue globally is the prevalence of Human Immunodeficiency Virus (HIV) among the adult population. The effect on children has been widespread, from contracting the infection themselves (through transmission from mother to child), to the phenomenon of children taking up adult roles within the family, such as caring for their parents and siblings. Many children have experienced orphanhood or become the heads of their households due to the death of their parents. In particular, this may influence girls' development to a greater extent, since they are more likely to bear the responsibility of household matters, and may therefore forego schooling (Richter, 2006). *Here, we call for recognition that programmes supporting the health of the caregivers of young children are also investments in ECD, and should be evaluated as such.*

Spheres of Influence: The Family

FATHERS

The role of fathers as part of the family-level sphere should not be underestimated, and is often regrettably marginalized. The United Nations Commission on the Status of Women "[encourages] men to participate fully in all actions towards gender equality and [urges] the establishment of the principle of shared power and responsibility between women and men at home, in the community, in the workplace, and in the wider national and international communities" (United Nations Office of the High Commission for Human Rights (UNCSW), 2004, p.1). Certainly, this includes the role of fathers in nurturing their children (UNICEF, 1997). In fact, engaging and working effectively with fathers and other men who affect the well-being of children and families is now firmly emphasized in policy frameworks as a strategic requirement for all children's services (Fathers Direct, 2006).

GENDER

Inequities within families may be significant from the standpoint of the social determinants of health, especially with respect to gender: "Women's access to power at the household level has the most direct impact on families and children … [through lack of control over] allocation of resources for food, health care, schooling and other family necessities" (UNICEF, 2007, p. 22). As a result, female children are more likely to receive less food, and to be denied essential health services and education. Household chores and caregiving keep adult women out of the paid labour force and girls out of school. Moreover,

Gender equity at the family level contributes to reducing the intergenerational transmission of poverty through improved development, access to education, and proper feeding.

It is clear that women's roles (decision-making power) within the family, as well as their educational levels, play an important part in promoting ECD. Women's education not only contributes to lower mortality rates but also long-term education for girls. Gender equity at the family level contributes to reducing the intergenerational transmission of poverty through improved development, access to education, and proper feeding (UNICEF, 2007).

FAMILY DWELLING

The family dwelling also contributes to (or detracts from) nurture for children. Physical and mental health are linked to housing conditions such as overcrowding, indoor air pollution, and dampness and cold (Dunn & Hayes, 2000). Conditions in slums and shanty-towns can present further risks for children. Studies of homeless families and children find much higher rates of physical and mental illness and worse developmental outcomes among this population (Dunn & Hayes, 2000). These conditions exacerbate the other socioeconomic challenges that many families face on a daily basis.

FAMILY SUPPORT

Families need to be able to access the resources that enable them to make choices and decisions in the best interests of their children, including services such as parenting and caregiver support (Richter, 2004), quality childcare (Goelman, 2003; Lamb, 1998; NICHD, 1996, 2002; Vandell, & White, 2000), and primary health care and education. Globally, one particular area where families require social protection is in resolving the demands of work and home life. Heymann's (2006) research on children and families in resource-poor countries demonstrates the importance of access to quality childcare for families the world over (see Appendix D). Her research demonstrates that millions of children worldwide are being left home alone, left in informal childcare (often in the care of other children), or being brought to work and exposed to unsafe working conditions. Public provision of quality, affordable childcare is part of the solution to this problem.

when mothers do work, female children are more likely to be kept home from school to care for other siblings, especially when there is no option for substitute caregivers such as childcare. Also according to the recent UNICEF report,

> Nearly 1 of every 5 girls who enrols in primary school in developing countries does not complete a primary education. Missing out on a primary education deprives a girl of the opportunity to develop to her full potential. Research has shown that educated women are less likely to die in childbirth; . . . are more likely to send their children to school; . . . [and] that the under five mortality rate falls by about half for mothers with primary school education. (UNICEF, 2007, p. 4)

RESILIENCE

Many families that face daily challenges because of their socioeconomic disadvantages are nevertheless able to create the essential nurturant environments for their children. Resilience refers to the capacity of a child to thrive, despite growing up facing adversity. Bartley's review of research on this issue points to "the importance of social relationships, of ties to the community, and social interactive 'relationship' skills as key sources of protection" (2006, p. 5). The family provides the most important social relationships for enhancing children's resilience (Grotberg, 1995). Children all over the world face situations such as witnessing and experiencing violence in their families and the broader community, bullying, disability, divorce, and witnessing or experiencing the effects of alcohol and substance abuse in their families, while others confront catastrophic events or day-to-day atrocities such as war, poverty, disease, famine, floods, HIV/AIDS, and forced labour. How a child emerges from these situations depends upon multiple factors at the individual, family, community, and broader societal levels (Bartley, 2006; Grotberg, 1995). Studies of the experiences of children exposed to war and children of battered women demonstrate that the family can provide a buffer against extreme circumstances (Berman, 1996). Berman's and other studies point to the importance of enhancing the family's capacity to support young children in times of stress and atrocity (Pinheiro, 2006). Families require proper safety nets, such as social protection policies, access to appropriate services, and sufficient income, to enhance their ability to bolster children's resilience regardless of the daily challenges the family faces.

Families require proper safety nets, such as social protection policies, access to appropriate services, and sufficient income, to enhance their ability to bolster children's resilience.

Resilience can be enhanced through the relationships that families, caregivers, and children establish with others in their locality or relational communities (e.g., religion-based communities), as well as through ECD, health, nutrition, and other services that are provided by governmental and non-governmental organizations (NGOs), and through larger policies that facilitate educational attainment, income transfers, health care, and access to safe housing. Institutional features of society that strengthen the "connectedness" of citizens in positive ways will enhance resilience in children and families (e.g., Positive Deviance [UNICEF, 2005]). Accordingly, governments, international agencies, and civil society groups should use the criterion of "connecting children with adult mentors" to judge programme and policy proposals.

Spheres of Influence: The Family

KEY MESSAGES: THE FAMILY

1. The family is a key nurturant environment for children, and caregiving is a strong determinant of children's outcomes. The family acts to modulate the impact of the broader social environment on the child. It is centrally important, as it is the primary source of stimulation, attachment, social bonds, and support for the child, and children learn in and through relationships.
2. The notion of gradients is most salient at the family level, because the association between socioeconomic status (SES) and children's developmental outcomes is globally consistent.
3. Families require access to a range of services, such as parenting and caregiver support, quality childcare, primary health care, and basic education. The family requires social protection in areas related to work- and home-life balance.
4. There are inequities within families that are significant from the standpoint of the social determinants of health, especially with respect to gender. For instance, gender biases in feeding practices will influence the growth and nutrition of girls, and a gender bias in attitudes to social roles will lead to boys and girls having differential access to education. An increase in maternal decision-making power relative to males can positively influence children's long-term outcomes.

Spheres of Influence: Residential and Relational

Residential and Relational Community

The child and family environment is shaped both by the residential community (where the child and family live) and the relational community (based on social ties among networks of people with a shared identity).

RESIDENTIAL COMMUNITIES

The core features of residential communities that have been identified as being important for ECD include the socioeconomic, physical, and service environments (Kawachi & Berkman, 2003). The socioeconomic environment of residential communities can be defined according to average or median income level, the percentage of residents with a high school diploma, or the percentage of employed or unemployed individuals in the community (Leventhal & Brooks-Gunn, 2000). High levels of socioeconomic status are generally associated with better school readiness and school achievement in younger children (including verbal and reading skills). Although socioeconomic inequalities between residential communities are often associated with inequalities in children's development, there are important caveats. Children from low SES families living in economically mixed neighbourhoods generally do better in their development than low SES children living in poor neighbourhoods (Kohen et al., 2002). Adopting policies to create economically mixed residential neighbourhoods does not cost government any more than allowing neighbourhood economic ghettoization, and can have developmental benefits for young children.

PHYSICAL AND SERVICE CHARACTERISTICS

There is a clear inverse association between the socioeconomic status of a community and the extent to which its residents will be exposed to toxic or otherwise hazardous exposures such as wastes, air pollutants, poor water quality, excessive noise, residential crowding, poor housing quality, and the like (Evans & Katrowitz, 2002). The physical spaces accessible to children create both the opportunities and the constraints for play-based learning and exploration, which are critical for motor, social/emotional, and cognitive development (Irwin, 2006; James, 1993). Similarly, the availability of high quality services will vary according to the socioeconomic circumstances of communities, including institutions and facilities for learning and recreation, childcare, medical facilities, access to transportation, food markets, and opportunities for employment (Leventhal & Brooks-Gunn, 2000). In both resource-rich and resource-poor countries, local access to these essential services for children should be used as a criterion for urban development.

SLUMS AND SHANTY-TOWNS

Globally, an increasing number of children are growing up in slums or shanty-towns, but children's cognitive and socio-behavioural outcomes in these contexts have not been explored in a systematic way. The extent to which government policies support legal legitimacy, basic housing, nutrition, schooling, health, and other basic public services is crucial, particularly with the rapid rate of urbanization occurring around the world. There are organizational models for mitigating the adverse effects of slum and shanty-town conditions (Dayal, 2001).

AN EXAMPLE FROM A KENYAN COMMUNITY'S LIVED EXPERIENCE

In one of the largest shanty-towns surrounding Nairobi, Kenya, there was a crisis. Teenage boys from each of two rival ethnic groups were regularly raping girls from the other group. This activity not was not only ruining the lives of the girls affected, it was creating a climate of distrust and fear that made it impossible to create a sense of collective efficacy for the people living there—young and old alike. A few years ago, the boys called a truce and started to patrol the area to prevent violence, not cause it. This shift in the norm between these two *relational communities* has led to a shift in the life chances of the children living in the residential community. Now, this is a community where 600 HIV/AIDS orphans are being looked after collectively, where the teenagers have established their own radio station and newspaper, and where the primary school is one of the top-functioning in the country.

In both resource-rich and resource-poor countries, local access to essential services for children should be used as a criterion for urban development.

RELATIONAL COMMUNITIES

The relational community is a primary influence on how children identify themselves and others, and how outsiders identify children; therefore, it is a primary source of social inclusion *and exclusion*, sense of self and self-worth, self-esteem, and gender socialization. The extent to which adults and children in communities are linked to one another, whether there is reciprocated exchange (of information, in-kind services, and other forms of support), and whether there is informal social control and mutual support, are determined at this level. These characteristics, known variously as social capital or collective efficacy, have been shown to be nurturant for children and their families, both in the context of urban neighbourhoods in resource-rich nations (Samspon, Morenoff & Earls, 1999) and in the village context in resource-poor nations (Carter & Maluccio, 2003). Essentially, child outcomes relate to the social ties between community residents that facilitate the collective monitoring of children related to shared community norms and practices, as well as positive role modelling (Bourdieu, 1984; Coleman, 1988, 1990; Jencks & Mayer, 1990; Putnam, 2000). Relational communities are often a main mechanism through which information regarding child-rearing practices, and child health and development are transmitted. Traditions regarding child rearing are passed down through generations, not only within families but also throughout broader socially bonded groups.

KEY MESSAGES: RESIDENTIAL AND RELATIONAL COMMUNITY

1. The physical spaces accessible to children create both the opportunities and the constraints for play-based learning and exploration, which are critical for motor, social/emotional and cognitive development.
2. Children's long term developmental outcomes are affected by children's feelings of safety, the level of cohesion experienced by those living in proximity, the SES mix, access to services, the resources available, the integration or segregation of their relational community, as well as political and institutional participation or discrimination.
3. The relational community is a primary influence on how children identify themselves and others and how outsiders identify children. Therefore, it is a primary source of social inclusion and exclusion; sense of self and self-worth; self-esteem and gender socialization.
4. Because gender norms and role expectations differ more between relational communities than any other determinant, gender equity issues need to be tackled most urgently at the level of the relational community.

Spheres of Influence: Residential and Relational

Spheres of Influence: Programmes and Services

ECD Programmes and Services

Quality ECD programmes and services are those that nurture all aspects of children's development—physical, social, emotional, language, and cognitive. Governments need to integrate quality ECD programmes and services into social protection policies[3] to ameliorate the effects of growing up in poverty for millions of children worldwide and to meet the Millennium Development Goals. The evidence is disturbing: 40% of children in resource-poor nations live in extreme poverty; 10.5 million children die from preventable diseases before they are 5 years old; many children never attend school; 20-25% of children in resource-poor countries suffer from malnutrition and poor health (Grantham-McGregor et al, 2007). Evidence shows that conditions in resource-poor countries that foster poverty, illness, lack of access to schooling, and malnutrition lead to an intergenerational transmission of poverty affecting the productivity of future adults and putting an increased burden of cost on the economic resources of a country. In resource-rich countries, the conditions are not as dramatic and the implications for human development are not as dire, but the differences are really just a matter of degree. Across the resource-rich world, developmental vulnerability rises as one goes down the socioeconomic spectrum, such that, in most OECD countries, 25% or more of children reach adulthood without the basic literacy and numeracy skills required to cope in the modern world (Willms, 2003). Thus, ECD is an issue for all societies, not just the resource-poor.

Kamerman and Gabel's global overview of social protection policies found that in OECD countries, policies that had a positive influence on outcomes for children included "increasing children's access to reasonable quality early childhood care and education" (2006, p. 11). They also found that in countries where resources were limited (and policy data is also sparse) priorities must be set such that the most vulnerable are targeted, while universal coverage should remain the longer term goal.

ECONOMIC ARGUMENTS

Economists now argue on the basis of the available evidence that investment in early childhood is the most powerful investment a country can make, with returns over the lifecourse many times the size of the original investment. ECD programmes foster and promote the quality of human capital: that is, individuals' competencies and skills for participating in society and the work force (Knudsen, et al., 2006). The competencies

In every country, it is children from the poorest communities who are least likely to have access to ECD programmes —"those most exposed to malnutrition and preventable diseases"—yet who would also benefit the most. (UNESCO, 2007)

and skills fostered through ECD programmes are *not* limited to cognitive gains, but also include physical, social, and emotional gains, all of which are determinants of health over the lifecourse (Carneiro & Heckman, 2003). Much of the burden of disease worldwide (e.g., cardiovascular disease, obesity, HIV/AIDS, depression) begins in early childhood (Marmot & Wadsworth, 1997). Accordingly, ECD programmes—which incorporate and link health-promoting measures (e.g., good nutrition, immunization) with nurturance, participation, care, stimulation, and protection—offer the prospect of sustained improvements in physical, social, emotional, language, and cognitive development, while simultaneously reducing the immediate and future burden of disease, especially for those who are most vulnerable and disadvantaged. According to the recent UNESCO Global Monitoring Report, in every country, it is children from the poorest communities who are least likely to have access to ECD programmes—**"those most exposed to** malnutrition and preventable diseases" **yet** who would also benefit the most (2007, p. 19).

Engle et al. remind us "to achieve the Millennium Development Goals of reducing poverty and ensuring primary school completion for girls and boys, governments and civil society should consider expanding high quality, cost-effective ECD programmes" (2007, p. 229). Early interventions can alter the lifetime trajectories of children who are born poor or are deprived of the opportunities for growth and development available to those more fortunate. ECD programmes and services (e.g., childcare for working parents, preschool, access to primary school) have high rates of return, and are an effective route to reduce poverty, to foster health, productivity, and well-being.

