Rethinking screening during and after COVID-19

Should things ever be the same again?

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Practice scenario

The mood at the Colgrove practice meeting is sombre; the clinic has been badly affected by the coronavirus disease 2019 (COVID-19) pandemic and has had to lay off 2 staff members. The physicians have adapted to virtual consultations. The 2 senior partners with older patient populations are still taking many calls, but Joan, with her female-focused practice, has many fewer in-person prenatal visits and many of her patients are postponing their annual physical examinations and Papanicolaou tests, and are getting their repeat contraception from pharmacies without review. Both she and John, with their interest in pediatrics, are dealing with acute problems, but their regular bookings of well-child visits and immunizations have dropped away. The initial phase of the pandemic has passed, but cases still occur and the disease might flare up again in the fall. One asks, "When and how can we get back to where we were?"

The COVID-19 pandemic has upended medical practice. We switched to virtual visits and we are learning how to perform them effectively. It has changed when and how physicians and other health care providers meet our patients face to face. This change has shaken ideas loose from a style of medical practice that is no longer suitable for an electronic society. Given that provinces have now developed systems to encourage and reimburse virtual visits, family physicians and many other specialists are discovering what can be done by electronic means and how only a part of our work needs in-person contact. It appears that the "whites of the eyes" rule for payment of every patient interaction is dead or at least mortally wounded.

We are realizing how many clinical actions are unnecessary, as highlighted previously by the Choosing Wisely campaign[1,2] and Practicing Wisely workshops.[3] Patients are learning that they can handle many problems at home, either themselves or with advice gained in a virtual visit. Many will be unwilling to return to regular clinic visits, given the time, effort, and direct financial cost of attending in person, even if there is no infection risk. However, there is concern that routine immunizations are being postponed or possibly omitted.[4] Other authors have discussed how overall practice should change,[5] but in this article we focus on changes to clinical preventive care—what to resume or not, and why.

How we practice in the near future will also depend on what happens after the pandemic is over. It is not yet clear whether postinfection immunity, treatment, or immunization will enable us to revert to the prepandemic close contact with patients. It is likely that concerns about infection will persist, realistically for older people and those with reduced immunity, but also for those with anxiety states. In addition, there is a backlog in referrals, as nonurgent tasks were canceled for many months. Even after restarting non–family physician specialist services, the volume of procedures and face-to-face visits remains reduced due to the need for vigilance, physical distancing, extra cleansing between procedures, personal protective equipment use, and patient fear of COVID-19. Thus, some specialist referrals will be delayed or more difficult now and in the near future.

Key points

- The coronavirus disease 2019 (COVID-19) pandemic has disrupted health care and physicians must adapt to new ways of practice, such as virtual care and electronic communication.
- The pandemic has affected preventive activities—some provincial cancer screening programs have been suspended and in-person visits have been much reduced. Physicians must adjust their screening activities accordingly. Prolongation of screening intervals will not increase risk for most patients.
- During this time, screening for cancer and cardiovascular disease needs rethinking to focus on actions that have strong recommendations.
- Childhood immunization must continue because of the risks of resurgent infectious disease; chronic infection screening is also important.
- Focused periodic preventive assessment at appropriate intervals for each activity is better than routine formal "physical examinations."

Movement into a post–COVID-19 world will likely occur in phases. **Table 1** illustrates this concept and a rough timeline. The boundaries between phases are fuzzy and will vary by region and time. We are currently just beyond the initial management phase of the pandemic, moving into cautious reopening. We anticipate moving through a second and subsequent "waves." At some time, we will open up more and perform a degree of postpandemic catch-up for elective activities or management of chronic disease. Afterward, we will settle into a "new normal." In each of these periods, we must consider what preventive care is undertaken, related to system constraints and patient willingness to attend.

Priority setting in primary health care

To make priority judgments, we must first consider how to place a value on what we do for patients, or at least to rank our actions in terms of their likely benefit to patients. This is a daunting task for which there is no good metric, given the many factors to take into account.

