



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Looking back and moving forward: Addressing health inequities after COVID-19



Kimberlyn McGrail,^{a*} Jeffrey Morgan,^b and Arjumand Siddiqi^c

^aCentre for Health Services and Policy Research, UBC Health, The University of British Columbia, Vancouver, Canada

^bCentre for Health Services and Policy Research, School of Population and Public Health, The University of British Columbia, Vancouver, Canada

^cDalla Lana School of Public Health, University of Toronto, Toronto, Canada

Summary

We will likely look back on 2020 as a turning point. The pandemic put a spotlight on existing societal issues, accelerated the pace of change in others, and created some new ones too. For example, concerns about inequalities in health by income and race are not new, but they became more apparent to a larger number of people during 2020. The speed and starkness of broadening societal conversation, including beyond the direct effects of COVID-19, create an opportunity and motivation to reassess our understanding of health. Perhaps more importantly, it is an opportunity to reduce inequities in who has access to, who uses, and who benefits from the resources that promote health and well-being. To this end, we offer three questions to guide thinking about health and health inequities after 2020: (1) what do we mean by “health” and “health inequality and inequity”? (2) what are the structures and policies we put in place to support or promote health, and how effective are they? And (3) who has the power to shape structures and policies, and whose interests do those structures and policies serve?

The Lancet Regional Health - Americas
2022;9: 100232
Published online 17
March 2022
<https://doi.org/10.1016/j.lana.2022.100232>

Copyright © 2022 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Keywords: COVID-19; Health equity; Health inequality; Health policy; Social determinants of health; Structural determinants of health

Introduction

We are in a period of time that will likely be viewed as a watershed, a turning point that created lasting change in society. Collectively, we should recognize the possibilities of this moment and seize the opportunity to support population health and health equity.¹ The last year-plus put a spotlight on a number of existing societal issues, accelerated the pace of change in others, and created some new ones too. These issues, including income and job security, racism, and the reach of government assistance programs, are already understood to influence health in and of societies, and particularly the level of health inequalities in a society. Societal issues are, however, just that. They are not forces of nature that cannot be altered, but instead result from the structures, institutions and policies that form our communities and our local and national identity. They both reflect and help shape norms, culture, and our relationships to one another. Collectively, they articulate – however implicitly or explicitly – the social contract that either ties us or divides us. The opportunity, then, is to

consider whether our current structures and policies are the right ones for now and for the future.^{2–5}

Thinking through what the experience over the course of the COVID-19 pandemic means for population health and health equity might point the way to a research agenda, and ultimately a policy agenda, as we wind our way back out. While there is already a good deal written about the pandemics and its effects, we offer here a more structured and formal way to approach the needed social and policy discussions. We propose three specific questions we might ask to inform a purposeful and inclusive response to the pandemic, which occurred concurrently with other important societal change. The questions that we propose as a foundation, and that we use these pages to illustrate, are: (1) what do we mean by “health”, “health inequality”, and “health inequity”? (2) what are the structures and policies we put in place to support or promote health, and how effective are they? And (3) who has the power to shape structures and policies, and whose interests do those structures and policies serve? Answering these questions will provide explicit information to relevant stakeholders about both the intent and the approach to addressing (or not addressing) health inequities. Before expanding on what is implied by each of the three

*Corresponding author.

E-mail address: kim.mcgrail@ubc.ca (K. McGrail).

questions, we introduce the background changes that form the context for this discussion.

Context

The immediate social and economic context is the COVID-19 pandemic, recognizing that part of the nature of the pandemic was its unusual, broad and concurrent effects on people everywhere. We use the specific geographic and political context of Canada and the United States (US) to situate and animate the discussion.

