The Role of Primary Care in a Pandemic: Reflections During the COVID-19 Pandemic in Canada

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Abstract
As COVID-19 cases began to rise in Ontario, Canada, in March 2020, increasing surge capacity in hospitals and intensive care units became a large focus of preparations. As part of these preparations, primary care physicians were ready to be redeployed to the hospitals. However, due to the effective implementation of community-wide public health measures, the hospital system was not overwhelmed. As Ontario prepares now for a potential second wave of COVID-19, primary care physicians have an opportunity to consider the full breadth and depth of scope for primary care during a pandemic. From planning to surveillance to vaccination, primary care physicians are positioned to play a unique and vital role in a pandemic. Nevertheless, there are specific barriers that will need to be overcome.

Keywords
pandemic, COVID-19, primary care, emergency response, planning, health systems

Dates received: 17 August 2020; revised: 4 September 2020; accepted: 7 September 2020

Introduction
As COVID-19 cases began to rise in Ontario, the public health and healthcare sectors began to rapidly prepare. A core component of preparations was to increase surge capacity in hospitals, anticipating a large influx of patients that would require critical care and ventilation. Plans were made for family physicians to be redeployed to work in hospitals if needed. However, as societal physical distancing measures took effect, the rate of transmission fortunately decreased. In most areas in Ontario, mainly outside of the Greater Toronto Area, the expected surge did not impact hospitals to the degree that was feared and expected. Instead, the majority of cases were managed in the community by primary care physicians.

Family medicine, as a specialty, is defined by several characteristics:

- community-based;
- continuity of care;
- first point-of-contact;
- comprehensive whole-person care;
- coordination of intersectoral and multidisciplinary team.1

While other medical specialties may at times incorporate some of these attributes, none exemplify all of these characteristics in the same way as family medicine. Importantly, there has been extensive research to demonstrate that access to a family physician improves patient satisfaction, hospitalization rates, clinical outcomes and equity.2-4 It is precisely these characteristics that place family physicians in a unique position in pandemic response. In this article, we outline some of the vital functions of primary care during a pandemic, based on studies and experiences of previous pandemics. Working through the course of a pandemic, from onset, peak, recovery and planning for the next pandemic, we demonstrate the need for support for primary care to explore and perform its role in a pandemic, outside of the hospital system.

Educate and Communicate
Many patients will inevitably turn to their family physicians as “trusted and credible sources of information.”5 In fact, family physicians may be considered more reliable by patients than public health organizations. This may be due to the

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longstanding relationship between a patient and their family physician, but also due to mistrust amongst some groups of governmental organizations, including public health organizations. Therefore, family physicians have a duty to remain up-to-date with the best evidence as the pandemic progresses, and public health organizations must maintain open lines of communication with primary care. Family physicians have the opportunity to provide patients with advice on individual preventative measures, self-management of symptoms and to correct sometimes detrimental misinformation.

Another opportunity for family physicians that may be overlooked and under-utilized is to emphasize with patients with COVID-19 the importance of isolation. Case-contact tracing and reinforcing self-isolation is one of the core responsibilities of public health. Nevertheless, when a patient is diagnosed, there is an opening for their family physician to contact them and reinforce public health measures. Similarly, if a patient were to identify themselves to their physician as a contact to a case, the role of quarantine can be emphasized. In this way, family physicians help to slow the spread of COVID-19.

**Surveillance**

Primary care physicians are a key component of surveillance systems, with the responsibility to report to public health when they identify communicable diseases of significance. For example, as a patient’s first point-of-contact, primary care tends to identify a spike in seasonal influenza earlier than emergency departments, and can serve as a reliable indicator of underlying trends in community transmission. This function will become increasingly important in post-peak surveillance, when primary care physicians will be the ones to whom patients are most likely to first present, and may therefore be the first to identify resurgence of COVID-19.

**Triage and Treatment of Pandemic Illness in the Community**

While a small subset of patients with COVID-19 will inevitably require hospitalization, the majority will be seen first and solely by primary care because the majority of infected individuals experience only mild to moderate symptoms. In Ontario, as of August 28, 2020, 11.6% of cases had ever been hospitalized, meaning that almost 90% of cases were managed in the community. Treating as many patients in the community as possible also removes strain from the hospital system, reducing the risk of overwhelming hospital capacity. Furthermore, reflecting on their experiences of COVID-19 in Italy, a group of intensive care physicians wrote, “We are learning that hospitals might be the main COVID-19 carriers, as they are rapidly populated by infected patients, facilitating transmission to uninfected patients. . .This disaster could be averted only by massive deployment of outreach services. Pandemic solutions are required for the entire population, not only for hospitals.” Similarly, a model based on pandemic influenza and SARS found that a higher concentration of hospitals is linked with greater spread and mortality, while a higher concentration of community-based primary care clinics to triage, diagnose and treat the pandemic illness was associated with reduced transmission and mortality. Hence, primary care of COVID-19 in the community is critical to keep as many patients out of hospital as possible to reserve constrained hospital resources and prevent institutional outbreaks.