Korownyk and colleagues[6] divided the work of family practice into 5 categories, as follows:

- management of acute symptomatic conditions,
- management of chronic symptomatic conditions,
- prevention of cardiovascular disease,
- cancer screening in average-risk patients, and
- screening or counseling for health promotion.

In each of these 5 categories there is a mix of valuable and low-value activities. For example, many acute care visits are beneficial, but others for self-limiting disease might not be needed. Management of chronic disease often enables patients to continue their lives more comfortably and sometimes extends them. At the same time, treatment can increase the risk of harm.[7] Many patients give greater weight to addressing acute symptomatic conditions than to addressing chronic disease or prevention[8]; therefore, physicians must be attentive to patient perception of what matters and must not impose our agenda of preventive care.

Preventive actions must be applied to many individuals before one can benefit (eg, roughly 1 in 1000 for disease-specific mortality from breast or colon cancer screening[9,10]). Higher-risk individuals, such as those with a family history or cancer family syndrome (eg, Lynch

Table 1. Phases of preventive screening during and after the COVID-19 pandemic

	POSSIBLE TIMELINES		
CONSIDERATIONS	COVID-19 PANDEMIC (MONTHS)	CATCH-UP PHASE (2-3 Y)	NEW NORMAL (> 3 Y)
Characteristics	• Disruption in medical practice • Rapid switch to virtual visits owing to the need for physical distancing • Access to preventive screening tests and investigations suspended by some provincial health agencies • Interruption to medical education	• Increased use of telephone and virtual visits: further development of e-consultation • Resource limitations for preventive screening owing to economic effects of COVID-19 • Focus on catch-up on elective procedures • Education is modified	• Redefinition of role and organization of family physicians to meet the needs of patients • Practice includes more focused preventive screening activities • Continued resource limitations will focus type and frequency of preventive screening • New education processes in place
Screening activities to maintain	• Maintain recall lists and patient disease registries • Reconsider role of family physicians in public health interventions such as vaccination	• Services will be done more slowly, so capacity will be less • Reevaluate preventive screening guidelines and recommendations • Prioritize preventive screening activities by their effectiveness • Further evolution in roles of multidisciplinary health care team members to include preventive screening activities • Better integration of family physicians with public health to ensure increased capacity for the "next pandemic"	• Continue developing and implementing reminders for screening guidelines, using EMRs and team members • Use patient self-administered screening tests • Better incorporate individual patient characteristics and preferences in determining screening need and intervals • Increase use of shared decision making in preventive health care • Further develop practice infrastructure to reduce the frequency of inappropriate screening
Practice and financial implications	• Fewer visits; most virtual, which are now paid by Medicare • Procedures halted • Income reduced • Need to reduce overhead costs, including staff	• Increased visits but maintaining many virtual visits • Rebalance mix of prevention vs acute care • Limited procedures • Change threshold with non–family physician specialist care • Income rises	• New normal of virtual visits • Fewer, more focused preventive visits • Income restored

COVID-19—coronavirus disease 2019, EMR—electronic medical record.

syndrome, *BRCA*-mutation positive), likely have a higher probability of benefit and should be given priority. Clinical prevention also causes harm from a cascade of testing followed by treatments that might cause short-term harm, for the sake of a long-term benefit experienced by a few.[11,12] As the COVID-19 pandemic has increased the risk associated with each health care visit, any benefit from screening and other "routine" tests could be lower than the risk of infection from visiting the clinic, depending on the prevalence of COVID-19 in your community. Only activities that offer a potential for greater benefit are worth pursuing. The COVID-19 risk varies by age, comorbidity, and social factors,[13] while the risk perception of individuals is highly variable. In this COVID-19 era, it is appropriate that some governments suspended cancer screening programs and limited blood testing to only that which was essential.

Key message 1: maintain immunization and infection screening

Children's immunizations must be maintained, as the probability of disease resurgence is high, as demonstrated by outbreaks of measles and the surge of vaccine-preventable diseases in the former Soviet Union after it broke up.[14] Thus, trying to keep as close as possible to recommended intervals is important. In addition, a few specific childhood screening activities have higher value, as noted in bold print in the Rourke Baby Record charts.[15] These activities can largely be done during immunization visits.

