Health, housing and COVID-19: public health efforts are vital in reducing gaps, but change can't stop there

Simisola Johnson, BSc[1]

[1] Temerty Faculty of Medicine, Medical Sciences Building, 1 King's College Circle, Toronto, Ontario

Abstract

Marc Lalonde's insights on the social determinants of health – the conditions in which people live, work and play" – have drawn major attention to housing over the decades, inspiring a wide range of policy decisions that has impacted the way we live today. However, in the wake of the COVID-19 pandemic, outbreaks in historically disadvantaged populations (e.g. black/ethnic, low-income communities etc.) reveal that there is more work to do. According to intervention studies, housing is a linking factor between "upstream" socioeconomic determinants and "downstream" interventions that help reduce health disparities. For this reason, housing is not separate from public health: housing is public health. As a rise in COVID cases and extended lockdowns continue to overwhelm our country, millions will require access to a safe, healthy and affordable home for protection. But without the help of additional funding and policy reform in the social housing sector, our most disadvantaged populations will continue to bear the brunt throughout this health crisis, and one's to come.

Introduction

The 1974 Lalonde Report was Canada's first federal document to address the role of the social determinants of health in unnecessary morbidity and mortality – an often-cited limitation of traditional medical care.[1,2] Many people at the time believed that genes decided fate. Lalonde, on the other hand, believed that a healthy environment could help reduce health gaps. Make no mistake, Lalonde's revolutionary approaches to better care for Canadians did not go unchallenged – the report endured many criticisms. Nevertheless, this white paper went on to inspire policy decisions on housing issues such as pollution, accident-prevention, and heating that benefit our lives today.[3]

Corresponding Author:
Simisola Johnson
simisolavjohnson@gmail.com

Nearly fifty years since its publication and amid a one-in-century global health crisis, it would appear that tenets of the report still remain true: the conditions in which people live, work and play, enable disease spread.[4] The coronavirus outbreak may have brought the whole country to a halt, but we've not all been in it "together" in the readjustment process: early findings by St. Michael's Hospital found that disparities in test positivity rates were highest within historically underserved communities (e.g. racial/ethnic minorities) – unsurprising, given that these population groups typically live and work in less than favorable social and physical environments.[5-10]

No one is immune in a global health crisis. Yet, COVID-19 is not the great equalizer either; rather, a stark reminder that taking a social determinants of health approach to policy is vital to reversing health inequities for the poor and disenfranchised.[11-14] In this commentary, we will take a closer look at how wider socio-economic determinants of health – including poverty, physical environment and race/ethnicity – within the complex scope of housing-related issues – are profoundly and unequally, impacting COVID-19 morbidity and mortality.[15,16]

Housing as a social determinant of health: then and now

In earlier centuries, epidemics such as the plague, cholera or smallpox were more readily associated with the poor: wealthier families could escape to their country estates and quarantine themselves whenever necessary.[17] In a more urbanized and industrial nineteenth century, it became clearer that diseases were not just a plight of the poor or imported from other shores, but were also internally generated from deplorable social and environmental conditions. "In the absence of specific etiological concepts, the social and physical conditions which accompanied urbanization were considered equally responsible for the impairment of vital bodily functions and premature death." (Rosenkrantz, 1972).[18]

Advances in public health have used the frameworks in the social determinants of health to assess geographic heterogeneity in population to characterise neighborhoods: wherever area-level poverty exists, a social gradient in disease morbidity and/or mortality is likely present.[13] For example, a study by Lowcock et al. (2009) found that individuals from neighborhoods with a high proportion of residents with a high school education (or lower) were more likely to be hospitalized for H1N1 influenza.[19] Similar trends exist globally for TB, dengue and malaria mortalities.[6,7,8] The mechanisms by which neighborhood characteristics affect health status are not fully understood, but these findings certainly make the case for seeing social programs (e.g. income support) as disease prevention for individuals living in impoverished areas.