While the public health-driven COVID-19-related restrictions affected everyone, it quickly became clear that the direct and indirect effects of the pandemic were not equally shared. For example, in Toronto there was a 10-fold difference in case rates between lower income and racialized neighbourhoods and higher income and white neighbourhoods.⁶ This is a remarkable difference for a novel, airborne infectious disease that at least theoretically posed an equal risk to all. This illustrates how deeply inequities are entrenched, that they can be so quickly replicated in an emerging disease, though the experience of HIV/AIDS should have alerted us to this likely outcome.⁷

More generally, it is clear that COVID-19 took advantage of social patterning. Calls for data about race to understand the virus' risk and spread did not always make the connection that race, per se, is not a risk factor for the virus. Rather, race is a proxy for individual experiences that are the result of systemic and structural forces in society, such as racism in general, and racialized capitalism more specifically. Through these forces, Black and Brown and other non-white people are systematically – structurally – disadvantaged in education markets, labour markets, housing markets, and other areas of life. The result is that constraints are put on their occupations, incomes, and housing options, all of which were more direct risk factors for exposure to the virus. Essential workers, such as personal support workers, service, and factory workers, who in Canada and the US are largely from racialized groups, often female, and from younger age groups, could not work from home.^{8,9} Many of these jobs do not pay well, and were in workplaces that were not necessarily well protected. These jobs are often precarious, with limited hours, leading to people working multiple jobs, thereby increasing risk.¹⁰ Limited income means more crowded housing, and cheaper housing in neighbourhoods with others in similar positions, creating what became known as "hot spots".

These hot spots were not random. They instead reflect long-standing inequities and social processes, including but not limited to racism, that load exposures and risks on Black and Brown racial groups, particularly those in the working class. In addition, the highest risks likely accrued to people who fit more than one of these "boxes" or stratifications of group membership. A

middle-income white nurse working in acute care, for example, certainly was at greater risk than his or her neighbour with the same income who could work from home. But a new immigrant working at a meat packing plant and living in crowded conditions in a multi-generational household clearly faced far higher risk, and far greater challenges to mitigate that risk. This is the effect of intersectionality,^{7,11} with race being both a proxy for some of these other risks, and a risk in itself because of bias and discrimination.

Another part of the existing context is that we are in a time of rapid change, driven by digital technology.¹² This rapid change, and fundamental transition, has been described as a "fourth industrial revolution". The first three industrial revolutions took us through mechanization (steam), mass production (electricity), and automation (computers). The fourth is technological fusion that is "...blurring the lines between the physical, digital, and biological spheres".¹³

The fourth industrial revolution has implications for all aspects of society, from work to education, cities, the climate, and global relations. We watched the "digital divide" play out during the pandemic, as we became even more reliant on technology,¹⁴ for example for access to education technology, vaccine appointments, and other COVID-19 information. The pandemic laid bare the effects the existing inequities, particularly those related to race and socioeconomic position. Conversations over the last several months are the first signs of broad public recognition that these inequalities, and large inequities, are systemic and structural, and thus are things we can choose to address.

What do we mean by "health", "health inequality", and "health inequity"?

With this context, we turn to our three foundational questions, the first of which is what do we mean by "health", "health inequality" and "health inequity"? We take a broad approach to the definition of health, drawing from World Health Organization,¹⁵ the Ottawa Charter for Health and Promotion,¹⁶ and the foundations of social determinants of health. We view health as *an attribute of individuals, communities, and societies and a fundamental resource for daily living*. Health can be measured in many ways, for example, based on the presence or absence of disease, or through more qualitative understanding of personal or community assets and capabilities.

When we measure health at a population level, for example with a blunt measure like life expectancy, we are expressing an average. Hidden within that average are different experiences in different population groups. Health inequalities and inequities describe and quantify these distributions. We understand at a basic level that people are different and have different experiences of

health. We know, for example, that health status varies by age group because it tends to decline as we get older. These are *health inequalities*. When we consider groups of people, for example by community, income, race or ethnicity, we can also see differences in measures of health such as life expectancy. Patterns that emerge this way suggest experiences of health that may be modifiable, that are not innate to a person but instead reflect something about their life or social experience. In this way, these differences in population health outcomes stem from social processes that are avoidable, unfair, and unjust, and are considered *health inequities*.^{17,18}

Health inequalities and inequities are defining features of the way health is organized, and decades of evidence show us that social determinants of health are the key to understanding the distribution of health within a population; why some people are healthy and others are not. Health at its core is influenced by a set of proximal mechanisms, from behaviors to epigenetic processes, that themselves are shaped, expressed, and constrained by social forces. The social inequalities we see, and the fact that they are so widespread, pervasive, and persistent tells us that inequalities and inequities are by design, not preordained. They are structural in nature,¹⁹ or what Riley refers to as “systems of exposure.”²⁰

