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SPECIAL SECTION ON WHY PUBLIC HEALTH MATTERS TODAY: COMMENTARY

Strengthening the health system through novel population and public health fellowships in Canada

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Abstract

This commentary provides a response to the call for papers that explore why public health matters today. We present our thoughts and experiences as members of the inaugural (2017) cohort of Canadian Institutes of Health Research (CIHR) Health System Impact Fellows, focused on population and public health projects within our respective health organizations. One year in, we understand our fellowships as uniquely integrating population and public health attributes toward enhancing health system learning and impact. Despite references to the weakening of public health in the call, we are encouraged by our fellowship experiences that promote a focus on prevention and upstream factors that impact health. We are hopeful that a continued focus on population and public health in future fellowship cohorts will in time demonstrate positive health system change for Canadians.

Résumé

Ce commentaire fournit une réponse à l'appel à contributions qui explore les enjeux de la santé publique compte aujourd'hui. Nous présentons nos pensées et expériences comme les membres de la première cohorte (2017–18) des Instituts de recherche en santé du Canada (IRSC) des boursiers spécialistes de l'impact du système de santé, au sein de nos organisations de santé respectives. Un an après, nous comprenons que nos bourses intègrent uniquement les attributs de la santé publique et des populations, en vue d'améliorer l'apprentissage et l'impact du système de santé. Malgré des références à l'affaiblissement de santé publique dans l'appel, nous sommes encouragées par nos expériences de boursiers qui promeuvent un accent de la prévention et des facteurs en amont ayant une incidence sur la santé. Nous espérons qu'un accent continu de la santé publique et des populations dans les futures cohortes de boursiers permettra, avec le temps, de faire évoluer le système de santé de façon positive pour les Canadiens.

Keywords Population and public health · Health system · Health system learning and impact · Health equity · Social determinants of health

Mots-clés Santé publique et des populations · Système de santé · L'apprentissage et l'impact du système de santé · Équité en santé · Déterminants sociaux de la santé

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Introduction

In this commentary, we highlight a unique perspective in response to the recent call for papers underscoring the value of public and population health (Guyon et al. 2017). We are postdoctoral fellows of the inaugural (2017) cohort of the Canadian Institutes of Health Research (CIHR) Health System Impact (HSI) Fellowship (the fellowship), focused on population and public health projects. Several Institutes, including Population and Public Health, joined forces with Health Services and Policy Research to prioritize a training modernization strategy wherein postdoctoral fellows gain experiential learning in health organizations. Fellows apply their academic research skills to challenges faced by health organizations, while concurrently developing competence in professional skills that may not be readily acquired during traditional postdoctoral programs (Government of Canada 2017).

As researchers with a public health focus, we appreciate population and public health (PPH)[1] as critical to health system transformation (Kindig and Stoddart 2003; Government of Canada 2012); and, while it is premature to deliver evidence of success, we are encouraged by our fellowship experiences and optimistic that continued focus on PPH within the fellowship will facilitate such change to meet the needs of Canadians into the future. Below, we outline what we see as the fellowship's focus on PPH, and then briefly describe our respective fellowships to illustrate ways that we, as embedded, specially-trained, population and public health researchers, are working toward health system learning.

A challenge in responding to why public health matters is that "population and public health" is not well understood, especially in comparison to "primary care" which largely denotes the health "care" system. The common analogy that the Medical Officer of Health (MOH) is to the population as the physician is to the patient, while somewhat helpful, perpetuates the emphasis on risk factors and treatment of disease (Stevenson et al. 2007) while neglecting key PPH attributes that better describe MOH activities and those of public health practitioners, including: health equity, upstream determinants of health, community well-being, partnerships across sectors, and acknowledgement that health is more than absence of disease and provision of health "care" services (World Health Organization 2018). Table 1 shows the proportion of PPH relevant postdoctoral fellowships in 2017 and 2018 cohorts, and their distribution across these attributes.

Next, we describe our four fellowships, to illustrate our aim to integrate PPH attributes for health system impact and learning. We focus on three PPH strengths specifically identified in our fellowships: 1) primordial (social determinants of health) and primary prevention; 2) networks and coordination; and 3) use of best available evidence.

Fellowship project 1

One fellowship project focuses on community-based programming to prevent primary tooth decay in young children among families experiencing domestic violence in Alberta. Despite significant treatment needs—primary tooth decay is the most common childhood disease, and the number one reason for day surgery among young children in Canada—the focus on primary prevention is intentional (Canadian Institute for Health Information 2013). Surgical treatment is potentially high-risk, very costly, has high re-treatment rates, and does not address the cause of dental decay. Young children may be better served with low-risk, low-tech, lower-cost preventive interventions, in combination with the social supports needed to achieve good oral health (Lee et al. 2017).

