

# To share or not to share

## When is shared decision making the best option?

Guylène Thériault MD CCFP Roland Grad MD CM MSc CCFP FCFP James A. Dickinson MBBS PhD CCFP FRACGP  
Pascale Breault MD CCMF Harminder Singh MD MPH FRCPC Neil R. Bell MD SM CCFP FCFP Olga Szafran MHSA

**M**any decisions in health care (diagnosis, treatment, screening, etc) warrant shared decision making (SDM); however, this approach has not yet been sufficiently integrated in clinical settings.<sup>1</sup> Some clinicians might think this process is not relevant, might doubt the ability of patients to make decisions, do not feel they have the capacity to share information in an appropriate format, or have misconceptions about what SDM involves.<sup>2</sup> A common barrier evoked by physicians is the additional time required, even though the literature suggests SDM adds only a few extra minutes to the consultation time (median of 2.6 minutes).<sup>3</sup> Still, as time is precious, we need to reflect on when SDM is warranted and when it is not.

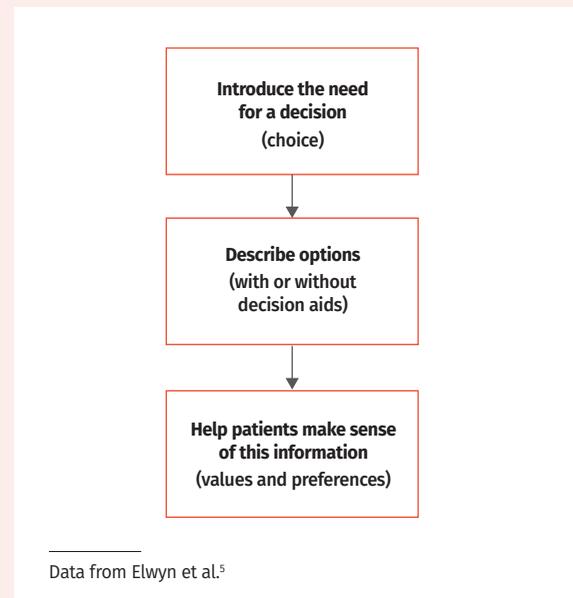
### What is SDM?

Shared decision making “is not about convincing the patient to follow the doctor’s recommendation. Nor is it about ... leaving your patient to decide on his or her own.”<sup>4</sup> It recognizes patient self-determination as an important piece of the doctor-patient relationship. It is different from a motivational interview and is more than simply sharing information.

Shared decision making is “an approach where clinicians and patients share the best available evidence when faced with the task of making decisions, and where patients are supported to consider options, to achieve informed preferences.”<sup>5</sup> Elwyn and colleagues proposed a 3-step model for SDM that can be summarized in 3 specific actions (**Figure 1**).<sup>5</sup> This model describes SDM as a deliberation process that respects what matters most to patients.

For SDM to be useful, there must be a clear need for a decision. For a decision to warrant SDM, there should be different options with a balance of benefits and harms (a certain equipoise) to address the issue at hand. The premise of SDM is to recognize (patient and clinician alike) that there are often many reasonable medically valid options, each with potential benefits and

**Figure 1. Three-step model of shared decision making**



harms, and that the optimal decision might be very different from one person to the next depending on their life circumstances, values, and preferences.

Shared decision making has many benefits such as increased patient and physician satisfaction, increased patient knowledge, and reduced decisional regret.<sup>3</sup> It is increasingly seen as an ethical imperative; however, training and continuing education opportunities in SDM are still lacking.

While SDM is mostly underused, at times it is introduced in situations when it probably should not be. For example, it is introduced when there is no decision to be made; when the patient cannot collaborate in the process; or when, on balance, estimates of benefits versus harms of a test or treatment do not justify such an

### Key points

- ▶ While shared decision making (SDM) is often underused, it is sometimes introduced in situations when it probably should not be.
- ▶ Generally, SDM should be considered when there are at least 2 medically valid options, each with a balance between benefits and harms (equipoise).
- ▶ When SDM is not warranted, sharing information remains a good practice.

approach. This article highlights these situations and discusses some limitations of SDM. In so doing, we aim to help clinicians better focus their time and energy on situations where SDM can really make a difference.

