Social paediatrics and early child development: Part 1

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Diseases of modernism, rather than infectious diseases and chronic medical conditions, increasingly cause childhood morbidity and mortality. Thus, the goal of enhancing life outcomes for all children has become imperative. Paediatricians may begin with a renewed interest in social paediatrics – the care of the disadvantaged child in Canada, requiring a focus on all the complex factors that impact families and the community. New paediatricians need the tools to impact both social determinants of health and political policies to support health for all. Such interest is as old as the field of paediatrics (social medicine began with the great pathologist, Virchow, in the 1800s). The new neuroscience of experience-based brain and biological development has caught up with the social epidemiology literature. It is now known from both domains that a child’s poor developmental and health outcomes are a product of early and ongoing socioeconomic and psychological experiences. In the era of epigenetics, it is now understood that both nature and nurture control the genome. Future paediatricians need to understand the science of experience-based brain development, and the interventions demonstrated to improve life trajectories. A challenge is to connect the traditional population health approach with traditional primary care responsibilities. New and enhanced collaborative interdisciplinary networks with, for example, public health, primary care, community resources, education and justice systems are required.

Key Words: Child development; Disadvantage; Social paediatrics

Over the past few years, heightened interest in the field of social paediatrics in Canada has been due in large part to paediatric initiatives and leaderships in Montreal, Quebec, including the career example of Gilles Julien (1), and McGill University’s and the University of Montreal’s social paediatrics programs (2,3). The connection and link between child health and the social context in which children live has long been documented, going back to the days of Virchow (1821 to 1902). More than the father of pathology, Virchow was an impassioned advocate for social and political reform, stating that physicians should act as ‘attorneys for the poor’” (4), illustrating how medical or scientific skill success does not preclude and, in fact, requires that the individual and population’s social context be effectively addressed. The first professor of childhood diseases in the United States, the president of the American Medical Association and a social reformer, Abraham Jacobi (1830 to 1919), is described as the father of paediatrics (5), with a founding role in the initiation of the American Pediatric Society and a “quintessential physician advocate” (6).

The European Society of Social Pediatrics and Child Health (ESSOP) was founded in Sweden over 30 years previously, in 1977, because paediatricians showed an interest...
in the social context of children's health and illness (7). The ESSOP defined social paediatrics as:

a global, holistic, and multidisciplinary approach to child health; it considers the health of the child within the context of their society, environment, school, and family, integrating the physical, mental, and social dimensions of child health and development as well as care, prevention and promotion of health and quality of life. Social paediatrics acts in three areas - child health problems with social causes, child health problems with social consequences, and child health care in society - and encompasses four areas of child health care - curative paediatrics, health promotion, disease prevention, and rehabilitation (7).

By all measures, their early recognition of the critical importance of the all-important family, community and civil society has resulted in generally enviable social capital and health, which buffers children and youth in Sweden from some of the life-threatening perils of modernism (8). The Swedish ESSOP definition, in short, states that "conditions with social causes and social consequences require special consideration", while the current Canadian definition for social paediatrics might be "the application of a knowledge base and skill set that is informed by the paediatric social determinants of health and experience-based brain development and attachment to models of care that are context-sensitive and improve health outcomes" (7).

Currently, social paediatrics in Canada tends to be seen coupled to a 'poverty' agenda, which is understandable given the magnitude of child poverty in Canada (9). However, the health socioeconomic gradient literature makes it clear that for almost every health problem, vulnerable children appear in all socioeconomic groups. As family income decreases from the highest socioeconomic status, children's health burden increases. While health problems are more likely to occur in the poorest families, they are more thinly dispersed across those living in affluent circumstances. We are proposing a review of the approach to 'social paediatrics', especially in relation to young children because we believe a broadened focus is required, which promotes a universal approach to all families based on the socioeconomic gradient literature (ie, rather than a clear present or absent risk), the new neuroscience of experience-based brain development, as well as social epidemiology and social determinants of health and developmental science.

Today, most, if not, all paediatricians consider themselves to practice 'social paediatrics' within the conventional practice models. However, giving advice on the social determinants of health is very tricky at the individual child and family level. Telling patients not to be poor, not to stay poor for too long, not to work in low-paying jobs with no control and not to live in poor neighbourhoods is hardly plausible or effective. Many paediatricians do address social factors (eg, paediatricians may communicate with employers of parents who are losing time during management of their child's disease; and paediatric consultants, while managing their busy call and practice demands, do sit on various local health-related boards and attend school meetings in support of their patients, often pro bono).

WHY SOCIAL PAEDIATRICS?

It is a new era of morbidity and mortality for children. In spite of increasing prosperity in Canada, we are seeing increasing disparity in child outcomes and increasing problems for all children and youth, especially among the large number of ‘have not’ children. The ‘absence of disease’ is not enough of a health goal nor is the 'absence of disease, disability and dysfunction' the definition of health. Rather, we are viewing health as a positive concept linked to the capacity to achieve life's goals. The World Health Organization's (WHO) Ottawa Charter defines health as “a resource for everyday life” (10). The goal of individuals today is to live robust and healthy lives, until they die, attempting to have 'life span' and 'health span' curves coherent with one another. The goal continues to be longevity, but with good function.