The project also aims to understand and act on social, structural, and cultural barriers (upstream determinants) to better support parents to access care and carry out critical homecare and nutrition behaviours. Networking and coordination between domestic violence shelter and community health workers, dental professionals (public health and private), social workers, and clients themselves, to co-deliver community-based programming, is expected to increase access to appropriate care, sustainably.

Fellowship project 2

A second fellowship project highlights networks, coordination, and ways that evidence is used in public health. A province-wide (British Columbia) initiative focuses on physical activity and healthy eating for early-years care providers aiming to improve cognitive, social, physical, and mental well-being for young children at a critical developmental stage (Timmons et al. 2012). A key activity is to form partnerships with organizations from different sectors (e.g., YMCA (Young Men's Christian Association), Sport for Life, and the Childhood Obesity Foundation) to leverage diverse skills, expertise, and capacity in pursuit of common goals, while optimizing performance and efficiency through shared resources and responsibility.

Additionally, the project incorporates best evidence in two ways. First, the partnership group engaged subject-matter experts to develop and implement evidence-based healthy eating and physical activity best practices. Second, by creating evaluation capacity through the fellowship, an iterative, ongoing reflection of the process evaluation results was possible. Thus, evidence is

[1] We use the term "population and public health" (PPH) here; though population health and public health are defined differently and possess different perspectives, the boundaries are blurred and complementary (Kindig and Stoddart 2003).

Table 1 Distribution of CIHR-health system impact postdoctoral fellowship projects across population and public health (PPH) relevant attributes

PPH relevant attributes	CIHR-HSI postdoctoral fellowship PPH projects 2017 # PPH/total funded (%) 20/47 (42%)	CIHR-HSI postdoctoral fellowship PPH projects 2018 # PPH/total funded (%) 15/29* (52%)	Total CIHR-HSI postdoctoral fellowship PPH projects 2017 and 2018 # PPH/total funded (%) 35/76 (46%)
Health equity	13	11	24
Social determinants of health	6	8	14
Community well-being	6	5	11
Partnerships across sectors	12	9	21
Broad view of health, beyond health care	4	6	10
Other PPH relevance**	3	2	5

*In 2018, HSI Fellowships were extended to include doctoral trainees, not included here which accounts for the small denominator

**Five projects were PPH projects relevant to infectious disease modeling, indicator development, surveillance, immunization policy, and risk factor epidemiology, without clear relevance to the listed PPH attributes. The total percentage of PPH projects is 40% when these are excluded

Numbers in PPH relevant attributes sum to more than the column totals as some projects were relevant to more than one PPH attribute

incorporated to make real-time course corrections (e.g., website content, changes to communications, and adjustments to evaluation administration).

This fellowship exemplifies what is possible with broad support for a public health initiative and an embedded researcher, implemented in an environment respectful of the autonomy and scope of the essential public health functions and use of evidence.

Fellowship project 3

As noted in the call, social and structural factors primarily determine health in the population (Guyon et al. 2017), yet largely fall outside the realm of the health system. These social determinants of health are a key focus of PPH. A third fellowship project is identifying ways to best integrate social determinants of health into a provincial health services and delivery system, including health care services (Neudorf 2012; Wyatt et al. 2016). Health care as a whole is a population health intervention, so there is value in orienting its processes, roles, and responsibilities to integrate and align with population health's foci (e.g., social determinants, equity).

A key activity is to develop a policy framework or road map for population health within a provincial health authority. Through explicitly articulating how PPH work is stewarded within the health services and delivery system, the policy framework ultimately aims to augment the profile of PPH within the health authority and better define its parameters within the organization. In development are considerations for actions that build organizational capacity toward consistent use of a population health lens in policies and practices organization-wide, while enhancing existing PPH supports and structures or exploring new resourcing of PPH work (e.g., embedding population health indicators within performance processes).

This fellowship enables the study of health system transformation that strengthens rather than weakens the core functions of public health as a population health approach in infiltrating clinical care, administrative, and governance components of this health organization.

Fellowship project 4

The final fellowship employs the use of best available evidence to inform gaps in surveillance activities that inform policy. Specifically, the fellow is exploring data linkage opportunities to understand how current evidence around individual-level risk factors applies or is translated to the Canadian population and the distribution of health outcomes. While it is important that connections between horizontal jurisdictions (e.g., surveillance, research, policy) exist in PPH, it is also important that levels of research and evidence (e.g., individual-, community-, and population-level interventions) are linked, and interpreted relative to each other. Public health decision-making considers research evidence as it translates to the population, including potential effects on inequities (Orton et al. 2011). A PPH lens ensures equitable policy decisions by triangulating multiple levels of evidence while recognizing population-level risk factors (e.g., income distribution). A recent example is the Canadian trans fats ban on industrially produced foods. Basic, clinical, and public health research provided evidence of trans fats' role in heart disease, while population health research identified their prevalence in low-cost foods, suggesting inequitable risk for heart disease among Canadians experiencing income vulnerability.