### Case description

You recently attended a conference about SDM and realized that you should try to incorporate it in your practice. Although you were told this will not increase your visit time with your patients, you are sceptical. You are wondering how to choose when to use SDM or not. Shared decision making is a tool, like your stethoscope, so surely there are times when it is helpful and other times when it is not. For example, a patient with respiratory symptoms of viral origin (eg, acute bronchitis) might need information but does not require SDM about whether to start an antibiotic. In contrast, a depressed patient will likely benefit from SDM when deciding between 2 reasonable options (eg, antidepressants or psychotherapy).

### It might look like SDM, but ...

The bronchitis example above reflects a situation with only 1 valid therapeutic option—namely managing symptoms until they disappear on their own. Shared decision making helps patients weigh the benefits and harms of different options that offer a somewhat similar benefit-to-harm ratio. It does not mean that we need to present every option including those that cannot deliver a reasonable chance of benefit but might cause harm.

Another example is using a decision aid about cancer screening with patients with multiple comorbid conditions. The reduced life expectancy of these patients likely precludes any benefit from the proposed intervention. The use of SDM about mammography screening for a frail 70-year-old woman might be perceived as an ethical dilemma. Some would say she is entitled to the information; but in this patient any benefit is unlikely. On the other hand, more immediate harms are quite possible; so, this decision cannot be in equipoise. Readers of this series might remember a similar example offered in another article.<sup>6</sup>

A third example is exploratory laparotomy for chronic persistent functional abdominal pain in a young otherwise healthy person. This option does not need to be discussed with these patients.

### When is SDM warranted?

As time is precious, discerning when SDM is appropriate and likely to make a difference in care is important. There are certain circumstances in which SDM is not used enough and in which it would be a worthwhile time investment. Recognizing that some decisions do not need to be rushed (for example, screening for lung cancer), you can decide to interact immediately with the patient or postpone the conversation until the patient has had a chance to learn more about the decision (possibly with a decision aid).

In many instances, there are multiple options, each with its pros and cons, and instead of offering an opinion, a shared decision is often more beneficial. Hot flashes from menopause have different treatment options. The decision about which option to pursue is influenced by values and preferences, and thus should be shared. If no decision aid exists, a generic tool like the Ottawa Personal Decision Guide<sup>7</sup> can be helpful. It provides a structured tool for the patient and physician to list options and it guides patients in their reflection.

There are many other examples, as a substantial proportion of care is considered to be preference sensitive.<sup>8</sup> For example, which medication should follow metformin in the treatment of type 2 diabetes, which medication should be prescribed first in depression, or whether a medication should be used to lower cholesterol or prevent fragility fractures.<sup>9</sup>

There is a continuum of when it might be appropriate to use SDM. That does not mean we should not try to reflect on when SDM is warranted or not. **Tables 1** and **2** provide some thinking points.<sup>10-19</sup> The examples are not meant to be prescriptive, but to foster clinicians' reflections about the place of SDM in their practice. **Figure 2** illustrates an algorithm for determining if SDM is the right approach.

### Limits of SDM

There are many medical circumstances in which SDM is warranted but, even though we think there is a balance between benefits and harms, no quantitative information about the different alternatives is available. In these instances, we have to accept this fact and share the uncertainties.

Imagine you have a 26-year-old woman with repeated blood pressure measurements equal to or just above 140/90 mm Hg. You would like to share the benefits and harms of treatment; however, we know of no reliable way to estimate her future risk of cardiovascular disease or to compare the potential benefit of nondrug with drug therapy at this age. Any clinician who truly embraces SDM will, at times, be confronted with situations like these. Shared decision making can sometimes be facilitated with decision aids<sup>20</sup> but need not be limited to situations for which a decision aid exists.