The current COVID-19 pandemic has ripped the curtain off long standing issues of chronic neglect and severe under funding in public health, revealing devastating consequences for our nation's most vulnerable population groups if we fail on prioritizing and better integrating housing affordability, stability and quality, into our overall public health care system.[20] It is worth mentioning, that COVID-19 is the third coronavirus outbreak in human populations over the past 2 decades.21 Worse still, roughly 35,000+ Canadians experience homelessness a night: implications for Canada's housing crisis amid rising income inequality and a future of disease outbreaks are enormous.[21-23]

Lack of housing is a structural risk factor for COVID-19

In the recent emergence of COVID-19, masking and widespread implementation of social distancing and self-isolation policies have been vital public health strategies for prevention and disease control.[24] But stay-at-home orders are meaningless when you don't have a home – a reality currently experienced by roughly 200,000 Canadians annually – and limited access to basic hygiene supplies and/or a washroom hinders compliance with 'frequent hand-washing' directives often enforced by government authorities.[22] Already at a lower life expectancy and with a high prevalence of chronic health conditions, Canada's housing crisis has prepared many struggling Canadians for vulnerability to the coronavirus.[9]

Housing conditions are critical in disease prevention

It was only a matter of time until housing conditions became an area of interest in the analysis of uneven distribution of health throughout the modern public health era.[25-26] Existing public health research has linked poor housing conditions to a wide range of mental health issues, behavioral issues chronic health issues, including respiratory illness – a major risk factor for COVID-19.[12,27] In May, it was reported that long term care homes accounted for over 80 percent of cases and deaths in Canada.[28] By October, over 600 cases had emerged from Toronto's shelter populations.[29]A study comparing the number of outbreaks between for-profit homes and non-profit homes found outbreaks were highest in for-profit LTC homes due to outdated designs.[30] It is reasonable to assume that issues of inadequate ventilation, overcrowding (ex. four-person living wards) and densely packed units (ex. beds that are less than a meter apart) contribute to high transmissibility rates.11 Moving forward, it is important for architects, property owners, builders, and investors to consider all root causes of the present crisis and support housing policies to retrofit or rebuild poorly designed dwelling units that will promote infection prevention and control in both senior residences and shelters.

Structural racism and COVID-19

At the onset of the pandemic, the two major risk factors for COVID-19 were advanced age and male sex.[31] However, sociodemographic data has allowed us to see who exactly is being impacted at the neighborhood level. In the US, the COVID-19 infection rate is three times higher in predominantly black counties than in predominantly white counties, and the mortality rate is six times higher.[32] Similarly, in Toronto, communities of colour make up 22 percent of the general population yet account for over 80 percent of cases.[33] Differences between levels of income are just as stark: a study found higher infection rates in Toronto neighborhoods earning less than $40,000. Unsurprisingly, rates disappear for neighborhoods with incomes over $80,000.[33] Put another way, racial/ethnic minorities and lower socioeconomic populations are developing disproportionately impacted by COVID-19.

In both Canada and the US, race plays a major role in where and how one lives.[34,35] It is important to note, that these pandemic disparities have little to do with genetics or the confluence of pre-existing health conditions, and everything to do with decades of structural racism that has sorted racial/ethnic minorities into low-income urban areas, characterized by high population density, substandard housing conditions, close proximity to pollution sites, and limited access to healthcare services.[32,36,37] Increased risk for infection for communities of colour could only ever be inevitable, when we also consider how decades of income inequality has funnelled people of colour into low-skilled work – now deemed essential – wherein access to PPE is limited and paid sick leave is virtually non-existent.[38] According to the Canadian Human Rights Commission, the same racial disparity also exists for off-reserve Indigenous peoples.[39] There are multiple factors that contribute to greater COVID-19 burden in communities of colour, but most of the evidence leads to structural racism.[40]

Additional funding is necessary to build public health capacity

Applying a social determinants of health lens into public health has undeniably broadened our understanding of disease exposure and prevention. However, sole dependence on the social determinants model can be hugely misleading (and may perpetuate stigma) if the roles of policy and healthcare expenditure are overlooked. As Lalonde put it, "individuals cannot, by themselves, ensure that the spread of communicable diseases is prevented" (Lalonde, 1981).[41]

