

The family physician and the public health perspective

Opportunities for improved health of family practice patient populations

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Scenario 1

You are a family physician arriving at the clinic the Monday morning after a sunny summer weekend. Over the course of the morning you see 5 patients suffering from vomiting and diarrhea. After talking to your colleagues, you find out that another 8 patients with similar symptoms were seen Sunday evening in the emergency department. Many of the patients reported going to a wedding reception on Saturday.

Scenario 2

You are a physician in a primary care clinic that has a high proportion of children among its patient population. You see a child complaining of abdominal pain. His mother tells you that he has not been doing very well in school. The results of a blood test reveal elevated lead levels. There are younger and older siblings at home, and other families with young children live in the same rental apartment building as your patient.

Scenario 3

You are one of several physicians in a group practice. While sitting over coffee at the end of a busy workday, you and your colleagues discuss a case of invasive group A streptococcus (GAS) in one of your long-term care centre patients. According to a recent report by the provincial Chief Medical Officer of Health, the rates of GAS appear to be rising in your province. The topic then turns to other preventable communicable diseases. You and your colleagues wonder how many adults within your practice are immunized against *Streptococcus pneumoniae*. You know you do a fairly good job of ensuring that everyone eligible receives the vaccine but do not know if you are missing anyone. You wonder how many patients have become eligible in the past year.

The first scenario describes a food-related gastrointestinal illness in a community. The management of this, and other communicable diseases, requires an understanding of the public health perspective. Recognizing

an outbreak of illness (when the number of observed cases exceeds the number expected) that is of public health significance (ie, notifiable disease) is important. Although treatment of the presenting patient is of the utmost importance, prevention of future illness in the community is just as vital. Such diseases might require reporting, contact tracing, investigation, prophylaxis, and follow-up. In many jurisdictions, after initial reporting or notification by primary care physicians, the local Medical Officer of Health and other public health unit staff will complete the additional required tasks. The family physician is an important partner in the initial recognition and reporting of communicable disease outbreaks.

The second scenario describes the identification of lead toxicity in a child following clinical suspicion. As with the first case, initial management of the presenting patient is essential. However, it is also critical to investigate the source and prevent further exposure to the individual, the family, and the community. In many Canadian jurisdictions, public health offices will coordinate the investigation and management of such community-based environmental exposures. Once hazards are identified in the environment, modifications to family practice patterns can be made. In this scenario, physicians in the area might need to begin screening all children for lead exposure. Anticipating and preventing adverse health outcomes is important to maintaining a healthy population. There are many preventive health and health promotion activities that are easily initiated in the office setting.¹ Interventions can range from advice for the mitigation of future harm, to offering prophylaxis and vaccinations. The periodic health examination is an ideal setting to inquire about risk factors for disease and is often an excellent opportunity to perform recommended screening tests. An age-appropriate "cradle-to-grave" approach to this preventive health strategy is fundamental to the care of our patient populations.

The third scenario is an example of how surveillance and regular practice review cycles are important in family practice. The example outlines the role of surveillance in monitoring and delivering health protection

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activities, such as vaccinations. Practice review cycles (or quality assurance cycles) in physicians' offices are completed to improve the health of the individual patient. These cycles typically focus on suggested diagnostic tests, screening protocols, or established treatment guidelines. Surveillance is often defined as the ongoing collection, analysis, interpretation, and dissemination of health information (eg, risk factors, health conditions, exposures, hazards, or agents) for the purposes of action. The long-term measurement of health conditions, risk factors, or exposures can be systematic in nature and can benefit not only the individual patient (eg, monitoring concordance to hypertension treatment guidelines), but also the greater population (eg, monitoring and improving vaccination rates). Surveillance of populations of any size is possible, and measuring events within a practice population is the backbone of successful population health interventions.

Community-based practice

All physicians should "know" their practice populations in order to make informed decisions in the practice environment and in the broader population. For example, with a well-designed electronic medical record, a physician might be able to quickly determine rates of illness, anthropometric measures of the population, individual- and population-level laboratory results, trends, and a snapshot of treatment interventions. Effective population-based chronic disease management programs require surveillance and population health assessment measures to identify and address the needs of the group. Establishing surveillance and epidemiologic analysis techniques within clinics can improve practice, providing direction for clinical focus and bettering the health of patients and the surrounding population.

Family medicine, at its core, requires physicians to be resources for their practice communities, as well as for their individual patients. Understanding the biophysical medical model of disease and illness and how it affects individuals is key to the diagnosis and treatment of all patients. However, the illness experience of the individual

is often affected by broader forces. Income, culture, environment, genetics, education, and overall social structure, to name a few, determine the state of health experienced by members of a community.² The affected population might be fundamentally different, or larger, than a clinic's defined population. Identifying and influencing these determinants, both in practice and in the general population, can help improve the health of all Canadians.