Further, there is evidence that inequalities are increasing.²¹ Chetty et al. (US data),²² and Shahidi et al. (Canadian data),²³ show that over time, across income groups, life expectancy has grown for everyone, but the biggest gains are enjoyed by the top income brackets. The result is a “fanning out” effect, with overall gains on average, but increasing inequalities because of differential gains across population groups. To provide nuance to this finding, another study using data from Canada focused on employment-related inequalities, looking over a fourteen-year period at poor self-rated health of people who are employed and people who are unemployed. The gap between the employed and unemployed grew over that time, driven by worsening health among the unemployed. Decomposing the sources of this, only a small minority of the increasing gap in inequality could be explained using variables routinely included in studies of determinants of health, such as demographics, risk factors, and measures of socioeconomic status such as income.²⁴

The hypothesis that emerges is that the context of unemployment has changed over time. The precarity associated with unemployment, the relationship between unemployment and the welfare state, and the institutions around the labour market and social policy have changed in ways not currently measured using traditional analytic variables. These missing variables can be described as more “structural” than “social” determinants of health.

A second example of increasing health inequalities that speaks to structural determinants comes from Case and Deaton (2015),²⁵ who looked at rising mortality

among whites in the US. From 1999 to 2013, mortality among whites was increasing, while mortality in other groups continued to decline, consistent with a broad longer-term trend. The question is why this would be happening uniquely for the white (more privileged) population, and outside of a recession or another major event. Speculation about this includes things like declining median income and other negative economic forces operating over the last several decades. The challenge to this hypothesis is that non-white groups experienced these economic forces as well, and perhaps to a greater extent.

An alternative, more structural, hypothesis developed by social psychologists and political scientists, is that white people feel a status threat. This idea is that the white population perceives their relative status is declining, and that has attendant effects on health. There is compelling empirical evidence to support the idea of this “status threat”.⁵ In brief form, looking at white mortality at the county level in the US, excess deaths were dominated by “deaths of despair”, referring to causes such as alcoholism, poisoning (largely opioid and other drug overdoses), and suicide. Those deaths are observed across the income and education hierarchy, not evenly, and not following a traditional socioeconomic gradient.⁵ Survey results show that over the last few decades, white populations in the US have expressed increasing racial resentment, declining happiness, and decreasing self-assessed social class. These characteristics are associated with the economic populism of the US Republican party. An analysis of county-level data shows a positive relationship between Republican voting and deaths of despair.⁵ If this relationship holds, it suggests that social status threat, even if it is only perceived, is part of the political and social landscape, and also part of the health landscape.

These findings need further investigation and development, including better language and more diversified views of potential causal factors. To be clear, this is both about understanding that “social” determinants have “structural” foundations, meaning that they have causes outside individual risk factors and decision-making,^{20,26} and that the range of such determinants needs to expand. We can say with some certainty that the usual list of social and structural determinants of health still matter, but are not telling us the whole story, particularly the whole story about more recent increases in health inequities.

What are the structures and policies we put in place to support or promote health, and how effective are they?

The expanded framing of structural determinants of health inequities leads naturally to the second of our two foundational questions, which is “what are the

structures and policies we put in place, and how effective are they at supporting health”? Structures and policies refer to the rules we use for social, political, industrial, and economic organization. For example, state, local and national governments are structures, and one set of policies within those relate to taxes and fiscal transfers. These structures and policies have more far-reaching effects than might be immediately apparent. Economic and work-related policies can encourage younger people to “move where the job is”, which often means being further from family. Family benefit policies and wage rates can either encourage or discourage having children, which can affect the number of people who might be available to provide support to older relatives. These structures and policies interact in ways that are often difficult to see directly, and so can produce intended outcomes, but many unintended outcomes as well, including for health.

As described above, both COVID-19 and trends that pre-existed the pandemic have differential effects across economic, racial, and age dimensions; COVID-19 has most affected the most vulnerable. We take a broad view of structures and policies to understand this, including those of government, but also of labour markets, and businesses within society, as they collectively shape inequality and its evolution over time. We use two broad examples to illustrate this: the labour market social safety net; and educational technology.