With the new neuroscience of the past decade, it is evident that the realization of this goal, in fact, is embedded in the experiences of prenatal and early childhood. So much has been learned over the past 10 years, with multiple erudite publications on early child development and enhancing family and community factors (11-14). The debate of nature versus nurture is past in this era of epigenetics, and a combination of both, it turns out, controls the genome. Dendritic growth and the architectural shaping of the brain are directly linked to early stimulation and care. The hard wiring of the brain is determined by the interplay of stimulation experienced through the various sensory pathways during the first few years of life. Pathways of repeated stimulation persist, while others are pruned away. In other words, gene effects on the structure of the brain vary with the environment in which the development is taking place (11,12), down to the activation of enzymes and proteins providing the cellular mechanism for this experience-based brain development.

Critical periods of development occur when certain capacities unfold. Vision, emotional control, habitual ways of responding to stimuli and language development all occur rapidly before one year of age. During preschool years, these skills are consolidated and other skills such as socialization, cognitive function (ie, concepts of symbols and relative quantity) and further language development occur.

As diseases of modernism, rather than infectious diseases, increasingly cause childhood morbidity and mortality, epidemiology now has a focus beyond chronic disease management and prevention. Enhancing life outcomes for all children across all gradients is imperative. This means a move away from a sole focus on individual cases with the usual armamentarium of treatments and prevention strategies, toward a focus on all the complex factors that impact families and the community. New paediatricians need the tools to impact both social determinants of health and political policies to support health for all.
To date, paediatricians continue to be trained through guidance by models focused on the old epidemiology of childhood illness – one that is limited to a complaint-response practice framework, when a move to a health-enhancing for all or population-based framework is also required. Clearly, the goal must still be to ensure outstanding clinical competence in the traditional sense, but this is not enough. Each child is on his or her own life and developmental trajectory based largely on the experiences of his or her early childhood. Today's approach needs to include training and attention to population-based factors that are likely to drive children's and youth's life trajectories downward and to limit their life successes, their health and their dreams. Paediatricians must change their training, thinking, tools and approach to connect the population health approach and the traditional primary care responsibilities. It will also require new and enhanced collaborative interdisciplinary networks with, for example, public health, primary care, community resources, education and justice systems.

The fundamentals in several statements about the future of paediatrics express a well-documented need, as we move away from a central focus on the treatment of the morbidity of disease in children to a healthy life and universal approach to support and enhance health for all children (15,16). The need to alter curriculum to include the ‘universal’ approach (in addition to targeted interventions that will reach disadvantaged children and traditional medical treatment of the individual) is essential (17,18). As we delay, we send cohorts of children into the future with diminished trajectories and less capacity for ‘health’ in their future lives, as defined by the WHO (10).

We believe that, based on knowledge of the unique collaboration of authors in the present document, including early child development and child public health, future paediatricians need to understand the science of experience-based brain development, and the interventions demonstrated to improve life trajectories. We want to tie the learning experience for paediatricians to a model which provides the background to this understanding, and provides a process for interaction and observational learning coming at the field from a healthy child development focus, as opposed to only a pathology or early identification focus.

If we take school readiness measures as a proxy for successful early child development, then the young child's developmental health trajectories illustrated in Figure 1 become a relevant place to start in our understanding of the impact of social determinants on paediatric life chances. In Canada, early development instrument results show that one child in five is not ready for school learning before grade 1 (19,20). Enhancing the opportunities for experience-based brain development in children in the first six years of life is critical for improving the individual's outcome as well as for Canada's future success and sustainability. The paediatrician's voice in making this happen, not only at a policy level, but in each and every office contact with children, has now become important.

New initiatives within social paediatrics, especially for the youngest children, can be grounded in the neuroscience and epigenetics of experience-based brain development, the social epidemiology and the social determinants of health, and the interventions that we know can make a difference in children's developmental trajectories. Figure 1 outlines three specific factors that impede developmental health – poverty, lack of support services and family discord that thwart optimal development as well as four factors that enhance developmental health. Paediatricians (as outlined in part 2 of the present article that will be published in the December issue of Paediatrics & Child Health) can support parenting that encourages the developmental enhancers – emotional well-being, early reading, appropriate discipline and participation in preschool programs. Further discussion of resilience is beyond the scope of the present paper, but it is noted that in the study of the relationship between psychopathology and poverty, income interventions to move families out of poverty have had a major positive effect on conduct and oppositional disorders, but not anxiety or depression (21).

CONCLUSION
In 2008, as the WHO celebrates its 60th year, the hope is for “the launch of a global movement, one that perceives equitable health as a societal good, at the heart of which lies social action and a field in which countries and people, rich and poor, can unite in common cause” (22). Today’s parents, whether rich or poor, are acutely aware of their challenge to prepare their children for an unknown future. Medical educators face a similar challenge in preparing paediatricians to enhance child health to face this same unknown future. The need for a change in the training framework is absolutely clear, especially in consideration of young children. The present article and part 2 outline the importance of training in enhancing early child development individually and at the population level for social paediatrics.
REFERENCES