FACETS
a multidisciplinary open access science journal

SCIENCE APPLICATIONS FORUM

Easing the disruption of COVID-19: supporting the mental health of the people of Canada—October 2020—an RSC Policy Briefing

Gordon J.G. Asmundson[a], Cindy Blackstock[bc], Marie Claire Bourque[de], Glenn Brimacombe[f], Allison Crawford[gh], S. Hélène Deacon[i], Ken McMullen[j], Patrick J. McGrath[kl*], Christopher Mushquash[mn], Sherry H. Stewart[o], Jennifer Stinson[pq], Steven Taylor[r], and Marsha Campbell-Yeo[s]

[a]Department of Psychology, University of Regina, Regina, SK, Canada; [b]First Nations Child and Family Caring Society of Canada, Ottawa, ON, Canada; [c]School of Social Work, McGill University, Montreal, QC, Canada; [d]Department of Psychiatry, University of Calgary, Calgary, AB, Canada; [e]Centre for Addiction and Mental Health, Toronto, ON, Canada; [f]Policy and Public Affairs, Canadian Psychological Association, Ottawa, ON, Canada; [g]Virtual Mental Health and Outreach, Centre for Addiction and Mental Health, Toronto, ON, Canada; [h]Department of Psychiatry, University of Toronto, Toronto, ON, Canada; [i]Department of Psychology and Neuroscience, Dalhousie University, Halifax, NS, Canada; [j]Emergency Services, The City of Red Deer, Red Deer, AB, Canada; [k]Department of Psychiatry, Dalhousie University, Halifax, NS, Canada; [l]IWK Health Centre, Chair of the Working Group, Halifax, NS, Canada; [m]Department of Psychology, Lakehead University, Thunder Bay, ON, Canada; [n]Dilico Anishinabek Family Care, Thunder Bay, ON, Canada; [o]Departments of Psychiatry and Psychology and Neuroscience, Dalhousie University, Halifax, NS, Canada; [p]Hospital for Sick Children, Toronto, ON, Canada; [q]Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, Toronto, ON, Canada; [r]Department of Psychiatry, University of British Columbia, Vancouver, BC, Canada; [s]School of Nursing, Faculty of Health, Dalhousie University and IWK Health, Halifax, NS, Canada

*patrick.mcgrath@dal.ca

OPEN ACCESS

Citation: Asmundson GJG, Blackstock C, Bourque MC, Brimacombe G, Crawford A, Deacon SH, McMullen K, McGrath PJ, Mushquash C, Stewart SH, Stinson J, Taylor S, and Campbell-Yeo M. 2020. Easing the disruption of COVID-19: supporting the mental health of the people of Canada—October 2020—an RSC Policy Briefing. FACETS 5: 1071–1098. doi:10.1139/facets-2020-0082

Handling Editor: Jules M. Blais

Received: September 17, 2020

Accepted: November 12, 2020

Published: December 22, 2020

Note: This paper is part of the Royal Society of Canada's COVID-19 Task Force Collection.

Published by: Canadian Science Publishing

Abstract

The COVID-19 pandemic has had a significant impact on the mental health of the people of Canada. Most have found it challenging to cope with social distancing, isolation, anxiety about infection, financial security and the future, and balancing demands of work and home life. For some, especially those who have had to face pre-existing challenges such as structural racism, poverty, and discrimination and those with prior mental health problems, the pandemic has been a major impact.

The Policy Briefing Report focuses on the current situation, how the COVID-19 pandemic has exacerbated significant long-standing weaknesses in the mental health system and makes specific recommendations to meet these challenges to improve the well-being of the people of Canada.

The COVID-19 pandemic has had a detrimental effect on mental health of people in Canada but the impact has been variable, impacting those facing pre-existing structural inequities hardest. Those living in poverty, and in some socially stratified groups facing greater economic and social disadvantage, such as some racialized and some Indigenous groups and those with preexisting mental health problems, have suffered the most. Some occupational groups have been more exposed to the virus and to psychological stress with the pandemic. The mental health care system was already overextended and under resourced. The pandemic has exacerbated the problems. The care system responded by a massive move to virtual care. The future challenge is for Canada to strengthen our knowledge

base in mental health, to learn from the pandemic, and to provide all in Canada the support they need to fully participate in and contribute to Canada's recovery from the pandemic.

Introduction

The COVID-19 pandemic has created unprecedented upheaval for people in Canada and around the world. Millions have been confined to their homes, many having to work from home, others have lost their jobs, and many are worried about future employment. Parents of children have the demanding and unfamiliar responsibility of home-schooling their children, often while also working from home, as schools closed. Residents of long-term care facilities have been at high risk for infection and death and have been denied vital family visits. During self-isolation, some people in the community have been trapped at home in coercive or abusive situations. A number have lost loved ones to COVID-19 and been unable to engage in normal grieving rituals. Many frontline workers including personal care workers, nurses, and doctors in Emergency Departments; delivery drivers and retail clerks; and first responders have been exposed to extreme and often unremitting stress, leading to mental distress, anxiety, and traumatic stress symptoms. Many people in the community experienced symptoms and anxiously awaited test results, fearing for their own health and those they have come in contact with. Some have been diagnosed, some hospitalized, some admitted to intensive care units (ICUs) with COVID-19, and some have died.

All people in Canada have experienced thousands of health warnings, the uncertainty of changing requirements and public health measures, increased fears, and the disruptions of our social and work lives. As in previous pandemics (Taylor 2019), there has been a widespread increase in distress (Taylor et al. 2020a, 2020b, 2020c, 2020d). The Conference Board of Canada and the Mental Health Commission of Canada (2020), in a survey conducted between 27 April and 15 May 2020, found that 84% reported that their mental health had declined during the pandemic. The biggest concerns were family well-being, one's future, isolation and loneliness, and anxiety and fear. There also appears to be an increase in mental health disorders including anxiety disorders, mood disorders, substance-use disorders, and traumatic stress for an important but as yet unknown percentage of people in Canada. Different surveys (CAMH 2020; Taylor et al. 2020a, 2020b) have described how about 20%–25% of people in Canada are experiencing moderate or severe COVID-19-related mental health problems. Emerging evidence indicates that people with pre-existing anxiety disorders may be more adversely impacted by COVID-19 than those with mood disorders or no mental health diagnoses (Asmundson et al. 2020).

A Nanos poll for the Canadian Centre on Substance Use and Addiction (Nanos/Canadian Centre on Substance Use and Addiction 2020) showed that about 20% have increased their use of alcohol as a result of the pandemic. Evidence from previous pandemics, and current evidence from other countries who are farther advanced in the chronology of the pandemic, also suggests significant increases in mental health problems and that mental health impacts can persist far beyond the acute phase of the pandemic. Much of the international evidence on COVID-19 and its mental health effects can be instructive for Canada.

The pandemic has affected the mental well-being of people in Canada differentially, however. COVID-19 is not just an illness; it also intensifies social ills that have long created health inequities. The data on mental health effects from COVID-19 are quickly emerging, and related evidence suggests that those living in poverty and adverse social circumstances will be the most impacted. Moreover, those who have been subjected to previous adverse events, especially in childhood, are more at risk (Asmundson and Afifi 2019). Even prior to the current pandemic, people in the lowest income groups were 3 to 4 times more likely than those in the highest income group to report poor

mental health (Public Health Agency of Canada 2018). Human Rights Watch (Carling and Mankani 2020) emphasizes that many First Nations communities don't have clean water and suffer from overcrowding so that handwashing and social distancing are difficult. Similarly, individuals in the LGBTQ+ community and racialized individuals are often at higher risk of COVID-19. For example, in Toronto, persons who are White make up 48% of the population and only about 17% of those with COVID-19 (Toronto 2020). Chronic illness, homelessness, imprisonment, and poverty exacerbate the risk of severe illness from COVID-19. The DepressD Living Systematic Review of Mental Health in COVID-19 (DEPRESSD Project 2020) has found initial evidence of differential effects related to pre-existing inequities of COVID-19 on mental health around the world. Prior to the pandemic, Canada was facing a serious opioid epidemic that has only been made worse by the COVID-19 pandemic. Canada has seen an increase in fatal drug overdoses since the onset of the pandemic (Wood et al. 2020). The restrictions on travel and border closures have impacted illegal drug supply chains, which has resulted in the use of more dangerous substances and more efficient, yet riskier, routes of administration (Tsai and Wilson 2020). During the pandemic, there has also been an increased risk of drug withdrawal and related complications for homeless people who use substances and an increased risk of negative health consequences in this vulnerable group (UNODC 2020).

The mental health effects of COVID-19 have occurred in the context of mental health services suffering chronic underfunding. The Mental Health Commission of Canada has estimated the prevalence of significant mental health problems at about one in five and the cost to the Canadian economy of mental health problems at about $50 billion a year prior to the pandemic (Smetanin et al. 2011). The Mental Health Commission of Canada (2017) noted that Canada spends about 7.2% of our total (public and private) health spending on mental health (cf. 13% for the United Kingdom (UK)) and well below what most other developed nations spend on mental health. Children and youth may be particularly affected as most children with mental health problems do not receive the care they need (Waddell et al. 2005). Waiting lists for child mental health prepandemic were growing and some children waited 2.5 years for service (Children's Mental Health Ontario 2020). Waitlists for all were lengthy even before the pandemic. The disruption of services and the stress of the pandemic has exacerbated the problem.

The Federal government recognized the desperate need for additional funding for mental health before the pandemic. In the 2017 budget, there was pledged a modest beginning to overcome the disparity; that is $5 billion over 10 years to improve mental health care (Government of Canada 2017). Recently, recognizing the specific needs of Indigenous communities in the COVID-19 pandemic, Federal Indigenous Services Minister Marc Miller announced $82.5 million in new funding for Indigenous communities to deal with increased mental health needs as a result of the COVID-19 pandemic. The concept of linking expenditure to burden, e.g., parity between mental and physical health, has not yet been incorporated into policy.

Mental health care must meet appropriate standards. The provision of poor quality care is not acceptable in mental health, as it is unacceptable in other areas of care. The Institute for Health Improvement in the United States outlines 6 domains important for quality of care: person-centred, equitable, timely, effective, efficient, and safe (Institute of Medicine 2001) that have been widely endorsed across Canada. Mental health services must be accountable by adapting the best practices and reporting on their compliance to quality standards. Effectiveness can only be established by routine collection and analysis of outcomes. Stepped care, a hierarchy of interventions, from the least to the most intensive matched to the individual's needs is less burdensome to those we serve and more cost effective for the system. Most will utilize the least intensive mental health interventions usually delivered in primary care. These interventions must be effectively integrated with mental health care.