If governments in both resource-rich and resource-poor societies were to act while children were young, by implementing quality ECD programmes and services as part of their broader social protection policies, they would each have a reasonable expectation that these investments would pay for themselves many times over (Schweinhart, et al., 1993; Schweinhart, 2004). In resource-rich countries where the issue has been studied directly, savings come from reduced remedial education and criminal justice costs (Schweinhart, et al., 1993; Schweinhart, 2004). Economic gains come from improved access of mothers to the labour force (Cleveland & Krushinsky, 1998) and increased economic activity in adulthood among those whose developmental trajectories were improved through intervention (Schweinhart, 2004 – follow-up to age 27). The economic benefits of ECD intervention over the long term have not been directly studied in resource-poor countries; however, it is widely understood that the transformation of the "Tiger Economies" of Southeast Asia from resource-poor, low life expectancy to resource-rich, high life expectancy societies was accomplished primarily through investment in children, from conception to school leaving. During this period, conditions for young children markedly improved, with infant mortality dropping from approximately 140/1000 in 1946 to less than 5/1000 in 2000 (Hertzman & Siddiqi, 2000; Siddiqi & Hertzman, 2001). From 1975 to 2002, the average GDP per capita in the Tiger Economies increased from approximately $4,000 to $23,000 (Hertzman & Siddiqi, 2000; Siddiqi & Hertzman, 2001). Thus, the scale of potential economic gain for resource-poor societies in adopting child development as a cornerstone to their development strategies can be measured not just in cost-benefit terms at the micro level, but in multiples of economic scale (Schady, 2005; Behrman, Cheng & Todd, 2004).

The scale of potential economic gain for resource-poor societies in adopting child development as a cornerstone to their development strategies can be measured not just in cost-benefit terms at the micro level, but in multiples of economic scale.

[3] Governments have an obligation to provide social protection affecting children which includes: 1) social assistance/economic support: conditional/unconditional cash transfers, child care grants, social pensions, tax benefits, subsidized food, and fee waivers; and 2) social services for children and their families including protective (and preventive) services such as foster care, adoption, residential treatment, family and community support services for children with special needs, as well as early childhood care (Kamerman & Gabel, 2006).

Rather than provide a "laundry list" of specific ECD programmes that have evidence of effectiveness, the following paragraphs present *generic characteristics as well as strategic and organizational principles* of quality, sustainable programmes that are transferable around the globe.

ECD programmes and services address one or more of the following key issues: breast-feeding, childcare, early childhood education, nutrition, and other forms of family support. These include services directed to children, such as daycare, preschools, community-based child development centres, and other such programmes and services. There are also programmes and services that focus on children indirectly, through their support for parents and caregivers; these include parenting programmes, home support or home visiting, and other family support programmes. In addition, health care services are a very important point of contact for young children and their families. When ECD programmes and services are added to the delivery of established health care services, they become a highly effective way of promoting ECD.

The quality and appropriateness of programmes and services is a central consideration in determining whether such programmes lead to good outcomes for children (Anderson et al., 2003; Hertzman & Wiens, 1996; Magnuson, Ruhm & Waldfogel, 2007; NICHD, 1996, 2002; Pelto, Dickin & Engle, 1999; Wylie et al., 2006). There are three aspects of quality in ECD programmes and services: structure, process, and nurturance. Structure includes such things as appropriate staff training and expertise, staff to child ratios, group size, and physical characteristics of the service that ensure safety. Process aspects include staff stability and continuity, and relationships between services providers, caregivers, and children (Goelman 2003; NICHD, 1996, 2002). Nurturant environments include those where exploration is encouraged; mentoring in basic skills is provided; the child's developmental advances are celebrated; development of new skills is guided and extended; there is protection from inappropriate discipline; and the language environment is rich and responsive (Ramey & Ramey, 1998). Nurturant environments should also include equity in treatment of boys and girls: in opportunity, expectations, and aspirations (UNICEF, 2007). In addition to these fundamental aspects of quality, ECD programmes and services should be based on consensus as to the nature of successful child development and a set of valid, reliable indicators of ECD (Kagan & Britto, 2005; Janus & Offord, 2000, 2007; UNICEF, 2007) (see also Appendix B).

Beyond the aspects of quality programmes, a set of principles has been demonstrated to sustain ECD programmes and services worldwide. This includes cultural sensitivity and awareness; community ownership; a common purpose and consensus about outcomes related to the needs of the community; partnerships among community, providers, parents, and caregivers; enhancing community capacity through active involvement of families and other stakeholders; and an appropriate management plan (which includes users) that facilitates the monitoring of quality and the assessment of programme effectiveness (Kagan & Britto, 2005). With respect to ECD programmes and services, a number of studies have shown these quality principles to enhance outcomes for young children (e.g., Anderson et al, 2003; Consultative Group on Early Childhood Development & Bernard van Leer Foundation Effectiveness Initiative Report, 1999; Engle et al, 2007; Karoly, Kilburn, & Cannon, 2005; UNESCO, 2007). Furthermore, the ECD programmes most associated with positive outcomes for children are those that build on existing resources and networks and revolve around the creation and maintenance of collaborative relationships between multiple interest groups, such as families, communities and services providers (for a recent review see Lancet Series Paper 3, Engle et al., 2007). Programmes that build on existing resources and networks often do so by encouraging the participation of parents, traditional caregivers, and older siblings. These types of programmes often include parent education, parent support groups, home visiting, and community-based and community-run childcare, and are strengthened by the co-ordinating support of several spheres of influence (UNESCO, 2007; Irwin, 2004).

ECD services may be targeted to specific characteristics of children or families (e.g., low birth-weight babies or low-income families), may occur only in some communities and locales and not others, or may be more or less comprehensively provided. Each of these is also accompanied by their respective benefits and drawbacks; *however, the overarching goal of the governments should be to find means of providing all children with effective ECD programmes and services* (Kamerman & Gabel, 2006).

THE EARLY CHILDHOOD DEVELOPMENT VIRTUAL UNIVERSITY

The Early Childhood Development Virtual University (ECDVU) represents an innovative approach to the leadership and capacity building requirements of countries seeking to enhance their social and economic development through addressing the human development needs of their youngest citizens, and the families and communities which nurture them. The ECDVU is a key North-South institution currently working closely with academic institutions in Ghana, Malawi and Tanzania, and with academic, governmental and non-governmental groups in other parts of Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA). The ECDVU was made possible through support received from The World Bank, UNICEF, UNESCO, the Bernard van Leer Foundation (BVLF), CIDA, a host of local organizations in a dozen ECDVU-participating countries in SSA, and four countries in MENA. International and local partner funds have allowed the delivery of combination web- and face-to-face leadership courses designed to advance country-identified, inter-sectoral early childhood initiatives. These have included, for example: country level policy development (see Chalamanda); HIV/AIDS and single mothers' programme development (see Nyesigomwe and Matola); and innovative parent-support training (see Habtom). These and other activity descriptions can be found at www.ecdvu.org (ECDVU, 2005), and in Pence & Marfo (2004). The ECDVU is one facet of a three-pronged capacity building effort—the other two being two-week ECD seminars and a major, Africa-wide conference series (Pence, Habtom & Chalamanda, in press). The ECDVU program was developed to work with communities, cultural groups, and countries in ways that respect local knowledge but also provide interaction with other sources of knowledge. The work of the ECDVU helps to advance major international development objectives, including the MDGs, Education for All, and the CRC, as well as regional and local objectives (e.g., PRSPs, SWAPs, national MDGobjectives). An external Impact Evaluation (see the World Bank Evaluation [ECDVU, 2005]) conducted at the conclusion of the 2001–2004 pilot delivery noted that, "By any measure ECDVU has been singularly successful in meeting and exceeding all of its objectives…, there is every reason to believe that future activities will achieve even greater results for expanding and improving ECD" (ECDVU, 2005).

Spheres of Influence: Programmes and Services

Linking ECD programmes and services with health care systems will improve child survival rates.

HEALTH CARE SYSTEMS

Health care systems (HCSs) are in a unique position to contribute to ECD at a population level, given that HCSs are already concerned with the health of individuals and communities, employ trained professionals, provide facilities and services, and are a primary contact for child-bearing mothers. In many instances, health care providers are the only health professionals whom families come into contact with in the early years of the child's life; they thus reach the majority of children in a community. When the HCS is used as a linkage point, health care professionals can be highly effective in promoting ECD.

The critical intersection of the ECD and child survival agendas happens in HCSs. While this report has included devastating statistics about millions of children dying throughout the world—many from preventable causes—here we suggest that linking ECD programmes and services with HCSs will improve child survival rates. The example of Kangaroo Care from Bogota, Columbia, is instructive here. Kangaroo Care is based on mothers, fathers and caregivers providing skin-to-skin contact for low birth-weight infants as part of early stimulation, which

has been shown to improve survival rates of the most vulnerable infants. Through skin-to-skin contact, infants gain the early stimulation that matters for their survival; costs of this intervention are minimal, but benefits are immeasurable.

Spheres of Influence: Programmes and Services

KANGAROO CARE: BEGINNINGS IN BOGOTA, COLUMBIA

Each year about 20 million infants of low birth weight are born worldwide, which imposes a heavy burden on healthcare and social systems in developing countries. (Ruiz-Pelaez, Charpak & Cuervo, 2004)

Premature babies (under 2000 grams) born in poorly resourced settings may not have access to incubators and those that do are separated from their mothers. Kangaroo Care was first developed in 1978 to help premature babies with temperature regulation and bonding in Bogota. Mothers, fathers or caregivers carry/sleep with newborn babies skin to skin in upright positions 24 hours a day. Kangaroo Care has been shown to be at least as effective as traditional care in incubatorsa at a fraction of the costs. It is a practice with roots in local traditional child rearing that has been taken up in many industrialized nations (e.g., France, Sweden, USA, Canada and more).
Kangaroo Care has been shown to:

- deliver ideal conditions for premature infants
- reduce costs of caring for premature infants
- improve breastfeeding rates
- improves bonding
- in some settings reduce morbidity and hospital stay

While the case of Kangaroo Care is a unique hands-on early stimulation programme, developed in hospitals and carried out within and beyond the walls of institutions, health care providers can facilitate ECD in various other ways as well. HCS can serve as a platform for information and support to parents around ECD; they can integrate ECD into existing programmes such as IMCI (Integrated Management of Childhood Illness) / Care for Development, ACSD (Accelerated Child Survival and Development), BFHI (Baby Friendly Hospital Initiative) (UNICEF, 2007), and nutrition/ growth monitoring and promotion that exist in most countries; they can then link children and families to existing community-based ECD services. Examples of this process include health or community development programmes that have added an early stimulation and care component, and ECD programmes that have been coupled with other health services such as a women's health programme or a reproductive health programme. They are an important point of contact that can extend ECD programming to children and families who would otherwise have no access, and can often do so for relatively small marginal costs.

A notable exception to using the HCS as a point of contact is in the case of remote rural areas or urban slums of resource-poor countries, where HCSs cater to populations who are either too poor to access health services, or the services are inaccessible or too weak. In these situations, most community-based interventions for women, children, and families are delivered by NGOs and voluntary organizations (e.g., SEWA, programmes delivered by Save, and the BvLF, Aga Khan, and Soros Foundations' community development projects). Further details can be found about *Equal Access: Using Communications to Reach Parents and Communities on Early Child Development in Nepal* and *Village-Based ECD Curriculum Development in Lao PDR* in Appendix B.

Local, regional, and national governments, with the support of international agencies and civil society partners, must be the key players in developing, promoting, and funding a basket of quality ECD programmes and services.

Local, regional, and national governments, with the support of international agencies and civil society partners, must be the key players in developing, promoting, and funding a basket of ECD programmes and services that conform to the principles articulated here.

KEY MESSAGES: ECD PROGRAMMES AND SERVICES

1. Programmes and services should be based on well-established quality frameworks and include a strategy for monitoring the quality of services. This also includes monitoring for equity in treatment of and opportunities for both girls and boys.
2. Governments have a central role to play to ensure that ECD programmes and services are fully integrated into social protection policies.
3. The overall objective is to provide universal access to inclusive, appropriate quality services and programmes that offer strong nurturant environments. To be sustainable, these services should build on existing infrastructure (especially health care systems) and mobilise national resources (human, institutional and financial).
4. There are multiple entry points for ECD programmes and services, including health care systems, community-based childcare, and preschool education.
5. Health care systems (HCS) are in a unique position to contribute to ECD at a population level, given that HCS are already concerned with the health of individuals and communities, employ trained professionals, provide facilities and services, and are a primary contact for child-bearing mothers.
6. HCSs ensure that development programmes combine health and nutrition services with early learning, rely on families as partners, and have adequate quality, intensity, and duration in order to affect children's development cost effectively.
7. HCSs include effective interventions for the physical and mental health of mothers and children within the current maternal and child health strategies (e.g., Making Pregnancy Safer Initiative and the Integrated Management of Childhood Illness), which should be widely implemented in resource-poor countries.

Regional and National

Spheres of Influence: Regional and National

The influence of the regional and national environments is fundamental in determining the extent of services and resources that are available to communities and to families. Many interrelated aspects of regional environments may be significant for ECD, including the physical (e.g., degree of urbanization, the health status of the population), the social, the political, and the economic environments. These aspects of the regional environment affect ECD through their influence on the family, community, and ECD services.

Most of the research performed thus far on regional characteristics in relation to human welfare concerns the impact of the socio-political environment. For instance, a rich literature (primarily derived from the United States) demonstrates an association between state-level income inequality (i.e., distribution of income) and a variety of health outcomes. This research suggests that, above and beyond the wealth of a region (in this case, the state), the greater the inequality in the distribution of income between households, the worse the health and related outcomes of the population[4], including adult mortality, infant mortality, low birth weight, malignant neoplasms, coronary heart disease, expenditure on medical care, homicide, and violent crime (Kaplan et al., 1996; Kennedy, Kawachi & Prothrow-Stith, 1996; Spencer, 2004). The extent of income inequality, in turn, is determined by decisions made partially at the regional level regarding wage rates, income tax, transfers, social expenditures, and other mechanisms of distribution and redistribution (Zuberi, 2001).

We know that in low- and middle-income countries, inequalities in child health outcomes—for example under-five mortality rates—vary according to geography, such as between rural and urban areas and between provinces. In regions where this is the case, the inequalities are often due to unequal allocation of resources (Houweling, Kunst, et al., 2005). Regional inequalities in ECD can also be seen in resource-rich countries, as is the case for the province of British Columbia, Canada (Kershaw, Irwin, Trafford & Hertzman, 2006). The map in

[4] The relationship between income inequality and health is nonetheless complex and widely debated.

Spheres of Influence: Regional and National

Figure 2 demonstrates a three-fold difference in rates of vulnerability (14.0-45.9%) for children reaching school age (5 years) according to the Early Development Instrument (see Appendix C). The pie charts layered on top of the regional areas describe the social and economic characteristics of the given region. Figure 2 shows the scale of social and economic inequality across regions and the associated inequalities in child outcomes. In many regions, however, SES does not seem to predict vulnerabilities in ECD. The research to understand how some low SES communities "buck the trend" and produce good ECD outcomes is, itself, in its infancy. We are confident that when the characteristics of these "resilient communities" are better understood, they will provide useful lessons for communities around the globe. Figure 2 also demonstrates what a powerful tool the mapping of ECD by locality and geographic region can be for the purposes of public discussion and policy-making.