As demonstrated in the 3 scenarios, interactions with the environment can change immediate and long-term health conditions at all stages of development. Performing interventions with a public health perspective is a vital aspect of our work as family physicians. In the Canadian context, these public health actions can be separated into key domains as outlined by the Advisory Committee on Population Health and the National Advisory Committee on SARS and Public Health (Table 1^{3,4}). Implementing public health elements into family medicine practice clearly has benefits: Successful interventions can prevent disease and injury, thereby increasing health and decreasing the expenses of taxpayers and governments. As described, interventions that address health protection, disease and injury prevention, and health promotion, as well as health assessment and surveillance, can be developed.

Public health in primary care

Primary care practice is an excellent environment to initiate public health-type interventions, such as health protection, disease and injury prevention, and health promotion. These interventions can be carried out in clinics in all geographic regions of Canada. Patients are seen in varying states of health, from risk factor identification and modification to treatment and palliation; as community-based family physicians understand this, they are able to adapt to local circumstances and needs. As a group, family physicians have the ability to affect a large segment of the Canadian population through direct patient interaction.

There might be barriers to implementing a public health perspective within primary care practice. All too

Table 1. Key domains of public health practice


PUBLIC HEALTH DOMAIN	DEFINITION OR PURPOSE
Health protection	Taking action to protect individuals against health and safety risks
Health surveillance	Identifying health events of concern through the collection, integration, analysis, and interpretation of data, with the dissemination of the results to the appropriate people or organizations
Disease and injury prevention	Developing interventions to reduce the likelihood or progression of disease
Population health assessment	Identifying conditions and factors that influence the health of populations and applying this knowledge to the development of policies to improve the health of the population
Health promotion	Engaging with individuals, communities, and agencies to enable people to take control of and improve their health
Disaster response	Working with communities and agencies to prepare for emergency situations that might occur. Planning includes preparation, response, recovery, and prevention

Data from the Advisory Committee on Population Health³ and the National Advisory Committee on SARS and Public Health.⁴

often, individuals see physicians for acute care issues. Identifying risk factors, screening, and advising appropriately require an engaged, involved patient base interested in preventive measures. Screening, education, and risk management interventions take a great deal of time, and there can be challenges to addressing both acute and preventive aspects of health within the office setting. As well, reviewing trends within the practice population might need to take place outside patient-care hours; as a result, this work might not be compensated. It also can be difficult to obtain the skills necessary to analyze health trends and disease statistics. Therefore, novel funding strategies for individuals and groups should be explored to remunerate preventive and health assessment activities. As a potential solution, primary care networks have been implemented in several jurisdictions across the country, which might increase the ability of physicians to prevent, monitor, and manage illness and disease in larger populations. To successfully implement these networks, funding agreements among the physician, the clinic, the ministry of health, and the surrounding health authorities are an option. Such networks might also increase the availability of necessary experts (eg, nutritionists, health promotion specialists, epidemiologists) to design and implement such strategies.

Given the opportunity to improve the health of their patients and communities, family physicians should include a public health approach in their practices. There should be an established procedure for 2-way communication with local public health units on important clinical issues (eg, reporting cases of measles or animal bites to the local Medical Officer of Health) and for management of emerging diseases (eg, information on novel influenza investigation and management sent from the provincial public health unit). To assist with

implementation of public health interventions and initiatives, family physicians can seek the assistance of the Royal College of Physicians and Surgeons of Canada certified community medicine specialists, who often also have family medicine specialty training, and work with local public health units, regional health authorities, or federal, provincial, and territorial ministries of health.

If a greater emphasis is placed on improving the health of practice communities, family physicians can have a greater positive effect overall on the future health of our patients than what could be attained through the action of singular specialty physicians. The specialty of family medicine stands poised to be a major partner in disease prevention, surveillance, and promotion of health in Canada. 

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Competing interests
None declared

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References

1. Canadian Task Force on the Periodic Health Examination. *The Canadian guide to clinical preventive health care*. Ottawa, ON: Public Health Agency of Canada; 1994. Available from: www.phac-aspc.gc.ca/publicat/clinic-clinique/index-eng.php. Accessed 2009 Sep 22.
2. Federal, Provincial and Territorial Advisory Committee on Public Health. *Statistical report on the health of Canadians*. Ottawa, ON: Statistics Canada; 1999. Available from: www.statcan.gc.ca/pub/82-570-x/4227734-eng.pdf. Accessed 2009 Sep 22.
3. Advisory Committee on Population Health. *Survey of public health capacity in Canada. Highlights report to the federal, provincial, territorial deputy ministers of health*. Ottawa, ON: Public Health Agency of Canada; 2001.
4. National Advisory Committee on SARS and Public Health. *Learning from SARS. Renewal of public health in Canada*. Ottawa, ON: Health Canada; 2003. Available from: www.phac-aspc.gc.ca/publicat/sars-sras/pdf/sars-e.pdf. Accessed 2009 Sep 22.