Accreditation Canada (2020), in their statement of health standards, emphasized patient and family experience of, and satisfaction with, care and involving patients and other stakeholders in the design of care. A crucial dimension of quality care is to ensure culturally safe care, which respects the cultural beliefs, values, and preferences of users. In the UK, this role is played by the National Institute for Health Care and Excellence (NICE).

The Canadian Institutes of Health Research (CIHR) is the principal funder of health research in Canada. In 2018–2019, the last year that data are available, the CIHR funded grants and awards worth $1.089 billion. Of this amount, $28.1 million was allocated to addictions research and $72.1 million to mental health research for a total of $100.3 million or approximately 9% of the funding (Canada 2020). This is in sharp contrast to the population burden of mental health, which would suggest at least a doubling of this spending.

The Canadian Institute of Health Information (CIHI) is the federally funded health agency that collects and analyses data on the health system and the health of people in Canada. This type of systems information is vital to the planning and evaluation of mental health and substance use care.

As the pandemic continues to affect all people in Canada, the federal government needs to respond not only to the infection itself and the economic consequences, but also to enact policies and fund programs and services that respond to current data on mental health and ensure the people of Canada survive and thrive following the pandemic.

Access

Access to publicly funded mental health care

Access to publicly funded, evidence-based, and appropriate mental health services was limited before COVID-19. Children's mental health may be particularly crucial as lack of services interferes with social and cognitive development and can lead to cumulative barriers and exponential challenges.

The stress of the pandemic is leading to an increase in demand for services that are already stretched where many do not receive the care they need. Prior to the COVID-19 global pandemic, people in Canada expressed concern about the lack of access to a range of publicly funded mental health and addiction care services.

Specifically:

- 94% of people in Canada think that provincial and territorial governments' health plans should cover mental health care (Cohen and Hosseiny 2019).
- 89% of people in Canada support increasing funding for mental health care professionals including psychologists and counsellors; 53% report that they know someone who has had a mental health problem or illness and has experienced delays in accessing services (Mental Health Commission of Canada 2019).
- 55% of people in Canada were dissatisfied with wait times for publicly funded mental health practitioners, and 20% said they had to seek and pay for private mental health services due to long wait times or lack of publicly funded mental health services (Ipsos 2019).

The COVID-19 pandemic has highlighted the vulnerability of our mental health system. Some provisions have been made for self-management, e.g., through the Wellness Together Canada Portal (ca.portal.gs/), which may be helpful for those with very modest mental health burden.

Nonetheless, there has been a reduction in provincial services as they grapple with social distancing. In fact, many have closed all but emergency services. Some groups have borne the brunt of increased stress and difficulty accessing mental health services. For example, people with serious mental health problems have had their clinics eliminate face-to-face services. Those without services (e.g., many rural and Indigenous communities) have not had mental health services despite the added stress of the pandemic. In addition, first responders and health workers in long-term care and in many emergency services and ICUs have been subjected to incredible stress, with depression, health anxiety, and post-traumatic stress disorder (PTSD) among some, yet there is little increase in mental health services to meet these needs.

Public expenditures on mental health are disproportionately low relative to the burden of mental illness. Prior to the pandemic, Vigo et al. (2019) found that mental health and pain were the leading source of health burden, accounting for 24% of the burden. They also found that mental health and pain spending in Canada represented an imbalance in the ratio between disease burden and spending of 3:1. A way of examining more pronounced burden is disability. Statistics Canada (2012) determined that 28% of people with disability in Canada have a mental health disability. A comprehensive study that captures the full spectrum of public and private mental health expenditures in Canada has not yet been completed and is a critical informational need. The available data indicate that in 2015, mental health spending was 7.2% of Canada's total health spending ($219.1 billion). This spending is well below that of other western countries. (Mental Health Commission of Canada 2017). All provinces fell short of the minimum figure of 9.0% that was recommended by the Mental Health Commission of Canada (2012). This has likely increased because of recent efforts.

Increasing mental health expenditures to at least 12% of health expenditures is warranted. This level of funding would still be a large under-spending in relationship to burden but would help meet the unmet needs. Statistics Canada (2019) estimated that 43% of people in Canada with mental health needs had unmet needs. The largest unmet need was for counselling or therapy.

All people in Canada should have timely access to evidence-based care with clear accountability of governments meeting their responsibilities. In the last two decades, the science of evidence-based care has been translated into guidance advice, pathways, and standards of care. In particular, the UK's NICE (nice.org.uk/) has led the way in this effort. The Improving Access to Psychological Therapies program of the UK's National Health Services is an ambitious program that will reach 1.9 million people in 2023–2024 towards its goal of providing evidence-based talk therapy to all who need it (england.nhs.uk/mental-health/adults/iapt/). As mentioned previously, the lack of access to talk therapy is the largest unmet need in Canada (Statistics Canada 2019).

Federal, provincial, and territorial governments in Canada are uniformly in favour of quality and appropriate standards for mental health and addictions care. Excellent work has been done by individual groups, professional bodies, and associations developing clinical practice guidelines (Katzman et al. 2014; Remington et al. 2017). In addition, many provinces have health quality councils. There has, however, been no pan-Canadian government sponsored, legally mandated structure for equity, quality, and standards.

Access to employment-based mental health care

There has been a significant increase in the number of unemployed people in Canada and, as a consequence, they have lost or have limited access to their employer-sponsored supplementary health benefits—which includes an array of mental health and substance use programs, services, and supports.

COVID-19 brings with it a triple threat. First, there has been a loss or reduction of employer-sponsored supplementary health benefits. These benefits are delivered by nonphysician health care providers like psychologists, social workers, psychotherapists, and counsellors whose services are not typically funded through the public health system. Second, much of what is publicly funded is situated within hospital and physician settings and have had partial shutdowns, increasing already very long wait lists. Third, there is a growing demand for mental health and substance use care services that is exacerbating the existing gap between the mental health and addictions care that people in Canada need and the capacity of the public and private sectors to provide such care. Combined, this has had a significant impact on Canadians' ability to access a range of mental health services and supports on a timely basis. Moving forward, it will be important to consider a coordinated policy response that extends across the public and private sectors.

Furthermore, the pandemic also underscores the importance of reviewing the breadth of evidence-based coverage employers are providing their employees for mental health care. A recent survey by the Canadian Life and Health Insurance Association (2020) noted that 18% of plan sponsors recently increased the maximum amount of coverage for counselling services related to mental health, e.g., psychologists and other mental health providers. Unionized workforces (29%) and public sector employers (29%) were also more likely to do so. An additional 25% of plan sponsors intend to increase the maximum coverage. It also found that the current median and annual maximum coverage for counselling services related to mental health is $1011. The majority (68%) have a maximum that is <$1000 or 5 h of a psychologist's time at a standard rate of $200/h. These caps fall short of delivering an evidence-based dose of care (Lambert 2013).

Without taking any additional measures, people in Canada will fall through the cracks in terms of not being able to access the mental health care they need due to limited access via the public system, or with the loss of employer-sponsored health benefits they must now pay out-of-pocket for such services. Either way, timely access to needed mental health care has been compromised.

Employers need to review their internal human resource policies to ensure that employees who are temporarily laid-off can have access to their supplementary health benefits. Employers, in dialogue with employees and insurers, need to ensure that they facilitate access to a comprehensive set of evidence-based mental health programs and services through their supplementary health benefit plans. Given the relationship between employee access to mental health care benefits and access to the publicly funded health care system, it will be important to consider a coordinated policy response across the public and private sectors.

Employees who sustain injury during their work are typically covered through provincial Workers' Compensation Boards. They are now eligible for coverage if they can show they were infected with COVID-19 on the job. However, employees who sustain subsequent mental health injuries by becoming infected or by caring for those who are infected may have a more difficult challenge proving their mental health injuries are employment related. The federal government in conjunction with the Canadian Association of Workers' Compensation Boards could develop model presumptive-cause regulations for front-line health workers and first responders who develop conditions like health anxiety, depression, or PTSD during the pandemic. They are presumed to have developed these disorders from occupational causes and thus are eligible for Workers' Compensation support and services.

Self-management approaches can be very low cost and are useful to many, but they may not be effective for those without the skills to navigate and sustain self-management or those with more significant mental health problems.

Recommendation 1: That the federal government, in conjunction with provincial and territorial governments, increase the funding for mental health services to at least 12% of the health services budget to respond to the long-standing unmet need that has been exacerbated by the COVID-19 pandemic.

Recommendation 2: That the federal government, in conjunction with provincial and territorial governments, establish national standards of access and quality of mental health services by the introduction of a *Mental Health Parity Act*.

Recommendation 3: That the Canadian Institute of Health Information (CIHI) should receive adequate resources to work collaboratively with the provinces and territories, and other stakeholders, to develop an up-to-date national public and private health expenditure series in mental health. CIHI should also accelerate the development of health system performance indicators for mental health (including wait times).

Recommendation 4: That the federal, provincial, and territorial governments fund and develop a program similar to the UK's Improving Access to Psychological Therapies. The program should cover adults, children, and youth. Considering the vast geography, consideration should be given to a virtual service.

Recommendation 5: That the self-management portal, Wellness Together Canada (ca.portal.gs/), be rigorously, externally evaluated and self-management options should be improved.

Recommendation 6: That the federal government provides additional long-term funding to the Canadian Institutes of Health Research (CIHR) and to the Social Sciences and Humanities Research Council (SSHRC) and the Natural Sciences and Engineering Council (NSERC) to ensure mental health research funding that is proportionate to mental health's burden of disease and its impacts on specific communities. Particular attention should be paid to research that can directly improve care and meet the needs of communities that have not been well served.

Indigenous mental health

Pre-COVID, Indigenous people bore a disproportionate burden of mental health difficulties when compared with non-Indigenous people in Canada. Population data for the general population of Indigenous and non-Indigenous individuals using the same methodologies are not available. However, there are good data on specific issues. The national rate of suicide among First Nations communities is double that of the general public and the rate among First Nations youth is approximately three times higher than non-Indigenous people in Canada. The rate of suicide in Inuit communities is estimated to be nine times higher than non-Indigenous people in Canada (Kumar and Tjepkema 2019). Indigenous adolescents begin using substances and consuming alcohol at a younger age than non-Indigenous adolescents (Falk et al. 2006; Miller et al. 2008). Among a sample of Indigenous youth in the upper-midwest of the United States and Ontario, there was a 54% chance of meeting criteria for a substance use disorder by late adolescence (Hautala et al. 2019). Indigenous youth experiencing homelessness are more likely to develop a mental health problem or addiction than non-Indigenous youth experiencing homelessness (Kidd et al. 2017). Finally, there are cumulative impacts on mental health within families and communities; individuals with parents who attended residential schools, for example, demonstrate greater depressive symptoms compared with those whose parents did not attend (Bombay et al. 2011).