At the sub-national level, regional and relational communities can intersect in ways that create conditions for families and children that are systematically different from the rest of the country. For example, in southern India, a large body of research has found that the norms of this region, in contrast to the norms of northern India, "provide women more exposure to the outside world, more voice in family life, and more freedom of movement than do the social systems of the north" (Jejeebhoy & Sathar, 2001). In fact, recent research findings refute the notion that differences in women's autonomy in South Asia can be ascribed to religious differences (with the main suggestion that Hindu women are more autonomous than Muslim women); these findings show that the north-south regional differences are much more salient (Jejeebhoy & Sathar, 2001). Women's autonomy itself is determined largely by women's education, which is much more accessible in southern regions of India, such as the state of Tamil Nadu (Jejeebhoy, 1995; Jejeebhoy & Sathar, 2001), we know that women's autonomy influences the opportunities for optimal ECD (UNESCO, 2007).

The national environment serves as a powerful influence on ECD. The basis for this statement comes in part from direct evidence on national-level factors and in part from an inescapable logical extension of the profound impact of socioeconomic factors at the family and neighborhood levels on children's well-being. In other words, if socioeconomic conditions matter, then so too do the societal factors that create the conditions themselves (Siddiqi & Hertzman, in press). These conditions are largely a function of the institutional and structural aspects of the nation. The most salient feature of the national environment is its capacity to affect multiple environments (and thus determinants) of children's well-being through policies and laws. Cross-national studies have found an association between the dispersion of income at the national level and a variety of population health indicators, including life expectancy and infant mortality (Rogers, 1979; Flegg, 1982). In fact, the effect of income inequality on infant mortality withstands the effects of other powerful predictors of mortality during the first year of life, including doctors per capita, nurses per capita, urbanization, female literacy, and reproductive rates (Waldman, 1992).

Socioeconomic conditions matter, as do the societal factors that create the conditions themselves.

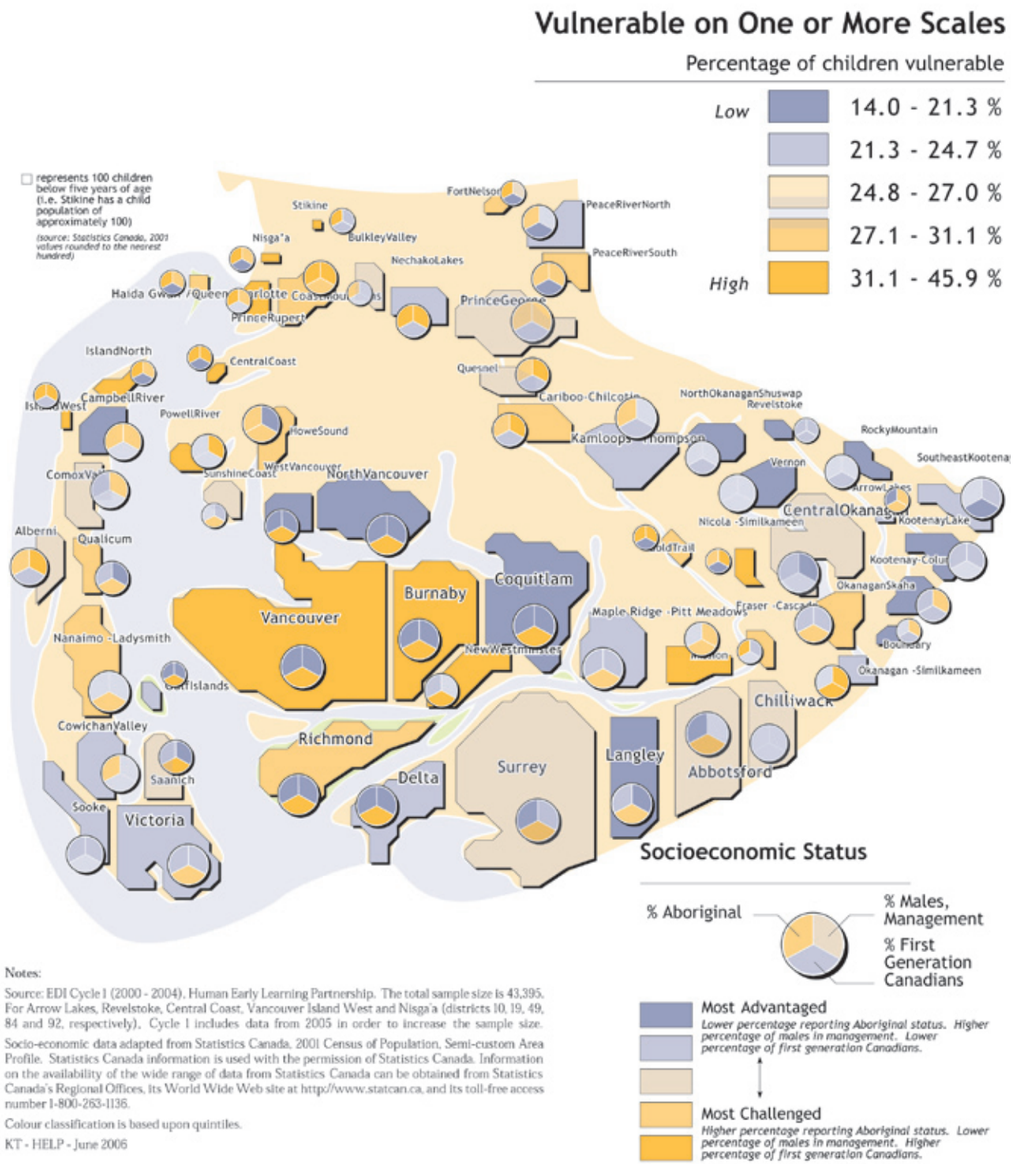
To date, the most comprehensive review of social policies in relation to inequities in child welfare across countries examines the impact of policy on child (i.e., family) poverty among the OECD nations (Kamerman et al., 2003). Kamerman's review identified five primary policy domains of significance:

1) income transfers (cash and tax benefits),
2) employment policies,
3) parental leave and other policies to support maternal employment,
4) early childhood education and care services, and
5) prevention and other interventions related to teen pregnancy and births.

Data from the Luxembourg Income Study has demonstrated that, based on market income (i.e., prior to taxes and transfers), at 31%, poverty rates[5] in the United States are up to

[5] Poverty was measured using a relative standard of 40% of median income, and 50% of median income.

FIGURE 2: EARLY DEVELOPMENT INSTRUMENT (EDI) VULNERABILITY MAP



Notes:

Source: EDI Cycle 1 (2000 - 2004), Human Early Learning Partnership. The total sample size is 43,395. For Arrow Lakes, Revelstoke, Central Coast, Vancouver Island West and Nisga'a (districts 10, 19, 49, 84 and 92, respectively), Cycle 1 includes data from 2005 in order to increase the sample size.

Socio-economic data adapted from Statistics Canada, 2001 Census of Population, Semi-custom Area Profile. Statistics Canada information is used with the permission of Statistics Canada. Information on the availability of the wide range of data from Statistics Canada can be obtained from Statistics Canada's Regional Offices, its World Wide Web site at http://www.statcan.ca, and its toll-free access number 1-800-263-1136.

Colour classification is based upon quintiles.

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Spheres of Influence: Regional and National

5-6% lower than in several OECD nations, including France and Sweden, and on par with others such as Australia, Canada, Spain, and Germany. However, after taxes and transfers, the United States has the highest poverty rate among the OECD nations, at 18%, between 6% and 11% higher than all other OECD nations (with the exception of Australia, which has a post tax and transfer poverty rate of 16%) (Smeeding & Ross, 1999). Prior to transfers, poverty rates across OECD nations were consistently high, with a range of 32% in Italy to 80% in the Netherlands. However, after governments applied redistributive measures, the rates for lone mothers are reduced to approximately 10% in many OECD nations, with a low of 4% in Germany. By contrast, the poverty rate for lone mothers in the United States remained at 60% (Beaujot & Liu, 2002).

A randomized controlled trial in Mexico (Gertler, 2004) integrated access to cash transfers with improvements in children's physical health and has shown much success. PROGRESA is a national programme designed to mitigate the effects of extreme poverty and socioeconomic inequalities in child well-being. The programme involves giving cash transfers to families, provided that children aged 0-60 months are immunized and attend well-baby visits where their nutritional status is monitored. They are given nutritional supplements, and their parents are given health education. Pregnant women receive prenatal care, lactating women receive postpartum care, other family members receive physical check-ups once per year (where they also receive health education), and adult family members participate in regular meetings where health, hygiene, and nutritional issues are discussed. An evaluation of this study found that children born during the two-year intervention period experienced 25% less illness in the first six months of life than the control children, and children aged 0-35 months during the intervention experienced 39.5% less illness than their counterparts in the control group. Children in the PROGRESA programme were also one fourth as likely to be anemic, and grew one centimeter more, on average. Finally, the results of this study suggest that the effects of the programme were cumulative, increasing the longer the children stayed in the programme (Gertler, 2004).

KEY MESSAGES:
REGIONAL AND NATIONAL

1. Regional variation in children's developmental outcomes is a good staring point for trying to understand "where the differences are that make a difference" in a given society and, thus, for determining the prospects for intervention and improvement.
2. Effective governance for ECD programs and services generally takes place at the regional level. This is the level at which accountability and interpretations of policy should be enacted. Also, the region is often the level at which programs and services that indirectly influence ECD are delivered (e.g., housing, employment).
3. National governments should be held responsible for guaranteeing the rights to which they are obligated through their signing of the CRC and their commitment to the MDGs. In practice, this means putting in place policies to alleviate disparities that have an impact on ECD.
4. Investing in ECD is a long-term economic and social strategy that takes on great importance at the national level. Returns on investment may be realized in as short a term as 3-5 years, in terms of children's improved readiness for school. In contrast, inequity in children's development undermines societal progress. ECD should be positioned as a non-partisan public health issue.
5. "Child and family friendly" societal investment strategies can be enacted regardless of the relative level of the per capita gross domestic product (GDP) of a society.
6. Reporting obligations under key international conventions, such as the CRC, International Labour Organization (ILO) Global Reports, and Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), can be used as levers for change at the national level.
7. Child survival and ECD are inseparable. Nations focusing on child survival should take responsibility for ensuring that their social and economic policies pay equal importance to both survival and development of children.

The Global Level

Spheres of Influence: Global

It is often difficult to characterize globalization, let alone its influence on children. There are many types of stakeholders that shape the global environment, including nation-states, multilateral economic organizations, industry, multilateral development agencies, non-governmental development agencies, and civil society groups. The global environment can influence ECD through its effects on the policies of nations. A major feature of the global environment in relation to children's well-being is the element of *power* in economic, social, and political terms. Power differentials between types of actors, and particularly between nations, have many consequences, including the ability of some nations (mainly resource-rich ones) to influence the policies of other nations (mainly resource-poor ones). This in turn may mean that the ability of resource-poor nations to enact policies that are optimal for ECD is compromised. Efforts to enable nations to gain independence over their own futures, and encouragement of multilaterals to favour policy directions that benefit children are major elements in promoting ECD. Notwithstanding this, most of the recommendations in this report are within the capabilities of any national government that meets the international criteria for a "competent authority."

Efforts to enable nations to gain independence over their own futures, and encouragement of multilaterals to favour policy directions that benefit children are major elements in promoting ECD.

One well-known set of policies that was introduced to many resource-poor nations in the 1980s and early 1990s was the Structural Adjustment Programme (SAP) of the World Bank and International Monetary Fund. The purpose of SAP was to increase the economic prosperity of low-income nations for the purpose of paying debts to high-income nations. SAP involved increasing privatization and decreasing the role of the government in many aspects of national economic and social endeavours, including reducing investments in social welfare programmes, such as education, health care, and other services that benefit ECD, as a means of increasing "efficiency" and spurring economic growth in the resource-poor nations. Ghana's experience with structural adjustment is briefly described here. It is particularly compelling, since it is often viewed by international agencies as perhaps the most successful case of structural adjustment in Africa.

Ghana's SAP commenced in 1983 and involved reducing government expenditures by cutting social services, adjusting the exchange rate through devaluation of the national currency, abandonning price controls, privatizing state-owned enterprises, and increasing the export-based portion of the economy. On a macro-level, the GDP of Ghana has improved, inflation has dropped, and foreign investment has increased, but the social welfare of Ghana's citizens has worsened. Of particular interest to this report, access to basic services for many children and families was compromised. The devaluation of the currency has meant an increase in cost of imported goods; poverty has decreased slightly, but socioeconomic inequalities have increased (Konadu-Agyemang, 2000).

SAPs have influenced children (directly or indirectly) in the areas of survival, immunization, prevalence of health attendants, nutrition, and balanced urbanization (Bradshaw et al., 1993). Although direct evidence of policy effects on health requires further specific study, the experience of Ghana and other nations is instructive.

The global environment is also characterized by important declarations that affirm the rights of children (CRC, 1990) and of women (United Nations Division on the Advancement of Women (CEDAW), 2007), which, by extension, influences the well-being of children. In particular, the new General Comment #7 on Implementing Rights in Early Childhood of the CRC (2005) creates an opportunity to hold "state parties" responsible for the physical, social/emotional, and language/cognitive development

The international community needs to agree on valid ways to measure ECD that are analogous to existing global measurements of health and human development, such as IMRs, U5MRs, stunting, and the HDI.

of young children, as well as eradicating child labour. Other sections of the CRC also have varying degrees of relevance to ECD. For example, Article 6 explicitly decrees that state parties (which primarily refers to nations) are responsible for ensuring "to the maximum extent possible . . . the development of the child." CEDAW "was adopted in 1979 by the [United Nations] General Assembly, [and] is often described as an international bill of rights for women" (United Nations Division on the Advancement of Women, CEDAW 2007). Since the convention is aimed at improving the circumstances of women, it clearly has implications for the well-being and development of children. In addition, the Global Monitoring Report from UNESCO ties *Education for All* to ECD.

One of the most alarming concerns for today's children is the issue of child labour. Data from 2002 compiled by the ILO suggest that approximately 246 million children are engaged in some form of child labour, which is defined as most productive activity of children, but "excludes the activities of children 12 years and older who are working only a few hours a week in permitted light work and those of children 15 years and above whose work is not classified as 'hazardous'" (2002). Of these, 171 million child labourers were working in hazardous situations or conditions. The overwhelming number of child labourers (over 127.3 million) is concentrated in the Asia-Pacific region, followed by Sub-Saharan Africa (48 million) and Latin America and the Caribbean (17.4 million). Among child labourers, boys slightly outnumber girls (132 million versus 113 million), but even more disproportionately (95.7 million compared to 74.8 million) bear the burden of work that is characterized as hazardous (ILO, 2002).