Healthcare is arguably the most important Canadian value: it is currently the largest budgetary item across all 10 provinces. Yet, we are at the bottom of the barrel in spending on the social determinants of health (e.g. secure housing).[42] Cuts to social programs – which has been evidenced to equalize health conditions – and public health only works against the common goal of improving health for all Canadians.[43] It's not that ironic of an idea to think that Ontario is one of the hardest hit provinces now, given government cuts to public health and social services that occurred last year. With cases intensifying daily and a new variant on the loose, demand for fiscal sustainability in public health is palpable.[44]

Conclusion

In this new era of emerging infectious disease outbreaks and social inequalities, public health efforts are vital in reducing health gaps, but change can't stop there.[45] The defining feature of our pandemic-related protocol is that having a home is disease prevention. How health and housing-related challenges are framed, analysed and addressed is critical to how we develop equity-informed solutions for a wicked problem.[26]

Unquestionably, the COVID-19 pandemic has exacerbated pitfalls in our public health care system and will leave a lasting mark for quite some time. The great public health lesson is that for centuries disease outbreaks disproportionately affect the poor and disadvantaged and the social determinants of health impact health outcomes.[16] A well-functioning (and less fragmented) public health

infrastructure is central to how we re-build a healthy population.

As the lessons of COVID-19 are considered, our public health goals (e.g. affordable housing) have the potential to dramatically reduce future pandemic morbidity and mortality.[16] Vaccines will help, but "care" still needs to be raised to the same standard as "cure." Sprawl that began nearly fifty years ago over a report reminds us today that ensuring healthy environments, and policies which make access to safe and affordable housing possible for everyone is not isolated to Canada's COVID-19 response plan but is a priority public health issue.[26]