These disparities are largely understood to have emerged as consequences of systematic colonial attempts at assimilation of the Indigenous population into the broader Canadian body politic. Canadian governmental policies directed at eradicating cultural practices through disruption of

communities and families through such well-documented mechanisms as the residential school and child welfare systems have led to what has been termed intergenerational trauma—the transmission of trauma across generations of Indigenous peoples. At the same time, many rural and remote communities have limited access to culturally and contextually appropriate care and experience chronically underfunded systems and services across all sectors.

Despite this multi-generational colonial effort, Indigenous peoples have demonstrated great resilience and many communities have found ways to be adaptive and innovative as a means of developing greater capacity in mental health and addiction services. Culture-based approaches have been demonstrated to be particularly important in improving wellness for Indigenous people.

As COVID-19 spread across Canada, the relative geographic isolation coupled with quick and decisive action by many Indigenous leaders led to effective quarantine of community from outside visitors, thus limiting transmission of the COVID-19 virus. This resilient and effective response highlights the need for, and the efficacy of, Indigenous leadership and approaches to health.

The COVID-19 pandemic has highlighted, and in many cases exacerbated, known gaps in services, equitable access to resources, and human resource capacity to manage mental health related crises. Vitally important community programs and service organizations were forced to suspend services as a means of preventing viral spread to isolated communities with limited resources to care for the ill in the event that COVID-19 arrived in the communities. Many communities have reported increases in child welfare related issues (e.g., abuse, neglect), domestic violence due to suspending of residential treatment facilities and shelters for women, and acute withdrawal episodes as a result of disruptions in illicit substance supply chains (due to community check-point screening) combined with limited access to medically assisted withdrawal services. With the well-documented rates of chronic disease comorbidity, many communities were at great risk from the virus. Moreover, social crowding from limited housing capacity, and in some cases poor access to clean running water, made social distancing and handwashing recommendations lack relevance and applicability for many communities. This with the cultural importance of Elders and community wellness, places Indigenous communities in a desperate situation.

Access to culturally and contextually appropriate care is essential for Indigenous communities in Canada. Certain non-Indigenous approaches to mental health care (e.g., psychological, psychiatric, medical) have shown effectiveness in addressing the disproportionate burden of mental health. Culture-based and on-the-land or land-based approaches have also demonstrated improvements in wellness in addition to improvements in culturally based wellness outcomes like improvements in purpose, hope, belonging, and meaning.

Recommendation 7: That the federal government work closely with Indigenous governance structures to find exemplar Indigenous communities, Indigenous-specific programs, and Indigenous-governed organizations that are leading the way in mental health and in Indigenous communities. These culturally and contextually appropriate services need to be funded for expansion to other communities.

Recommendation 8: That in consultation with First Nations, Metis, and Inuit communities, the federal, provincial, and territorial governments implement solutions to remedy the across-the-board public services inequities and structural discrimination that contributes to over-represented rates of mental illness.

Recommendation 9: That the federal government facilitate and resource connected and holistic approaches to mental health care, inclusive of child welfare, housing and social services, education, justice, and other overlapping domains that often exist in silos and are sometimes at odds in terms of approach.

Virtual mental health care—immediate potential and future promise

The COVID-19 pandemic has precipitated the cessation of most nonurgent, in-person mental health and substance use care, compounding the pre-existing problem of access to mental health and addictions care for people in Canada (Findlay et al. 2020; Koushik 2020; McIntyre and Lee 2020). These public health measures tasked entire health care systems to change the way they deliver mental health services, including a large-scale shift away from in-person care to digital or virtual delivery of care for many mental health services. As a result, we saw rapid and large increases in use of technology for the delivery of mental health care (Fisk et al. 2020; Ohannessian et al. 2020; Torous et al. 2020). Digital health and virtual care have been on the horizon for decades now in Canada, but always struggling to come into full ascendency. Digital health is the integration of electronic material and compilation of health data, decision support tools, and analytics using technologies to deliver preventive, diagnostic, and treatment services (Canadian Medical Association 2019). Virtual care is any interaction between patients and (or) members of their circle of care, occurring remotely, using any forms of communication or information technologies to achieve patient care (Shaw et al. 2018). Despite a large evidence base demonstrating equivalency with in-person mental health care across many diagnoses and evidence-based interventions (Hilty et al. 2013; Hubley et al. 2016; Langarizadeh et al. 2017), prior to COVID-19 virtual modalities had low rates of adoption (Canadian Medical Association 2019). In a recent study in Ontario, for example, <1% of adult patients in need received care via telepsychiatry, and only 7% of psychiatrists provided it (Serhal et al. 2017). This low rate of implementation occurred despite the potential of virtual care to address bridging large geographic distances and maldistribution of heath human resources (Wozney et al. 2017). These challenges contribute to health inequities across the country, with those in rural areas bearing the added barrier of finding funds to travel long distances to access services. Prior to COVID-19, virtual care was a relatively untapped resource. Some of the reasons suggested for this lack of adoption and penetration of virtual care are: poor implementation, health governance and funding that does not contribute to care across regional or provincial boundaries, lack of funding and remuneration for virtual care, and inadequate training for health care providers (Serhal et al. 2017; Cowan et al. 2019).

In response to COVID-19, the rapid implementation of virtual care has been facilitated by relaxed regulations and a quick funding shift in many provinces. Many have rightly lauded the flexibility of this modality of care to allow patients to continued access to many essential health services. For example, recent guidelines recommend a shift to greater use of virtual care in combination with greater flexibility in prescribing practices for opioid agonist therapy during the pandemic (e.g., allowing more flexibility in take home privileges combined with patient monitoring via telemedicine). This would allow the system to respond to the increased demand for access to methadone to manage exacerbations in the opioid epidemic (Bruneau et al. 2020).

According to a recent survey, 38% of people in Canada would prefer to continue receiving virtual health care, and the majority would like to see virtual care continue as an option (Abacus/Canadian Medical Association 2020). And yet there are evident challenges with virtual care that urgently need to be addressed to sustain this initial rapid scaling. The first relates to unintended health equity impacts of virtual care, with many vulnerable groups unable to access care (Crawford and Serhal 2020) amplifying mental health disparities that predated COVID-19. The second has to do with the implementation and integration of virtual care at both local and health systems levels, made more challenging because of pre-existing fragmentation and poor integration of health services.

We need to shift our thinking and approaches from the urgent response to the pandemic to sustainability and integration. There are opportunities here to finally harness the underused potential of virtual care, granting more freedom and choice to persons accessing mental health care. While

virtual care options were critical to maintaining access to services, as we move out of the acute crisis phase, we need to attend to the quality of care provided and whether it meets the needs of patients, families, and communities. Quality of care is as important in virtual care as it is in face-to-face care.

Of particular importance is ensuring digital health equity. While virtual care can increase access, it may pose barriers related to other social and structural inequities, making virtual care inaccessible or ineffective for groups who are experiencing poverty or homelessness, or who have poor digital literacy skills (Levesque et al. 2013; Crawford and Serhal 2020).

Recommendation 10: That the federal government, in conjunction with provincial and territorial governments, track digital health equity and improve funding and infrastructure to create virtually connected communities.

Establishing a continuum of virtual care—person-centred integration across the health system

Often when we speak of virtual care, we only consider care at the provider–patient level of care. Technology within health care is part of an ecosystem of care that includes not only the organizational setting, but also all stakeholders, community, health systems, and governments (Wiljer et al. 2020). As with other health services in Canada, provincial and regional funding and governance makes integration across health systems challenging. Virtual care directly challenges this status quo because of the capacity to easily provide care across jurisdictional lines. However, providers are faced with a complex system of jurisdictions, licensures, and regulators to navigate. Poor integration leads to poor care transitions and poor follow-up. We need to plan systems of virtual care that ensure an acceptable, efficacious, and efficient blend of in-person and virtual care. Navigating care, transitioning between care providers and settings, and receiving appropriate follow-up all require systems planning.

Virtual care can facilitate the delivery of collaborative or integrated care across distance, integrating mental health providers into primary care teams. We can start thinking about digital health and virtual care as the collection of support tools (Fortney et al. 2013; Adaji and Fortney 2017; Hilty et al. 2018) and technology that can provide care along the continuum of health including prevention, diagnosis, and treatment. Stepped care provides patients and primary care providers access to increasing levels of care based upon need. Preliminary research shows the feasibility and value of these models, which can also introduce efficiencies. Further research into and funding of these models of care, including studies on return on investment, is critical to the penetration of virtual care, and to systems integration.

Recommendation 11: That the federal, provincial and territorial Governments ensure that systems, including technology, records, professional licensure, and funding are harmonized and interoperable to support integration across points of care and across the health system in Canada.

Most provinces have provided temporary reimbursement or billing codes to physicians for the practice of telemedicine during COVID-19, including for telepsychiatry, and have transferred most care by nonphysicians to digital care. Funding will be critical to sustainability, and patients will likely demand ongoing access. But funding is also needed at program and organizational levels to support the administration of virtual care. Economic analysis of different models of care will be important to determine the relative value of virtual care. A recent study, a cost comparison between telepsychiatry, in-person care, and a travel subsidy program for patients found telepsychiatry to be the most economical (Serhal et al. 2020). Virtual care must be covered in a systematic way within health professions education at all stages of training and continuing professional development.

Virtual care can also be used as to establish alternative models of care such as paraprofessionals delivering care (McGrath et al. 2011) and communities of learning and practice that can facilitate the learning and evidence-based practice of providers (Sockalingam et al. 2018).

Recommendation 12: That the provincial and territorial governments develop stable funding models for virtual mental health care with remuneration aligned to in-person care, including funding for collaborative, indirect care and intervention models that employ peers and paraprofessionals.

Recommendation 13: That training in the implementation of virtual care become standard for all mental health professionals in their education and via continuing education.

Prevention

Despite a longstanding call to governments and health systems from the World Health Organization (WHO 2004) and the Institute of Medicine (Muñoz et al. 1996) to provide a more proactive and preventative approach to mental health, our policies and practices in Canada remain largely reactive. Primary preventative interventions can be effective and cost effective (WHO 2004; van Zoonen et al. 2014; Furber et al. 2015; Arango et al. 2018; Carbone 2020). And yet, Canada invests very little in the primary prevention in mental health, despite indications that our current approach is not sustainable (Roberts and Grimes 2011).

Mental health prevention strategies as a response to COVID-19 are needed to flatten the cost and alter the curve (Carbone 2020; Moreno et al. 2020). Prevention aims to reduce the incidence, prevalence, and recurrence of mental disorders and addictions and their associated disabilities. Interventions are based on modifying known risks, and strengthening capacity to cope, and can be understood as: (*i*) universal prevention, applied to entire populations; (*ii*) specific prevention, aimed at groups with specific risk factors; or (*iii*) indicated prevention for individuals who are experiencing current or recurrent symptoms or diagnoses (Muñoz et al. 1996). The Mental Health Commission of Canada, and other health advocacy groups, support the idea that the continuum of care should also include health promotion and illness prevention through virtual means (Mental Health Commission of Canada 2014).

