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Taking a Social Determinants Perspective on Children's Health and Development

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In early 2007, then Minister of Health Tony Clement appointed Dr. Kellie Leitch, Chief of the Division of Paediatric Surgery at the Children's Hospital of London, Ontario, as his Children's Health Advisor. Her mandate was to review the role of the federal government in the health of Canada's children. Dr. Leitch submitted her report, *Reaching for the Top*,¹ to the Minister in July 2007. The report was subsequently made public in March 2008. In her report, Dr. Leitch made it clear that in terms of child health and well-being, Canada did not compare well with other nations. Specifically, she highlighted the fact that when compared to other OECD (Organisation for Economic Co-operation and Development) nations, Canada ranked 21st of 29 for child well-being (a category that included mental health), 22nd in terms of preventable childhood injuries and deaths, and 27th for childhood obesity.

Reaching for the Top was widely endorsed by health professionals and organizations working in the area of child and youth health. The report provides a solid foundation to support such work and, in amassing and presenting a large body of evidence, Dr. Leitch throws into sharp profile the urgency of the need to act to improve the health and well-being of Canada's children and youth. What is more, the report identifies specific options and a number of priority areas for action, which we shall discuss shortly.

An area that is not adequately addressed in the report is that of social determinants of health. Dr. Leitch acknowledges that "a look through the lens of social determinants of health tells us a lot about our children," but she goes on to assert that her mandate did not extend to addressing those determinants. Rather, the report includes a brief appendix "to reference the three social determinants that affect child and youth health that were raised repeatedly during [our] roundtables: poverty, housing and education" (ref. 1, p.174). The need for a substantive treatment of social determinants of health to complement the contribution of the Leitch Report was one of the motivating factors in the genesis of this supplement.

The observation that health outcomes tend to be poorer among individuals and within areas of lower socio-economic status (SES) compared to individuals and areas of higher SES is now a commonplace one. In a nutshell, we know that experiences of health and illness are "stratified along various lines of social and economic inequality".² What is more, we do not only see differences between the wealthiest and the most poorly off. Differences in health are seen across the entire socio-economic spectrum: individuals with the highest income tend to have better health than those who fall into the middle-income group, who in turn experience better

health than those individuals who fall into the lowest income group. This relationship, found consistently over many years, has been labeled the *social gradient* in health.

Such observations are not new of course. They have become almost tiresomely familiar. That there are direct and indirect links between material deprivation and health was the central message of the UK's landmark Black Report, which is thirty years old.³ At the same time, the influential Whitehall Study of British civil servants was demonstrating the effect of social position such that "each group had a higher mortality rate than the group one step higher in the hierarchy".⁴ The enigma, perhaps, is that despite all that we know about the links between social factors and health inequities, those inequities have remained remarkably robust.

This general pattern of health inequities linked to social environments is found among children too. We know that in contexts of lower socio-economic status, children are more likely to be born at low birth weight;⁵ to experience higher rates of injuries,⁶ higher rates of disability and disease,⁷⁻⁹ mental health disorders⁷ and behavioural problems;¹⁰ and to start school in a less-developed state of readiness to learn than their better-off counterparts.¹¹ When health inequities are considered, there are, of course, children in Canada who fare particularly poorly. The plight of Aboriginal children is the one area of health inequities that is addressed at some length in *Reaching for the Top*. Dr. Leitch acknowledged that First Nation and Inuit children "lag behind on almost all health indicators compared to the Canadian average" (ref. 1, p.40).

We also know that many of Canada's children and youth continue to live in circumstances that are likely to perpetuate health inequities. In 2004, for example, 13% of Canadian children still lived in low-income households. This was essentially the same as the proportion in 1989,¹² the year in which Canada's parliament voted unanimously to eradicate child poverty by 2000. Subsequently, Statistics Canada reports that the proportion fell to below 10% by 2007,¹³ though others, such as the OECD, put the figure higher using a different method of calculation.¹⁴

The situation is considerably worse for Aboriginal children. In 2006, about half of Aboriginal children under the age of six in urban areas, and a quarter of those in rural areas, were growing up in low-income families.¹⁵ Statistics Canada's LICO measure is not

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applicable in the territories or on reserves, but we know that poverty and related phenomena are common there too.

What do we know about the nature of the relationship between social inequalities and health inequities? In other words, what are the modifiable factors that are open to change? In the conclusion to her report, Dr. Leitch calls for bold changes if Canada is to be "a world leader in the area of child and youth health." When it comes to taking action to reduce child health inequities, it seems clear that developmental factors, early experiences and exposure to various risk factors in early life offer opportunities for the implementation and evaluation of interventions.