**Prevention of Spread Amongst Vulnerable Populations**

Certain populations will be at a higher risk of contracting communicable diseases, such as those who are unstably housed or living in congregate settings. Still others are more vulnerable to worse outcomes from a respiratory illness, such as those who are immunocompromised or have multiple comorbidities. Public health organizations will often attempt to broadly identify, inform, and provide support for these populations. Yet, primary care physicians are in a unique position of being able to individually pinpoint who in their practice is most vulnerable. By proactively reaching out to these patients, family physicians are able to provide education and support to prevent spread to these individuals. No one else in the healthcare sector is able to perform this function in the way that family physicians can.

Moreover, in most communities, family physicians form the backbone of outreach services to the most vulnerable and to congregate living settings. In these settings, family physicians may be expected to set the standards for infection prevention and control measures, as well as help coordinate response to outbreaks within the facility.

**Home and Community Care of Higher Acuity Non-Pandemic Illness**

During a pandemic, primary care physicians will need to provide care in the community to an increasing number and higher acuity of patients. Patients that may have typically been admitted to hospitals for short stays may need to be treated as an outpatient during a pandemic. This is primarily to divert patients away from hospitals that are already stretched in terms of resources. Further, this prevents vulnerable patients from risking exposure in the hospital setting. There are multiple potential avenues to provide this increased care, including continued adapted clinic-based care, strengthened multidisciplinary home care, tele-monitoring and virtual visits.
Vaccination
If and when this becomes available for COVID-19, primary care physicians are going to play an important role in delivering population-wide vaccination. While this process will likely be coordinated by public health, primary care offers a built-in infrastructure for rapid distribution of vaccines. Moreover, in a survey on influenza vaccination in 2009, about a third of people were found to be reluctant to receive the vaccination even after public health messaging. Yet, due to longer-standing rapport, patients may be more likely to receive the vaccine after discussion with their family physician.

Post-Pandemic Recovery
Considering the stringency of societal physical distancing measures, during which many lost jobs and social contact decreased, there will be a lot of rebuilding that must take place following COVID-19. Some patients will have increased health needs due to the long period of physical distancing, and the impact that has had on their physical and mental health. Others will have avoided acute or delayed routine medical care due to fears over exposure to COVID-19. In the post-peak period, family physicians will have a large role in caring for these needs. Following the relaxation of physical distancing measures, there will likely be an increase in demand of counselling and mental health services, higher volume of preventive care, and a higher acuity of medical complaints.

Pandemic Planning
Finally, a core component of pandemic recovery is to assess lessons learned and begin to prepare and plan for another pandemic. This needs to take place within each organization and across organizations in the public health and healthcare sectors. Traditionally, primary care specific planning has been limited. However, COVID-19 highlights the importance of having primary care representatives in the creation of pandemic preparedness plans.

Barriers
Though primary care has many important roles in a pandemic, there are also many barriers or challenges to family physicians being able to fulfill these roles.

- Time: Family physicians are often already feeling pressured in terms of time commitments. Expanding and adapting clinical practice during a pandemic can be difficult.
- Communication: Following SARS and H1N1 influenza, one of the largest barriers identified by surveyed family physicians was the sense of lack of communication or miscommunication between public health agencies and primary care.

Recommendations
As Ontario passes the first peak of COVID-19, it is now necessary to reflect on lessons learned in order to best prepare for any subsequent waves, as well as for future pandemics. Based on the discussed roles of primary care in a pandemic, and the related barriers, several recommendations can be made:

- Prioritize primary care in PPE provision
- Improve access and use of data generated from primary care for syndromic surveillance
- Include primary care representatives on pandemic planning and response committees in all healthcare sectors and formulate primary care specific pandemic plans for each community
- Creation of clinical care pathways and guidelines to support family physicians in providing care for higher acuity illness in the community
- Governmental investment in technology in primary care to improve quality of virtual care
- Consider creation of community-based clinics for triage and treatment
- Expansion of home-based care by primary physicians
• Timely and open avenues of communication between public health organizations and primary care, with clear messages for physicians to give to patients

Lastly, though this review found several useful commentaries, guidelines and qualitative studies, evidence of how primary care can best respond to a pandemic is limited overall. COVID-19 presents an opportunity for further research on this area.