Secondary prevention may also be achieved through virtual care. Keeping people with mental illness connected and connected to care virtually, through programs such as remote monitoring, virtual communities of care, etc., can also reduce relapse. Suicide prevention is another obvious target for virtual intervention. The promise of these interventions is great because they can impact many people in a cost-effective manner; however, they are relatively new and require greater research and evaluation.

Recommendation 14: That the federal government undertake a national task force on the prevention of mental illness and the promotion of mental health and wellness with special reference to pandemics and similar national emergencies.

Detrimental behaviour

Although compliance with the restrictions posed by COVID-19 has varied during the course of the pandemic, there is an important subgroup of about 20% of the population, that have psychological characteristics that influence them to disregarded public health demands and may present serious barriers to future public health initiatives as the pandemic continues. In April 2020, about 20% of adults worldwide were failing to comply with public health viral containment measures like physical distancing (Lavoie 2020). Nonadherence is higher among males (DeGrace et al. 2020; Litton 2020) and among younger people (Lavoie 2020; Moore et al. 2020).

Major epidemics and pandemics are managed by (*i*) risk communication (i.e., providing information to the public about the outbreak and how people can protect their health and safety), (*ii*) vaccines and antiviral therapies (if or when available), (*iii*) hygiene practices (e.g., washing hands, wearing facial masks), and (*iv*) physical distancing (e.g., staying 2 m apart). Willingness to be vaccinated is a major issue affecting the success of vaccination programs. Most people do not adhere to vaccination recommendations (Taylor 2019). Data from Taylor and Asmundson's CIHR funded multi-wave population-representative survey of approximately 7000 Canadian and US residents indicates that 20% would not get a COVID-19 vaccine once it is available (Taylor et al. 2020e). There may be hesitation to be vaccinated because concerns over safety of the vaccine, a fear of needles, or beliefs that vaccination programs infringe on civil liberties.

Psychological factors play a vital role in the success of each of these methods (Taylor 2019). Willingness to participate in activities such as hygiene practices and physical distancing are critical in the mitigation of viral spread. Unfortunately, many people do not adhere to handwashing recommendations (Pfattheicher et al. 2018). During the 2009 H1N1 pandemic, people who viewed themselves as having a low risk of infection were less likely to wash their hands (Gilles et al. 2011). Likewise, many people fail to adhere to social distancing recommendations. During the 2009 H1N1 pandemic, many in the UK and US (79% and 44%, respectively) made no effort to avoid being near someone who had influenza-like symptoms (SteelFisher et al. 2012). In the context of COVID-19 there have also been challenges with respect to hygiene practices and physical distancing, with a substantial number of Canadians and Americans failing or refusing to follow recommendations (S. Taylor et al., unpublished data).

Psychological factors, including amongst other things, low perceived vulnerability to threat and unrealistic over-optimism bias, may play a major role in these disease-spreading behaviours. In such cases, getting people to adhere to recommendations that ultimately diminish infection rates and mortality—getting vaccinated, following recommended hygiene practices, physical distancing—may require public health officials to take a strategic approach to messaging that calls on the public's altruistic sense, that is, messages that emphasize that a person should be doing these things not for themselves but to protect potentially vulnerable family members, friends, and neighbours (World Health Organization Writing Group 2006; Taylor 2019).

Personality characteristics also appear to be associated with greater nonadherence. For example, impulsivity (Baptist-Mohseni et al. 2020) and sensation seeking (DeGrace et al. 2020) have both been associated with higher levels of nonadherence to public health COVID-19-prevention strategies. Moreover, higher sensation seeking in males has been shown to help explain gender differences in nonadherence (DeGrace et al. 2020). Again, public health messaging and prevention programming may need to be targeted toward these higher-risk groups.

Parenting and home schooling

Public health policy response to the pandemic closed schools and workplaces, leaving families "sheltering in place", often in close quarters, with parents facing far greater home responsibilities than ever before, including homeschooling their children. In April of 2020, UNESCO (2020) data showed that more than 90% of children around the world were out of school. Parents faced mandatory homeschooling often with little support from the educational system, while many also struggled to work from home with heightened uncertainty and stress about their children's education, household finances, and family health. Parents were in an impossible situation (Lyons 2020; Mandel 2020) because of conflict between the demands of work and home, role strain that contributes to mental health problems and addictive behaviours (e.g., Abbey et al. 1993). The mental health consequences of the

pandemic are predicted to be especially severe for families, even more so for women and children (Brooks et al. 2020; Wenham et al. 2020).

The consequences of this confluence of forces on family well-being intersect with pre-existing social inequities. For example, the effects of having children at home during the pandemic and of homeschooling appear to be amplified for women (Rodriguez et al. 2020), potentially due to traditional gender roles where women still bear most of the burden of household chores and childcare. Adding the work of homeschooling, COVID-19 has compounded pre-existing gender inequalities in household labour (UNSDG 2020). Recent articles, including Minello (2020), suggested that increased household workload in recent pandemic times has largely fallen to women, validating predictions from UNESCO (2020) and other organizations. A recent largescale survey in the US (Miller 2020) showed that women do most of the homeschooling, with similar data emerging in Canada (Elgendi et al. 2020). Further, higher levels of COVID-related psychological distress were recently associated with greater drinking, particularly among women, providing evidence for important gender differences (Rodriguez et al. 2020).

COVID-19 is also exacerbating pre-existing educational inequalities (Andrew et al. 2020). Parents with higher levels of education and income had more resources offered by schools during COVID-19-related shutdowns, even within the public education system (Andrew et al. 2020). Another study in the US showed that Black, Native American, and Latino students had less access to internet connectivity, electronic devices, and quality virtual learning programs during the pandemic (Winter 2020). School closures place additional strains on disadvantaged families who may rely on schools for more than just education (e.g., meal programs) (Dooley et al. 2020).

Children are a vulnerable group. With school closures, children cannot access the first place that they would normally seek help for psychological distress: the school (Sellers et al. 2019). As such, parents' effectiveness in maintaining their own mental health may be even more important to children's mental health during pandemic times. And, with mandatory homeschooling increasing family conflict (Elgendi et al. 2020), observing parental conflict due to homeschooling (e.g., about division of the homeschooling workload) is likely to negatively affect children's mental health, given established adverse effects of parental conflict on children's psychological distress (Barletta and O'Mara 2006). Additionally, parent–child conflict may increase with mandatory homeschooling as children resist parents taking on the role of teacher. As one 9-year-old told CBC's Cross-Country Checkup, "It's horrible to have your parent as a teacher because there's no difference between school and home" (CBC Radio One 2020).

Parenting through a pandemic has mental health consequences. Recent data from the UK found that adults with children in the home during the COVID-19 lockdown were far more likely to suffer anxiety and depression than were those without children (Shevlin et al. 2020). In another study of 754 adults in the US, having children at home during the lockdown was associated with increased alcohol use (Rodriguez et al. 2020). This effect is the reverse of that evidenced in nonpandemic times in which having children is a protective factor against heavy drinking (Bowden et al. 2019).

Homeschooling mandated in response to a pandemic is a unique context (Dalton et al. 2020; Holmes et al. 2020; Lee 2020), about which there is little associated evidence. Most of what we know about the effects of homeschooling on parents and children comes from research outside of the pandemic on voluntary homeschooling. During the recent shutdowns, a study was conducted with 760 Canadian couples in June of 2020 (Elgendi et al. 2020); participants were asked to retrospectively report on the month of April 2020, close to the time when schools were first closed. After controlling for parental age, those homeschooling children (n = 203 couples) reported less optimism, more role strain, and more cannabis use to cope than those without children at home. In addition, more hours spent

homeschooling was associated with greater anxiety, depression, COVID-related traumatic stress, and more frequent cannabis use. There were also some gender differences observed with greater effects of increased hours that mothers (vs. fathers) spent homeschooling on the frequency of drinking by both parents. These pilot data with 203 couples homeschooling children illustrate the effects that mandatory homeschooling during a pandemic has on parents' psychological well-being (Elgendi et al. 2020). These findings are cause for concern given that increased psychological distress and increased substance use among homeschooling parents is likely to impede their ability to cope and support their families in these challenging times.

Unfortunately, there is little research yet conducted to address the impacts of mandatory homeschooling on children's mental health. However, we do know that the COVID-19 pandemic more generally is having an adverse impact on children's mental health. Data from China show increased rates of both depression and anxiety in children during the first COVID-19 outbreak (Dalton et al. 2020), perhaps due at least in part to exposure to increased stress in their parents.

Going into the 2020–2021 academic year with the pandemic ongoing, jurisdictions have been struggling with how to handle schooling of the nation's children, given predictions of future waves of COVID-19 (Scher 2020), as has happened elsewhere around the world (Bensadoun 2020; Euronews 2020; Gutiérrez and Kirk 2020). According to a recent Kaiser Family Foundation report (Michaud and Kates 2020), most countries that have reopened schools have not experienced consequent COVID-19 outbreaks, but most of those countries had low community transmission rates. Some countries, including Canada, did experience school-based outbreaks upon school reopening requiring schools to close a second time (Michaud and Kates 2020). This implies that jurisdictions reopening schools must carefully prepare for the very real possibility that they may need to close again in the event of an outbreak. Indeed, going into the 2020–2021 academic year, mandatory homeschooling is included in most planned responses to predicted second waves. And yet, with this option in hand, we are left with a core question: Is it better to keep schools closed to prevent viral spread at the expense of the mental health costs to families and to our economies? Or should we open schools doing our best to ensure public health strategies are followed within the schools? When schools are opened, efforts to reduce viral transmission must be implemented. These methods include ensuring physical distancing within the classroom through smaller class sizes; mandatory mask wearing by children, teachers, and support staff; alternating days of learning at school vs. at home; or alternating half days of learning at school among other options. Such efforts could reduce viral spread as well as stress on families many of whom are anxious about appropriate public health measures being taken as children return to schools (Kroshus et al. 2020).

As we consider the potential options for schooling children, we hope this report shines a spotlight on the very real mental health consequences on families of requiring parents to homeschool. These consequences include evidence of increased levels of role conflict between demands of home and work, increased substance use, and heightened depression and anxiety, amongst other adverse impacts. Many of these impacts may be lasting, for example with increased substance use often continuing beyond pandemic times. We need to weigh these mental health consequences against the potential benefits to physical health of school closures. Closing schools has a very real cost to families and one that we need to consider in public discussion and policy making. Returning children to school will be important to our nation's economic recovery, including from the "she-cession" with women disproportionately impacted economically by COVID-19 (Queisser et al. 2020).

