Wanted: better public health training for family physicians

Marie-Renée B-Lajoie MD CM MPH CCMF(MU) **Lucas Chartier** MD CM MPH FRCP

The list of current and upcoming challenges to the health of Canadians is long, and it continues to grow: the emergence of rapidly spreading and deadly illnesses, widespread migration of both Canadian travelers and immigrants, free-trade routes leading to the importation of goods and foods with varying quality standards, changing environments, and depletion of safe natural resources. Canadian public health workers have the opportunity to rise to the challenge, as they did during the 2003 SARS (severe acute respiratory syndrome) outbreak, with multidisciplinary, competent, and effective actions.[1] *Public health*, defined as "all organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole,"[2] serves to protect and improve the health of the population. However, even the Public Health Agency of Canada acknowledges that "there are significant challenges associated with [the] traditionally weak and limited public health capacity in Canada."[3] In order to be better prepared for new and complex challenges in a multidisciplinary and effective way, the Canadian public health sector needs to accomplish a few things. It needs to better engage physicians, especially family physicians who are often the first-line providers, in public health and train them appropriately to become the evidence-based and proactive public health advocates that their respective communities deserve. To do so, we need to better prepare family medicine residents as they complete residency training, and put emphasis on the public health role of family physicians.

Public health human resources

The 20th century has seen its share of improvement in the health of Canadians. Life expectancy has grown from 60 years of age in the 1920s to about 80 years almost a century later.[4] The Canadian Public Health Association lists 12 important public health advances in the past century, ranging from control of infectious diseases to motor vehicle safety.[5] Eleven of these important advances would not have been possible without the work of public health professionals, including and sometimes primarily family physicians. Yet, more than ever, the strength of our public health system is being challenged—the Canadian measles epidemic from 2013 to 2014 is a sad reminder of this point.[6] To consolidate past achievements and strengthen future responses, physicians need to mobilize around public health issues. In light of the relatively small number of Canadian physicians currently specializing in public health and the paucity of public health education throughout general medical training, we are concerned that we might fall short of the high expectations that have been placed upon us by society.

According to the Public Health Agency of Canada, there is "little quantitative information on the state of public health human resources in Canada."[7] Although estimates differ and physicians might take on a variety of roles that are not reflected in these statistics, as few as between 210 and 470 physicians are currently working as Canadian medical officers of health.[7-9] There are also large numbers of physicians who have been trained in public health, but who are not currently working in this sphere.[7,8] This is in contrast to the 12 000 public health nurses and thousands of public health laboratory technicians, microbiologists, and epidemiologists.[7] What is possibly worse is that

> relatively few public health physicians maintain active clinical practices while working for a public health unit. Aside from reporting mandatory diseases, even fewer … family doctors interact in a meaningful way with their local public health units.[7]

This situation is occurring despite the facts that most public health specialization programs include family medicine training and that family medicine programs attempt to put some emphasis on public health training. Simply said: on one side, public health practitioners tend to let go of clinical practice, whereas on the other, clinicians avoid public health tasks. This lack of connection among specialties affects the efficacy of both clinical and public health efforts, despite clear evidence that substantial overlap exists and could benefit patient care directly.[10,11]

Exposure to public health education

Almost all Canadian medical schools currently have a postgraduate medical program in public health and preventive medicine. They are 5-year specialty programs, currently combining for 27 direct-entry positions annually,

This article has been peer reviewed.
Can Fam Physician 2016;62:471-3

La traduction en français de cet article se trouve à **www.cfp.ca** dans la table des matières du numéro **de juin 2016** à la **page e294.**

with potential re-entry positions. Approximately half of the programs include 2 years of training and Certification in Family Medicine.[12] These quotas have progressively increased over the years to compensate for many fewer specialists having been trained in the past.[13] Given the length of these programs and the relatively small numbers they can accommodate, there must be access to high-quality public health training for physicians who decide to pursue other specialties. This is especially true for family medicine residency training programs, which accommodate the largest numbers of trainees but only have 2 years to train them in all aspects of family practice, including public health.

Unfortunately, based on a review we conducted of current mandatory medical curricula in Canada, the exposure to public health that medical trainees get is diverse and minimal. In fact, in an extensive evaluation of public health education in Canada by the Association of Faculties of Medicine of Canada, it was found that "medical students do not select public health electives."[14] Luckily, all family medicine training programs at least indirectly promote public health through the CanMEDS and CanMEDS–Family Medicine physician competency frameworks.[15,16] These frameworks describe the knowledge, skills, and abilities that specialist physicians need for better patient outcomes.[15] Sadly, only a handful (out of about 100) of these objectives pertain to the health needs of communities, activities that contribute to the effectiveness of health care organizations, or allocation of finite health care resources. Further, it is unclear how each residency program meets those requirements, especially within the short 24 months of family medicine training. In fact, family medicine residents clearly stated in a national survey that they were "poorly equipped to discharge the [public health] part of their duties on starting their practice."[17]