Conclusion

The response to COVID-19 has required extensive adaptation and flexibility by all healthcare providers. Nevertheless, the focus, particularly at the beginning of the outbreak, was on the impact on and response of secondary and tertiary care. The primary care sector’s duties in the response focused on how it could participate in the response of secondary and tertiary care centers. However, due to effective public health measures, much of the created hospital surge capacity was thankfully not required. There is now time to reflect and learn from this experience in order to best prepare for a subsequent wave. The entire breadth and depth of the role of primary care during outbreaks and pandemics remains to be fully recognized and utilized.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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References

1. Haggerty J, Bruge F, Levesque JF, Gass D, Pineault R, Beaulieu MD, Santor D. Operational definitions of attributes of primary health care: consensus among Canadian experts. Ann Fam Med. 2007;5:336-344.
2. Parchman ML, Burge SK. The patient-physician relationship, primary care attributes, and preventive services. Fam Med. 2004;36:22-27.
3. Rosenblatt RA, Wright GE, Baldwin LM, et al. The effect of the doctor-patient relationship on emergency department use among the elderly. Am J Public Health. 2000;90:97-102.
4. Weiss LJ, Blustein J. Faithful patients: the effect of long-term physician-patient relationships on the costs and use of health care by older Americans. Am J Public Health. 1996;86:1742-1747.
5. Rust G, Melbourne M, Truman BI, Daniels E, Fry-Johnson Y, Curtin T. Role of the primary care safety net in pandemic influenza. Influenza Prep Resp. 2009;99:S316-S324.
6. Green ME, Weir E, Hogg W, et al. Improving collaboration between public health and family health teams in Ontario. Health Policy. 2013;8:e93-e104.
7. Voo TC, Capps B. Influenza pandemic and the duties of healthcare professionals. Singap Med J. 2010;51:275-282.
8. Wong W, Lee A, Tsang KK, Wong S. How did general practitioners protect themselves, their staff and their families during the Severe Acute Respiratory Syndrome epidemic in Hong Kong? J Epidemiol Community Health. 2004;58:180-185.
9. Lee A, Chuh AAT. Facing the threat of influenza pandemic - Roles of and implications to general practitioners. BMC Public Health. 2010;10:661-668.
10. Sloane PD, MacFarquhar JK, Sickbert-Bennett E, et al. Syndromic surveillance for emerging infections in office practice using billing data. Ann Fam Med. 2006;4:351-358.
11. Ontario Agency for Health Protection and Promotion. Ontario COVID-19 data tool. Accessed August 28, 2020. https://www.publichealthontario.ca/en/data-and-analysis/infectious-disease/covid-19-data-tool.
12. American College of Physicians; Barnitz L, Berkwis M. The health care response to pandemic influenza. Ann Intern Med. 2006;145:135-137.
13. Nacoti M, Ciocca A, Giupponi A, et al. At the epicenter of the COVID-19 pandemic and humanitarian crises in Italy: changing perspectives on preparation and mitigation. NEJM Catalyst. 2020;1.
14. Lizon NA, Schwartz B, Alemad DM. Incorporating healthcare systems in pandemic models. In: IEEE Proceedings of 2010 Winter Simulation Conference, Baltimore, MD: IEEE; 2010.
15. Rahim-Jamal S, Bhaloo T, Quail P. Developing a national role description for medical directors in long-term care. Can Fam Physician. 2010;56:e30-35.
16. Nori A, Williams MA. Pandemic preparedness - Risk management and infection control for all respiratory infection outbreaks. Aust Fam Physician. 2009;38:891-895.
17. Knebel A, & Phillips SJ (eds). Home health care during an influenza pandemic: issues and resources. Rockville, MD: Agency for Healthcare Research and Quality; 2008.
18. Chor JSY, Ngai K, Goggins WB, et al. Willingness of Hong Kong healthcare workers to accept pre-pandemic influenza vaccination at different WHO alert levels: two questionnaire surveys. BMJ. 2009;359:b3398.
19. Galea S, Merchant RM, Lurie N. The mental health consequences of COVID-19 and physical distancing: the need for prevention and early intervention. JAMA Intern Med. 2020;180:817-818.
20. Moroni F, Gramegna M, Ajello S, et al. Collateral damage: medical care avoidance behaviour among patients with myocardial infarction during the COVID-19 pandemic. JACC. 2020;2:1620-1624.
21. Lauer J, Kastner J, Nutsch A. Primary care physicians and pandemic influenza: an appraisal of the 1918 experience and an assessment of contemporary planning. J Public Health Manag Pract. 2008;14:379-386.
22. Tay J, Ng YF, Cutter J, James L. Influenza A (H1N1-2009) pandemic in Singapore - Public health control measures implemented and lessons learnt. Ann Acad Med Singap. 2010;39:313-324.