The main arguments against returning children to schools are concerns for children's health and concerns that infected children may carry the virus home to family members or infect teachers and school support staff. The recent review by the Kaiser Family Foundation (Michaud and Kates 2020) concluded that, although children are much less likely than adults to become severely ill, they can

transmit the virus to others. This suggests that if children are to be returned to schools, extraordinary efforts will be required to ensure that schools closely follow public health recommendations (e.g., adequate physical distancing, mask wearing, and frequent handwashing). These efforts will be incredibly difficult to implement, particularly for younger children who may not understand the public health context and also for adolescents who have been particularly unlikely to adhere to public health recommendations (Moore et al. 2020). Some jurisdictions have considered enhancing physical distancing between children within schools through either part days or oscillating days (CBC 2020; Rocca and Dhanraj 2020; The Canadian Press 2020). Such policies would still require families to partially homeschool with unknown consequences to family well-being.

Offering a choice of schooling option to parents does not solve the debate. In a recent US survey in June 2020 (Kroshus et al. 2020), 31% of parents reported they would keep their child home even if in-person schooling were provided. Those more likely to want to keep children at home had lower incomes, greater rates of unemployment, more flexible jobs, increased fears of COVID-19, fewer perceived challenges to homeschooling, and lower confidence in schools (Kroshus et al. 2020). However, many parents do not have the luxury of flexibility within their jobs or the resources to enable children to engage in virtual learning (Dooley et al. 2020) and so voluntary homeschooling is simply not an option for many families. Jurisdictions must resource increased educational and mental health supports to parents in the event another period of mandatory homeschooling should be required.

A further complication is that the return to school protocols often are not friendly to children with neurodevelopmental challenges and will often preclude their return to school. This will leave them at greater risk of falling further behind and their parents at greater risk of the dramatically increased stress of homeschooling their children.

Recommendation 15: That provinces and territories should attempt to keep children in school and carefully weigh the cost/benefit ratio of closing schools in the event of another wave of COVID-19.

Recommendation 16: That the federal, provincial and territorial governments adequately fund efforts to minimize viral transmission within schools to reduce the chances that children will become ill and (or) spread the virus to their teachers, school support staff, and family members.

Recommendation 17: That, should schools need to close again due to second or more wave(s) of the virus, parents be better supported in the education of their children at home. This includes supporting the increased mental health service needs of parents during mandatory homeschooling.

Recommendation 18: That if schools close again, provincial and territorial governments have mental health and substance use supports ready to stabilize family well-being using the vehicles used to deliver school curriculum to families.

Parenting and the unintended consequences of universal COVID-19 restrictions on vulnerable populations

The impact of the unintended consequences of the COVID-19 pandemic response on vulnerable populations and their families related to social and physical distancing policies remain unknown. One example includes the vulnerability of neonatal populations and their families and potential adverse effects of uniform pandemic response measures. The impact on persons in extended care homes has been treated in "Restoring Trust: COVID-19 and The Future of Long-Term Care" (Estabrooks et al. 2020) and is not repeated here.

Nearly 400 000 babies are born in Canada each year (Government of Canada 2020). Of these, approximately 8% will be born preterm (<37 weeks gestational age), with the majority requiring neonatal intensive care and 10% of babies overall are admitted to neo-natal ICU (NICU), equating to 30 000–40 000 Canadian babies requiring hospital care annually (Government of Canada 2020). Babies born extremely preterm are the most vulnerable, but even those delivered one to two weeks early are at risk for immediate and long-term negative outcomes, including developmental delays, social, emotional, and behavioural problems (Moster et al. 2008; Woythaler et al. 2019). As a result, prematurity is the leading cause of infant disability and death, costing the Canadian health system in excess of $8 billion annually, with the length of stay over 100 d for the sickest and smallest infants (Lee et al. 2020).

Beyond infant outcomes, there is strong evidence that the parents of these infants report higher levels of immediate stress, anxiety, depression, posttraumatic stress, and greater adverse parenting outcomes than parents of healthy newborns (Roque et al. 2017; Schecter et al. 2020). To improve the outcomes of vulnerable infants and their families and ease health care system burden, strong parental presence and education along with family integrated interventions have been shown to be a beneficial component of care in the NICU (O'Brien et al. 2018a, 2018b; Cheng et al. 2019; Franck and O'Brien 2019; Tandberg et al. 2019).

Although a concern in newborn infants, COVID-19 appears to be a very mild disease that is usually asymptomatic in this population. To date, evidence supports the lack of vertical transmission of the coronavirus during pregnancy (Choi et al. 2020; Qiu et al. 2020). However, in contrast to adults, infants and children under 10 only account for 1% of COVID-19 cases (Wu and McGoogan 2020). In Wuhan, only three confirmed cases of COVID-19 have been identified in neonates, with all infected neonates having mild or no symptoms (Choi et al. 2020). These milder cases suggest that there may be a mechanism that regulates how the immune system interacts with the virus in the respiratory system in children potentially pointing to the host adaptive response involvement in cases of more severe illness.

Despite this apparent reduced risk, restricted parental contact and extensive infection prevention and control measures have been instituted in neonatal units across Canada and worldwide to prevent COVID-19. It is not known if such approaches are effective nor if they lead to unwarranted side effects. Specifically, the development and maturation of neonatal gut microbiome are largely determined by maternal–neonatal microbial exchange and it plays an integral role in the immune and metabolic health of the infants (Prince et al. 2014; Mueller et al. 2015). Having limited contact with the mother and being exposed to other bacterial sources is likely to increase the chances of the baby being colonized with pathogenic organisms. There is some evidence that in addition to numerous other life saving benefits, the provision of breastmilk may protect newborns from contracting COVID-19, yet institution of universal public health social distancing policies restricting parental presence has been linked with reduced breastfeeding (Dong et al. 2020).

The mental health of at-risk parents of sick newborns has been exacerbated by universal social distancing restrictions that have not taken into consideration the potential risk and consequences in this vulnerable population (Mahoney et al. 2020). No parent wants to be separated from their baby. This is especially true for parents of premature or sick infants requiring hospitalization in a NICU, already with heightened risk for adverse mental health outcomes. Yet, given the restrictions of the COVID-19 global pandemic response, this is the reality for many mothers and almost every father of our smallest and extremely vulnerable patients. Changes to care standards at most Canadian NICUs do not permit both parents to remain with their infant for the duration of stay if they are admitted. Partners are not permitted to return to the hospital following attendance at the birth. Mothers who must leave to care for other children or relatives at home, are unable to return to the

NICU. As a result, up to half of infants receiving care may not have a parent present due to COVID-19 restrictions. If one parent is allowed to remain in the NICU with their infant, they lack access to their usual social support systems, their partners have little engagement, and usual in-person support, education delivery, and discharge teaching has been disrupted.

Environmental restrictions and modifications have been put in place to prevent COVID-19 in babies, families, and staff based on universal public health social distancing policies. They may exacerbate mental health outcomes in already at-risk parents and adversely impact later infant development and emotional well-being and may promote dysbiosis and abnormal immune system development of babies in the NICU. To prevent or limit the spread of COVID-19, the majority of NICUs have limited or eliminated parental presence and contact with their infant leaving most infants with limited or no parental contact during their hospitalization. The tension between protection of infants and caregivers from serious infection and the desire to maximize the developmental outcome of newborns and reduce parent mental health concerns forces consideration of several options for restricted interaction, rather than relying on a universal approach. While neonatal COVID-19 disease appears relatively uncommon, the risk–benefit calculation for restricting NICU access remains unclear.

Recommendation 19: That provinces should attempt to keep high risk families of vulnerable neonates together and carefully weigh the cost–benefit ratio of restricting family presence during neonatal intensive care admission in the event of another wave of COVID-19.

Recommendation 20: That the provincial and federal governments adequately fund efforts to determine the impact of family presence restriction on family and infant mental well-being and health outcomes.

Recommendation 21: That if hospital family restrictions are implemented again, provincial governments have mental health supports ready to stabilize family well-being using virtual care delivery similar to school curriculum to families.

Summary

The COVID-19 pandemic has had a detrimental effect on mental health of people in Canada, but the impact has been variable, impacting those facing pre-existing structural inequities hardest. Those living in poverty and in some socially stratified groups facing greater economic and social disadvantage, such as some racialized and some Indigenous groups and those with preexisting mental health problems, have suffered the most. Some occupational groups have been more exposed to the virus and to psychological stress with the pandemic. The mental health care system was already overextended and under resourced. The pandemic has exacerbated the problems. The care system responded by a massive move to virtual care. The future challenge is for Canada to strengthen our knowledge base in mental health, to learn from the pandemic and provide all in Canada the support they need to fully participate in and contribute to Canada's recovery from the pandemic.

Land acknowledgement

The headquarters of the Royal Society of Canada is located in Ottawa, the traditional and unceded territory of the Algonquin nation.

Background on the Policy Briefing Report process

Established by the President of the Royal Society of Canada in April 2020, the RSC Task Force on COVID-19 was mandated to provide evidence-informed perspectives on major societal challenges in response to and recovery from COVID-19.

The Task Force established a series of Working Groups to rapidly develop Policy Briefings, with the objective of supporting policy makers with evidence to inform their decisions.

Notes from the authors

In this Policy Briefing, mental health should be understood to be inclusive of substance use and addictions. The opinions expressed in this report are those of the authors and do not necessarily represent those of the Royal Society of Canada.

Author contributions

PJM conceived and designed the study. GJGA, CB, MCB, GB, AC, SHD, KM, CM, SHS, JS, ST, and MC-Y drafted or revised the manuscript.

Competing interests

The authors have declared that no competing interests exist.

Data availability statement

All relevant data are within the paper.

References

Abacus/Canadian Medical Association. 2020. What Canadians think about virtual health care? Abacus Data [online]: Available from cma.ca/sites/default/files/pdf/virtual-care/cma-virtual-care-publicpoll-june-2020-e.pdf.

Abbey A, Smith MJ, and Scott RO. 1993. The relationship between reasons for drinking alcohol and alcohol consumption: an international approach. Addictive Behaviors, 18: 659–670. PMID: 8178704 DOI: 10.1016/0306-4603(93)90019-6

Adaji A, and Fortney J. 2017. Telepsychiatry in integrated care settings. Focus, 15(3): 257–263. PMID: 31975855 DOI: 10.1176/appi.focus.20170007

Andrew A, Cattan S, Dias MC, Farquharson C, Kraftman L, Krutikova S, et al. 18 May 2020. Learning during the lockdown: real-time data on children's experiences during home learning. Institute for Fiscal Studies, London, UK [online]: Available from bit.ly/2CbSfDV.