Arming physicians with knowledge

We believe that the combination of the paucity of public health training in postgraduate medical education and the lack of appropriately trained physicians currently working in the public health sphere is detrimental to the health of the Canadian population. Better training in family medicine programs might allow early identification of problems related to general public health issues and improved understanding of how to actively respond to these problems. It can also enhance family physicians' perception of competency in regard to these issues, such as rabies management or prevention of respiratory infections.[18,19] As discussed by Drs Sikora and Johnson in *Canadian Family Physician* in 2009, "Implementing public health elements into family medicine practice clearly has benefits."[20] We believe these benefits stem from multifaceted and comprehensive public health training offered by formal training programs that could be incorporated in curricula. One solution, proposed by Harvey et al, is the use of a list of competencies to be addressed during training, which includes elements such as "demonstrat[ing] an effective approach to disease prevention and health promotion,"[21] and "develop[ing] and apply[ing] the knowledge and skills necessary to assess a population's health."[21] On a related note, Potts et al described an integrated curriculum within family medicine training in the United States that meant to enhance and highlight public health experiences in the existing 3-year curriculum without further straining existing time and human resources.[22] Finally, the Association of Medical Faculties of Canada published a report of best practices for public health training in the undergraduate curriculum, touching briefly on residency programs.[14] Determining how these solutions could best be integrated into current programs will require further work and evaluation.

Most public health training programs, whether at the graduate or postgraduate level, focus on a few core disciplines. We believe that family medicine training programs should also encompass these disciplines. First, the social determinants of health are the cornerstone of any public health training.[23,24] In addition, basic knowledge of biostatistics, epidemiology, and health care management and policy are also important. Only armed with the aforementioned knowledge can physicians analyze the available data, draw appropriate conclusions, and engineer meaningful changes in their community and beyond. Given the complexity of the health care environment in which family physicians work, a broad but thorough understanding of the functioning of the system, as well as the way in which to implement change, is paramount for family physicians to be effective in the public health role.

Conclusion

We believe that in order to address upcoming challenges to the health of Canadians, public health training needs to be strengthened nationwide. It also needs to move beyond the vertical silos of specialty-trained physicians who are barely involved, if at all, in clinical practice. Public health training first needs to permeate family medicine residency programs through the integration of core public health courses within curricula and hands-on graded clinical responsibilities. This would equip family physicians with tools to proactively address public health issues as they arise within their communities, and continue their important role as health advocates. More important, it would allow them to have a better understanding of how the Canadian public health system functions, and which resources to turn to when in need. Formal training in public health, whether through graduate or postgraduate training, will remain vital for those officials who will be at the helm of larger

organizations or who will have bigger portfolios. However, for all other physicians, formal training through their medical postgraduate programs is becoming a necessity to address the complexity of health issues and the health care system as a whole.

Dr B-Lajoie is Associate Professor in the Department of Family Medicine at McGill University in Montreal, Que, and an attending physician at Jewish General Hospital; she is currently on sabbatical to pursue an MBA at INSEAD. **Dr Chartier** is Assistant Professor in the Division of Emergency Medicine in the Department of Medicine at the University of Toronto in Ontario, and an emergency physician at the University Health Network and the North York General Hospital.