The use of children to perform labour in order to produce commodities to be sold on the market is certainly nothing new; however, the world's capacity to ameliorate child labour has increased (although we may not always act on this capacity), primarily owing to more avenues for advocacy and institutional support for the protection of child well-being. Article 32 of the CRC makes it imperative that state parties recognize the right of the child to be protected from child labour, particularly work that is harmful to her or his development.

The world's capacity to ameliorate child labour has increased, primarily owing to more avenues for advocacy and institutional support for the protection of child well-being, e.g. Article 32 of CRC.

THE ROLE OF CIVIL SOCIETY

At the global level, the role of non-governmental international bodies and civil society is critical for creating the economic, social, and political conditions that support ECD and children's welfare more broadly. Civil society makes a particularly strong contribution to ECD and population health. Civil society groups are conceptualized as being organized at, and acting on, all levels of social organization, from local residential through global. The ability of civil society to act on behalf of children is a function of the extent of the social capital, or connectedness of citizens, and the support of political institutions in promoting expressions of civil organization. When civil society is enabled, there are many avenues through which it can engage on behalf of children. Civil society groups can initiate government, NGO, and community action on social determinants of ECD. They can advocate on behalf of children to ensure that governments and international agencies adopt policies that positively benefit children's well-being. They can be instrumental in organizing strategies at the local level to provide families and children with effective delivery of ECD services; to improve the safety, cohesion, and efficacy of residential environments; and to increase the capacity of local and relational communities to better the lives of children. *Although research on the direct effect of civil society on ECD is limited, the strong statistical association between the strength of civil society and human development in societies around the globe leaves little doubt about its importance to ECD.*

THE IMPORTANCE OF GLOBAL ECD INDICATORS

The international community needs to agree on valid ways to measure ECD that are analogous to existing *global* measurements of health and human development, such as Infant Mortality Rates (IMRs), Under Five Mortality Rates (U5MRs), stunting, and the Human Development Index. This is essential to achieving national and international recognition of the scale of the ECD challenges we face, and to establishing credible international goals. We are currently able to measure IMR and U5MRs across whole societies in a valid, reliable, and credible fashion. As a result, individual states and the global community recognize the scale of the child survival problem and have set the MDGs to address it. Similarly, the level of early childhood nutrition across populations is estimated through rates of stunting. This act of measurement, too, has led to national and international recognition of the scale of the problem, and an MDG has been set. The problem is that we have no comparable indicator for ECD, and therefore *no measurement, no data; no data, no problem; no problem, no action*. Creating a

Spheres of Influence: Global

The WHO Commission on the Social Determinants of Health has a special role to play, since its broad population health perspective allows it to understand the importance of global monitoring of ECD.

global measurement system to monitor ECD needs to be an essential component of every nation's ECD strategy. Now that signatory countries are required to report progress in fulfilling General Comment #7 of the CRC (Implementing Rights in Early Childhood), there is an incentive for the international community to create a global ECD measurement system. The elements of such a system are described in Appendix C. The WHO Commission on the Social Determinants of

Health has a special role to play here, since its broad population health perspective allows it to understand the importance of global monitoring of ECD, and its access to world leaders puts it in a position to effectively advance this argument.

Spheres of Influence: Global

KEY MESSAGES: GLOBAL

1. The current international climate is propitious for advancing ECD. Heightened awareness of the importance of ECD and convergence of initiatives at the international level are creating a new momentum.
2. Alliances that are independent of state parties should be encouraged among those who are concerned with the well-being of young children. These can occur at the level of the family (*e.g.,* the grandmother to grandmother program) or at the level of the local community (*e.g.,* networks like those developed by the BVLF, Aga Khan, and Soros Foundations).
3. Because of its global responsibility in population health, the WHO should strengthen its commitment to ECD as a key social determinant of health.
4. The international community has a role to play in creating consensus on how to monitor child development through indicators that can be analyzed at the national, regional, and community levels, and tracked over time.
5. The CRC's new General Comment #7 on Implementing Rights in Early Childhood creates an opportunity to hold States Parties responsible for physical, social/emotional, and language/cognitive development of young children, as well as eradicating child labour.

Discussion and Recommendations

Discussion and Recommendations

A child requires nurturant conditions to thrive. **The process of development is** influenced not only by a child's nutritional and health status but also by the kind of interactions—beginning *in utero*—infants and children develop with caregivers in their environment. We know that early environments influence individual children's development independent of and in combination with their biologic characteristics, and there is a growing awareness of specific periods in children's brain development that affect health outcomes over a lifetime. Enriched environments and the **quality of** stimulation, security, and support **during** sensitive periods of development are of utmost importance from conception to eight years of age. **The environments respon**sible for fostering nurturant conditions for children range from the intimate realm of the family to the broader socioeconomic context shaped by governments, international agencies, and civil society. These environments and their characteristics are the social determinants of ECD. An essential precondition for ECD is the child's basic right to exist; thus, *national governments have an essential predisposing role to play by ensuring that all children are registered at birth, through maintaining a functioning, comprehensive birth registry.*

Recommendation 1

We now understand that the transactional nature of young children's relationships are far more important for their growth and development than has traditionally been recognized. Children do not just grow up according to internal laws of biology; they grow and develop through the interplay of human relationships in the environments where they live. In order to provide nurturant environments for their children, all families need support from community and government. *The quality of support received by families should be monitored by local NGOs as part of the reporting under the CRC.* The goal is universal access to a range of ECD services: parenting and caregiver support, quality childcare, nutrition, social protection, primary healthcare, and basic education. To be effective, these services need to be coordinated at the regional level, and delivered at the local level in a way that puts the child at the centre. Children benefit most when national governments adopt child-and family-friendly policies that guarantee adequate income for all, and allow parents and caregivers to balance their time spent at home and work. *Governments should take up the challenge of creating a work-life/home-life balance, by putting systems in place to ensure that quality community-based childcare relevant to local culture and context is available for the children of working mothers.*

Recommendation 2

Recommendation 3

In order to achieve a global consensus on the importance of ECD, there is a need to foster a broader and more profound understanding of what is involved in ECD, and to a much wider audience than in the past. This would have to take shape as *a social marketing campaign that expands to include audiences not traditionally thought of as ECD stakeholders: finance and planning departments of government, the economic sector, the corporate world, and media.* In addition, WHO, UNICEF, UNESCO, the World Bank, and key NGOs should form a consortium to ensure broad dissemination of the science of ECD in conjunction with the social marketing campaign.

Recommendation 4

The CSDH should model ways to promote an understanding that the MDGs will only be achieved if ECD is addressed seriously.

The CSDH should model ways to promote an understanding that the MDGs will only be achieved if ECD is addressed seriously. In order to do this, and because of its global

Recommendation 5

responsibility in population health, *the WHO should strengthen its commitment to ECD as a key social determinant of health, beyond the CSDH, by subsuming its child survival and health programmes globally under the developmental perspective articulated in this report.*

Recommendation 6

Governments, by ratifying the CRC, have committed themselves to realizing rights in early childhood. This means that *local, regional, and national governments should incorporate the "science of early child development" into policy.* Most countries require capacity building to meet this goal. Given the overlap in underlying determinants, *governments should be building upon an established child survival and health programmes to make ECD programmes accessible through existing platforms.* The health care system is often the most cost-effective platform and most universal point of contact.

Recommendation 7

Recommendation 8

Governments should create an inter-ministerial policy framework for ECD that clearly articulates the roles and responsibilities of each sector and how they will collaborate. Governments should also integrate ECD policy elements into the agendas of each sector to ensure that they are considered routinely in sectoral decision-making. Governments will need to reallocate resources to decrease inequities in access to high-quality ECD programmes and services; to facilitate this, ourreview has identified evidence that can be used as a benchmark for judging the quality of ECD programmes and services. Community involvement is an important component of successful ECD programming; because of this, *governments should involve local communities in developing and implementing ECD policies, programmes and services.* This does not absolve governments from their responsibilities but ensures stronger relationships between government and the local communities where service delivery occurs.

Recommendation 9

Recommendation 10

ECD programmes should be monitored for quality and effectiveness. This should include an assessment of barriers to and opportunities for access, with a particular focus on decreasing inequity in ECD. Mechanisms need to be developed and implemented to insure that communities and central agencies work together to collect reliable data on outcomes.

Recommendation 11

Governments need to develop strategies for "scaling up" effective programmes from the local to the national, without sacrificing the characteristics of the programme that made it effective. Implementation integrity and accountability at the local level must be sustained, even when programmes are scaled-up to the national level.

The social determinants of health operate from the most intimate sphere of influence for children—the family—to the most distant—the global sphere. While governments can do much to change the circumstances of the world's children and families, this review has also demonstrated the need for global collaboration in the area of ECD. *We propose an expanded global interagency collaboration (herein, the Global Alliance for ECD, or GA-ECD), that will build upon existing informal networks of agencies currently working on ECD internationally, such as UNICEF, UNESCO, World Bank, BVLF, Soros Foundation, the Aga Khan Foundation and the WHO.*

A more formal partnership would facilitate developing an interactive global knowledge platform for communities and individuals to share knowledge related to ECD; monitoring country work through facilities such as the CRC; and providing advocacy for ECD and advice to countries on the science of ECD. The GA-ECD could become an effective site of advocacy for increased investment in child- and family-friendly policies. It should work towards linking ECD to the MDGs, especially to MDGs on poverty reduction, education, gender equality, and child survival. The GA-ECD should take responsibility for strengthening the ECD "watchdog" function that needs to be performed by independent agencies within countries. In practice, this would require the GA-ECD to play a role in aiding and ensuring that countries remain accountable through the CRC's General Comment #7; including the voices of children in their country reports; and demonstrating how they have considered the evolving capacities of children.

Recommendation 12

A global funding strategy needs to be put in place to allow effective monitoring of General Comment #7. In particular, a funding arrangement is required to sustain the GA-ECD and to support in-country watchdog functions in fulfillment of *General Comment #7*. Although this is an ambitious goal, it need not be an expensive one. It is estimated that an endowment that generates US $1-2 million revenue per year would permit these functions to be fulfilled.

Recommendation 14

UNICEF, with the concurrence of the GA-ECD should develop a common formula for calculating national expenditures on ECD, as well as per capita investment in children. *An economic analysis that indicates the "return on investment" that society can anticipate from different types of ecd programmes and services should be created and disseminated.*

Recommendation 15

Recommendation 13

Local, regional, and national governments should incorporate the "science of early child development" into policy.

Conclusions

What a child experiences during the early years *sets a critical foundation for the entire lifecourse.* ECD, including physical, social/emotional and language/cognitive domains, strongly influences basic learning, school success, economic participation, social citizenry, and health. The principal strategic insight of this document is that the nurturant qualities of the environments where children grow up, live, and learn matter the most for their development, yet parents cannot provide strong nurturant environments without help from local, regional, national, and international agencies. Therefore, this report's principal contribution is to propose ways in which government and civil society actors, from local to international, can work in concert with families to provide equitable access to strong nurturant environments for all children globally. Recognizing the strong impact of ECD on adult life, it is imperative that governments recognize that disparities in the nuturant environments required for healthy child development will impact differentially on the outcome of different nations and societies. In some societies, inequities in ECD translate into vastly different life chances for children; in others, disparities in ECD reach a critical point where they become a threat to peace and sustainable development. The result of our efforts suggest two primary directions for the future:

1) continued research to provide a better understanding of the effects of environments on biological embedding and ECD, particularly that of broader environments, and
2) the use of available information to inform action to further the goal of a "grass-roots to global" child-centered social investment strategy.

References

Anda, R.F., Felitti, V.J., Bremner, J.D., Walker, J.D., Whitfield, C.H., Perry, B.D., Dube, S.R., Giles, W.H. (2006) The enduring effects of abuse and related adverse experiences in childhood: a convergence of evidence from neurobiology and epidemiology. **European Archives of Psychiatry and Clinical Neuroscience**, 256 (3), pp.174-86.

Anderson, L.M., Shinn, C., Fullilove, M.T., Scrimshaw, S.C., Fielding, J.E., Normand, J., Carande-Kulis, V.G., & the Task Force on Community Preventative Services. (2003) The effectiveness of early childhood development programs. **American Journal of Preventive Medicine**, 24(3S), pp.32-46.

Barker, D. (1992) Fetal and infant origins of adult disease: The womb may be more important than the home. **British Medical Journal**, 301, 17 November 1999, p.1111.

Bartley, M. (2006) **Capability and resilience: beating the odds**. London, UCL Department of Epidemiology and Public Health.

Beaujot, R. & Liu, J. (2002) **Children, social assistance and outcomes: cross-national comparisons**. Luxembourg Income Study Working Paper, No. 304.

Behrman, J., Cheng, Y. & Todd, P. (2004) "Evaluating Pre-school Programs when Length of Exposure to the Program. **Statistics**, 86(1), pp.108-32.

Berman, H.A. (1996) Growing up amid violence: a critical narrative analysis of children of war and children of battered women. **Doctoral dissertation**, Wayne State University.

Bornstein, M., Haynes, O., Pascual, L., Painter, K. & Galperin, C. (1999) Play in two societies: pervasiveness of process, specificity of structure. **Child Development**, 70, pp.317-331.

Bourdieu, P. (1984) **A social critique of the judgement of taste**. Translated from the French by R. Nice. London, Routledge.

Bowlby, J. (1969) **Attachment and loss: attachment**. Vol. 1. New York: Basic.

Boyden, J. & Levison, D. (2000) Children as economic and social actors in the development process. Stockholm, Ministry of Foreign Affairs, Expert Group on Developmental Issues (Working paper, 1).

Bradshaw, Y.W., Noonan, R., Gash, L. & Sershen, C.B. (1993) Borrowing against the future: children and third world indebtedness. **Social Forces**, 71(3), pp.629-656.

Bronfenbrenner, U. (1986) Ecology of the family as a context for human development: research perspectives. **Developmental Psychology**, 22(6), pp.723-741.

Brooks-Gunn, J., Duncan, G.J. & Maritato, N. (1997) Poor families, poor outcomes: the well-being of children and youth. In: Duncan, G.J. & Brooks-Gunn, J. eds. **Consequences of growing up poor**. New York, Russell Sage Foundation.

Carneiro, P.M. & Heckman, J.J. (2003) Human capital policy. IZA discussion paper No. 821. [Internet]. Available from: http://papers.ssrn.com/sol3/ papers.cfm?abstract_id=434544 [Accessed 24 March 2007].

Carter, M.R. and Maluccio, J.A. (2003) Social capital and coping with economic shocks: an analysis of stunting of South African children. **World Development**, 31(7), pp.1147-1163.

Cleveland, G. & Krashinsky, M. (1998) **The benefits and costs of good child care: the economic rationale for public investment in young children - a policy study**. Toronto, The Childcare Resource and Research Unit, Centre for Urban and Community Studies, University of Toronto.

Coleman, J.C. (1990) **Foundations of social theory**. Cambridge, Harvard University Press.

Coleman, J.C. (1988) Social capital in the creation of human capital. **American Journal of Sociology**, 94, S95-S120.

Commission on Social Determinants of Health (CSDH). (2005) **Towards a conceptual framework for analysis and action on the social determinants of health**. Discussion Paper for the Commission on Social Determinants of Health. Draft. 1 July 2005.