US data show that the pandemic created different change in employment rates at different levels of the income distribution.²⁷ Looking at the bottom 25% of the income distribution, there was a large drop at the beginning of the pandemic, followed by a quick (partial) recovery and then complete stagnation from about September 2020, at a level 20% below the beginning of that year. In contrast, employment levels for high-income workers bounced back to January 2020 levels by September of that year.

The importance of structures and policies is then in how workers are protected after employment loss. Data from 2003 to 2010 show that people who were laid off experienced income losses that were largest in the year they were laid off, but continued to be substantial in subsequent years.²⁸ An important feature of this finding is that their sources of income were actually quite broad. More than 40% of their income was replaced, but in the long-term only a small part of that came from formal employment insurance, with other income coming through other social transfers and progressive taxation. The implication is that we should take a broad view of the type of structures and policies that comprise our social safety net. The pandemic underlines this, as it has accelerated long-term changes in labour markets, for example increasing automation, and small local businesses closures while companies like Amazon post record profits.

A second example comes from trends toward on-line tools for education. An online educational platform called “Zearn” was being used by about 925,000 students in the US prior to March 2020.²⁷ In the pre-pandemic period, lower income and higher income students were proceeding at the same pace in terms of math assignments completed on this platform. At the start of the pandemic, all students showed significant slowdown. After that, and looking into the fall of 2020 (i.e. the next school year), higher-income students recovered most of their losses on this platform, returning nearly to their pre-pandemic pace, while lower income students also recovered, but only to a pace that was 20% lower. In other words, a “one-time event” could have lasting impacts that are differential for different groups of children.

Finally, it is important to acknowledge that policies are not produced in a vacuum; they evolve in the context of the overall political culture, the role of and trust in government, and political and ideological orientations. Policies will in general reflect the overall governmental approach to the dominant economic model (e.g. market-based capitalism), and the expectations and constraints it puts on that model (e.g. welfare capitalism vs. neoliberalism) provide a broad framing.^{29,30} These structural, institutional and cultural factors influence policy priorities, the potential policy options that are deemed relevant, and the distribution of power to influence both. For structures and policies to influence health inequities, there have to be decisions first that those inequities matter, then about the available approaches to address them. The latter will be determined by the distribution of power and influence over defining and prioritizing the relevant set of options. It is that power structure to which we turn next.

Who has the power to shape structures and policies, and whose interests do they serve?

Perhaps the most hidden and yet most important question at the root of the conversation around health after 2020, is who has the power to shape structures and policies, and whose interests do they serve? As noted above, there are clear inequities in health by whatever dimension or characteristic is used to assess them. A fundamental contribution of the early work in population health and social determinants of health is that these effects are relative to social standing, with each step up the ladder associated with better health.^{31,32}

If we are to take a health equity approach,³³ we need to address and re-imagine the policies and power structures embedded in our public health responses to date. In doing so, we must confront the fact that health outcomes reflect the underlying values of those in decision-making positions to set these policies. Inequities are not simply tolerated, they are embedded in systems that

produce and reproduce them, as seen starkly in the experience of the pandemic. Changing the outcome requires opening the black box of policy-making.

We use the experience of dual public health emergencies in British Columbia, Canada to illustrate what is required. In 2016, the Provincial Health Officer declared drug-related overdoses and deaths a public health emergency.³⁴ The same position (different person) declared the COVID-19 public health emergency in 2020. The pandemic came four years into the opioid crisis, and unfortunately, since then the number of drug-related overdose deaths has only increased.

When asked about the contrast in the speed and depth of response to the two emergencies, the Premier of BC responded that COVID-19 was an infectious disease that could affect anyone, while overdoses are a result of a choice initially that becomes a dependency.³⁵ While it is true that an infectious disease implies a different transmission risk and therefore a different set of policy tools, the word “choice” is indicative of the underlying normative framing of these two public health issues. Substance use and addiction are perceived by many as a choice, and therefore carry a different sense of urgency and a very different sense of collective ownership of the underlying causes. In other words, this framing suggests that in fact everyone’s health is not valued equally. (The Premier later apologized for his remarks.)