Material deprivation may affect health directly in a number of ways: household income, for example, will be linked to adequacy of accommodation, food security, and vulnerability to effects of heat and cold. Material deprivation can also compromise a person's ability to participate in society in ways that most of us take for granted – for example, in terms of social interaction with family, friends and community, participation in economically or socially valuable activities, engagement in political processes, and capacity to purchase goods and services. Furthermore, less well-off geographic areas tend to be characterized by: relatively limited access to healthy recreation; fewer retail outlets for healthy food; lower-quality fruit and vegetables and higher prices for healthy foods; lower provision of primary health care; less access to libraries, museums and other cultural resources; poorer air quality; and less aesthetically pleasing surroundings.

In addition to such material factors, contexts characterized by low income and other aspects of deprivation are associated with psychosocial stressors that induce their own psychobiological stress responses. These stress responses can in turn lead to elevated vulnerability to disease states.^{16,17} "Allostatic load" is a measure of cumulative stress.¹⁸ It is a concept that refers to the "wear and tear" of allostasis (the body's protective stress response) on the body. Over the long term, this allostatic load can lead to physiologic changes in the body – particularly in the immune system and brain. This in turn can lead to disease through a variety of biological mechanisms.^{19,20}

Stress is seen as a factor that may contribute to socio-economic disparities in health^{19,21} because, though most of us experience stress from various sources, people with limited economic resources or who are experiencing social disadvantage appear to face a greater amount of stress over the life course. This differential exposure to stressors means that the adverse biological effects of chronic stress may cumulate more among those of lower socio-economic status. A review of the literature¹⁹ concluded that socio-economic position is associated with both the frequency of stressful life events and stress responses.¹⁹ Lower SES is likely to be correlated, for example, with residence in environments with higher population density, noise, crime, pollution, poor access to resources, and with a life of routine stresses such as food insecurity and unstable housing tenure.

More recent research has documented the emergence of SES differentials in allostatic load in children as young as five.²² Children, particularly young children, can be victims of stress because they are unable to communicate their feelings effectively. They may also be more likely to be exposed to events or environments over which they have no control. In general, low-income children experience a wider array of stressors – such as hunger, residential crowding,

community violence, family turmoil, parental stress, and lack of household structure and routine – than do children in higher-income groups.

Chronic stress exposures in early childhood may adversely affect brain development, and this may be further accentuated if children live in environments that are not cognitively stimulating.²³ In recent decades, researchers have found SES differentials among children in brain and cognitive development and achievement outcomes;²⁴⁻²⁷ the gradient that we see in health is matched by a parallel gradient in cognitive and behavioural development in early life. Canadian studies have found that SES differentials in development and behavioural problems are apparent by kindergarten age.¹¹

So, what can be done? *Reaching for the Top* presents many recommendations for improving child health in Canada. These recommendations have been widely endorsed by various groups. Of the many recommendations in the report, Dr. Leitch highlighted five areas as priorities for action:

1. "Developing a National Injury Prevention Strategy;
2. Reducing childhood obesity by establishing a Centre of Excellence on Childhood Obesity;
3. Improving mental services for Canadian children and youth;
4. Undertaking a longitudinal cohort study to provide data on the health of Canadian children and youth to help understand environmental factors impacting children's health; and,
5. Establishing a National Office of Child and Youth Health with a permanent Advisor." (p. 3)

In its March 2010 speech from the throne, the Canadian government committed itself to working with non-government organizations to launch a national strategy on childhood injury prevention. In 2007, the Federal Government created the Mental Health Commission of Canada (MHCC). The Commission is currently developing a mental health strategy, one of the advisory committees for which focuses on children and youth. Specific responses are still awaited in the other three areas. Increased rates of obesity and sedentary lifestyles, in particular, have been highlighted as issues that need to be addressed.

With the exception of the expansion of the Aboriginal Head Start Program, tuberculosis surveillance in the North, and better cross-jurisdictional coordination in relation to the health of Aboriginal children, none of the recommendations are aimed specifically at *the reduction of inequities* in children's health. Two potential areas for action to achieve this goal are the reduction of rates of children experiencing low income, and comprehensive programs for early childhood education and care.

In Canada, we have experience of successful reductions in low-income rates. In the late 1970s, for example, almost 20% of Canada's seniors lived with low income – the highest percentage of any group. Pension policies introduced at that time led to a steady decline in this rate to just over 2% by 2006. This is now the country's lowest incidence of low income.²⁸ Similarly, although to a lesser extent, in 2004 the redistribution of income through income taxes and transfers helped reduce the incidence of low income among children from 22% – the rate based on market income alone – to 13%.¹⁵ A study of effective strategies to reduce child poverty conducted by the OECD concluded that for developed countries, the most successful route lies in the right balance between redistributive and employment-based approaches; employment in and

of itself is not always sufficient if the rewards do not elevate those with employment above low-income status.²⁹ Given that low-income rates are significantly higher among Aboriginal children and youth than among non-Aboriginal, it is likely that particular attention will need to be given to this group.