Dahlgren, G. & Whitehead, M. (1991) **Policies and strategies to promote social equity in health.** Stockholm: Institute of Futures Studies.

Dayal, M. (2001) **Towards securer lives: SEWA's social-security programme**. Delhi: Ravi Dayal.

DiPietro, J.A. (2000) Baby and the brain: advances in child development. **Annual Review of Public Health**, 21, pp.455-471.

Dunn, J.R. & Hayes, M.V. (2000) Social inequality, population health, and housing: a study of two Vancouver neighbourhoods. **Social Science and Medicine**, 51, pp.563-587.

ECDVU (Early Child Development Virtual University). (2005) [Website]. Available from: http://www.ecdvu.org/flash.asp. [Accessed 24 March 2007].

Emmons, K. (2003) Health behaviours in a social context. In: Kawachi, I. & Berkman, L.F. eds. **Neighborhoods and health.** New York, Oxford University Press.

Engle, P.L., Black, M.M., Behrman, J.R., Cabral de Mello, M., Gertler, P.J., Kapiriri, L., Martorell, R. & Young, M.E. (2007) Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world. The International Child Development Steering Group. **The Lancet**, 369(9557), 20 January, pp. 229-242.

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

Farrington, D., & Welsh, B. (2006). **Saving children from a life of crime: early risk factors and effective intervention**. New York: Oxford University Press.

Father's Direct: The National Information Centre on Fatherhood. (2007) What the National Service Framework says about fathers. [Internet]. Available from http://www.fathersdirect.com/index.php?id=28&cID=84. [Accessed 31 January 2007].

Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., Koss, M.P., & Marks, J.S. (1998) Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. **American Journal of Preventive Medicine**, 14(4), pp.245-58.

Flegg, A.T. (1982) Inequality of income, illiteracy and medical care as determinants of infant mortality in underdeveloped countries. **Population Studies**, 36, pp.441-458.

Gertler, P. (2004) Do conditional cash transfers improve child health? Evidence from PROGRESA's control randomized experiment**. Health, Health Care, and Economic Development**, 94(2), pp.336-341.

Goelman, H. (2003) Early childhood education. In: Reynolds, W.M. & Miller, G.E. eds. **Handbook of psychology. Vol. 7, Educational psychology**. Hoboken, Wiley, pp. 285-332.

Grantham-McGregor, S., Cheung, Y.B., Cueto, S., Glewwe, P., Richter, L. & Strupp, B. (2007) Developmental potential in the first 5 years for children in developing countries. The International Child Development Steering Group. **The Lancet**, 369 (9555), 6 January, pp.60-70.

Grantham-McGregor, S.M., Walker, S.P., Chang, S.M. & Powell, C.A. (1997) Effects of early childhood supplementation with and without stimulation on later development in stunted Jamaican children. **American Journal of Clinical Nutrition**, 66, pp.247-253.

Greenwood, M. (2005) Children as citizens of First Nations: linking indigenous health to early child development. **Paediatric Child Health**, 10(9), pp.553-556.

Grotberg, E. (1995) Strengthening the human spirit. The International Resilience Project, from the Early Childhood Development: Practice and Reflections series. Bernard Van Leer Foundation.

Gussow, J.D. (1980) **Who pays the piper? Teacher's College Record**, 18(4), pp.448-466.

Hart, B. & Risley, T.R. **Meaningful differences in the everyday experience of young American children**. Baltimore: Brookes, 1995.

Hertzman, C. (2000) The case for an early childhood development strategy. **Isuma: Canadian Journal of Policy Research**, 1(2), pp.11-18.

Hertzman, C. (1999) The biological embedding of early experience and its effects on health in adulthood. **Annals of New York Academy of Science**, 896, pp.85-95.

Hertzman, C. & Siddiqi, A. (2000). Health and rapid economic change in the late twentieth century. **Social Science and Medicine** 51(6): 809-819.

Hertzman, C. & Wiens, M. (1996) Child development and long-term outcomes: a population health perspective and summary of successful interventions. **Social Science and Medicine**, 43(7), pp.1083-95.

Heymann, J. (2006) **Forgotten families: ending the growing confrontation children and working parents in the global economy**. New York: Oxford University Press.

Houweling, T.A., Caspar, A.E., Looman, W.N. & Mackenbach, J.P. (2005) Determinants of under-5 mortality among the poor and the rich: a cross-national analysis of 43 developing countries. **International Journal of Epidemiology**, 34(6), pp.1257-65.

References

Houweling, T.A.J., Kunst, A.E., Borsboom, G. & Mackenbach, J.P. (2006) Mortality inequalities in times of economic growth: time trends in socioeconomic and regional inequalities in under 5 mortality in Indonesia, 1982-1997. **Journal of Epidemiology and Community Health**, 60, pp.62-68.

International Labour Organization (ILO). (2002) **Every child counts: new global estimates on child labour**. Geneva: International Labour Organization.

Irwin, L.G. (2006) The potential contribution of emancipatory research methodologies to the field of child health. **Nursing Inquiry**, 13(2), 94-102.

Irwin, L.G. (2004) **Published report on review of the evidence base for healthy infant and early childhood development in British Columbia**. Healthy Child BC Forum. Vancouver, British Columbia, Canada, November 2004.

Irwin, L.G. & Johnson, J.L. (2005) Interviewing young children: explicating our practices and dilemmas. **Qualitative Health Research**, 15(6), 821-831.

Irwin, L.G., Johnson, J.L., Henderson, A., Dahinten, V.S. & Hertzman, C. (in press) Examining how contexts of daily life influence children's perspectives of health. **Child: Care, Health and Development.**

James, A. (1993) **Childhood identities: self and social relationships in the experience of the child**. Edinburgh, Edinburgh University Press.

Janus, M. & Offord, D. (2007) Psychometric properties of the Early Development Instrument (EDI): a teacher-completed measure of children's readiness to learn at school entry. **Canadian Journal of Behavioural Science**, 39(1), pp.1-22.

Janus, M. & Offord, D. (2000). Readiness to learn at school. . **Isuma: Canadian Journal of Policy Research**, 1(2), pp.71-75.

Jejeebhoy, S.J. (1995) **Women's education, autonomy, and reproductive behaviour; experience from developing countries**. Oxford, Clarendon Press.

Jejeebhoy, S.J. & Sathar, Z.A. (2001) Women's autonomy in India and Pakistan: the influence of religion and region. **Population and Development Review**, 27(4), pp.687-712.

Jencks, C. & Mayer, S.E. (1990) The social consequences of growing up in a poor neighborhood. In: Lynn, L.E. Jr. & McGeary, M.G.H. eds. **Inner-city poverty in the United States**. Washington, National Academy Press.

Kagan, S.L. & Britto, P.R. (2005). **Going global with early learning and development standards**. UNICEF Technical Report. New York, UNICEF.

Kamerman, S.B., & Gabel, S.G., (2006). Social protection for children and their families: a global overview. Paper presented at **Social Protection Initiatives for Children Women and Families: An analysis of recent experience**. October 2006

Kamerman, S.B., Neuman, M., Waldfogel, J. & Brooks-Gunn, J. (2003) **Social policies, family types, and child outcomes in selected OECD countries.** OECD Social, Employment, and Migration Working Papers, No. 6.

Kaplan, G.A., Pamuk, E.R., Lynch, J.W., Cohen, R.D. & Balfour, J.L. (1996) Inequality in income and mortality in the United States: analysis of mortality and potential pathways. **British Medical Journal**, 312, pp.999-1003.

Karoly, L.A., Kilburn, R.M. & Cannon, J.S. (2005) **Early childhood interventions: proven results, future promise**. Pittsburg, Rand.

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

Kennedy, B.P., Kawachi, I. & Prothrow-Stith, D. (1996) Income distribution and mortality: cross-sectional ecological study of the Robin Hood Index in the United States. **British Medical Journal**, 312, pp.1004-1007; erratum: p.1253.

Kershaw, P., Irwin, L., Trafford, K. & Hertzman, C. (2006) **The British Columbia atlas of child development.** Vol. 40. Human Early Learning Partnership. Vancouver, Western Geographical Press.

Knudsen, E.I., Heckman, J.J., Cameron, J. & Shonkoff, J.P. (2006) Economic, neurobiological, and behavioral perspectives on building America's future workforce. **Proceedings of the National Academy of Sciences**, 103 (27), July, pp.10155-10162.

Kohen, D.E., Brooks-Gunn, J., Leventhal. T. & Hertzman, C. (2002) Neighbourhood income and physical and social disorder in Canada: associations with young children's competencies. **Child Development**, 73, pp.1844-1860.

Konadu-Agyemang, K. (2000) The best of times and the worst of times: structural adjustment programmes and uneven development in Africa: the case of Ghana. **Professional Geographer**, 52(3), pp.469-483.

Lamb, M.E. (1998) Non-parental child care: context, quality, correlates, and consequences. In: Damon, W., Sigel, I.E. & Renninger, K.A. eds. **Handbook of child psychology**. **Vol. 4, Child psychology in practice**. New York: Wiley, pp.73-133.

Lansdown, G. (2005) **Can you hear me? The right of young children to participate in decisions affecting them.** Working Papers in Early Childhood Development. Bernard van Leer Foundation, May 2005.

Leventhal, T. & Brooks-Gunn, J. (2000) The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. **Psychological Bulletin**, 126(2), pp.309-337.

Maggi, S., Hertzman, C., Kohen, D. & D'Angiulli, A. (2004) School proportion of highly competent, neighbourhood socioeconomic characteristics, and class composition. **Journal of Educational Research**, 98(2), pp.109-114.

Maggi, S., Irwin, L.G., Siddiqi, A., Poureslami, I., Hertzman, E. & Hertzman, C. (2005) **Analytic and strategic review paper: International perspectives on early child development**. The World Health Organization's Commission on the Social Determinants of Health, December 2005.

Magnuson, K.A., Ruhm, C. & Waldfogel, J. (2007). The persistence of preschool effects: do subsequent classroom experiences matter? **Early Childhood Research Quarterly**, 22 (1), pp.18-38.

Marmot, M. & Wadsworth, M. eds. (1997) **Fetal and early childhood environment: long term health implications**. London: British Medical Bulletin.

Masten, A.S. & Powell, J. L. (2006) A resilience framework for research, policy, and practice. In: Luthar, S.S. ed. **Resilience and vulnerability: adaptation in the context of childhood adversities**. Cambridge: Cambridge University Press.

Mayall, B. (1996) **Children, health and the social order**. Buckingham: Open University Press.

McArdle, P. (2003) Children's play. **Child: Care, Health & Development**, 27(6), pp.509-514.

NICHD Early Child Care Network. (2002) Early child care and children's development prior to school entry: results from the NICHD Study of Early Child Care. **American Educational Research Journal**, 39, pp.133-164.

NICHD Early Child Care Network. (1996) Characteristics of infant child care: factors contributing to positive care-giving. **Early Childhood Research Quarterly**, 11, pp.269-306.

Nsmenang, B. (2005) The teaching-learning transaction: an Africentric approach to educational psychology. **Journal of Psychology in Africa**, 15(1) January, pp.115-116.

Organisation for Economic Co-operation and Development (OECD). (2006) **Starting strong II: early childhood education and care**. OECD.

Pelto, G., Dickin, K. & Engle, P. (1999) **A critical link: interventions for physical growth and psychological development, a review**. Geneva: Department of Child and Adolescent Health and Development, World Health Organization.

Pence, A.R., Habtom, A. & Chalamanda, F. (in press). Promoting capacity in ECD: complementary strategies and the evolution of the ECDVU in Africa. In Garcia, M., Pence, A.R. & Evans, J. eds. **Africa's future–Africa's challenge: early childhood care and education in sub-saharan Africa**. Washington: World Bank.

Pence, A.R. & Marfo, K. (Eds.). (2004). Capacity building for early childhood education in Africa (special issue). **International Journal of Educational Policy, Research and Practice**, 5(3).

Pinheiro, P.S. (2006) World report on violence against children. **United Nations Secretary-General's Study on Violence against Children**. New York, October 2006.

Powell, C.A., Walker, S.P., Chang, S.M. & Grantham-McGregor, S.M. (1998) Nutrition and education: a randomized trial of the effects of breakfast in rural primary school children. **American Journal of Clinical Nutrition**, 68, pp.873-879.

Putnam, R.D. (2000) **Bowling alone: the collapse and revival of American community**. New York: Simon and Schuster.

Ramey, C.T. & Ramey, S.L. (1998) Prevention of intellectual disabilities: early interventions to improve cognitive development. **Preventive Medicine**, 27(2), pp.224-232.

Richter, L. (2004). **The importance of caregiver-child interactions for the survival and healthy development of young children: A review**. Geneva, Department of Child and Adolescent Health and Development, World Health Organization.

Richter, L. & Foster, G. (2006) **Strengthening systems to support children's healthy development in communities affected by HIV/AIDS**. Geneva: Department of Child and Adolescent Health and Development, World Health Organization.

Rogers, G. (1979) Income and inequality as determinants of mortality: an international cross-section analysis. **Population Studies**, 33, pp.343-351.

Ruiz-Pelaez, J. G., Charpak, N., & Cuervo, L.G. (2004). Kangaroo Mother Care, an example to follow from developing countries. **British Medical Journal**, 329, pp.1179-1181.

Samspon, R.J., Morenoff, J.D. & Earls, F. (1999) Beyond social capital: spatial dynamics of collective efficacy for children. **American Sociological Review**, 64(5), pp.633-660.

Schady, N. (2005). Early childhood development in Latin America and the Caribbean. World Bank Policy Research Working Paper No. 3869. Washington, World Bank.

Schweinhart, L.J. (2004) **The High/Scope Perry preschool study through age 40: summary, conclusions, and frequently asked questions**. Ypsilanti: High/Scope Educational Research Foundation.

Schweinhart, L.J., Barnes, H.V. & Weikart, D.P. (1993) **Significant benefits: the high/scope perry preschool study through age 27**. Ypsilanti: High/Scope Press.

Shonkoff, J.P. & Phillips, D.A. (Eds.) (2000) **From neurons to neighborhoods: the science of early childhood development**. Committee on Integrating the Science of Early Childhood Development, Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education, National Research Council and Institute of Medicine. Washington, National Academy Press.

Siddiqi, A. & Hertzman, C. (in press) The impact of slow-moving processes on population health trends: a comparative perspective of socio-political determinants in Canada versus the United States. **Social Science and Medicine**.

Siddiqi, A. & Hertzman, C. (2001) Economic growth, income equality and population health among the Asian Tigers. **International Journal of Health Services**, 31, pp.323-34.

Siddiqi, A., Irwin, L.G. & Hertzman, C. (2007). The Total Environment Assessment Model of Early Child Development. Evidence Report for the Commission on Social Determinants of Health, World Health Organization.

Siddiqi, A., Kawachi, I., Berkman, L., Subramanian, S.V. & Hertzman, C. (in press) Variation of socioeconomic gradients in children's development across advanced capitalist societies: analysis of 25 OECD nations. **International Journal of Health Services**.

Smeeding, T. & Ross, K. (1999) Social protection for the poor in the developed world: the evidence from LIS. Luxembourg Income Study Working Paper. No. 204.