There is also consideration of the unintended consequences and harms that can arise when people on the receiving end of policies are excluded from the process of policy-making. This relates to whose expertise matters and whose interests are being served. The impact of the response to COVID-19 and its specific effects on the overdose epidemic were not readily addressed. For example, travel restrictions and border measures made the drug supply more unpredictable and dangerous.³⁶ Specialized services, like some overdose prevention sites, were temporarily closed, while liquor stores and cannabis dispensaries remained open as essential services. When re-opened, safe injection sites had reduced capacity which was augmented with pop-up tents that had no set schedule or fixed location. The result was that more people ended up using drugs alone, and all of these factors contributed to the increase in overdose deaths seen since the start of the pandemic.^{36–38} The inclusion of community voices would likely have mitigated these unintended effects, even if they could not all be prevented.

Overall, while many communities have been active in advocating for change, there has been little formal public engagement and involvement in developing public policy responses to the pandemic. The public has largely been the recipient of public health messages, with the expectation of compliance. This was readily accommodated early in the pandemic, but has become more fractious over time, resulting in for example movements for sick pay and other labour market

changes,³⁹ and increasing polarization in guidance and public response.⁴⁰ This reflects the existing power dynamic of policy influence, which in many cases favours commercial and other economic interests over considerations of community and equity-related implications of policy decisions (in this case specific to the virus and related social controls).^{41–43}

Discussion

The experience of the pandemic demonstrated two countervailing forces. One force was the initial sense of commonality and solidarity. There was a shared sense of vulnerability to a threat that was seen as a great equalizer, with the potential to infect anyone. There was a shared sense of purpose in doing our part, to stay home if we could, and show solidarity with those who could not.

The second force emerged after this initial shock and response, with a slow realization that in fact the virus was not a great equalizer. Yes, everyone was vulnerable, but there were stark inequalities in our ability to mitigate the potential effects of the virus. Unsafe work, crowded housing, income and other pervasive and systematic forces, including racism, all affected access to the resources required to create safety, and also affected the ability to continue functioning for example as a student.

A third phenomenon is the idea that in some ways the COVID-19 pandemic provided a spotlight, but it put that spotlight on things we have been talking about for a very long time. Inequities in health were well-documented prior to the pandemic, and in some cases were exacerbated by it. In other words, the pandemic was like an accelerant added to a smoldering fire. A significant crisis showed tears in the safety net. It also provided a moment of collective pause, and a rare experience of all of us slowing down and looking at the same events from many different vantages and of course with many different viewpoints. The fact that knowing all of this information we still stood by and watched inequity continue – and grow – has to speak for itself.

Thus an urgent question is whether we will continue to have this collective view as we emerge from the pandemic. Will that moment of collective vulnerability lead to collective action? Or will we go back to the old normal, even knowing that that “normal” was not working for significant parts of our population? If history is a guide, we have reason to worry about our capacity for memory. The experience of SARS was not that long ago. We thought we had learned from that crisis, and yet it is clear that some countries were more prepared than others when COVID-19 hit. Knowledge about health and other inequities is not new, and yet purposeful attempts to address them are few.

The importance of collective experience seems particularly important given another, ongoing public health emergency, which is the opioid crisis. The COVID-19

pandemic shows us that we can have a substantial and effective response to a public health crisis *if we choose to do so*. We have yet to make that choice in a definitive way for the opioid crisis, and we should ask ourselves why that is the case.

While the empirical literature often focuses on describing social patterning rather than explaining its causes,⁴⁴ it is difficult to come to any other conclusion that they are produced by societal choices. As the saying goes, every system is perfectly designed to produce the outcomes it does. Systematic differences in outcomes must reflect systematic differences in inputs, which in this case is differential access to health-promoting environments, services, and systems. The challenge is that addressing systemic differences and bias can create a status threat for another social group. Even if that threat is perceived, and not real by any empirical measure, it can have an effect on health.

All of this points to a significant and motivating research and policy agenda. We need better theory and evidence, and new tools for research. Better theory and evidence refers to expanding our understanding of both existing and emerging social and structural determinants of health, and testing the application of our proposed foundational questions in a variety of contexts. It includes explicitly naming the intended and unintended biases (and thus oppression) that are embedded in current health-related policies and services. It must also include not just describing but addressing inequities, by finding and changing their roots in our social and political structures and policies. New tools for research include better methods for engaging with the public and with specific communities that are the targets of those policies and services, with the understanding that in democratic societies, values-based policies require ongoing public discussion and input. All of this should be guided by and grounded in the three foundational questions we outline here: What we mean by health and health equity? Are policies and structures designed to support our aspirations related to health equity? And whose voice and interests matter?