Arango C, Díaz-Caneja CM, McGorry PD, Rapoport J, Sommer IE, Vorstman JA, et al. 2018. Preventive strategies for mental health. The Lancet Psychiatry, 5(7): 591–604. PMID: 29773478 DOI: 10.1016/S2215-0366(18)30057-9

Asmundson GJG, and Afifi T. 2019. Adverse childhood experiences: using evidence to advance research, policy, practice and prevention. Elsevier, New York, New York.

Asmundson GJG, Paluszek MM, Landry CA, Rachor GS, McKay D, and Taylor S. 2020. Do pre-existing anxiety-related and mood disorders differentially impact COVID-19 stress responses and coping? Journal of Anxiety Disorders, 74: 102271. PMID: 32673930 DOI: 10.1016/j.janxdis.2020.102271

Baptist-Mohseni N, Stewart SH, Wardell J, DeGrace S, and Keough M. October 2020. Personality as a predictor of adults' poor adherence to public health measures for controlling COVID-19 viral spread:

mediating role of problem drinking. Paper to be presented at Dalhousie University Psychiatry Research Day, Halifax, Nova Scotia.

Barletta J, and O'Mara B. 2006. A review of the impact of marital conflict on child adjustment. Australian Journal of Guidance and Counselling, 16: 91–105. DOI: 10.1375/ajgc.16.1.91

Bensadoun E. 27 June 2020. South Korea has entered 2nd wave. Global News [online]: Available from bit.ly/3gzebI4.

Bombay A, Matheson K, and Anisman H. 2011. The impact of stressors on second generation Indian residential school survivors. Transcultural Psychiatry, 48(4): 367–391. PMID: 21911507 DOI: 10.1177/1363461511410240

Bowden JA, Delfabbro P, Room R, Miller C, and Wilson C. 2019. Parental drinking in Australia: does the age of children in the home matter? Drug and Alcohol Review, 38: 306–315. PMID: 30565763 DOI: 10.1111/dar.12875

Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. 2020. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. The Lancet, 395: 912–920. DOI: 10.1016/S0140-6736(20)30460-8

Bruneau J, Rehm J, Wild TC, Wood E, Sako A, Swansburg J, et al. 15 May 2020. Telemedicine support for addiction services: national rapid guidance document. Canadian Research Initiative in Substance Misuse (CRISM), Montreal, Quebec. 47 p. Version 1 [online]: Available from crism.ca/wp-content/uploads/2020/05/CRISM-National-Rapid-Guidance-Telemedicine-V1.pdf.

CAMH. 2020. COVID-19 national surveys on mental health [online]: Available from camh.ca/en/health-info/mental-health-and-covid-19/covid-19-national-survey.

Canada. 2020. Funding analytics. CIHR investments related to INMHA validated applications by: Jonathan Dench. Analysis requested by Dr. Patrick McGrath through personal communications with Arian Mota. Canadian Institutes of Health Research.

Canadian Life and Health Insurance Association (CLHIA). 2020 [online]: Available from clhia.ca.

Canadian Medical Association. 2019. Virtual care in Canada: discussion paper [online]: Available from cma.ca/sites/default/files/pdf/News/Virtual_Care_discussionpaper_v2EN.pdf.

Carbone SR. 2020. Flattening the curve of mental ill-health: the importance of primary prevention in managing the mental health impacts of COVID-19. Mental Health & Prevention, 19: 200185. PMID: 32566473 DOI: 10.1016/j.mhp.2020.200185

Carling A, and Mankani I. 2020. Systemic inequities increase Covid-19 risk for Indigenous people in Canada. Human Rights Watch [online]: Available from hrw.org/news/2020/06/09/systemic-inequities-increase-covid-19-risk-indigenouspeople-canada.

CBC. 10 June 2020. Alberta return to 'near-normal' classes 2020–21 [online]: Available from bit.ly/2Z3kHkk.

CBC Radio One. May 2020. Cross country checkup. CBC Radio One, Halifax, Nova Scotia.

Cheng C, Franck LS, Ye XY, Hutchinson SA, Lee SK, and O'Brien K. 2019. Evaluating the effect of Family Integrated Care on maternal stress and anxiety in neonatal intensive care units. Journal of Reproductive and Infant Psychology, 1–14. DOI: 10.1080/02646838.2019.1659940

Children's Mental Health Ontario. 2020 [online]: Available from cmho.org/.

Choi S-H, Kim HW, Kang J-M, Kim DH, and Cho EY. 2020. Epidemiology and clinical features of coronavirus disease 2019 in children. Clinical and Experimental Pediatrics, 63(4): 125–132. PMID: 32252139 DOI: 10.3345/cep.2020.00535

Cohen KR, and Hosseiny F. 10 October 2019. Election 2019: Let's really talk about mental health. iPolitics.

Conference Board of Canada/Mental Health Commission of Canada. 2020. Survey on the impact of COVID-19 on mental health [online]: Available from conferenceboard.ca/focusareas/health/how-has-covid-19-impacted-canadians-mental-health.

Cowan KE, McKean AJ, Gentry MT, and Hilty DM. 2019. Barriers to use of telepsychiatry: clinicians as gatekeepers. Mayo Clinic Proceedings, 94(12): 2510–2523. PMID: 31806104 DOI: 10.1016/j.mayocp.2019.04.018

Crawford A, and Serhal E. 2020. Digital health equity and COVID-19: the innovation curve cannot reinforce the social gradient of health. Journal of Medical Internet Research, 22(6): e19361. PMID: 32452816 DOI: 10.2196/19361

Dalton L, Rapa E, and Stein A. 2020. Protecting the psychological health of children through effective communication about COVID-19. The Lancet Child & Adolescent Health, 4: 346–347. PMID: 32243784 DOI: 10.1016/S2352-4642(20)30097-3

DeGrace S, Keough M, Wardell J, Baptist-Mohseni N, and Stewart SH. October 2020. Sex differences in COVID-19 responses: what is the role of personality? Paper to be presented at Dalhousie University Psychiatry Research Day, Halifax, Nova Scotia.

DEPRESSD Project. 2020. Living systematic review of mental health in COVID-19 [online]: Available from depressd.ca/covid-19-mental-health.

Dong Y, Chi X, Hai H, Sun L, Zhang M, Xie WF, et al. 2020. Antibodies in the breast milk of a maternal woman with COVID-19. Emerging Microbes & Infections, 9(1): 1467–1469. PMID: 32552365 DOI: 10.1080/22221751.2020.1780952

Dooley DG, Simpson JN, and Beers NS. 2020. Returning to school in the era of COVID-19 (Editorial). JAMA Pediatrics, 174(11): 1028–1029. DOI: 10.1001/jamapediatrics.2020.3874

Elgendi M, Deacon SH, Rodriguez L, King F, Sherry SB, Meier S, et al. 30 October 2020. A perfect storm: the effects of mandatory homeschooling on parents' mental health and substance use during pandemic lockdown. Paper to be presented at Dalhousie University Psychiatry Research Day, Halifax, Nova Scotia.

Estabrooks CA, Straus SE, Flood CM, Keefe J, Armstrong P, Donner GJ, et al. 2020. Restoring trust: COVID-19 and the future of long-term care in Canada. FACETS, 5: 651–691. DOI: 10.1139/ facets-2020-0056

Euronews. 27 August 2020. Coronavirus second wave? Which countries in Europe are experiencing a resurgence of cases? [online]: Available from euronews.com/2020/08/27/is-europe-having-acovid-19-second-wave-country-by-country-breakdown.

Falk DE, Yi HY, and Hiller-Sturmhöfel S. 2006. An epidemiologic analysis of co-occurring alcohol and tobacco use and disorders: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. Alcohol Research & Health, 29: 162–171. PMID: 17373404

Findlay LC, Arim R, and Kohen D. 2020. Understanding the perceived mental health of Canadians during the COVID-19 pandemic. Health Reports, 31(4): 22–27. PMID: 32644764 DOI: 10.25318/82-003-x202000400003-eng

Fisk M, Livingstone A, and Pit SW. 2020. Telehealth in the context of COVID-19: changing perspectives in Australia, the United Kingdom, and the United States. Journal of Medical Internet Research, 22(6): e19264. PMID: 32463377 DOI: 10.2196/19264

Fortney JC, Pyne JM, Mouden SB, Mittal D, Hudson TJ, Schroeder GW, et al. 2013. Practice-based versus telemedicine-based collaborative care for depression in rural federally qualified health centers: a pragmatic randomized comparative effectiveness trial. The American Journal of Psychiatry, 170(4): 414–425. PMID: 23429924 DOI: 10.1176/appi.ajp.2012.12050696

Franck LS, and O'Brien K. 2019. The evolution of family-centered care: from supporting parent-delivered interventions to a model of family integrated care. Birth Defects Research, 111(15): 1044–1059. PMID: 31115181 DOI: 10.1002/bdr2.1521

Furber G, Segal L, Leach M, Turnbull C, Procter N, Diamond M, et al. 2015. Preventing mental illness: closing the evidence-practice gap through workforce and services planning. BMC Health Services Research, 15(1): 283. DOI: 10.1186/s12913-015-0954-5

Gilles I, Bangerter A, Clémence A, Green EGT, Krings F, Staerklé C, et al. 2011. Trust in medical protection measures in the Swiss public. European Journal of Epidemiology, 26: 203–210. PMID: 21476079 DOI: 10.1007/s10654-011-9577-2

Government of Canada. 2017. Budget 2017: building a strong middle class [online]: Available from budget.gc.ca/2017/home-accueil-en.html.

Government of Canada. 2020. Live births, by month [online]: Available from www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310041501.

Gutiérrez P, and Kirk A. 25 June 2020. 10 countries risking 2nd wave. The Guardian [online]: Available from bit.ly/2ZKbInf.

Hautala D, Sittner K, and Walls M. 2019. Onset, comorbidity, and predictors of nicotine, alcohol, and marijuana use disorders among North American Indigenous adolescents. Journal of Abnormal Child Psychology, 47(6): 1025–1038. PMID: 30515623 DOI: 10.1007/s10802-018-0500-0

Hilty DM, Ferrer DC, Parish MB, Johnston B, Callahan EJ, and Yellowlees PM. 2013. The effectiveness of telemental health: a 2013 review. Telemedicine and e-Health, 19(6): 444–454. PMID: 23697504 DOI: 10.1089/tmj.2013.0075

Hilty DM, Rabinowitz T, McCarron RM, Katzelnick DJ, Chang T, Bauer AM, et al. 2018. An update on telepsychiatry and how it can leverage collaborative, stepped, and integrated services to primary care. Psychosomatics, 59(3): 227–250. PMID: 29544663 DOI: 10.1016/j.psym.2017.12.005

Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. 2020. Research priorities for the COVID-19 pandemic: a call to action for mental health. The Lancet Psychiatry, 7: 547–560. PMID: 32304649 DOI: 10.1016/S2215-0366(20)30168-1

Hubley S, Lynch SB, Schneck C, Thomas M, and Shore J. 2016. Review of key telepsychiatry outcomes. World Journal of Psychiatry, 6(2): 269. PMID: 27354970 DOI: 10.5498/wjp.v6.i2.269

Institute of Medicine. 2001. Crossing the quality chasm: a new health system for the 21th century. DOI: 10.17226/10027

Ipsos. 2019. Eight in ten (82%) Canadians believe that prescription drugs should be covered for everyone regardless of their insurance coverage. [online]: Available from ipsos.com/en-ca/news-polls/canadians-believe-prescription-drugs-should-be-covered-for-everyone.