Smith, L.C., Ramakrishnan, U., Ndiaye, A., Haddad, L. & Martorell R. (2003) The importance of women's status for child nutrition in developing countries. **Research Report 131, International Food Policy Research Institute**, pp. 127-128. Washington, Department of International Health, Emory University.

Solari, O. & Irwin, A. (2005) **Towards a conceptual framework for analysis and action on the social determinants of health: discussion paper for the commission on social determinants of health**. Geneva: World Health Organization.

Spencer, N. (2004) The effect of income inequality and macro-level social policy on infant mortality and low birthweight in developed countries – a preliminary systematic review. **Child: Care, Health and Development**, 30(6), November, p.699.

Storch, S.A. & Whitehurst, G.J. (2001) The role of family and home in the literacy development of children from low-income backgrounds. In: Britto, P.R. & Brooks-Gunn, J. eds. **New directions for child and adolescent development**, 92. Indianapolis, Jossey Bass, pp.53-71.

Tremblay, R.E., Boulerice, B., Foster, H., Romano, E., Hagan J. & Swisher, R. (2001) **Multi-level effects on behaviour outcomes in Canadian children**. Working paper no. W-01-2E. Ottawa, Applied Research Branch, Strategic Policy, Human Resources Development Canada, Direction Canada.

UNESCO (United Nations Educational, Scientific and Cultural Organization) (2007). **The 2007 Global Monitoring Report**. Paris, UNESCO. [Internet]. Available from http://portal.unesco.org/education/en/ev.php-URL_ID=49591&URL_DO=DO_TOPIC&URL_SECTION=201.html. [Accessed 24 March 2007].

UNESCO (United Nations Educational, Scientific and Cultural Organization) (2006). **Strong foundations: early childhood care and education**. Paris, UNESCO, 3 November. [Internet]. Available from http://portal.unesco.org/education/en/ev.php-URL_ID=51483&URL_DO=DO_TOPIC&URL_SECTION=201.html. [Accessed 24 March 2007].

UNICEF (United Nations Children's Fund) (2007). **State of the World's Children 2007–women and children: the double dividend of gender equality**. [Internet] Available from http://www.unicef.org/sowc07/. [Accessed 24 March 2007].

UNICEF (United Nations Children's Fund) (2006). **Progress for children: a report card on nutrition, Number 4**. New York, UNICEF, May 2006. [Internet]. Available from http://www.unicef.org/progressforchildren/2006n4/. [Accessed 24 March 2007].

UNICEF (United Nations Children's Fund) (1997). **Role of men in the lives of children: a study of how improving knowledge about men in families helps strengthen programming for children and women**. New York: UNICEF. [Internet]. Available from http://www.unicef.org/sowc04/sowc04_boys_education.html. [Accessed 24 March 2007].

United Nations Division on the Advancement of Women (2007). **Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW)**. [Internet]. Available from http://www.un.org/womenwatch/daw/cedaw/. [Accessed 26 January 2007].

United Nations Office of the High Commission for Human Rights (CRC). (1990) **Convention on the Rights of the Child.** Geneva, United Nations, 2 September. [Internet]. Available from http://www.unhchr.ch/html/menu3/b/k2crc.htm. [Accessed 24 March 2007].

United Nations Office of the High Commission for Human Rights (UNCSW). (2004) The role of men and boys in achieving gender equality: agreed conclusions. **Commission on the Status of Women, 48th session**. [Internet]. Available from http://www.un.org/womenwatch/daw/csw/csw48/Thematic1.html. [Accessed 24 March 2007].

Vandell, D. & White, B. (2000) **Child care quality: does it matter?** Madison, University of Wisconsin Institute for Research of Poverty.

Wadsworth, M.E.J. (1997) Health inequalities in the life course perspective. **Social Science and Medicine**, 44, pp.859-869.

Waldman, R.J. (1992) Income distribution and infant mortality. **Quarterly Journal of Economics**, 107, pp.1283-1302.

Walker, S.P., Wachs, T.D., Gardner, J.M., Lozoff, B., Wasserman, G.A., Pollitt, E. & Carter, J.A. (2007) Child development: risk factors for adverse outcomes in developing countries. The International Child Development Steering Group. **The Lancet**, 369(9556), January.

Weber, M. (1946) Class, status, and party. In: Gerth, H.H & Mills, C.W. eds. **From Max Weber: essays in sociology**. Tranlated from the German by Gerth, H.H & Mills, C.W. NewYork: Oxford University Press, pp.180–95.

White, A. (2006) **Implementing child rights in early childhood: young children as active social participants**. General Comment 7. Bernard Van Leer Foundation, September.

Willms, J.D. (2003) **Ten hypotheses about socioeconomic gradients and community differences in children's developmental outcomes**. Applied Research Branch, Strategic Policy, Human Resources Development Canada, February.

Winicki, J. & Jemison, K. (2003) Food security and hunger in the kindergarten classroom: Its effect on learning and growth. **Contemporary Economic Policy**, 21(2), pp.145-157.

World Bank. **World development report 2007: development and the next generation**. Washington, World Bank, 2007. [Internet]. Available from http://web.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTWDRS/EXTWDR2007/menuPK:1489865~pagePK:64167702~piPK:64167676~theSitePK:1489834,00.html. [Accessed 24 March 2007].

World Health Organization (WHO). (2003) **Global strategy for infant and young child feeding.** Geneva: World Health Organization.

Wylie, C., Hodgen, E., Ferral, H., & Thompson (2006). **Contributions of early childhood education to age-14 performance: evidence from the Competent Children, Competent Learners project.** Wellington, New Zealand Ministry of Education, Research Division.

Zuberi, D. (2001) **Transfers matter most.** Luxembourg Income Study Working Paper. No. 271. Luxemburg, May. [Internet. Available from http://www.lisprojecct.org/ publications/liswps/271.pdf. [Accessed 24 March 2007].

Appendix A: Critical Appraisal of the Underlying Evidence

Elsewhere, it has been convincingly argued that, for several reasons, the traditional hierarchy of evidence may not be suitable for "appraising the evidence for social or public health interventions."[6] One particular case in which this is especially true is in the search for evidence concerning social determinants of health. That traditional evidentiary hierarchies are incompatible (or, at least, not completely compatible) with the available and desirable types of information in this area is supported by the prominence given to measurement and evidence issues by the WHO's CSDH.

The evidence gathered by the Knowledge Network for Early Child Development (KN-ECD) draws on several notions of what constitutes valid and reliable "evidence." The aim is to provide meaningful ways of weighing the available data and information in the field. The following provides an overview of the manner in which evidence was weighed for inclusion in this report. It is organized according to the "spheres of influence" outlined in the TEAM-ECD framework, since "types of evidence" cluster along these lines as well.

At the level of the individual, much of the recent evidence that is available in the literature has developed out of the broad acceptance of the CRC. With children recognized as fully human beings with evolving capacities to contribute to their lives, researchers have also recognized the value of including children's perspectives in knowledge generation. A major limitation in interpreting this body of evidence (yet also its strength, in that it is methodologically appropriate[7]) is that the small sample sizes and nature of qualitative research limits the generalizability of the work. Despite this scientific limitation, the moral and ethical value or obligation to consider the wishes/perspectives/needs of children in this evidence was paramount. We therefore do not make broad claims that extend beyond the evidence; rather, we suggest that, from the body of literature regarding children's perspectives, children deserve to be considered social actors, and that it is our duty to consider their views in our work. The bio-physiological responses to environmental stimuli that result in developmental outcomes for young children have undergone numerous and rigorous investigations. This is especially true compared to the body of knowledge regarding biological–environmental interactions for adults. Our knowledge of "biological embedding" comes from well-controlled experimental conditions that have been completed both in primates (including humans) and non-primates. In this way, information at this level meets the traditional "gold standard" of evidence.

With the family as a sphere of influence, the evidence-base is virtually void of experimental evidence. This is largely because it is neither feasible nor ethical to randomize or control family conditions. There are exceptions to this, such as experimental (or quasi-experimental) evidence obtained from studies of siblings and orphans. Where possible, these studies have been included. For the most part, studies conducted about the effect of family characteristics/structure/parenting on children have been observational. Within observational research, both descriptive studies (e.g., ecologic and cross-sectional studies) and analytic studies (e.g., cohort studies) have been completed. Wherever possible, results obtained from cohort studies were favoured over those obtained from descriptive studies. In comparison to cross-sectional studies, cohort studies enable the establishment of temporal order: that the cause arose before the outcome. At the family-level, there was also an explicit desire to demonstrate *population-level* patterns between socioeconomic conditions and child development, and moreover, to demonstrate variation in these patterns across populations or societies. Therefore, at this level, for this

6 Petticrew, M and Roberts, H. (2003.) Evidence, hierarchies, and typologies: Horses for courses. *Journal of Epidemiology and Community Health*. 57: 527-529.

7 Ibid.

task, cross-sectional, ecologic information was included. The trade-off here was in sacrificing temporal order to highlight an important aspect of developmental distribution that could not be captured without an ecologic perspective. Temporal order has been well established in the aforementioned cohort studies, which were also included to provide an individual-level perspective on socioeconomic conditions and ECD.

Evidence for the residential and relational communities, for similar reasons, arises primarily from prospective cohort investigations. Studies chosen for review were those which arose from the strongest research designs; those which were the best controlled, and most free of other forms of bias, as judged by the journals in which they appeared and their known scientific reputation in the field.

In order to maintain a social determinants of health perspective on the evidence we included in this report, in the ECD programmes and services section, rather than provide a "laundry list" of specific ECD programmes and services that have evidence of effectiveness, we chose to present *generic characteristics as well as strategic and organizational principles* of quality and sustainable programmes that are transferable around the globe. One rationale behind this decision is that, despite the best evidence of a programme or service's effectiveness, we cannot support the practice of taking a successful program or service from one context and expecting it to work as effectively (or at all) in another context. What we *can* support is consideration of generic characteristics and principles that have crossed contexts, or characteristics of nurturant environments that we know have been proven to support children's development. To answer the question of criteria for inclusion of examples of programmes and services in this report, we turn to many sources: 1) to our ECD experts who have been on the ground and experienced the effects of particular programmes—this includes the notion of "best practice"; 2) to the grey literature; 3) to the evidence of program and services effectiveness; and 4) to consideration of whether programs meet the criteria which we articulate in the ECD programmes and services section for creating nurturant environments for children. In some cases, the examples were chosen to support a particular point, such as with the Kangaroo Care; in other cases the inclusion was based upon the availability of information on the programme or service. We endeavoured to include the highest quality programmes and services where available.

For the studies included in the regional, national, and international spheres, scientific rigour was much more difficult to ensure. As mentioned in the broader *TEAM-ECD* evidence document (Siddiqi, Irwin & Hertzman, 2007), this is largely due to the lack of studies conducted at this level. The literature review yielded very little experimental information, of which the primary example is the PROGRESA study. Beyond that, most of the information gathered comes from cross-sectional or other forms of descriptive observational studies. These studies, though they don't provide definitive evidence, were included because they make strong suggestions about future areas to be investigated, and because there are strong plausible links between micro-levels for which we have data (such as the family) and macro-environments such as the regional, the national, and international environments. In traditional scientific terms, plausibility is often assessed in biological terms. We contend here that what is apparent is a *sociological* plausibility.

Appendix B: Examples of ECD Programmes and Services

The folowing programmes and services are presented as examples of "good practice" towards creating nurturant environments in a diversity of contexts.

Linked to Health Care Systems

INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS (IMCI)

The WHO's IMCI program seeks to reduce childhood mortality, illness, and disability as well as promote health and development among children aged 0-5 years. IMCI has both preventive and curative aspects, which are designed to be implemented at the level of the family, the community, and through the HCS. IMCI prioritizes the proper identification and treatment of childhood illnesses within a variety of settings, including homes and health facilities, but also provides counselling for parents and caregivers, and referral services for severely ill children. The main implementation involves the following steps:

- adopting an integrated approach to child health and development in the national health policy
- adapting the standard IMCI clinical guidelines to the country's needs, policies, available drugs, and to the local foods and language
- upgrading care in local clinics by training health workers in new methods to examine and treat children, and to counsel parents effectively
- enabling upgraded care by ensuring a sufficient supply the right low-cost medicines and simple equipment
- strengthening care in hospitals for those children too sick to be treated in outpatient clinics
- developing support mechanisms within communities for preventing disease, for helping families to care for sick children, and for getting children to clinics or hospitals when needed.

(Source: http://www.who.int/child-adolescent-health/integr.htm)

CARE FOR DEVELOPMENT

In partnership with UNICEF, the WHO has developed a special early childhood development component, called the Care for Development, intended to be incorporated into existing IMCI programs. Care for Development aims to enhance parents' and caregivers' awareness of the importance of play and communication with children by providing them with information and instruction during children's clinical visits. Evidence has shown that Care for Development is an effective method of supporting parents' and caregivers' efforts to provide a stimulating environment for their children by building on their existing skills. Health care professionals are encouraged to view children's visits for acute minor illnesses as opportunities to spread the messages of Care for Development, such as the importance of active and responsive feeding to improve children's nutrition and growth, and the importance of play and communication activities to help children move to the next stages in their development. (WHO pamphlet available at: http://www.who.int/child-adolescent-health/integr.htm)

BREASTFEEDING AND INFANT STIMULATION

A pilot project in southern Iran aims to reach the national development goals of safe pregnancies and deliveries, promote breastfeeding and birth spacing, provide early psychological stimulation, as well as to help parents avoid developmental delays among young children. The project attempts to support and promote breastfeeding practices, both in the hospital and after discharge (receiving a home health nurse visit and consultation), by offering lactation consultants, interaction with and support of new mothers, and providing relevant training for

new mothers who require more information, which has shown significant impact on breastfeeding success. In the region, women's literacy level is generally low, especially in rural areas. The program's aim is to bridge the gap between tribal and cultural patterns and beliefs about breastfeeding; child nutrition, health, and development; and the practice of correct breastfeeding, by providing support for consistent, high-quality information on breastfeeding. This HCS point of contact provides an opportunity for parents to access lactation consultation and early childhood education classes. The mid-term evaluation of the project, in the form of a KAP (Knowledge/Attitude/Practice) study revealed that the HCS's involvement in the breastfeeding and nutritional education efforts in the region significantly improved mothers' knowledge, which led to their health promoting behaviours in terms of their children's health and nutrition. Further evaluation is still required to provide evidence about the impact of the program on children's developmental outcomes.
(Froozani, M.D., Permehzadeh, K., Dorosty Motlagh, A.R. & Golestan, B. (1999) Effect of breastfeeding education on the feeding pattern and health of infants in their first 4 months in the Islamic republic of Iran. Bulletin of the World Health Organization 77(5), PP.381-385.)

NURSE HOME-VISITING

Kazakhstan

Through its existing nurse home-visiting system, Kazakhstan has introduced an ECD education module to increase parents' understanding of their children's psychosocial and cognitive developmental needs—without additional costs. The Care for Development Module of the IMCI Training Package, jointly developed by WHO and UNICEF, were used as the basic training package. The project is supported jointly by WHO and UNICEF, and is carried out under the leadership of the Kazakhstani Ministry of Health. It builds on the country's existing HCS, and aims at improving the capacity of service providers. During implementation, the program involves local medical training institutions, local administration, and community participation. Nurses visit newborn babies almost every week during the first month, and regularly afterwards. A Healthy Life Style Center is also involved in knowledge development, training, monitoring, and evaluation. The Healthy Life Style Centre is a para-governmental training centre with strong academic links to medical and social research institutions. This program has recently been evaluated and the report will be available soon.