Conclusion

There is possibility for positive action to come from our experiences. As many have noted, particularly through discussions about racialized experience during the COVID-19 pandemic, there is no point in studying these differences if we do not have an intent to change them. If we have a commitment to reducing inequities we have to focus on what really matters, and recognize these are societal choices, not individual ones.

We are at a moment at which collective attention could lead to re-imagining of how we think about health and what resources are available to support health. More fundamentally, it is an opportunity to start acting to address long-standing structural inequities that make

some people healthy and others not. We have an opportunity presented to us by the devastation of the COVID-19 pandemic, which is to learn and act together – across academic disciplines, across professional spheres, and most importantly with the public and all the multiple and rich communities that make up society. We should take this opportunity before it is too late.

Contributors

All authors contributed to conceptualization of this manuscript and the construction of its overarching construction and main messages. KM provided an original draft. All authors contributed substantially to review and editing.

Declaration of interests

The authors have nothing to declare.

References

- 1 COVID-19—break the cycle of inequality. *Lancet Public Health*. 2021;6(2):e82. [https://doi.org/10.1016/S2468-2667\(21\)00011-6](https://doi.org/10.1016/S2468-2667(21)00011-6).
- 2 Noppert GA, Zalla LC. Who counts and who gets counted? Health equity in infectious disease surveillance. *Am J Public Health*. 2021;111(6):1004–1006. <https://doi.org/10.2105/AJPH.2021.306249>.
- 3 Mays VM, Cochran SD, Sprague A, Heymann J. Social justice is not the COVID-19 vaccine alone: it is addressing structural racism through social policies that shape health. *Am J Public Health*. 2021;111:S75–S79. <https://doi.org/10.2105/AJPH.2021.306442>.
- 4 Galea S, Tracy M, Hoggatt KJ, Dimaggio C, Karpati A. Estimated deaths attributable to social factors in the United States. *Am J Public Health*. 2011;101(8):1456–1465. <https://doi.org/10.2105/AJPH.2010.300086>.
- 5 Siddiqi A, Sod-Erdene O, Hamilton D, Cottom TMM, Darity W. Growing sense of social status threat and concomitant deaths of despair among whites. *SSM Popul Health*. 2019;9:(October 2018) 100449. <https://doi.org/10.1016/j.ssmph.2019.100449>.
- 6 McKenzie K. Socio-demographic data collection and equity in COVID-19 in Toronto. *EClinicalMedicine*. 2021;34: 100812. <https://doi.org/10.1016/j.eclinm.2021.100812>.
- 7 Bowleg L. We're not all in this together: On COVID-19, intersectionality, and structural inequality. *Am J Public Health*. 2020;110(7):917–918. <https://doi.org/10.2105/AJPH.2020.305766>.
- 8 Gwynn RC. Health inequity and the unfair impact of the COVID-19 pandemic on essential workers. *Am J Public Health*. 2021;111(8):1459–1461. <https://doi.org/10.2105/AJPH.2021.306386>.
- 9 Tuyisenge G, Goldenberg SM. COVID-19, structural racism, and migrant health in Canada. *Lancet*. 2021;397(10275):650–652. [https://doi.org/10.1016/S0140-6736\(21\)00215-4](https://doi.org/10.1016/S0140-6736(21)00215-4).
- 10 Duan Y, Iaconi A, Song Y, et al. Care aides working multiple jobs: considerations for staffing policies in long-term care homes during and after the COVID-19 pandemic. *J Am Med Dir Assoc*. 2020;21(10):1390–1391. <https://doi.org/10.1016/j.jamda.2020.07.036>.
- 11 Hankivsky O, A. Kapilashrami A. Intersectionality offers a radical rethinking of COVID-19 | the BMJ Opinion. *blogs.bmj.com*. Published 2020. <https://blogs.bmj.com/bmj/2020/05/15/intersectionality-offers-a-radical-rethinking-of-covid-19/>. Accessed 11 November 2021.
- 12 McGrail KM. Contact-tracing apps: time to confront broader societal change. *Am J Public Health*. 2021;111(3):369–370. <https://doi.org/10.2105/AJPH.2020.306084>.
- 13 Schwab K. The fourth industrial revolution: what it means, how to respond | World Economic Forum. Published January 14, 2016. <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>. Accessed 11 November 2021.
- 14 Poole L, Ramasawmy M, Banerjee A. Digital first during the COVID-19 pandemic: does ethnicity matter? *Lancet Public Health*. 2021;6(9):e628–e630. [https://doi.org/10.1016/S2468-2667\(21\)00186-9](https://doi.org/10.1016/S2468-2667(21)00186-9).