### The patient has to remain central to the decision

Imagine a 64-year-old patient with severe chronic obstructive pulmonary disease who asks about colon cancer screening. The Canadian Task Force on Preventive Health Care recommends screening adults 60 to 74 years of age for colorectal cancer (strong recommendation), but given the severe chronic obstructive pulmonary disease, the situation needs a different approach, as the likelihood of benefiting from this screening is so low compared with the potential risk of harm. Information and support, more than SDM, is likely the right approach here.

**Table 1. When SDM should be considered**

CARE OPTIONS*	CATEGORIES	EXAMPLES
There are at least 2 medically valid options with a balance between benefits and harms  <i>Many weak or conditional recommendations<sup>12</sup></i>	<ul style="list-style-type: none"> <li>If the recommendation is in favour of action, SDM should precede ordering the test or treatment</li> <li>If the recommendation is against action, SDM is useful when the patient wants to know more about the option</li> </ul>	<ul style="list-style-type: none"> <li>Mammography in women 50-74 y<sup>10</sup></li> <li>Screening for abdominal aortic aneurysm in men 65-80 y<sup>11</sup></li> <li>Statins for primary prevention of CVD in people at moderate risk</li> <li>PSA screening in men 55-70 y<sup>13</sup></li> <li>Mammography in women in their 40s<sup>10</sup></li> </ul>
In specific circumstances even if the balance between benefit and harms is usually not in equipoise  <i>Some strong recommendations in favour of action<sup>12</sup></i>	<ul style="list-style-type: none"> <li>The balance between benefits and risks is different for a particular patient</li> <li>A patient who expresses the desire to discuss a specific recommendation</li> </ul>	<ul style="list-style-type: none"> <li>A potentially lifesaving surgery in a patient with multiple comorbidities in whom potential harms are important</li> <li>Colon cancer screening in adults 60-74 y<sup>14</sup></li> </ul>

CVD—cardiovascular disease, PSA—prostate-specific antigen, SDM—shared decision making.  
\*When there is a decision to be made and the patient can collaborate.

**Table 2. When SDM should probably not be considered**

SITUATION*	EXAMPLES
There is no decision to be made	<ul style="list-style-type: none"> <li>There is no valid indication for a diagnostic or therapeutic maneuver (eg, you should not offer imaging in patients with acute low back pain and no red flags)</li> <li>There is a clear urgency to act in a patient for whom benefits clearly outweigh possible harms (eg, unstable chest pain with elevated cardiac enzymes in a 50-year-old man in otherwise good health)</li> <li>There is only one therapeutic option and the option of doing nothing would be detrimental (eg, reduction and immobilization of a fracture)</li> <li>The patient has already clearly expressed he or she does not want an intervention</li> </ul>
The patient cannot collaborate in the process	<ul style="list-style-type: none"> <li>Unable to participate in the decision<sup>†</sup> (eg, dementia)</li> <li>Emotional overload (eg, at the time we announce a life-changing diagnosis)</li> <li>Under the effect of substances that can alter judgment</li> <li>Emotional crisis (eg, suicidal)</li> </ul>
The balance between benefits and harms is not in equipoise	<ul style="list-style-type: none"> <li>Most strong recommendations in favour<sup>12</sup> (eg, screening for hypertension in middle-aged people<sup>15</sup>)</li> <li>Strong recommendation against<sup>12</sup> (eg, screening for dementia<sup>16</sup>; screening for thyroid dysfunction in nonpregnant adults<sup>17</sup>)</li> <li>Some weak or conditional recommendations in favour<sup>12</sup> (eg, screening for tobacco smoking in children and adolescents<sup>18</sup>)</li> </ul>

SDM—shared decision making.

\*Sharing information is always helpful and should be part of practice. Each clinical situation is different. Obtaining consent should not be confused with SDM.