Building capacity for evidence-based public health is important for achieving a sustainable, accountable, learning health system. The health organization facilitates the fellow's development, who in turn facilitates organizational change (e.g., health system learning) (Brownson et al. 2018).

Conclusion

In closing, we have aimed to illustrate the value-add potential of PPH concepts when integrated with the broader health system, and ways in which we see our fellowships support, challenge, and guide health organizations, with the goal of moving toward sustainable health system change. In reflecting on our fellowships, we see commitment to the multidisciplinary nature of health, and a population-level lens as a fundamental skillset in our roles as networkers and coordinators in our respective health systems. Returning to simple analogies—such a role is to the overall health system as the patient navigator or hospital facilitator is to the health care and services delivery system. We believe that our diverse backgrounds, non-traditional career paths, and PPH training are key to initiating and supporting that skillset, while the fellowship is the opportunity that demands its continued development. If so, the Health System Impact Fellowship has the capacity to develop emerging leaders who can take up this role, by providing opportunities to foster leadership, networking, and change management skills that will enable them to fulfill this important responsibility.

Finally, at the recent Canadian Association for Health Services Policy and Research Conference, the larger inaugural fellowship cohort recommended that addressing "health equity" be a condition of all future fellowship applications, in line with CIHR's position on health equity (Ouédraogo et al. 2018). Health equity is the conceptual underpinning of "population health," highlighting the importance of PPH influence within health services and policy research (Rose 1992).

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

Brownson, R. C., Fielding, J. F., & Green, L. W. (2018). Building capacity for evidence-based public health: reconciling the pulls of practice and the push of research. *Annu Rev Public Health, 39*, 27–53.

Canadian Institute for Health Information (2013). Treatment of preventable dental cavities in preschoolers: a focus on day surgery under general anesthesia. Available at: https://secure.cihi.ca/free_products/Dental_Caries_Report_en_web.pdf. Accessed 13 June 2018.

Government of Canada (2012). What is the population health approach? Available at: https://www.canada.ca/en/public-health/services/health-promotion/population-health/population-health-approach.html. Accessed 13 June 2018.

Government of Canada (2017). Health Systems Impact Fellowship. Available at: https://www.canada.ca/en/institutes-health-research/news/2017/10/health_systems_impactfellowships.html. Accessed 13 June 2018.

Guyon, A., Hancock, T., Kirk, M., Sutcliffe, P., & Talbot, J. (2017). The weakening of public health: a threat to population health and health care system sustainability. *Canadian Journal of Public Health, 108*(1), E1.

Kindig, D., & Stoddart, G. (2003). What is population health? *Am J Public Health, 93*(3), 380–383.

Lee, H., Milgrom, P., Huebner, C. E., Weinstein, P., Burke, W., Blacksher, E., et al. (2017). Ethics rounds: Death after pediatric dental anesthesia: an avoidable tragedy? *Pediatrics, 7*, e20172370.

Neudorf, C. (2012). Integrating a population health approach into healthcare service delivery and decision making. *Healthcare Management Forum, 25*(3), 155–159.

Orton, L., Lloyd-Williams, F., Taylor-Robinson, D., O'Flaherty, M., & Capewell, S. (2011). The use of research evidence in public health decision making processes: systematic review. *PLoS One, 6*(7), e21704.

Ouédraogo, S., Mawani, FN., Subhan, FB., Polsky, J., Lai, J., Sim, M. Contributions of CIHR health system impact fellows to equitable health systems across Canada. Canadian Association of Health Services and Policy Research Annual Conference. (Panel Presentation). Montreal, PQ; May 29, 2018.

Rose, G. (1992). *The strategy of preventive medicine*. Oxford University Press.

Stevenson, R. M., Hogg, W., & Huston, P. (2007). Integrating public health and primary care. *Healthcare Policy, 3*(1), e160–e181.

Timmons, B. W., LeBlanc, A. G., Carson, V., Connor Gorber, S., Dillman, C., Janssen, I., et al. (2012). Systematic review of physical activity and health in the early years (aged 0–4 years). *Appl Physiol Nutr Metab, 37*(4), 773–792.

World Health Organization (2018). Constitution of WHO: principles. Available at: http://www.who.int/about/mission/en/. Accessed 13 June 2018.

Wyatt, R., Laderman, M., Botwinick, L., Mate, K., Whittington, J (2016). Achieving health equity: a guide for health care organizations. IHI White Paper. Cambridge, Massachusetts: Institute for Healthcare Improvement. (Available at ihi.org).