- 15 WH. Organization. *Constitution of the World Health Organization*. World Health Organization; 2021... Accessed November 11; <https://www.who.int/about/governance/constitution>.
- 16 Ottawa Charter for Health Promotion. International Conference on Health Promotion. 1986. <https://www.canada.ca/content/dam/phac-aspc/documents/services/health-promotion/population-health/ottawa-charter-health-promotion-international-conference-on-health-promotion/charter.pdf>. Accessed 11 March 2022.
- 17 Whitehead M. The concepts and principles of equity and health. *Int J Health Serv*. 1992;22(3):429–445. <https://doi.org/10.2190/986L-LHQ6-2VTE-YRRN>.
- 18 Braveman P. What are health disparities and health equity? We need to be clear. *Public Health Rep*. 2014;129(Suppl 2):5. <https://doi.org/10.1177/003335491412915203>.
- 19 Siddiqi A, Hertzman C. Towards an epidemiological understanding of the effects of long-term institutional changes on population health: a case study of Canada versus the USA. *Soc Sci Med*. 2007;64(3):589–603. <https://doi.org/10.1016/j.socscimed.2006.09.034>.
- 20 Riley AR. Advancing the study of health inequality: fundamental causes as systems of exposure. *SSM Popul Health*. 2020;10:100555. <https://doi.org/10.1016/j.ssmph.2020.100555>.
- 21 Rashid T, Bennett JE, Paciorek CJ, et al. Life expectancy and risk of death in 6791 communities in England from 2002 to 2019: high-resolution spatiotemporal analysis of civil registration data. *Lancet Public Health*. 2021;6(11):e805–e816. [https://doi.org/10.1016/s2468-2667\(21\)00205-x](https://doi.org/10.1016/s2468-2667(21)00205-x).
- 22 Chetty R, Stepner M, Abraham S, et al. The association between income and life expectancy in the United States, 2001–2014. *JAMA J Am Med Assoc*. 2016;315(16):1750–1766. <https://doi.org/10.1001/jama.2016.4226>.
- 23 Shahidi FV, Parnia A, Siddiqi A. Trends in socioeconomic inequalities in premature and avoidable mortality in Canada, 1991–2016. *CMAJ*. 2020;192(39):E1114–E1128. <https://doi.org/10.1503/cmaj.191723>.
- 24 Shahidi FV, Muntaner C, Shankardass K, Quiñonez C, Siddiqi A. Widening health inequalities between the employed and the unemployed: a decomposition of trends in Canada (2000–2014). *PLoS One*. 2018;13(11):1–22. <https://doi.org/10.1371/journal.pone.0208444>.
- 25 Case A, Deaton A. Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century. *Proc Natl Acad Sci USA*. 2015;112(49):15078–15083. <https://doi.org/10.1073/pnas.1518393112>.
- 26 Lynch J. *Regimes of Inequality: The Political Economy of Health and Wealth*. Cambridge University Press; 2019. <https://doi.org/10.1017/9781109051576>.
- 27 Chetty R, Friedman JN, Hendren N, Stepner M. The Opportunity Insights Team. How did COVID-19 and stabilization policies affect spending and employment? A new real-time economic tracker based on private sector data. NBER Working Paper Number 27431. November 2020. <http://www.nber.org/papers/w27431>.
- 28 Stepner M. The insurance value of redistributive taxes and transfers. 2019. <https://michaelstepner.com/jmp/>. Accessed 11 November 2021.
- 29 Bamba C. Going beyond the three worlds of welfare capitalism: regime theory and public health research. *J Epidemiol Community Health*. 2007;61(12):1098–1102. <https://doi.org/10.1136/jech.2007.064295>.
- 30 Venugopal R. Neoliberalism as concept. *Econ Soc*. 2015;44(2):165–187. <https://doi.org/10.1080/03085147.2015.1013356>.