References

1. Glouberman S, Millar J. Evolution of the determinants of health, health policy, and health information systems in Canada. Am J Public Health. 2003;93(3):388–392. doi: 10.2105/AJPH.93.3.388
2. Braveman P., Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. Public Health Rep. 2014;129(SUPPL. 2):19–31. doi: 10.1177/00333549141291s206
3. Buck, C. (1986). Beyond Lalonde: Creating Health. Journal of Public Health Policy, 7(4), 444. doi:10.2307/3342234
4. Dean, H. D., & Fenton, K. A. Addressing Social Determinants of Health in the Prevention and Control of HIV/AIDS, Viral Hepatitis, Sexually Transmitted Infections, and Tuberculosis. Public Health Reports. 2020;125(4_suppl):1–5. https://doi.org/10.1177/00333549101250s401
5. Sundaram, M. E., Calzavara, A., Mishra, S., et al. The Individual and Social Determinants of COVID-19 in Ontario, Canada: A Population-Wide Study. 2020. doi:10.1101/2020.11.09.20223792
6. Alvarez JL, et al. Educational inequalities in tuberculosis mortality in sixteen European populations. Int. J. Tuberc. Lung Dis. 2011;15(11):1461–7, i. doi: 10.5588/ijtld.10.0252
7. Carabali, M., Hernandez, L.M., Arauz, M.J. et al. Why are people with dengue dying? A scoping review of determinants for dengue mortality. BMC Infect Dis. 2015;15:301. https://doi.org/10.1186/s12879-015-1058-x
8. Lowassa, A., Mazigo, H.D., Mahande, A.M. et al. Social economic factors and malaria transmission in Lower Moshi, Northern Tanzania. Parasites Vectors. 2012;5:129. https://doi.org/10.1186/1756-3305-5-129
9. Albon, D., Soper, M., & Haro, A. Potential Implications of the COVID-19 Pandemic on the Homeless Population. Chest. 2020;158(2):477–478. https://doi.org/10.1016/j.chest.2020.03.057
10. Office of the Surgeon General (US). The Surgeon General's Call to Action to Promote Healthy Homes. Rockville (MD): Office of the Surgeon General (US); 2009, 3, Promoting Healthy Homes through Prevention. Available from: https://www.ncbi.nlm.nih.gov/books/NBK44200/
11. The Canadian Press. (2020, May 19). Toronto settles with homeless advocates, will ensure physical distancing in shelters [Internet]. Toronto. https://toronto.ctvnews.ca/toronto-settles-with-homeless-advocates-will-ensure-physical-distancing-in-shelters-1.4944836
12. Krieger, J., & Higgins, D. L. Housing and Health: Time Again for Public Health Action. American Journal of Public Health. 2020;92(5):758–768. https://doi.org/10.2105/ajph.92.5.758
13. Marmot, M. Social determinants of health inequalities. The Lancet. 2020;365(9464): 1099–1104. https://doi.org/10.1016/s0140-6736(05)71146-6
14. Braveman, P. (2006). HEALTH DISPARITIES AND HEALTH EQUITY: Concepts and Measurement. Annual Review of Public Health, 27(1), 167-194. doi:10.1146/annurev.publhealth.27.021405.102103
15. Kirby, T. Evidence mounts on the disproportionate effect of COVID-19 on ethnic minorities. The Lancet Respiratory Medicine. 2020;8(6):547-548. doi:10.1016/s2213-2600(20)30228-9
16. Abrams, E. M., & Szefler, S. J. COVID-19 and the impact of social determinants of health. The Lancet. Respiratory medicine. 2020;8(7):659–661. https://doi.org/10.1016/S2213-2600(20)30234-4
17. Institute of Medicine (US) Committee for the Study of the Future of Public Health. The Future of Public Health. Washington (DC): National Academies Press (US); 1988. 3, A History of the Public Health System. Available from: https://www.ncbi.nlm.nih.gov/books/NBK218224/
18. Rosenkrantz, Barbara G. 1972. Public Health and the State. Harvard University Press, Cambridge, Mass
19. Lowcock, E. C., Rosella, L. C., Foisy, J., et al. The social determinants of health and pandemic H1N1 2009 influenza severity. American journal of public health. 2012;102(8):e51–e58. https://doi.org/10.2105/AJPH.2012.300814
20. Committee on Public Health Strategies to Improve Health; Institute of Medicine. For the Public's Health: Investing in a Healthier Future. Washington (DC): National Academies Press (US); 2012 Apr 10. 4, Funding Sources and Structures to Build Public Health. Available from: https://www.ncbi.nlm.nih.gov/books/NBK201025/
21. Munster VJ, Koopmans M, van Doremalen N, et al. A novel coronavirus emerging in China-key questions for impact assessment. N Engl J Med. 2020;382:692–694. doi:10.1056/NEJMp2000929
22. Gaetz, S., Dej, E., Richter, T., et al. The state of homelessness in Canada 2016. Toronto, Ontario: Canadian Observatory on Homelessness Press. 2016
23. Marchand, Y., Dubé, J., Breau, S. Exploring the Causes and Consequences of Regional Income Inequality in Canada. Economic Geography. 2020;96(2):83-107. doi:10.1080/00130095.2020.1715793