Katzman MA, Bleau P, Blier P, Chokka P, Kjernisted K, Van Ameringen M, et al. 2014. Canadian clinical practice guidelines for the management of anxiety, posttraumatic stress and obsessive-compulsive disorders. BMC Psychiatry, 14(Suppl. 1): S1. DOI: 10.1186/1471-244X-14-S1-S1

Kidd SA, Gaetz S, and O'Grady B. 2017. The 2015 national Canadian homeless youth survey: mental health and addiction findings. The Canadian Journal of Psychiatry, 62(7): 493–500. PMID: 28372467 DOI: 10.1177/0706743717702076

Koushik NS. 2020. A population mental health perspective on the impact of COVID-19. Psychological Trauma: Theory, Research, Practice, and Policy, 12(5): 529–530. DOI: 10.1037/tra0000737

Kroshus E, Hawrilenko M, Tandon P, and Chistakis DA. 2020. Plans of US parents regarding school attendance for their children in the fall of 2020: a national survey. JAMA Pediatrics, 174(11): 1093–1101. DOI: 10.1001/jamapediatrics.2020.3864

Kumar MB, and Tjepkema M. 2019. Suicide among First Nations people, Métis and Inuit (2011–2016): findings from the 2011 Canadian Census Health and Environment Cohort (CanCHEC). Statistics Canada Catalogue No. 99-011-X [online]: Available from www150.statcan.gc.ca/n1/pub/99-011-x/99-011-x2019001-eng.htm.

Lambert MJ. 2013. Outcomes in psychotherapy: the past and important advances. Psychotherapy, 50: 42–51. PMID: 23505980 DOI: 10.1037/a0030682

Langarizadeh M, Tabatabaei MS, Tavakol K, Naghipour M, Rostami A, and Moghbeli F. 2017. Telemental health care, an effective alternative to conventional mental care: a systematic review. Acta Informatica Medica, 25(4): 240–246. PMID: 29284913 DOI: 10.5455/aim.2017.25.240-246

Lavoie K. 2020. iCARE International COVID-19 Survey: initial findings and recommendations. *In* symposium entitled "Behavioral responses to global pandemics: Lessons (being) learned from COVID-19" (Chair: N McCleary). International Behavioral Trials Network Global 2020 Virtual Conference, 28 May 2020.

Lee J. 2020. Mental health effects of school closures during COVID-19. The Lancet Child & Adolescent Health, 4: 421. PMID: 32302537 DOI: 10.1016/S2352-4642(20)30109-7

Lee SK, Beltempo M, McMillan DD, Seshia M, Singhal N, Dow K, et al. 2020. Outcomes and care practices for preterm infants born at less than 33 weeks' gestation: a quality improvement study. CMAJ, 192(4): E81–E91. PMID: 31988152 DOI: 10.1503/cmaj.190940

Levesque JF, Harris MF, and Russell G. 2013. Patient-centred access to health care: conceptualising access at the interface of health systems and populations. International Journal for Equity in Health, 12(1): 18. PMID: 23496984 DOI: 10.1186/1475-9276-12-18

Litton S. 27 March 2020. Men lag behind women in following social distancing measures, according to survey of Michigan residents by Altarum [online]: Available from alterum.org/COVID/results.

Lyons K. 20 March 2020. It's impossible. The Guardian [online]: Available from bit.ly/2VPzz3F.

Mahoney AD, White RD, Velasquez A, Barrett TS, Clark RH, and Ahmad KD. 2020. Impact of restrictions on parental presence in neonatal intensive care units related to coronavirus disease 2019. Journal of Perinatology, 40: 36–46. PMID: 32859963 DOI: 10.1038/s41372-020-0753-7

Mandel B. 20 April 2020. Distance learning isn't working. The Atlantic [online]: Available from bit.ly/3gyPYBM.

McGrath PJ, Lingley-Pottie P, Thurston C, MacLean C, Cunningham C, Waschbusch DA, et al. 2011. Telephone-based mental health interventions for child disruptive behavior or anxiety disorders: randomized trials and overall analysis. Journal of the American Academy of Child & Adolescent Psychiatry, 50(11): 1162–1172. PMID: 22024004 DOI: 10.1016/j.jaac.2011.07.013

McIntyre RS, and Lee Y. 2020. Projected increases in suicide in Canada as a consequence of COVID-19. Psychiatry Research, 290: 113104. PMID: 32460184 DOI: 10.1016/j.psychres.2020.113104

Mental Health Commission of Canada. 2014. E-mental health in Canada: transforming the mental health system using technology. Mental Health Commission of Canada, Ottawa, Ontario [online]: Available from mentalhealthcommission.ca.

Mental Health Commission of Canada. 2017. Strengthening the case for investing in Canada's mental health system: economic considerations [online]: Available from mentalhealthcommission.ca/sites/default/files/2017-03/case_for_investment_eng.pdf.

Mental Health Commission of Canada. 2019. Newfoundland and Labrador Stepped Care 2.0 e-mental health demonstration project [online]: Available from mentalhealthcommission.ca/sites/default/files/2019-09/emental_health_report_eng_0.pdf.

Michaud J, and Kates J. 29 July 2020. What do we know about children and coronavirus transmission? Kaiser Family Foundation, San Francisco, California [online]: Available from kff.org/coronavirus-covid-19/issue-brief/what-do-we-know-about-children-and-coronavirus-transmission/.

Miller CC. 8 May 2020. Nearly half of men say they do most of the home schooling. 3 percent of women agree. The New York Times [online]: Available from nyti.ms/2AAHryG.

Miller K, Beauvais F, Burnside M, and Jumper-Thurman P. 2008. A comparison of American Indian and non-Indian fourth to sixth graders rates of drug use. Journal of Ethnicity in Substance Abuse, 7: 258–267. PMID: 19042809 DOI: 10.1080/15332640802313239

Minello A. 27 April 2020. The pandemic and the female academic. Nature [online]: Available from go.nature.com/3e62FlC.

Moore RC, Lee A, Hancock JT, Halley M, and Linos E. 2020. Experience with social distancing early in the COVID-19 pandemic in the United States: implications for public health messaging. medRXiv. PMID: 32511643 DOI: 10.1101/2020.04.08.20057067

Moreno C, Wykes T, Galderisi S, Nordentoft M, Crossley N, Jones N, et al. 2020. How mental health care should change as a consequence of the COVID-19 pandemic. The Lancet Psychiatry, 7(9): 813–824. PMID: 32682460 DOI: 10.1016/S2215-0366(20)30307-2

Moster D, Lie RT, and Markestad T. 2008. Long-term medical and social consequences of preterm birth. The New England Journal of Medicine, 359(3): 262–273. PMID: 18635431 DOI: 10.1056/NEJMoa0706475

Mueller NT, Bakacs E, Combellick J, Grigoryan Z, and Dominguez-Bello MG. 2015. The infant microbiome development: mom matters. Trends in Molecular Medicine, 21(2): 109–117. PMID: 25578246 DOI: 10.1016/j.molmed.2014.12.002

Muñoz RF, Mrazek PJ, and Haggerty RJ. 1996. Institute of Medicine report on prevention of mental disorders: summary and commentary. American Psychologist, 51(11): 1116–1122. PMID: 8937259 DOI: 10.1037/0003-066X.51.11.1116

Nanos/Canadian Centre on Substance Use and Addiction. 2020. Boredom and stress drives increased alcohol consumption during COVID-19: NANOS poll summary report [online]: Available from ccsa.ca/boredom-and-stress-drives-increased-alcoholconsumption-during-covid-19-nanos-poll-summary-report.

O'Brien K, Lui K, Tarnow-Mordi W, and Lee SK. 2018a. Breastfeeding data in the Family Integrated Care trial. The Lancet Child & Adolescent Health, 2(4): e5. PMID: 30169303 DOI: 10.1016/S2352-4642(18)30072-5

O'Brien K, Robson K, Bracht M, Cruz M, Lui K, Alvaro R, et al. 2018b. Effectiveness of Family Integrated Care in neonatal intensive care units on infant and parent outcomes: a multicentre, multinational, cluster-randomised controlled trial. The Lancet Child & Adolescent Health, 2(4): 245–254. PMID: 30169298 DOI: 10.1016/S2352-4642(18)30039-7

Ohannessian R, Duong TA, and Odone A. 2020. Global telemedicine implementation and integration within health systems to fight the COVID-19 pandemic: a call to action. JMIR Public Health and Surveillance, 6(2): e18810. PMID: 32238336 DOI: 10.2196/18810

Pfattheicher S, Strauch C, Diefenbacher S, and Schnuerch R. 2018. A field study on watching eyes and hand hygiene compliance in a public restroom. Journal of Applied Social Psychology, 48: 188–194. DOI: 10.1111/jasp.12501

Prince AL, Antony KM, Ma J, and Aagaard KM. 2014. The microbiome and development: a mother's perspective. Seminars in Reproductive Medicine, 32(1): 14–22. PMID: 24390916 DOI: 10.1055/s-0033-1361818

Public Health Agency of Canada. 2018. Key health inequalities in Canada [online]: Available from canada.ca/content/dam/phac-aspc/documents/services/publications/scienceresearch/key-health-inequalities-canada-national-portrait-executivesummary/key_health_inequalities_full_report-eng.pdf.

Qiu H, Wu J, Liang H, Yunling L, Song Q, and Chen D. 2020. Clinical and epidemiological features of 36 children with coronavirus disease 2019 (COVID-19) in Zhejiang, China: an observational cohort study. The Lancet Infectious Diseases, 20(6): 689–696. PMID: 32220650 DOI: 10.1016/S1473-3099(20)30198-5

Queisser M, Adema W, and Clarke C. 22 April 2020. COVID-19, employment and women in OECD countries [online]: Available from bit.ly/2O32OvD.

Remington G, Addington D, Honer W, Ismail Z, Raedler T, and Teehan M. 2017. Guidelines for the pharmacotherapy of schizophrenia in adults. The Canadian Journal of Psychiatry, 62(9): 604–616. PMID: 28703015 DOI: 10.1177/0706743717720448

Roberts G, and Grimes K. 2011. Return on investment mental health promotion and mental illness prevention [online]: Available from secure.cihi.ca/free_products/roi_mental_health_report_en.pdf.

