‘Most at risk’ for COVID19? The imperative to expand the definition from biological to social factors for equity

Abstract

First recognized in December 2019, the Coronavirus Disease 2019 (COVID19) was declared a global pandemic by the World Health Organization on March 11, 2020. To date, the most utilized definition of ‘most at risk’ for COVID19 morbidity and mortality has focused on biological susceptibility to the virus. This paper argues that this dominant biomedical definition has neglected the ‘fundamental social causes’ of disease, constraining the effectiveness of prevention and mitigation measures; and exacerbating COVID19 morbidity and mortality for population groups living in marginalizing circumstances. It is clear - even at this early stage of the pandemic - that inequitable social conditions lead to both more infections and worse outcomes. Expanding the definition of ‘most at risk’ to include social factors is critical to implementing equitable interventions and saving lives. Prioritizing populations with social conditions is necessary for more effective control of the epidemic in its next phase; and should become standard in the planning for, and prevention and mitigation of all health conditions. Reversing disparities and health inequities is only possible through an expansion of our ‘most-at-risk’ definition to also include social factors.

Keywords: COVID19; health equity; public health; fundamental social causes; social determinants of health; most-at-risk; health disparities; decision-making

‘Most at risk’ for COVID19? The imperative to expand the definition from biological to social factors for equity

First recognized in December 2019, the Coronavirus Disease 2019 (COVID19) was declared a global pandemic by the World Health Organization on March 11, 2020[1]. To date (July 10, 2020), over 12 million people worldwide have been infected, and over 550,000 have died of COVID19[2]. Public health approaches, methods, and tools - such as surveillance, prevention and mitigation - have been critical to understanding and managing the pandemic. However, in the haste to respond to events that have taken the world by surprise, core public health values of equity and social justice have been overlooked and dismissed. It has become clear that inequitable social conditions lead to both more infections and worse outcomes. Recent data from big cities in the US – as well as more rural states - indicate staggering patterns of inequitable mortality by race and ethnicity[3,4]. Global data provide similar evidence of the increased mortality from COVID-19 of racial and ethnic minorities[5]. In addition, as of April 8, at least 1324 confirmed cases in the US had been traced to jails and prisons, with over 500 cases coming from a single jail in Chicago[6]. We argue that the dominant biomedical definition of ‘most at risk’ populations has neglected the ‘fundamental social causes’ of disease[7]. This has constrained the effectiveness of prevention and mitigation measures; and exacerbated COVID19 morbidity and mortality for population groups living in marginalizing circumstances. Expanding the definition of ‘most at risk’ to include social factors is critical to implementing equitable interventions and saving lives[8].

To date, the most utilized definition of ‘most at risk’ for COVID-19 morbidity and mortality has focused on biological susceptibility to the virus, a determinant at the individual level. Early evidence indicated that age, preexisting chronic health conditions, and immunosuppression increase risk for adverse outcomes[9]. This focus on biological risk has ignored the social vulnerabilities that exacerbate disease risk in populations throughout the lifecourse, and as a result, minimal data on these factors have been collected[10]. This is a striking omission given that

the understanding of the social production of disease dates back nearly two centuries[11]. More recently, Link and Phelan [7] defined ‘fundamental social causes of disease’ as those involving access to resources - such as money, knowledge, and power - that enable individuals to avoid disease or to mitigate its consequences if it occurs. When a new disease enters a population (e.g., COVID19), it does so in the context of already existing inequities[12] in access to resources - i.e., in the fundamental social causes of disease - between advantaged and disadvantages groups along lines of gender, race, ethnicity, social position, education, class, physical and cognitive ability, sexual orientation, citizen status, and other stigmatized identities. The ‘fundamental social causes of disease’ framework suggests that - though the biologic pathways to disease may change over time (e.g.; from plague to COVID19), the fundamental social causes remain the same[7,13]. Thus, though biological vulnerability is a necessary component of risk assessment and response; it is wholly insufficient.

In line with the common definition of ‘most at risk’, COVID19 prevention and mitigation measures recommended by the WHO and CDC have focused overwhelmingly on individual-level interventions[14,15]. The most common measures include primary prevention strategies such as hand washing or sanitizing, physical distancing, and stay-in-place orders; and secondary prevention strategies such as self-isolation at the first symptoms of COVID19 and seeking medical care if symptoms become worse. Yet, these recommendations can be implemented most effectively by privileged individuals—those with secure housing, monetary resources, tangible social support, access to medical care, power to self-advocate to receive a test in contexts with limited tests, and white-collar professions that easily transition to remote work for physical distancing[16]. A recent analysis of COVID-19 policy interventions indicates the extent of their potential inequitable impacts on some population groups[17]. In addition, the recommendations may not be as applicable to low and middle income countries (LMIC) as to

high income countries; context matters[18-19]. Prevention and mitigation recommendations have been decontextualized from the realities of the everyday lives of many people worldwide.

Fundamental social causes of disease mobilize pathways to morbidity and mortality that (i) exacerbate risk of COVID19 by limiting the ability to implement preventive recommendations, (ii) exacerbate consequences of COVID19; and (iii) may result in harmful consequences in addition to COVID19.