There is evidence that some progress is being made. A number of provincial poverty reduction strategies have been implemented in recent years, along with federal initiatives, such as the introduction of a Universal Child Care Benefit and the child tax credit. As noted above, in 2007 the proportion of children living with low income, according to Statistics Canada, dropped below 10%. Since that time, of course, economic circumstances have altered dramatically with the recession experienced since 2008.

Writing in the *Encyclopedia on Early Childhood Development*, Harvard researcher Jack Shonkoff argues that, "the basic principles of neuroscience indicate that providing supportive conditions for early childhood development is more effective and less costly than attempting to address the consequences of early adversity later".³⁰ This assertion is supported by a report commissioned by Human Resources and Skills Development Canada (HRSDC) on early childhood education and care (ECEC). The authors found that there is widespread international agreement in the academic literature "that ECEC programs tend to significantly improve cognitive abilities, future economic well-being and social outcomes for disadvantaged children [and]... that ECEC improves cognitive abilities and the future economic well-being of more advantaged children".³¹ What is more, the study concludes that there is persuasive evidence that dollars invested in ECEC programs are more than recouped through the benefits that accrue to the economy as a whole. The importance of early childhood education and care has been highlighted in reports from the World Health Organization^{32,33} and Canada's Senate Subcommittee on Population Health, which released its final report in June 2009.³⁴ *Closing the Gap in a Generation*, the final report of the World Health Organization's Commission on Social Determinants of Health, for example, includes the recommendation that, "Governments build universal coverage of a comprehensive package of quality early child development programmes and services for children, mothers, and other caregivers, regardless of ability to pay" (ref. 32, p.202).

This editorial began with a reflection on the significant contribution of Dr. Kellie Leitch's report to the field of child and adolescent health in Canada – a contribution that has much to offer to policy development in the area. The intention of this special issue of the *Canadian Journal of Public Health* is to expand that contribution through a more specific focus on social determinants of health and health inequities. The papers that are brought together in this issue reflect the range and quality of Canadian scholarship in the area of children's health. Collectively, they constitute a considerable contribution to discussions of child and youth health inequities and their determinants.

Kershaw et al. address issues related to the economic costs of avoidable vulnerability in early childhood. Looking at data from the Early Development Instrument (EDI), they find that more than 25% of Canadian children arrive at kindergarten in a state of developmental "vulnerability." Such vulnerability is not evenly distributed. In British Columbia, rates vary considerably between school districts. What is more, early vulnerability can shape later educational experiences and economic opportunities with consequences

for both individuals and societies. Puchala, Vu and Muhajarine also make use of the EDI to measure readiness among kindergarten children. Their focus, however, is on the individual and contextual factors related to readiness among children in Saskatoon for whom English is a second language.

Looking at older age groups, Tramonte and Willms estimate the prevalence of anxiety for males and females and the extent to which it varies among middle and secondary schools. Using data from the *Tell Them from Me* survey, which tracks indicators of student engagement, wellness, and learning environment, and the theoretical concept of "flow" (a state achieved when there is congruence between challenges and skills), they provide insights into the relationships between students' confidence in their skills and levels of anxiety. Exploring adolescent health through the wider lens of the social environment, Elgar, Trites and Boyce find that social capital – derived in this case from a five-item scale developed for the Health Behaviour of School-aged Children survey – has a considerable mitigating effect on SES differences in physical and psychological health outcomes. Findings such as these highlight the relevance of community belonging and social support in relation to social inequities and health.

Brownell et al. explore, from a temporal perspective, the relatively understudied issue of socio-economic differences in childhood injury hospitalizations. Their analysis of Manitoba data revealed that behind a substantial overall drop in injury hospitalizations between 1986 and 2006 lies an increased socio-economic gradient. This phenomenon, whereby an overall reduction is matched by increased differences in socio-economic status, speaks to the value of a broader understanding of the social determinants of injury and other important child health indicators. In Canada, the percentage of children and youth who are overweight or obese has risen dramatically over the last 25 years or so. The social consequences of this shift and the related costs to the health care system have yet to be determined. In their research, presented in this journal, Simen-Kapeu and Veugelers found a social gradient for overweight among children, as well as for parental encouragement for healthy eating and physical activity.

The papers in this supplement collectively highlight the important role of social factors as determinants of child health and development. In doing so, the perspectives they provide offer a useful expansion to the insights presented in *Reaching for the Top* and a valuable resource to those working to improve the health of all Canadians.

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