Rocca R, and Dhanraj T. 19 June 2020. Reopening plans for Ontario. Global News [online]: Available from bit.ly/2O1ijEv.

Rodriguez L, Litt D, and Stewart SH. 2020. Drinking to cope with the pandemic: the unique associations of COVID-19-related perceived threat and psychological distress to drinking behaviors in American men and women. Addictive Behaviors, 110: 106532. PMID: 32652385 DOI: 10.1016/j.addbeh.2020.106532

Roque ATF, Lasiuk GC, Radünz V, and Hegadoren K. 2017. Scoping review of the mental health of parents of infants in the NICU. Journal of Obstetric, Gynecologic & Neonatal Nursing, 46(4): 576–587. PMID: 28506679 DOI: 10.1016/j.jogn.2017.02.005

Schecter R, Pham T, Hua A, Spinazzola R, Sonnenklar J, Li D, et al. 2020. Prevalence and longevity of PTSD symptoms among parents of NICU infants analyzed across gestational age categories. Clinical Pediatrics, 59(2): 163–169. PMID: 31833404 DOI: 10.1177/0009922819892046

Scher I. 16 June 2020. Beijing closes schools for 2nd wave. Business Insider [online]: Available from bit.ly/31LJr2q.

Sellers R, Warne N, Pickles A, Maughan B, Thapar A, and Collishaw S. 2019. Cross-cohort change in adolescent outcomes for children with mental health problems. Journal of Child Psychology and Psychiatry, 60: 813–821. PMID: 30989670 DOI: 10.1111/jcpp.13029

Serhal E, Crawford A, Cheng J, and Kurdyak P. 2017. Implementation and utilisation of telepsychiatry in Ontario: a population-based study. The Canadian Journal of Psychiatry, 62(10): 716–725. PMID: 28541753 DOI: 10.1177/0706743717711171

Serhal E, Lazor T, Kurdyak P, Crawford A, de Oliveira C, Hancock-Howard R., et al. 2020. A cost analysis comparing telepsychiatry to in-person psychiatric outreach and patient travel reimbursement in Northern Ontario communities. Journal of Telemedicine and Telecare, 26(10): 607–618. PMID: 31234715 DOI: 10.1177/1357633X19853139

Shaw J, Jamieson T, Agarwal P, Griffin B, Wong I, and Bhatia RS. 2018. Virtual care policy recommendations for patient-centred primary care: findings of a consensus policy dialogue using a nominal group technique. Journal of Telemedicine and Telecare, 24(9): 608–615. PMID: 28945161 DOI: 10.1177/1357633X17730444

Shevlin M, McBride O, Murphy J, Miller JG, Hartman TK, Levital L, et al. 2020. Anxiety, depression, traumatic stress and COVID-19-related anxiety in the UK general population during the COVID-19 pandemic. BJPsych Open, 6(6): e125. PMID: 33070797 DOI: 10.1192/bjo.2020.109

Smetanin P, Stiff D, Briante C, Adair CE, Ahmad S, and Khan M. 2011. The life and economic impact of major mental illnesses in Canada: 2011–2041. Prepared for the Mental Health Commission of

Canada [online]: Available from mentalhealthcommission.ca/sites/default/files/MHCC_Report_Base_Case_FINAL_ENG_0_0.pdf.

Sockalingam S, Arena A, Serhal E, Mohri L, Alloo J, and Crawford A. 2018. Building provincial mental health capacity in primary care: an evaluation of a Project ECHO Mental Health Program. Academic Psychiatry, 42(4): 451–457. PMID: 28593537 DOI: 10.1007/s40596-017-0735-z

Statistics Canada. 2012. Mental health-related disabilities among Canadians aged 15 years and older, 2012 [online]: Available from www150.statcan.gc.ca/n1/pub/89-654-x/89-654-x2014002-eng.htm.

Statistics Canada. 2019. Mental health care needs, 2018 [online]: Available from www150.statcan.gc.ca/n1/pub/82-625-x/2019001/article/00011-eng.htm#:~:text=8%25%29%20Canadians%20needed%20mental%20health%20care%20in%202018%2C,therapy%20were%20the%20most%20likely%20to%20be%20unmet.

SteelFisher GK, Blendon RJ, Ward JR, Rapoport R, Kahn EB, and Kohl KS. 2012. Public response to the 2009 influenza A H1N1 pandemic: a polling study in five countries. The Lancet Infectious Diseases, 12(11): 845–850. PMID: 23041199 DOI: 10.1016/S1473-3099(12)70206-2

Tandberg BS, Flacking R, Markestad T, Grundt H, and Moen A. 2019. Parent psychological wellbeing in a single-family room versus an open bay neonatal intensive care unit. PLoS ONE, 14(11): e0224488. PMID: 31689307 DOI: 10.1371/journal.pone.0224488

Taylor S. 2019. The psychology of pandemics: preparing for the next global outbreak of infectious disease. Cambridge Scholars Publishing, Newcastle upon Tyne, UK.

Taylor S, Landry CA, Paluszek MM, and Asmundson GJG. 2020a. Reactions to COVID-19: differential predictors of distress, avoidance, and disregard for social distancing. Journal of Affective Disorders, 277: 94–98. DOI: 10.1016/j.jad.2020.08.002

Taylor S, Landry CA, Paluszek MM, Fergus TA, McKay D, and Asmundson GJG. 2020b. COVID stress syndrome: concept, structure, and correlates. Depression and Anxiety, 37: 706–714. DOI: 10.1002/da.23071

Taylor S, Landry CA, Paluszek MM, Fergus TA, McKay D, and Asmundson GJG. 2020c. Development and initial validation of the COVID Stress Scales. Journal of Anxiety Disorders, 72: 102232. DOI: 10.1016/j.janxdis.2020.102232

Taylor S, Landry CA, Rachor GS, Paluszek MM, and Asmundson GJG. 2020d. Fear and avoidance of healthcare workers: an important, under-recognized form of stigmatization during the COVID-19 pandemic. Journal of Anxiety Disorders, 75: 102289. DOI: 10.1016/j.janxdis.2020.102289

Taylor S, Landry CA, Paluszek MM, Rachor GS, and Asmundson GJG. 2020e. Worry, avoidance, and coping during the COVID-19 pandemic A comprehensive network analysis. Journal of Anxiety Disorders, 76: 102327.

The Canadian Press. 3 June 2020. Mix of online, in-class learning could continue in September: B.C. education minister. CBC [online]: Available from bit.ly/3gyQ3W6.

Toronto. 2020. Status of cases in Toronto [online]: Available from toronto.ca/home/covid-19/covid-19-latest-city-of-toronto-news/covid-19-status-of-cases-in-toronto/.

Torous J, Jän Myrick K, Rauseo-Ricupero N, and Firth J. 2020. Digital mental health and COVID-19: using technology today to accelerate the curve on access and quality tomorrow. JMIR Mental Health, 7(3): e18848. PMID: 32213476 DOI: 10.2196/18848

Tsai J, and Wilson M. 2020. COVID-19: a potential public health problem for homeless populations. The Lancet Public Health, 5(4): e186–e187. PMID: 32171054 DOI: 10.1016/S2468-2667(20)30053-0

UNESCO. 2020. COVID-19 educational disruption and response [online]: Available from bit.ly/38BQJXN.

United Nations Office on Drugs and Crime (UNODC). 12 May 2020. Research brief: COVID-19 and the drug supply chain: from production and trafficking to use [online]: Available from unodc.org/documents/data-and-analysis/covid/COVID-19-and-drug-supplychain-Mai2020.pdf.

UNSDG. 2020. Policy brief: the impact of COVID-19 on women. UNSDG, New York City, New York [online]: Available from bit.ly/2D5YOIz.

van Zoonen K, Buntrock C, Ebert DD, Smit F, Reynolds CF III, Beekman AT, et al. 2014. Preventing the onset of major depressive disorder: a meta-analytic review of psychological interventions. International Journal of Epidemiology, 43: 318–329. PMID: 24760873 DOI: 10.1093/ije/dyt175

Vigo DV, Kestel D, Pendakur K, Thornicroft G, and Atun R. 2019. Disease burden and government spending on mental, neurological, and substance use disorders, and self-harm: cross-sectional, ecological study of health system response in the Americas. The Lancet Public Health, 4(2): e89–e96. PMID: 30446416 DOI: 10.1016/S2468-2667(18)30203-2

Waddell C, McEwan K, Shepherd CA, Offord DR, and Hua JM. 2005. A public health strategy to improve the mental health of Canadian children. The Canadian Journal of Psychiatry, 50(4): 226–233. PMID: 15898462 DOI: 10.1177/070674370505000406

Wenham C, Smith J, Morgan R, and the , Gender and COVID-19 Working Group. 2020. COVID-19: the gendered impacts of the outbreak. The Lancet, 395: 846–848. DOI: 10.1016/S0140-6736(20)30526-2

WHO. 2004. Prevention and promotion in mental health: prevention of mental disorders effective interventions and policy options. Summary Report. WHO, Geneva, Switzerland.

Wiljer D, Strudwick G, and Crawford A. 2020. Caring in a digital age: exploring the interface of humans and machines in the provision of compassionate healthcare. *In* Without compassion there is no healthcare. *Edited by* B Hodges, J Bennet, and G Paeche. McGill University Press.

Winter A. 24 June 2020. Experts to Congress: health pandemic will worsen racial disparities in public education. NC Policy Watch [online]: Available from ncpolicywatch.com/2020/06/24/experts-to-congress-health-pandemic-will-worsenracial-disparities-in-public-education/.

Wood LJ, Davies AP, and Khan Z. 2020. COVID-19 precautions: easier said than done when patients are homeless. The Medical Journal of Australia, 212(8): 384–384.e1. PMID: 32266965 DOI: 10.5694/mja2.50571

World Health Organization Writing Group. 2006. Nonpharmaceutical interventions for pandemic influenza, national and community measures. Emerging Infectious Diseases, 12: 88–94. PMID: 16494723 DOI: 10.3201/eid1201.051371

Woythaler M. 2019. Neurodevelopmental outcomes of the late preterm infant. Seminars in Fetal and Neonatal Medicine, 24(1): 54–59. PMID: 30322826 DOI: 10.1016/j.siny.2018.10.002

Wozney L, McGrath P, Newton A, Hartling L, Curran J, Huguet A, et al. 2017. RE-AIMing e-Mental Health: a rapid review of current research report to the Mental Health Commission of Canada [online]: Available from mentalhealthcommission.ca.

Wu Z, and McGoogan JM. 2020. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. JAMA, 323(13): 1239–1242. PMID: 32091533 DOI: 10.1001/jama.2020.2648