## The ripple effects of school closures during the COVID-19 pandemic

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For many children and their families, schools are the intersection of whole child health and development, education and community. 1 The COVID-19 pandemic has required widespread school closures to prevent the spread of disease, impacting more than 90% of school-aged children globally. 2 While necessary public health interventions, the impact of school closures on Canadian children and youth and their families cannot be ignored. Beyond places of academic achievement, schools occupy a fundamental role in supporting the physical, social and emotional well-being of children and families through school-based health services, school nutrition programs and mental health services in a safe, child-centred space.3 Health care providers, educators and policymakers must be cognizant of the sequelae of school closures, both immediate and long-term, particularly on under-served and marginalized children.

In response to government-mandated school closures, all school boards in Canada have adopted distance learning as a primary platform to deliver educational content during the pandemic including modalities such as online learning. However, successful online learning requires that every student have extended and uninterrupted access to a device which may be prohibitive for many families. Moreover, nearly 10% of Canadians do not have reliable internet access; a conservative estimate with rising rates of unemployment and poverty which will only compound the widening achievement gap in already at-risk neighbourhoods.4 In addition to limiting online education opportunities, lack of broadband internet connection may also limit opportunities for interactions with peers, teachers and trusted adults. While some internet service providers have made concessions to try to mitigate the connectivity gap, universal access to appropriate devices and broadband internet remains elusive.

School-based health centres (SBHCs) provide primary and preventative care to thousands of children and families across Canada many of whom face barriers to accessing health care. Unfortunately, SBHCs have been forced to close their doors along with schools, leaving families without access to health care, potentially worsening chronic conditions and increasing complications of illness.

School-based nutrition programs are lifelines for hundreds of thousands of food-insecure families in Canada. The Breakfast Club of Canada serves close to 250,000 students and without schools to deliver these programs, many children will lose access to these essential meals.6 Combined with pandemic-related under- and unemployment, the loss of school-based meals may further contribute to decreased access to nutritious food for at-risk children with subsequent health risks such as obesity and micronutrient deficiencies. This compounded with the loss of physical education classes, recess and free time may increase the likelihood of becoming sedentary, adding to the risk of obesity.

With the sudden enforcement of school closures, the inherent loss of routines and predictability may cause distress in children and exacerbate anxiety and other existing mental health conditions. Without in-person interactions with teachers, guidance counsellors and qualified mental health support staff, there are fewer opportunities to identify and support mental health concerns. In addition, many child protection advocates have raised alarm bells about the risk of rising rates of substance use, domestic violence and child maltreatment during the pandemic, worsened without the added eyes of trusted adults, limiting opportunities to identify children at increased risk of non-accidental injury.3

Without school, some children may experience social isolation with fewer opportunities to interact and play with peers which will negatively impact social and emotional health and development. Teachers are often first to recognize children at risk of developmental concerns including intellectual disability, learning difficulties, autism spectrum disorder and attention deficit hyperactivity disorder. Furthermore, many schools support

developmental needs by providing on site speech and language pathology, behaviour therapy, physiotherapy, occupational therapy and psychological services. School closures may consequently delay the identification and subsequent management and outcomes of students with developmental disorders.

Given the wide-reaching impact of school closures on child health and development during this unprecedented time, health care providers can help mitigate these effects. Virtual care modalities, including telephone visits, offer a flexible and accessible model to deliver safe and effective care addressing children's physical and mental health needs. Health care providers should also promote social engagement through virtual solutions and advocate for physical activity, regular screen breaks and outdoor play while maintaining social distancing to limit inactivity and promote wellbeing.

School boards, policymakers and institutions can keep children at the forefront of their policies, attenuating the further effects of school closures. The decisions by the Breakfast Club of Canada to redistribute perishable goods and provide grants amongst community organizations like food banks are examples of responsive action to support the nutritional needs of at-risk children and youth. Policymakers across Canada should adopt similar responses to ensure under-served children and families can continue to access affordable, nutritious food while schools remain closed.

Paradoxically, many of the solutions addressing the effects of school closures are virtual in nature, yet some children face barriers to accessing technology and the internet. To promote equity in access to technology, the Ontario government has partnered with private industry to deliver iPads with free wireless data to deliver distance learning to those without access.7 In addition to delivering educational content, school boards should consider using virtual platforms to deliver developmental services at home, such as speech and language therapy, special education resource support and psychology services, which are essential for children with developmental and educational difficulties. The education gaps with school closures and abrupt transition to online learning are unknown and unprecedented and may delay this generation's potential for achievement.

While school closures are necessary to help limit the spread of COVID-19, there may be unintended but significant consequences to the health and development of children and youth. Although children may not be shouldering the burden of this virus, they are losing on every other front, and not unlike other catastrophes, under-served children are suffering the most. It is critical for providers, policymakers and institutions to create child-centred policies to mitigate the ripple effects of the pandemic, protecting not only the lives today, but of tomorrow.

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