24. World Health Organization, Advice on the use of masks in the context of COVID-19: interim guidance, 6 April 2020. Geneva: World Health Organization, 2020. Report No.: Contract No.: WHO/2019-nCov/IPC_Masks/2020.3
25. Roy M, Généreux M, Laverdière E, et al. Surveillance of social and geographic inequalities in housing-related issues: the case of the Eastern Townships, Quebec (Canada). Int J Environ Res Public Health. 2014;11(5):4825-4844. Published 2014 May 6. doi:10.3390/ijerph110504825
26. Sharpe, R. A., Taylor, T., Fleming, L. E., et al. Making the Case for "Whole System" Approaches: Integrating Public Health and Housing. International journal of environmental research and public health. 2020;15(11): 2345. https://doi.org/10.3390/ijerph15112345
27. Evans GW. The built environment and mental health. J Urban Health. 2003 Dec;80(4):536-55. doi: 10.1093/jurban/jtg063
28. Hsu AT, Lane NE, Sinha SK, et al. Report: Understanding the impact of COVID-19 on residents of Canada's long-term care homes – ongoing challenges and policy responses. Article in LTCcovid.org, International Long-Term Care Policy Network, CPEC-LSE, 4 June 2020
29. Casey, L. (2020, October 01). People experiencing homelessness safer in tents than shelters during pandemic, Toronto court hears | CBC News. Retrieved December 28, 2020, from https://www.cbc.ca/news/canada/toronto/toronto-homeless-tents-shelters-pandemic-1.5746955
30. Stall, N. M., Jones, A., Brown, K. A., et al. For-profit long-term care homes and the risk of COVID-19 outbreaks and resident deaths. Canadian Medical Association Journal. 2020;192(33). doi:10.1503/cmaj.201197
31. Grasselli, G., Zangrillo, A., Zanella, A., et al. COVID-19 Lombardy ICU Network. Baseline Characteristics and Outcomes of 1591 Patients Infected With SARS-CoV-2 Admitted to ICUs of the Lombardy Region, Italy. JAMA, 2020;323(16):1574–1581. https://doi.org/10.1001/jama.2020.5394
32. Yancy CW. COVID-19 and African Americans. JAMA. 2020;323(19):1891–1892. doi:10.1001/jama.2020.6548
33. Bromley, L. (2020, July 30). Toronto Public Health releases new socio-demographic COVID-19 data. Retrieved September 1, 2020, from https://www.toronto.ca/news/toronto-public-health-releases-new-socio-demographic-covid-19-data/
34. White, K., & Borrell, L. N. Racial/ethnic residential segregation: framing the context of health risk and health disparities. Health & place. 2011;17(2): 438–448. https://doi.org/10.1016/j.healthplace.2010.12.002
35. Canadian Institute of Health Information. Urban. Physical Environments and Health Inequalities. CIHI; Ottawa, ON, Canada: 2011
36. Louisias, M., & Phipatanakul, W. Managing Asthma in Low-Income, Underrepresented Minority, and Other Disadvantaged Pediatric Populations: Closing the Gap. Current allergy and asthma reports. 2017;17(10):68. https://doi.org/10.1007/s11882-017-0734-x
37. Hood E. Dwelling disparities: how poor housing leads to poor health. Environmental health perspectives, 2005;113(5):A310–A317. https://doi.org/10.1289/ehp.113-a310
38. Gould, E., Wilson, V. Black workers face two of the most lethal preexisting conditions for coronavirus-racism and economic inequality [Internet], 2020. Retrieved November 2, 2020, from https://www.epi.org/publication/black-workers-covid/
39. Landry, M. (2020). Statement - Inequality amplified by COVID-19 crisis. Retrieved December 28, 2020, from https://www.chrc-ccdp.gc.ca/eng/content/statement-inequality-amplified-covid-19-crisis
40. Millett, G. A., Honermann, B., Jones, A., et al. White Counties Stand Apart: The Primacy of Residential Segregation in COVID-19 and HIV Diagnoses. AIDS patient care and STDs, 2020;34(10): 417–424. https://doi.org/10.1089/apc.2020.0155
41. Lalonde, M. (1981). A new perspective on the health of Canadians: A working document. Ottawa, Ontario: Government of Canada
42. Papanicolas I, Woskie LR, Jha AK. Health Care Spending in the United States and Other High-Income Countries. JAMA. 2018;319(10):1024–1039. doi:10.1001/jama.2018.1150
43. Ruckert, A., Labonté, R. Health inequities in the age of austerity: The need for social protection policies. Social Science & Medicine. 2017;187:306-311. doi:10.1016/j.socscimed.2017.03.029
44. Wise, J. Covid-19: New coronavirus variant is identified in UK. Bmj. 2020;M4857. doi:10.1136/bmj.m4857
45. Smith, K. M., Machalaba, C. C., Seifman, R., et al. Infectious disease and economics: The case for considering multi-sectoral impacts. One health (Amsterdam, Netherlands). 2019;7:100080. https://doi.org/10.1016/j.onehlt.2018.100080