<sup>†</sup>At times, SDM can be used with families or alternate decision makers rather than with patients themselves.<sup>19</sup>

In a recent article in this series,<sup>6</sup> we debated the opposite situation. Namely, at times, even for recommendations against screening maneuvers, benefits might surpass the potential harms—for example in elderly but fit individuals. The Canadian Task Force recommendation on colon cancer screening in adults aged 75 and older is a weak recommendation against screening. This is based on low-quality evidence and a generally reduced life expectancy in this age group. Still, some adults older than 75 years without serious comorbidities might decide to continue screening. The decision comes down to values and preferences and knowing about the median life expectancy of Canadians at an advanced age. There will always be gray zones, and that is why you should gather information about your patient before deciding if SDM is a good approach.

### Patients we feel make unreasonable requests

Some patients want a test or treatment where the recommendation is strongly against it or will refuse an intervention where the benefits clearly seem to outweigh the harms. Communicating in such circumstances is outside the realm of SDM because the options are not in equipoise. However, we can suggest an approach that can be useful. For example, if you encounter a 78-year-old man who wants a prostate-specific antigen test to screen for prostate cancer, you could simply state this is not a good idea. But what if the patient insists? What if you have an asymptomatic patient who wants thyroid-stimulating hormone screening? A patient with acute low back pain requesting magnetic resonance imaging? A 40-year-old woman who refuses a Papanicolaou test? A patient with elevated blood pressure who refuses treatment?

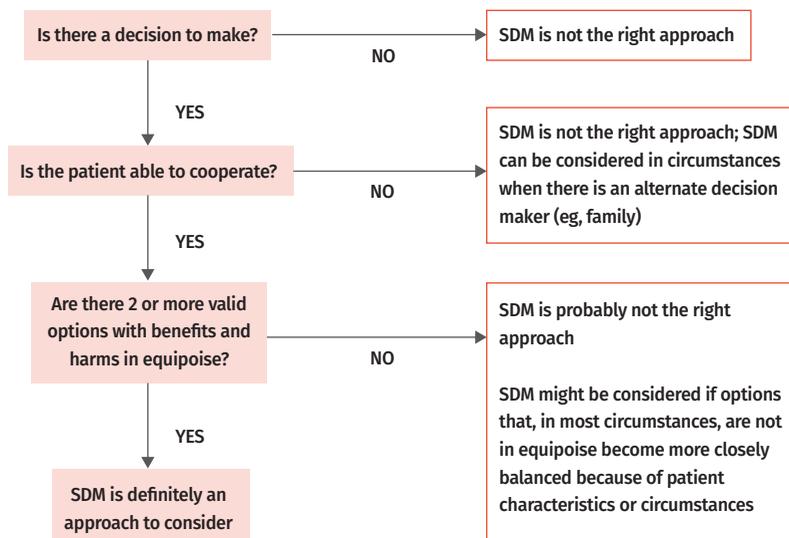
A patient with diabetes who refuses an eye examination or medications to control diabetes? One strategy is to “align, acknowledge, and refocus” (Figure 3).