Competing interests
None declared

Correspondence
Dr Marie-Renée B-Lajoie; e-mail **marie-renee.lajoie@mcgill.ca**

References

1. Borgundvaag B, Ovens H, Goldman B, Schull M, Rutledge T, Boutis K, et al. SARS outbreak in the greater Toronto area: the emergency department experience. *CMAJ* 2004;171(11):1342-4. Erratum in: *CMAJ* 2005;172(6):730.
2. World Health Organization. *Public health*. Geneva, Switz: World Health Organization; 2015. Available from: **www.who.int/trade/glossary/story076/en**. Accessed 2015 Feb 10.
3. Public Health Agency of Canada. *The Public Health Agency of Canada—strategic plan: 2007—2012, information, knowledge, action*. Ottawa, ON: Public Health Agency of Canada; 2007. Available from: **www.phac-aspc.gc.ca/publicat/2007/sp-ps/SPPS-06d1-eng.php**. Accessed 2016 Apr 14.
4. Statistics Canada. *Life expectancy at birth, by sex, by province*. Ottawa, ON: Statistics Canada; 2012. Available from: **www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/health26-eng.htm**. Accessed 2013 Nov 11.
5. Canadian Public Health Association. *12 great achievements*. Ottawa, ON: Canadian Public Health Association; 2015. Available from: **http://cpha.ca/en/programs/history/achievements.aspx**. Accessed 2015 Jan 5.
6. Public Health Agency of Canada. *Public health notice: measles.* Ottawa, ON: Public Health Agency of Canada; 2014. Available from: **www.phac-aspc.gc.ca/phn-asp/2013/measles-0717-eng.php**. Accessed 2015 Apr 19.
7. Public health human resources. In: National Advisory Committee on SARS and Public Health. *Learning from SARS—renewal of public health in Canada.* Ottawa, ON: Public Health Agency of Canada; 2004. Available from: **www.phac-aspc.gc.ca/publicat/sars-sras/naylor/7-eng.php**. Accessed 2013 Nov 11.
8. Canadian Medical Association. *Number of physicians by province/territory and specialty, Canada, 2013*. Ottawa, ON: Canadian Medical Association; 2013. Available from: **www.cma.ca/Assets/assets-library/document/en/advocacy/policy-research/physician-historical-data/2013-01-spec-prov.pdf**. Accessed 2016 Apr 14.
9. Hasselback P, Rusk R. Public health physicians are caught in a losing battle [eLetter]. *CMAJ*. Epub 2008 Sep 26. Available from: **www.cmaj.ca/content/179/9/877.figures-only/reply-cmaj_el_20593**. Accessed 2016 Apr 14.
10. Russell ML, McIntyre L. Boundaries and overlap. Community medicine or public health doctors and primary care physicians. *Can Fam Physician* 2009;55:1102-3.e1-5. Available from: **www.cfp.ca/content/55/11/1102.full.pdf+html**. Accessed 2016 Apr 14.
11. Hill A, Levitt C, Chambers LW, Cohen M, Underwood J. Primary care and population health promotion. Collaboration between family physicians and public health units in Ontario. *Can Fam Physician* 2001;47:15-7 (Eng), 22-5 (Fr).
12. Canadian Resident Matching Service [website]. *Santé publique et médecine préventive. 2014 jumelage R-1. Vue d'ensemble des quotas par université.* Ottawa, ON: Canadian Resident Matching Service; 2014. Available from: **https://phx.e-carms.ca/phoenix-web/pd/main?mitid=1201**. Accessed 2016 Apr 14.
13. Canadian Resident Matching Service [website]. *R-1 match reports*. Ottawa, ON: Canadian Resident Matching Service; 2015. Available from: **www.carms.ca/en/data-and-reports/r-1**. Accessed 2015 Feb 15.
14. Association of Faculties of Medicine of Canada. *An environmental scan of best practices in public health undergraduate medical education. Report 3: interviews with Canadian medical school representatives.* Ottawa, ON: Association of Faculties of Medicine; 2009.
15. Royal College of Physicians and Surgeons of Canada. *CanMEDS: better standards, better physicians, better care*. Ottawa, ON: Royal College of Physicians and Surgeons of Canada; 2014. Available from: **www.royalcollege.ca/portal/page/portal/rc/canmeds/framework**. Accessed 2016 Apr 14.
16. Working Group on Curriculum Review. *CanMEDS-Family Medicine: a framework of competencies in family medicine.* Mississauga, ON: College of Family Physicians of Canada; 2009. Available from: **www.cfpc.ca/uploadedFiles/Education/CanMeds%20FM%20Eng.pdf**. Accessed 2016 Apr 14.
17. Association of Faculties of Medicine of Canada. *An environmental scan of best practices in public health undergraduate medical education. Report 2: Association of Faculties of Medicine of Canada—furnished existing literature review.* Ottawa, ON: Association of Faculties of Medicine; 2009.
18. Hogg W, Huston P, Martin C, Saginur R, Newbury A, Vilis E, et al. Promoting best practices for control of respiratory infections. Collaboration between primary care and public health services. *Can Fam Physician* 2006;52:1110-1. Available from: **www.cfp.ca/content/52/9/1110.full.pdf+html**. Accessed 2016 Apr 14.
19. Grill AK. Approach to management of suspected rabies exposures. What primary care physicians need to know. *Can Fam Physician* 2009;55:247-51.
20. Sikora C, Johnson D. The family physician and the public health perspective. Opportunities for improved health of family practice patient populations. *Can Fam Physician* 2009;55:1061-3 (Eng), e47-9 (Fr).
21. Harvey BJ, Moloughney BW, Iglar KT. Identifying public health competencies relevant to family medicine. *Am J Prev Med* 2011;41(4 Suppl 3):S251-5.
22. Potts SE, Deligiannidis KE, Cashman SB, Caggiano ME, Carter LH, Haley HL, et al. Weaving public health education into the fabric of a family medicine residency. *Am J Prev Med* 2011;41(4 Suppl 3):S256-63.
23. World Health Organization [website]. *Social determinants of health*. Geneva, Switz: World Health Organization; 2013. Available from: **www.who.int/social_determinants/en**. Accessed 2013 Nov 11.
24. Public Health Agency of Canada [website]. *What determines health?* Ottawa, ON: Public Health Agency of Canada; 2011. Available from: **www.phac-aspc.gc.ca/ph-sp/determinants**. Accessed 2013 Nov 11.