Inequities rooted in fundamental social causes of disease affect the ability of individuals and groups to implement recommended precautions such as handwashing and physical distancing with implications for increasing the risk and spread of transmission. The risk of exposure to COVID19 is higher in congregate settings; such as jails and prisons, immigrant detention centers, refugee camps, homeless shelters, inner city housing complexes, indigenous people's reservations, impoverished communities, naval ships, crowded workplaces, among others[6,20-23]. Those without housing; with inadequate, insecure or crowded housing are without even the most basic of resources. They may not have a sink to wash their hands, share an irregular water supply, have shared or limited bathrooms/latrines, and live in high density spaces that do not permit them to enact physical distancing, or to self isolate[24-26]. Alarms have been sounded about the catastrophic consequences of the spread of COVID19 in the slums and high density inner city cores of LMIC and refugee camps in the Middle East, Africa, South America, and South East Asia where soap and water are not available, physical distancing is impossible, and health care access is severely limited[27-29]. Additionally, In the US, meat processing plants, which employ many immigrant and refugee workers in close quarters and a fast pace of work, have also emerged as sites of outbreaks[30].

Fundamental social causes of disease also result in more severe consequences once a person is infected with COVID19. This is due to lack of access to services such as among persons with disabilities[31], uninsured population groups[32]; medical mistrust resultant from histories of mistreatment and colonialism[33-36]; lack of access to well-resourced hospitals with high-quality treatment; and possibly provider bias in referring patients for testing and treatment. Additionally, populations that have already experienced health inequities, such as racial and ethnic minorities, may - as a result, have a higher prevalence of underlying conditions, such as asthma or diabetes, which in turn exacerbates risk of severe consequences of COVID19.[37] Concerns have been raised that protocols prioritizing ventilators in a time of scarcity may result in inequitable access because marginalized populations are more likely to have underlying conditions that lead them to be rated as less likely to benefit from a ventilator[38].

Fundamental social causes of disease also can result in other harmful consequences related to prevention and mitigation measures. Physical distancing can undermine wellbeing for individuals with mental health distress[39] or for persons with substance use problems by depriving them of necessary preventative and supportive services[40]. In LMIC, sheltering in place has resulted in a reduction in clinical and public health interventions, such as vaccinations, even threatening polio eradication programs[18,41]. Physical distancing and sheltering in place recommendations also expose people in abusive home situations to further harm. Indeed, there is worldwide evidence of an increase in domestic violence since COVID19 restrictions on movement[42]. Also, mandatory self-isolation has left millions without an income, particularly workers in the informal sector[43-46], many of whom are adolescents and women, and most of whom live in low and lower-middle income countries[47]. Mitigation strategies are difficult to implement among the working poor who lack social protections. Low-wage workers are less likely to have jobs that can be continued remotely, meaning workers continue in “essential” jobs that either expose them to the coronavirus (e.g., service industry, meat processing, grocery

stores, cleaning), or lose income. These consequences are gendered, with women disproportionately disadvantaged[48].

These considerations lead to the questioning of COVID19 as *the* priority concern. The moral and ethical choice of hunger versus health risks is mostly felt in the poorest communities across the globe. With access to their sparse resources being severely constrained or denied as a result of the shutdown, for many the most immediate threat is food for survival, and not the pandemic[18,19]. A recent COVID19 survey in Bangladesh found that 18% and 10% of urban and rural respondents respectively had no food stored at home, while 37% and 21% respectively had only 1-3 days food reserve[49]. Until they're addressed, fundamental social causes will continue to result in poorer health and premature death from many causes, including chronic diseases as well as respiratory infections and diarrheal diseases in LMICs. COVID19 prompts us to pay attention now, and addressing inequities will have broader benefits beyond this one disease.

We raise these issues urgently in this pandemic because addressing them will improve the next phases of COVID-19 prevention and mitigation. We join others in calling for the imperative to collect data on the fundamental social causes as part of the analysis of COVID19 morbidity and mortality[10]. Further, we urge decision making that applies a fundamental social causes of disease lens, in addition to a biological lens, to identify risks, plan strategies, and recalibrate for equity. A case we may anticipate is vaccination. When a coronavirus vaccine becomes available, it is likely to be in small batches initially. Evidence from other health conditions (cancer, respiratory distress syndrome in infants) indicates that health inequities can widen when new treatment becomes available[7,50]. To mitigate this, we call on the global public health community to advocate that vaccines become rapidly accessible to those 'most at risk' as a result of both biological *and* social vulnerabilities[51]; i.e. people in prison, those who are homeless, refugees, people with mental distress and in violent home situations, black,

indigenous and other people of color (BIPOC) and of lower socioeconomic class, people living in LMIC, and others noted above. If we disagree with the above premise, then we are continuing a history of racial, ethnic, and colonial oppression. More importantly, we ignore the central public health values of equity and social justice.

Despite mounting evidence that COVID-19, like other infectious and chronic diseases, exerts a higher toll on those who suffer social inequities, health equity remains at the margins of public health responses. COVID19 is a like a ‘canary in the coal mine’, highlighting conditions that make people differentially susceptible to all diseases[52-53]. In our prevention and mitigation responses, we must prioritize the most socially vulnerable to begin to reverse disparities and health inequities[17,54-55]. After all, public health has two moral aims, one to improve population health and second to reduce health inequities[56].

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