Testing for sexually transmitted infections and hepatitis C among those at high risk should also continue and can usually be organized virtually, although sample collection requires visiting a laboratory collection centre.

What prevention should we do in the catch-up phase and post–COVID-19 world?

Social circumstances are more powerful as a cause of poor health than anything under our clinical sphere of influence.[16,17] As screening programs are restarted, it is probably a good idea that they return in some different format.[18] Their suspension created anxiety for some patients accustomed to frequent screening and for their physicians. The alarmist message from some physicians and overzealous screening enthusiasts that there will be a "tsunami" of cancer[19] is exaggerated.[20]

In this regard, it is helpful to reflect on the recommendations of the Canadian Task Force on Preventive Health Care. They are based on the strength of the scientific evidence and balance benefits against harms; many also systematically consider patient preferences. **Table 2** shows the strength of recommendations assigned to common chronic disease screening tests.[21] It is prudent to focus on the activities that have a strong positive recommendation (within the age groups where that strong recommendation applies). Later, after appropriate discussion with patients, possibly including trade-offs against COVID-19 risk, some activities that are conditionally recommended might resume.

Key message 2: prioritize screening that is strongly recommended at optimal intervals

Screening that offers clear positive benefits should restart first. Some tests can be done at home (eg, blood pressure measurement) and some can be done without visiting the clinic (eg, fecal occult blood testing), although follow-up of positive results will require physician contact. Physicians who were not following guidelines should not restart screening activities the Canadian Task Force on Preventive Health Care recommends against (eg, mammograms in women in their 40s).

Even for conditions with strong positive recommendations, some physicians and patients have performed screening tests more often than appropriate. For example, follow-up for colon polyps seen on colonoscopy often occurs at or before the shortest recommended interval. It is incumbent on us and our other specialist colleagues to rethink rescreening intervals and include shared decision making with patients. Shorter screening intervals are likely to increase false-positive results, with their subsequent extra investigation and potential harms, yet reduce serious outcomes minimally. Extending the interval reduces the harms that can follow positive test results, but the fear is that disease might have developed to a stage where a cure is no longer possible. Evidence indicates that these events are rare among patients who have already been screened. Therefore, on balance there is minimal harm from extending the interval by months, or even a year. Indeed, for conditions such as hypertension, up to 5 years is safe before rescreening those younger than 40 without important risk factors.[22] A subsequent paper in this series will review the evidence about screening intervals and potential harms. In the COVID-19 era, optimizing the screening interval has become even more important. As for those with illness or symptoms, follow-up visits for abnormalities detected on screening must then be assessed individually.

Key message 3: change to focused periodic assessments rather than examinations

The concept of the annual physical examination must now be abandoned even by those who have resisted.[23,24] Many physicians believe that annual health reviews enable them to know their patients better and this is likely true for patients with chronic disease. For healthy people, the marginal benefit is so low that trials have been unable to demonstrate their value.[25,26] Some specific activities should be performed at longer intervals (measuring blood pressure, measuring weight, and Pap testing), but none require routine annual visits unless there is high risk. The infection risk for both patient and provider of traveling and attending the office, using

Table 2. Recommendations on screening for cardiovascular disease and cancer

SCREENING FOR ...	RECOMMENDATION BY CTFPHC	INTERVAL	NEED FOR CLINIC VISIT
Cardiovascular disease			
• Hypertension	Strong	3-5 y	No
• Dyslipidemia	No CTFPHC recommendation • Men > 40 y, women > 50 y[21]	 5 y	No, laboratory
• Type 2 diabetes	Conditional. Use risk calculator to assess • For high risk (> 30% 10-y risk) • For very high risk (> 50% 10-y risk)	 3-5 y Annual	No, laboratory
• Abdominal aortic aneurysm	Conditional • Men 65-80 y	 Once	Imaging centre
Cancer			
• Colorectal	Conditional for age 50-59 y Strong from age 60-74 y	 2 y	No
• Cervical	Conditional from age 25 y Strong from age 30-65 y	 3 y	Yes
• Breast	Conditional	2-3 y	Imaging centre
• Lung	Conditional if in high-quality centre	Annually for 3 y	Imaging centre