This program, and several similar initiatives supported by international NGOs, the World Bank, and others, can play an important role in furthering Kazakhstan's HCS reform.

Turkey

The Mother-Child Education Program (MOCEP), started in 1993, provides children from disadvantaged communities with early enrichment programs and helps to strengthen parenting skills. This approach supports and encourages parents and caregivers, who are recognized to be a child's first teachers, in providing children with the experiences they need to develop their competencies. The program attempts to empower families to make and act on informed decisions about their children by educating primary caregivers to better support children's cognitive, physical, and socioemotional development. It combines home visiting by registered nurses with parent education. Home visits allow the nurses to observe mothers in interaction with their children. The program works with mothers in relation to their various needs while addressing child development information and parenting.
(Source: http://www.acev.org/english/training/ect.html)

Australia

Maternal and child health/community nurses visit young children regularly over the first 5 years of life in Australia,[8] and one of the goals of this activity is to promote ECD. In addition to monitoring development and responding to any parental concerns about development and behaviour, many nurses provide anticipatory guidance and suggest ways of promoting development. They run first-time mothers' groups, and provide parents with a range of written materials about ECD.
(Department of Health and Aged Care. (1998) A healthy start for 0-5 year olds. Department of Health and Aged Care Occasional Papers Series, No. 3. Commonwealth of Australia.)

COMMUNITY DEVELOPMENT EMPOWERMENT (CDE)

The Community Development Empowerment (CDE) Program in Malaysia was established to address the needs of children and families in resource-poor communities in an attempt to improve the environment within which children are raised. CDE includes the following activities:

- expanding preschool programs with emphasis on stimulating cognitive, physical, and socioemotional development
- health care workers conducting meetings with community members to identify and map the existing formal and informal services that meet the particular needs of families

Once identified, the priorities for the communities are to establish a *childcare program* and *immunization* plan for young children, as well as *income-generating activities for women and single mothers*. Parents participated in the development and coordination of the interventions, such as pediatric assessment, educational services, intervention services, and childcare coordination. A major feature of the program is to strengthen the links between parental values, the community's social structure, and the HCS. This program builds on existing community resources and has been shown to be cost effective. CDE addresses children's particular ECD needs in combination with health care services and programs, and supports mothers to engage in income-producing activities.

[8] Home visiting programs like this Australian model can be found in many countries; the scope and age range of the visits may vary.

REACH OUT AND READ (ROR)

Reach Out and Read (ROR) is a U.S. national non-profit organization that promotes early literacy by giving new books to children and advice to parents attending pediatric examinations about the importance of reading aloud. ROR programs make early literacy a standard part of pediatric primary care and as such are a point of contact with the HCS, one that has proven to support children's early development. Following the ROR model, physicians and nurses advise parents that reading aloud is the most important thing they can do to help their children love books and to start school ready to learn. Pediatricians and other clinicians are trained in the three-part ROR model in an effort to promote pediatric literacy:

1. At every well-child check-up, doctors and nurses encourage parents to read aloud to their young children, and offer age-appropriate tips and encouragement. Parents who may have difficulty reading are encouraged to invent their own stories to go with picture books and spend time naming objects with their children.
2. Providers give every child between the ages of six months and five years new, developmentally appropriate children's book to keep.
3. In literacy-rich waiting room environments, often with volunteer readers, parents and children learn about the pleasures and techniques of looking at books together.

Research findings evaluating the impact of ROR's efforts have been remarkably consistent. Compared to families that have not participated in ROR, parents who have received the ROR intervention are significantly more likely to read to their children and have more children's books in the home. Most importantly, studies examining language in young children found an association between the ROR intervention and statistically significant improvements in preschool language scores, a good predictor of later literacy success.

There are currently ROR program sites located in all 50 states, the District of

Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. ROR programs are housed at hospitals, health centers, and private pediatric practices. (Source: http://www.reachoutandread.org/index.html)

INTEGRATED FAMILY-BASED ECD (IFBECD)

In Thailand, several local and International organizations, for example, UNICEF, Christian Children's Foundation, and Save the Children, in collaboration with Department of Health in the Ministry of Public Health and local universities, have supported the development of the Integrated Family-Based ECD (IFBECD) project, which has been in effect since 1990. The project operates out of child health centres and involves collaboration between experienced mothers (who volunteer as ambassadors), the HCS, and the broader community (e.g., universities, other educational centers, not-for-profit organizations). Each ambassador works with five families in her neighbourhood and provides the mothers with information and advice about child health, nutrition, and development in a range of settings such as in peoples' homes or at a local market. Monthly training sessions (on issues such as family life, child development, infant care, etc.) and meetings are held in local departments of health to update the ambassadors on new information and materials in relation to children health and development. The approach is especially useful because older children frequently provide some care for their younger siblings or neighbours in Thailand. The ambassadors also provide necessary information about the importance of child health, nutrition, and developmental issues to these older children. In one of the more "hands-on" lessons, students in the 5th and 6th grades work with and learn from the ambassador about how to determine the vaccination status and developmental progress of the younger children in their families. All these educational and training initiatives are coordinated through the Ministry of Public Health.
(Herscovitch, L. (1997) Moving Child and Family Programs to Scale in Thailand: Integrated Program for Child and Family Development. Bangkok, Thailand: UNICEF.)

IMMUNIZATION

Expanded Programme on Immunization (EPI)

The WHO's Expanded Programme on Immunization (EPI) was originally launched in 1976, at a time when less than 5% of the world's children received immunization against the six most easily preventable diseases: diphtheria, tetanus, pertussis (whooping cough), polio, measles, and tuberculosis. Over the past 30 years, the EPI has increased its coverage to the point where there are now an estimated 500 million immunization contacts with children around the world on an annual basis. Disease prevention is a major component of reducing child mortality, and the long-term international success of the EPI has resulted in significant and measurable reductions in preventable disease. The long-term success and scale of the EPI is now providing a framework within which to introduce other children's health services.

The scale of the WHO's EPI, as well as its near-universal coverage, are now being recognized as potentially valuable opportunities with which to bundle other child health promotion activities. The time at which 90% of the world's children receive immunization, usually within their first two years of life, this is a potential contact point for other health interventions or monitoring. Kenya has been especially proactive in utilizing this early contact point. The Kenyan Ministry of Health has recently decided to collect information about developmental indicators during immunization visits as a way of monitoring the progress of ECD in Kenya, on a population basis. Immunization visits are also viewed as an opportunity to distribute information about ECD and infant health to parents. Other innovative projects that use immunization visits as the key contact point within the health sector include the large-scale distribution of insecticide-treated bed nets in Togo, designed to further reduce the spread of diseases like malaria.

The importance of universal immunization programs, both in terms of reducing childhood disease and providing opportunities for additional early childhood interventions, should not be underestimated. Immunization programs are often reliant upon a combination of public, private, national, and international funding sources, and as such these programs often compete with other programs and priorities of national health agendas. While the 30-year history of EPI has yielded worldwide success, variations and fluctuations in immunization coverage at the national level indicate the difficulty involved in maintaining the universality of immunization programs.
(www.afro.who.int; www.unicef.org/health/files/UNICEFTechnicalNote1MalariaImplementationApproach(1).doc
R Kim-Farley, R. (1992) Global Immunization. Annual Review of Public Health, Vol. 13, pp.223-237.)

Integrated Child Development Services (ICDS)

Another similar initiative in India, Integrated Child Development Services (ICDS), is a multi dimensional, community based effort aimed at improving the quality of life of women and children living in poverty. The program grew out of the recognition that all infants require developmental assessment, and that the established immunization clinic offered a point of contact with the HCS. As such, a more comprehensive early childhood development program was established. The clinics function in connection with health facilities' during babies' immunization visits, mothers are given information about development, a Developmental Observation Card (DOC) to help them monitor their infant's development, and an opportunity to seek detailed assessment guidance if necessary. The aim of the plan is to empower families, in particular mothers, to learn more about their infants' health and developmental issues by offering on-site education and the possibility of follow-up home visits.

As immunization programs become coupled with other child health services, such as early childhood interventions and ECD monitoring, there may be increased opportunities to find permanent public funding for these programs.
(India Development Observation Card
Chaturvedi, E., B. C. Srivastava, J. V. Singh, and M. Prasad. 1987. "Impact of Six Years' Exposure to the ICDS Scheme on Psychosocial Development." Indian Pediatrics24:153–64.
http://www.unicef.org/india/media_2640.htm and
http://www.unicef.org/india/nutrition_188.htm)

In Absence of Health Care Systems

EQUAL ACCESS RADIO IN NEPAL

The Equal Access Initiative uses appropriate and low cost technology (satellite broadcasting, AM/FM broadcasts) and community outreach to disseminate information to families living in remote rural areas. Equal Access creates customized communication strategies and outreach solutions on a range of topics including prevention of HIV/AIDS, women's health, and early child development. By designing and producing compelling local language audio and multimedia programs in-country, the program educates and catalyzes behavior change in target audiences.

A new ECD radio program called *Kheldai Sikdai* ("Learning While Playing") is now broadcast in Nepal via FM and satellite radio to ECD centers and a broadcast audience of millions. *Kheldai Sikdai* helps parents and communities create positive environments for children under the age of six. Through the program, parents learn about the importance of their children's intellectual and emotional development. This entertaining and engaging program reaches out to parents and workers in children's centers with ways to better identify, address, and support the needs of children. By bringing together educators, parents and trained ECD facilitators, "Learning while Playing" transforms the underlying lack of knowledge about early childhood development that perpetuates cycles of poverty throughout Nepal. While frankly discussing and contextualizing the impact of child rights, play-based learning, and parental and community roles in a child's education, the programs work to transform the way in which children's early education

is conceived and implemented. A large part of this effort is working with educators and parents to move beyond the traditional rote teaching methods often referred to as the "three R's: Reading, Riting and 'Rithmatic" and to convince parents that quality play-based programs, stories, and songs are appropriate, valid, and accelerate children's intellectual development. Additionally, the programs use interviews with community members and education specialists, as well as songs and stories, to transform the mentality of educators, the government, and—most importantly—the parents of young children throughout Nepal, by creating an understanding of the appropriateness and long-lasting positive benefits of ECD programs for children prior to attending primary school. Episodes also discuss topics like safe motherhood, nutrition, and immunization. (Source: Equal Access, Global Program Report 2006. http://qwww.equalaccess.org)

VILLAGE-BASED ECD CURRICULUM DEVELOPMENT IN LAO PDR

The Women's Development Project worked to promote various development initiatives for women in five provinces of Lao PDR. After five years, interest developed and a need was identified to more directly address child development issues. The Early Childhood and Family Development Project (ECFD) grew out of this experience. Project Planning Workshops for ECFD were organized in villages in the initial steps of development and implementation. Village-level planning resulted in agreement on needs and objectives, an understanding of overall design, assessments of resources and constraints, activity planning, setting up the project committee, and criteria for selecting village volunteers. The community-based curriculum development process focused on participatory input at the local level to create a curriculum that could be adapted to the particular needs of different ethnic groups. The process focused on village data collection and needs assessment. Analysis of existing traditional knowledge was used as a basis for curriculum development. One of the most unique activities in the Lao PDR experience was a village engagement agreement signed by village members and the village development committee. It was based on a child rights framework and included actions that could be taken immediately while waiting for needed external assistance. (Description taken from: Programming experiences in ECD; First edition, November 2006, UNICEF. p. 23. and World Bank, Early Childhood Counts: Programming Resources for Early Childhood Care and Development (CD-ROM), The Consultative Group on ECCD, World Bank, Washington DC, 1999.)

Appendix C: Population-based Measurement of Early Child Development from a National Perspective

In the international development community, there have been multiple efforts to assess social welfare in ways that facilitate comparison across societies. To date, many approaches have been developed, each with its own set of assumptions regarding the factors that contribute to, and reflect, well-being. The World Health Organization (WHO) Commission on Social Determinants of Health, Knowledge Network on Early Child Development, proposes that early child development (ECD) is an outcome (or rather, a set of outcomes) that is fundamentally reflective of the *social success of societies*. ECD is also an indicator of future societal success, as it is associated with learning skills, health, and other measures of well-being throughout the lifecourse; as such, it can be considered a fundamental measure of the potential for societies to flourish in multiple social domains. The extent to which a nation provides opportunities for healthy child development is the extent to which the well-being of its most vulnerable members is supported.

Prior literature suggests that individuals within societies are differentially affected by adverse conditions such as lower levels of GDP, high levels of income inequality, and the like. We suggest here that children are often a vulnerable group, due to a variety of factors, from their stage of biological development, to their compromised ability to exercise life choices. Knowledge of ECD levels in a society provides a direct measure of societal welfare by highlighting well-being during the early years, but in the process also addresses societies' future prospects for well-being. Thus, we are promoting population-based measurement of ECD with the aim of constructing a globally accepted social indicator.

Despite an extensive literature review, we have been unable to locate prior efforts to frame ECD in this manner. The reason seems to be that, until now, ECD research has been an individual-oriented field, dominated by psychological and educational approaches and focused on curriculum and programme implementation strategies. The advent of the Knowledge Network on ECD, under the auspices of the WHO, provides an opportunity to add a different perspective—the population health perspective—to the mix. Population health sees ECD as a social determinant of health, requiring that we come to understand, through acts of measurement, where systematic differences in the prospects for healthy child development are emerging among clearly defined populations of children around the world. Once identified, these systematic differences become the basis for understanding the *modifiable* determinants of ECD, for measuring progress in ECD over time, and for measuring equity of access to the conditions that support healthy child development.

Coming to agreement on an internationally comparable ECD indicator will not be easy. The indicator must meet the following criteria:

- encompass those domains of early child development that influence health, well-being, learning, and behaviour across the lifecourse
- be based upon a common international conception of the relevant domains of ECD, consensus as to the specific elements within each domain that must be measured the same way everywhere in the world, and recognition of those elements that are distinct in different contexts
- notwithstanding the above challenges, be transferable to diverse global contexts, recognizing that the conditions under which children are dying are the same conditions under which children are living
- provide valid and comparable information for children of a given age, regardless of whether or not they are in school

In light of these challenges, the ECD indicator cannot be a single attribute, like infant mortality; instead, it must tap into multiple attributes of child development. Perhaps the most notable successful precedent on the international stage to date is the Human Development Index (HDI), introduced by the United Nations Development Programme (UNDP) in 1990. The HDI assesses the status of societal welfare using a composite score based on three measures: life expectancy, adult literacy, and purchasing power adjusted per capita gross domestic product. It is fair to say that the HDI has had a marked influence on discourse regarding international development. With respect to ECD, the multiple attributes must be broad enough to meet the first criterion above; that is, to encompass those domains of early development that influence health, well-being, learning, and behaviour across the lifecourse. In practice, there are three broad domains of development that meet this criterion: physical, language/cognitive, and social/emotional.