- 31 Marmot M, Friel S, Bell R, Houweling TA, Taylor S. Closing the gap in a generation: health equity through action on the social determinants of health. *Lancet*. 2008;372(9650):1661–1669. [https://doi.org/10.1016/S0140-6736\(08\)61690-6](https://doi.org/10.1016/S0140-6736(08)61690-6).
- 32 Phelan JC, Link BG, Tehranifar P. Social conditions as fundamental causes of health inequalities: theory, evidence, and policy implications. *J Health Soc Behav*. 2010;51(1_suppl):S28–S40. <https://doi.org/10.1177/0022146510383498>.
- 33 Galea S, Vaughan R. Taking an anti-health inequity approach to counter the unfair burden of poor health. *Am J Public Health*. 2021;111(9):1584–1585. <https://doi.org/10.2105/ajph.2021.306451>.
- 34 Government of British Columbia. Provincial health officer declares public health emergency | BC Gov News. Published 2016. Accessed November 11, 2021. <https://news.gov.bc.ca/releases/2016HLTH0026-000568>.
- 35 C. Kearney “I regret that very much”: premier John Horgan apologizes for comments labelling 1st time drug use as a choice | CBC News. CBC news on-line. Published 2020. Accessed October 20, 2021. <https://www.cbc.ca/news/canada/british-columbia/john-horgan-apologizes-for-comments-about-b-c-s-overdose-crisis-1.5653803>.
- 36 Norton A, Kerr T. Applying the lessons of COVID-19 response to Canada’s worsening opioid epidemic. *EClinicalMedicine*. 2020;29-30:100633. <https://doi.org/10.1016/j.eclinm.2020.100633>.
- 37 Galarneau LR, Hilbert J, O’Neill ZR, et al. Experiences of people with opioid use disorder during the COVID-19 pandemic: a qualitative study. *PLoS One*. 2021;16(7 July 2021):1–15. <https://doi.org/10.1371/journal.pone.0255396>.
- 38 BC Centre for Disease Control. Overdose Response Indicator Report; 2020. Accessed October 20, 2021. [http://www.bccdc.ca/resource-gallery/Documents/Statistics and Reports/Overdose/Overdose Response Indicator Report.pdf](http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Reports/Overdose/Overdose%20Response%20Indicator%20Report.pdf).
- 39 Vazquez J, Islam T, Beller J, Fiori K, Correa R, Correa DJ. Expanding paid sick leave as a public health tool in the COVID-19 pandemic. *J Occup Environ Med*. 2020;62(10):e598–e599. <https://doi.org/10.1097/JOM.0000000000001998>.
- 40 Allcott H, Boxell L, Conway J, Gentzkow M, Thaler M, Yang D. Polarization and public health: partisan differences in social distancing during the coronavirus pandemic. *J Public Econ*. 2020;191:104254. <https://doi.org/10.1016/j.jpubeco.2020.104254>.
- 41 Landivar LC, Ruppanner L, Rouse L, Scarborough WJ, Collins C. School reopenings during the COVID-19 pandemic and implications for gender and racial equity. *Demography*. 2022;59(1):1–12. <https://doi.org/10.1215/00703370-9613354>.
- 42 Moynihan R, MacDonald H, Bero L, Godlee F. Commercial influence and COVID-19: greater independence from commercial interests is more important than ever. *BMJ*. 2020;369:10–11. <https://doi.org/10.1136/bmj.m2456>.
- 43 Sweeney S, Capeding TPJ, Eggo R, et al. Exploring equity in health and poverty impacts of control measures for SARS-CoV-2 in six countries. *BMJ Glob Health*. 2021;6(5):1–11. <https://doi.org/10.1136/bmjgh-2021-005521>.
- 44 Basu S. COVID-19 in marginalized communities: shifting from descriptive to interventional research. *Am J Public Health*. 2021;111(8):1448–1450. <https://doi.org/10.2105/AJPH.2021.306242>.