CTFPHC—Canadian Task Force on Preventive Health Care.

personal protective equipment, and decontaminating everything afterward makes any physical examination a more conscious and selective choice, performed only when benefits outweigh potential risks. The need for protection will limit procedures, so there is an even higher need to prioritize and make decisions before the patient attends the office. Thus, history taking reverts back to its central role of providing most of the information for clinical decision making. Stopping the "annual physical" will also reduce in-person visits for blood tests and imaging.

Note that many actions intended for preventive purposes are not recommended, as they are more likely to cause harm than benefit. This includes a long list sometimes offered to asymptomatic average-risk people: electrocardiography (resting or stress), imaging by ultrasound or whole-body computed tomography scanning, and so-called routine blood testing (complete blood counts; renal function tests; thyroid function tests; prostate-specific antigen screening; ovarian cancer screening; and vitamin B12, homocysteine, ferritin, and vitamin D testing in low-risk populations). The bottom line is this: if there is not strong evidence, examining or testing for screening purposes is more likely to cause harm than benefit.[11,24]

News items about reduced visits or late presentations to emergency departments for myocardial infarction or other treatable conditions suggest that some inappropriate decisions have occurred. If family physicians can more appropriately prioritize and reduce unnecessary time devoted to inappropriate preventive health care, more time could be available to help patients make better decisions about whether and where to attend for urgent or emergency care.

Many patients are also concerned about attending non–family physician specialist care. As e-consultation services are further developed,[27] using them to obtain specific advice can avoid in-person visits. This is particularly helpful in provinces that pay for extended consultation times, enabling use of extra time to solve problems for people who otherwise would be referred and would have to wait for a specialist appointment. E-consultation services need to be extended in all provinces.[28]

The pandemic is once more emphasizing that disease is distributed inversely to social opportunity.[29,30] The greatest contributors to prevention of disease are the social determinants of health, such as social and community context, education, and economic stability with good housing, food, and physical activity.[16,31] Isolation has mental health consequences, and unemployment consequent to the pandemic is making inequalities worse. We must continue to recognize the needs of those who have few choices in their lives.

Conclusion

After previous pandemics (1918-1919 influenza pandemic, 1940s and 1950s polio epidemics, and the 2002-2004 SARS-CoV-1 epidemic), society and medicine returned to normal with little change. This pandemic has forced us deeper into the electronic age. As Berwick asks, "Will the lesson persist in the new normal that the office visit, for many traditional purposes, has become a dinosaur, and that routes to high-quality help, advice, and care, at lower cost and greater speed, are potentially many?"[32]

Both physicians and patients will become more accustomed to virtual visits. Patients are making their own personal estimates of risk and benefit and are reducing physical visits. While it might be convenient to fill our timetables in advance with regular booked follow-ups and "physicals," many patients perceive it as more beneficial if we are available at short notice for their immediate concerns.[8] This will be difficult for

physicians with established practice models of regular and routine visits. Such patterns must be rethought for the future, rather than trying to return to the status quo.

For prenatal care and children, specific activities can make a difference,[15] but many routine visits can be rethought. For adults, there are a few effective clinical preventive activities, and some of those can be performed at longer intervals. Can we rethink our prevention strategies to provide more value for those who can benefit the most?

Practice scenario resolution

On further discussion, the Colgrove practice members realize that practice will never be the same again. But they can rethink what they do to provide high-quality care for their patients, including having a greater awareness of mental health concerns. They will focus on being available for more responsive acute care and how this builds their relationships with patients. They will strive to adopt e-consultation for many non–family physician specialist referrals and much continuing care, and with that assistance, plan to undertake more in-depth investigation and management in the practice. In preventive care, they will stop performing annual physical examinations. Instead they will allocate a staff member to better implement immunization for both children and adults. That person will also identify patients who omit high-value screening, so the practice can better engage them in a discussion about such decisions.

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