The process of reducing such diverse domains as physical, social/emotional, and language/cognitive development to a single, transferable, and comparable index is known as "commensuration." That is to say, by reducing each domain to a number, we can then compare them directly with one another and, by reducing these numbers to a single multi-attribute index, we can compare ECD across societies, just like we currently do with infant mortality. Calls for commensuration are obviously controversial and have caused intellectual divisions for as long as there has been intellectual discourse. For example, Plato was in favour of commensuration and Aristotle was opposed to it. Not surprisingly, this division is alive and well in the ECD international development community today. The four criteria listed above reflect a compromise between—on the one hand—the need to succeed in an act of commensuration, in order to allow ECD to compete with other childhood priorities (like survival) on an "epistemologically level playing field" while—on the other hand—not letting the reductionist tendency necessary for commensuration to somehow defeat global diversity by making ECD appear to be a matter of "one size fits all."

Appendix D: Children and Families in Global Perspective: Discussion of and excerpts from Heymann's *Forgotten Families*

Introduction

With the tremendous connectedness of people and societies worldwide, a global perspective on the issues facing children and their families is critical. There are two primary factors that serve as the impetus for a global lens of examination. First, that with greater links between societies comes better information about the state of people and their environments everywhere. Second, that with increased complexity of the global economy, the policy decisions made in one nation or region have far reaching implications all over the world. In these regards, the work of Jody Heymann has made major contributions. Studies conducted by Heymann's Project on Global Working Families have ranged from in-depth interviews of more than 1,000 families in Latin America, Africa, Asia, North America, and Europe, to analyzing survey data on 55,000 families around the world, to examining the extent of public policies supporting working parents and their children in 180 countries. The following are some highlights from *Forgotten Families: Ending the Growing Crisis Confronting Children and Working Parents in the Global Economy* (Oxford University Press, 2006). More information can be found at www.mcgill.ca/ihsp/.

Popular Misconceptions on Caregiving for Young Children

One of the primary ways in which the global economy affects children and families is through the patterns of caregiving that prevail under various societal circumstances. "When you ask the leaders in most countries who is caring for infants, toddlers, and preschoolers, they have similar answers: 'Grandparents play a large role in our culture.' When pressed, they make clear that they mean grandmothers. What about when grandmothers aren't available, you ask? 'There's lots of informal care,' they inevitably reply, 'other family members, neighbours, women in the community.' 'Many mothers can bring their children to work.' The answers are vague because they describe a world that has been kept out of sight, unexamined.

"[When stating to a large teaching hospital in Gabarone that] we were looking at the conditions that working families face . . . a hand went up. 'Those issues don't affect us here. Everyone has extended family members they can rely on so they never have any problem getting care for their children.' Though the belief was satisfying, the problem was that the experience of the families we had interviewed in Botswana belied it. We interviewed many families in which parents had no choice but to leave young children home alone, pull older children out of school to provide free care, or take children to the workplace even when doing so threatened the children's health and development or the parents' jobs. But before I could respond to the fantasy the first speaker relayed by sharing the experiences of some of the 250 we had already interviewed, a Motswana surgeon raised his hand and interjected: 'A lot of parents have no one they can rely on. I see the children who, because of that, end up being left home alone when they come into the emergency room or into my operating room with broken bones and burns.'"

Empirical Findings on Caregiving Patterns for Young Children

EXTENDED FAMILY

"What, then, is the global reality? There is no doubt that both having two parents in a nuclear family and having extended family can make an enormous difference to children's care. Among families we interviewed, 33 percent of single parents had left their young children home alone compared with 22 percent of parents living with a

spouse or partner. When single parents have no other adult caregivers in the household, young children are even more likely to be left home alone (56 percent versus 23 percent). . . . But the myths that extended families alone solve the problem are mistaken in at least three ways. First, many working parents and their young children have sporadic, limited, or no contact with extended-family members they might ever turn to for help. Worldwide, with urbanization and the increasing mobility required to get and keep jobs, the number of working adults who live near enough to their own parents to be able to turn to them for regular assistance is rapidly declining.

"Second, even among those who continue to live near their children's grandparents, many cannot rely on them for help. Grandparents themselves may need to work and may be as constrained as parents in their ability to provide routine care or even to take time off to care for a grandchild who is sick. Third, all too often those adult family members who might be able to help—because they are close by and are not working themselves or already caring for a full house—face physical and mental health constraints. In fact, when extended family members are close, they are as likely to be in need of care as to be able to assist with it."

WHEN EXTENDED FAMILY IS NOT AN OPTION

"In situations where extended-family members are in need of care, preschool children often get less care than if no extended family were nearby. When mothers or fathers are caring for other sick family members, children are twice as likely to be left home alone. Forty percent of working parents caring for a sick spouse and 41 percent of parents caring for extended family had to leave a child home alone (compared with 22 percent not caring for a sick spouse and 21 percent not caring for other sick family members). When extended-family members don't require assistance, they may still be too physically limited, frail, or sick to provide adequate care for their grandchildren, nephews, nieces, and other dependents because the same constraints on age and health that limit extended-family members' ability to work affect the quality of the care they can provide."

Further, these factors are patterned by parents' socioeconomic resources. "Low income parents are less likely to receive help from and more likely to need to provide caregiving assistance to extended family." 32% of those parents who earn less than 10 dollars per day (purchasing power parity adjusted) can rely on extended family for help (and do not need to provide assistance to them) compared to 46% of those parents earning more than 10 dollars per day. 47% of parents earning fewer than 10 dollars per day (purchasing power parity adjusted) need to provide assistance to extended family compared to 42% of those earning more than 10 dollars daily.

PARENTS TAKING THEIR CHILDREN TO WORK

When family is unavailable, another common global response is parents taking their children to work. "While some policy makers acknowledge the improbability of such safe care in factories and the unlikelihood that parents will be given permission to bring children to work elsewhere in the formal sector, they assume it is not only possible but a decent solution in the informal sector. The image conjured up is of a parent—nearly universally a mother—working with an infant swaddled tenderly on her back or a toddler playing happily at her side as she sells goods in a market or cleans a home. . . . In our studies, we met many women who had lost formal sector, decent paying jobs in order to care for their children. . . .

"At times, they subsequently found informal sector jobs which allowed them to bring their children, but even those women, who had the better experiences of the lot, did not have any romanticized fantasy of their children's lives spent at their mother's side while they worked. Most shared a bleak view of children at work with their mothers who had started in the informal sector because of lack of education and job choices and had never been able to leave because of caregiving responsibilities. . .

"Even when children taken to work are not at high risk of sustaining sudden life-threatening injuries, their opportunities for normal growth are often degraded daily. Amalia Montoya, born and reared in Cancun, Mexico, was raising her son as a single mother. She had been cleaning houses since age fifteen and never had the chance to finish school. Living far from her family, she had no one to turn to for help. Without sufficient publicly supported slots available, childcare was far beyond her economic reach. Amalia took her infant son to work with her because she had no other choice. 'It was really difficult because it's not the same as being in your own house. When he began to cry because he was hungry, I couldn't tend to him at the same time as working.'. . . She went on to describe how she grew depressed over the situation and her son's consequent malnutrition. . ..

"Beyond Amalia's inability to feed her son regularly, she couldn't care for him adequately when he was sick. When Amalia gained access to a childcare center, perhaps the most telling summary of her son's experience was her delight in the most basic elements: 'I dropped him off at seven-thirty in the morning and picked him up at five o'clock in the afternoon. He ate there and everything.' She was grateful even for care that consisted of the most fundamental features: enabling her to work, providing her son with adult supervision, and ensuring that he could eat. . .

"The same stories echoed among the parents we interviewed in Botswana and Vietnam. What differed across national borders and economic circumstances was not the nature of the problem but the level of the parents' desperation. . . . This is also similarly patterned along socioeconomic lines. One in four parents earning less than 10 dollars per day (purchasing power parity adjusted) have to take their children to work regularly, as do one in four parents who have only primary or middle-school education themselves. Parents who work in the informal sector are the least likely to have access to formal childcare; as a result, half of the parents we interviewed who worked in the informal sector needed to bring their children regularly."

INFORMAL CARE

"[Another] fiction about preschool childcare is that *inexpensive* informal care is a viable solution. It's clear that low-income families and many middle-income ones cannot currently afford or find space in formal childcare programmes for all of their children. But it's also clear that there is a large and apparently less-expensive informal sector market for care. Public policy makers often ask, without beginning to examine the double standard implied as they support formal early childhood care and education programmes in higher-income nations, 'Isn't informal care the solution for young children in poor countries?' These experts argue that it is less expensive and assume it is as good as formal care. Our experience is that, in the majority of cases, parents reported only that it was cheaper. . ..

"While in theory, care provided by adults in informal care settings could be of equal quality to formal settings, this was not the common experience of most parents we interviewed, and in particular, this was not the experience of low-income families. Though many countries have some degree of subsidy for low-income families using formal childcare settings, far fewer subsidies and little public provision or supervision exist in informal settings. As a result of this and of parents' low wages, those low-income parents using informal care typically could afford to pay little. This resulted in their having extremely limited choices in childcare providers. The low wages they could afford to provide meant that, in general, they were hiring either adults who could not find other work or adults who provided the informal care while working at another job. The low skill level of those hired and the fact that those hired were, at times, simultaneously doing other work led to poor-quality care when it was provided. Moreover, problems that began with the poor quality of childcare providers in the informal sector were exacerbated by the lack of supervision in the informal sector. Parents we interviewed repeatedly recounted stories of going home to find that informal childcare providers had left their children home alone for all or part of the day. . . .

"In countries we studied, many parents reported that they had to leave their young children in the 'care' of other children. In Vietnam, 19 percent of the working parents

we interviewed had to leave children home alone or in the care of an unpaid child, and 4 percent relied on a paid child for childcare. In Mexico, 27 percent of the parents we interviewed had to leave children alone or in the care of an unpaid child, and 9 percent left their sons and daughters with another child who was paid as a provider. While Botswana had a nearly identical GDP per capita to Mexico and one that was more than seven times as high as Vietnam's, Botswana families had the highest rate of leaving children home alone. With next to no publicly supported childcare, 48 percent of working parents in Botswana had to leave a child home alone some or all of the time or in the care of an unpaid child…

"There was a clear social class gradient in informal care. Parents who were poor and parents who had the least educational opportunities themselves were the most likely to have to leave their preschool children in the care of another child. Parents with a middle school or less education were twice as likely (22 versus 9 percent) to have to leave their children in the care of other, unpaid children as parents with a high school education or more, who as a result earned more money … The calculus is cruel: 2.7 billion people live on less than $2 a day, and 1.1 billion live on less than $1 a day. Even those who manage to feed their children on less than $2 a day simply cannot afford to pay, on their own, even for informal care of their preschoolers that will ensure the children's safety and good health."

CHILDREN HOME ALONE

"When parents were poor and couldn't afford to pay for childcare, when parents had limited education themselves and therefore fewer job opportunities, and when parents faced costly penalties at work for caring for their children, they were more likely to leave children home alone on either a regular or an intermittent basis…. Forty six percent of those who lost pay because of caregiving responsibilities ended up having to leave children home alone versus 21 percent who did not face penalties. Parents with a middle school or less education were more than twice as likely (39 versus 18 percent) to have to leave their children home alone or in the care of other, unpaid children as were parents with a high school education or more."

Developmental Consequences of Poor Quality Childcare

The developmental consequences of lack of quality childcare are tremendous. In Botswana, 53% of parents responded that their children had experienced accidents or emergencies while a parent was at work, as did 47% in Mexico and 38% in Vietnam. Thirty-five percent of parents in Botswana reported a negative impact of their working conditions on their children's health. In Mexico and Vietnam, these figures were 21% and 25% respectively. "We as a global community, have agreed that all children have a right to a free public primary education. However, by doing nothing for most children in the critical developmental years from birth to five, we have effectively left hundreds of millions of children globally with little chance to succeed in school. Before they are six, they have no adequate chance to develop in a healthy way, let alone learn the requisite basic skills for beginning school."

The Need for Early Child Development Programmes

"We need to ensure that all children have access to early childhood care and education. The public sector in some countries and the private nonprofit sector in others have begun to address this problem. However, the gap between the care that is available and the number of families that need it is enormous." Household surveys in several nations provide contrasting information on the percentage of children three to five years of age in early childhood education programmes. In Vietnam, where a national programme has been developed, 51% of children from single working-parent families are enrolled in early childhood education (ECE) programmes, compared to 40% in Brazil, where municipalities have programmes, and 21% in Botswana, where there are no major public early childhood programmes. In both Vietnam and Brazil, 44% of dual-earner families had children enrolled in ECE programmes, compared to 25% in Botswana. In Vietnam, 46% of children living in extended-family households with all resident adults working were enrolled in ECE programmes, compared with 30% in Brazil and 19% in Botswana. Forty-two percent of children living in extended-family households with not all resident adults working were enrolled in ECE programmes in Vietnam, compared with 31% in Brazil and 11% in Botswana.

Effects on Families

"Clearly, the dramatic changes in adult work lives are transforming the lives of children around the world. … but what effect has the labor force transformation, the rise of urbanization, and an increasingly globalized economy had on the economic [and related social] well-being of families?" Each brings opportunities and risks, but it is critical to reiterate that the negative impact of these factors fall disproportionately on those with fewer socioeconomic resources, and on women.

"On nearly every measure, from the availability of paid leave to adequate flexibility at work, the parents living in poverty we interviewed were facing worse working conditions." Among those parents who earned less than 10 dollars per day (purchasing power parity adjusted), only 50% were granted paid leave from work for caregiving. Ten percent of those earning less than 10 dollars could alter their work schedules and were able to get paid leave for caregiving, compared to 18% of those earning more than 10 dollars. Only 36% of parents earning less than ten dollars per day had access to health insurance through their jobs, compared with 75% of those earning more than 10 dollars per day.

Single working mothers are much more likely to work longer hours than single men. Data from national living standards surveys demonstrates that in Brazil, 65% of single working mothers average sixty or more hours of paid and unpaid work weekly. This proportion drops to 43% for single working fathers. In Mexico, the numbers are 76% and 64% respectively.

Conclusion

Governments have begun to employ potential solutions. Vietnam, with a higher availability of public childcare services, had, overall, more families with access to formal childcare as well as the smallest differences across income groups in use of formal childcare. "Fifty-seven percent of lower-income families in Ho Chi Minh City were able to send a child to formal childcare, as were 62 percent of higher-income families." In Mexico, the government has a mandate to provide childcare for employees in the formal sector to help narrow income disparities. The figures show that, indeed, the gap in the use of formal childcare between poorer and middle-income parents is less in the formal sector, where child care is part of social security (58% compared to 39%) than in the informal sector (58% compared to 22%).

"When young children are left home alone or in substandard care, the potential for tragedy is real." This includes the risk of children suffering accidents or emergencies while their parents were at work and becoming the victims of violence. "But there is another, slower, but equally devastating type of tragedy that is transforming the lives of tens of millions of preschool children. Unable to find or afford decent care, needing to work and only finding jobs under the worst conditions, these parents are forced to leave their preschool children in care which jeopardizes their health and development as well as their safety. The quality of the care they receive is so poor that with each day that passes, their health and development slowly deteriorate, and their life-chances decline further."