

Public Health Practice Informed by Population Health Principles: What Can We Learn?



INTRODUCTION

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Introduction

As we write this editorial in early 2022, the Omicron variant of the SARS-CoV-2 virus is running rampant. We are in dire times – as we have been throughout the COVID-19 pandemic – with periods of ebbing that have been few and far between. Never in our lifetimes has “public health” occupied the world’s attention as it has over the past two years. With great urgency, we have activated some of the core aspects of public health, including the implementation of widespread emergency prevention and mitigation measures, such as masking, reducing interpersonal contact (through physical distancing and capacity limits) and vaccination. We have pleaded with the public to understand how these public health efforts will reduce sickness and death and help avoid overwhelming hospital capacity.

As these “wartime” efforts and appeals press on, Frank and colleagues (2022) implore

us in this issue’s lead paper to also take a step back and remember that public health is (or should be) far more than a set of emergency measures implemented to combat a specific disease. Rather, when done well, public health operates (or should operate) on the principles of population health, which lay down the foundations for prevention and mitigation strategies. In a set of accompanying commentaries, respondents arriving from a wide range of perspectives provide excellent insights that further illuminate how “population health-informed public health practice” might occur.

Societal Conditions Are Critical to Understanding Disease

At the heart of the principles of population health is the notion that no matter the health outcome – from COVID-19 to obesity – and no matter the mechanism through which

disease ultimately penetrates our bodies – from airborne virus inhalation to diet-, exercise- and stress-related mechanisms – the explanation for how these diseases mount in scale to the level of populations requires an understanding of the societal conditions in which populations are situated. It is the economic conditions, political and social dynamics and public policies that explain disease occurrence within and between population groups.

As an example, Frank et al. (2022) use the recent physical distancing guidelines that the public health system enacted when COVID-19 was thought to have a droplet transmission mechanism. Of course, now it is clear that COVID-19 is an airborne virus, and scientists are contemplating the utility of physical distancing in the context of sharing poorly ventilated, indoor spaces. That aside, the authors bring up the fact that physical distancing guidelines were created without attending to the fact that essential service workers, for all intents and purposes, could not comply. Indeed, in recent analyses using data from Ontario, the prevalence of COVID-19 cases and mortality rates is higher in neighbourhoods where more essential service workers reside. Moreover, the racial inequities in COVID-19 outcomes that have been well documented through the pandemic may be closely linked to racial inequities in performing essential service work, itself a function of a segregated labour market.

The arguments made in the lead paper would suggest that segregated labour markets (along with lack of paid sick leave and a host of other societal conditions) lie at the root of the complex causal mechanisms that have spread COVID-19 at the population level. Their arguments further suggest that COVID-19 cannot be understood solely in terms of airborne inhalation of the SARS-CoV-2 virus or even in terms of

individual social characteristics, such as job status or race/ethnicity. It is societal conditions that tell us how and why these characteristics lead to risk for ill health. Indeed, then, understanding health inequities, which are produced by differential effects of societal conditions across social groups in society, is necessary for understanding population health, including the COVID-19 pandemic and the other two examples (obesity and climate change) on which Frank and colleagues (2022) focus.

Commentators' Perspectives

In Bryan's (2022) commentary, he concerns himself with matters of causal inference to understand how population health phenomena are produced. He questions both the expertise of public health scientists to assert claims about the effect of societal conditions on health and whether the methods they use are sufficiently rigorous. The field of public health has been evolving in this direction and has grown to include researchers from multiple disciplines. This process of engagement with a broader community of scholars and use of more rigorous methodologies was a response on the part of the field to findings such as persistent and pervasive health inequities and countless failed traditional public health interventions. There is much scholarship in the field today that investigates and uncovers the fundamental role of social factors and societal conditions as key determinants of population health. On the other hand, we wholeheartedly agree with Bryan that public health must engage with social scientists to understand "... which of the many causes of X ought we to focus on ..." (p. 27), with similar comments made by Forest (2022) and with those outside of academia who understand how to produce favourable structural interventions. The wide set of expertise represented by our respondents is certainly a start.

On the matter of causal inference, we are somewhat perplexed by Bryan's (2022) comments. Public health research is incredibly concerned with methodological rigour. Quasi-experimental designs to isolate causal factors, mediation analysis to understand pathways that lead from social conditions to health outcomes and machine learning approaches that attempt to make sense of a large range of Xs are now commonplace in the public health literature. Moreover, the question of which methods best illuminate particular questions is less settled than Bryan's (2022) piece suggests. After all, quasi-experimental designs come out of asking social questions, for which true experimental designs are not possible to produce, rendering it difficult to claim experimental designs are always the gold standard. Economist Angus Deaton has written quite a bit about these issues. In the end, methodological rigour is critical, but we see this argument as a bit of a red herring as public health research wants not for an interest in this matter.

The Role of Societal Conditions

Other respondents pick up the baton from Frank and colleagues (2022) in three primary ways. First, they help us to expand how we think about the role of societal conditions in population health. In particular, we were struck by (and very much appreciate) their emphasis on structural organizational characteristics over solely recommending specific policies. Of course, specific policies, such as guaranteed minimum income that Forget (2022) discusses in her commentary, are important to vet in relation to population health. However, it seems even more vital to get the correct scaffolding in place for policies that are beneficial to health to routinely emerge.

For instance, Forget (2022) argues for automatic stabilizers, which are systems

(policies) that are already in place before a major population health phenomenon occurs and "... would automatically respond to shocks of all kinds without the need for experts to recognize a problem, develop solutions and then implement them during social upheaval ..." (p. 35). It is in this context that Forget brings up guaranteed minimum income. Forget (2022) describes the sudden need to create the Canadian Emergency Response Benefit, which could have been in place right from the beginning of the pandemic, and perhaps developed in more thoughtful ways, had we paid more attention to the notion of automatic stabilizers.

Failure of Public Health Systems

Second, respondents help us understand some of the externalities – health and social – of weak public health systems and, to be frank, weak societal institutions in general. Petticrew (2022) discusses the opportunistic spirit of commercial entities, and of capitalism more generally, that manage to profiteer from population health phenomena, such as the COVID-19 pandemic. Moreover, this opportunism can deepen other population health problems. Petticrew (2022) cites as example the increased sale of confectionary foods and the rise in childhood obesity.

Population Health Principles and Public Health Practice

Finally, our respondents reflect on the relationship between the population health principles highlighted by Frank and colleagues (2022) and the practice of public health. Forest (2022) provides extremely thoughtful comments about the structure of public health systems and whether they are adequate for producing the kind of thoughtfulness required to address the points made by Frank and colleagues (2022). One of Forest's central points is that public health must pay much

more attention to institutional factors and policy processes.

Galea's (2022) commentary also focuses on how to translate the issues raised by Frank et al. (2022) into the practice of public health. He starts with an assessment of why these principles have not to date been fully embraced by public health practice, citing the dilemmas associated with the slow speed of scientific development and the difficulties of

translating science to practice, not the least of which are political impediments. Galea's (2022) prescriptions for remedying these issues are wise and bold.

Most fundamentally, Galea (2022) calls for "... a reimagining of the very nature of public health" (p. 47), for which we sincerely believe that this issue provides motivation and guidance.

References

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