### Patients who want health professionals to decide for them

It is a widespread myth that all patients want physicians

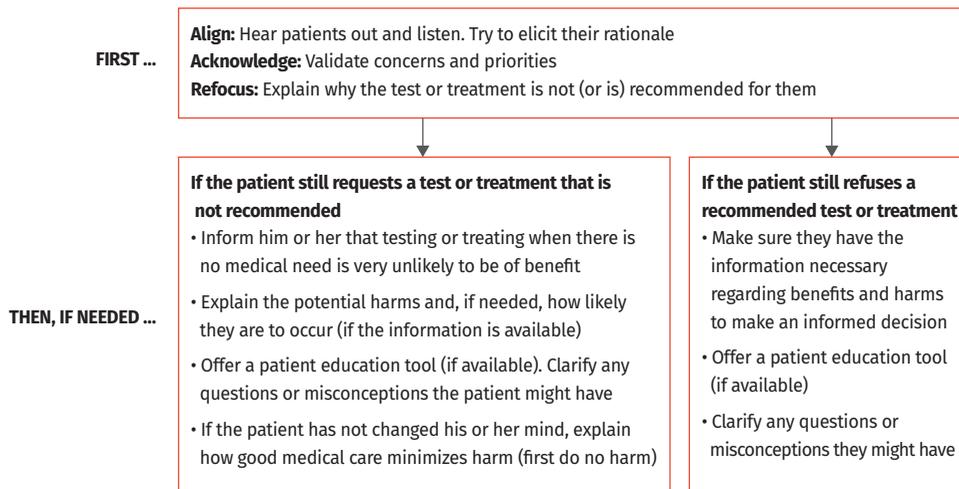
to make decisions for them. Even if a certain percentage of patients would prefer the doctor to make the decision, this is not a reason to avoid SDM altogether. Most patients appreciate SDM, while a small percentage prefer to make the decision alone.<sup>21</sup> The physician might be the expert in the disease, but remember that the patient is the expert on living with the disease (or the consequences of an action).

Figure 2. Determining if SDM is the right approach: Tables 1 and 2 offer examples.



SDM—shared decision making.

Figure 3. Approach for when patients’ requests seem unreasonable



Inspired by a tool in progress from the Canadian Task Force on Preventive Health Care. Used with permission.

## Case resolution

You have now reflected on what SDM is and what it is not, when it is worthwhile and when it is not. You recognize that there are times we should do it and times when we do not need to. You realize that you were not using this approach in discussions about screening, and that is a place where many conditional recommendations warrant such an approach.

As knowledge translation tools for screening decisions are readily available,<sup>22</sup> you decide that introducing SDM for these will be a good first step. You will use these tools before ordering a woman's first mammogram or if a patient asks about prostate cancer screening.<sup>23</sup> You will also ensure you have information pamphlets for situations in which SDM is not warranted (eg, bronchitis, acute low back pain).<sup>24,25</sup>

Once you feel comfortable with the approach, you intend to use decision aids for common therapeutic decisions, like choices about diabetes medication or antidepressants. You feel these will be easy to implement and will make sure to share this approach with your colleagues. You also intend to reflect on how this change in practice could be evaluated to capture improvements in outcomes that matter.<sup>26</sup>

**Dr Thériault** is Academic Lead for the Physicianship Component and Director of Pedagogy at Outaouais Medical Campus in the Faculty of Medicine at McGill University in Montreal, Que. **Dr Grad** is Associate Professor in the Department of Family Medicine at McGill University. **Dr Dickinson** is Professor in the Department of Family Medicine and the Department of Community Health Sciences at the University of Calgary in Alberta. **Dr Breault** is Clinical Lecturer in the Department of Family Medicine at Laval University in Quebec. **Dr Singh** is Associate Professor in the Department of Internal Medicine and the Department of Community Health Sciences at the University of Manitoba in Winnipeg and in the Department of Hematology and Oncology for CancerCare Manitoba. **Dr Bell** is Professor in the Department of Family Medicine at the University of Alberta in Edmonton. **Ms Szafran** is the Associate Director of Research in the Department of Family Medicine at the University of Alberta.

### Competing interests

All authors have completed the International Committee of Medical Journal Editors' Unified Competing Interest form (available on request from the corresponding author). **Dr Singh** reports grants from Merck Canada, personal fees from Pendopharm, and personal fees from Ferring Canada, outside the submitted work. The other authors declare that they have no competing interests.

### Correspondence

**Dr Guylène Thériault**; e-mail [guylene.theriault@mcgill.ca](mailto:guylene.theriault@mcgill.ca)

### References

- Haesebaert J, Adepkedjou R, Croteau J, Robitaille H, Légaré F. Shared decision-making experienced by Canadians facing health care decisions: a Web-based survey. *CMAJ Open* 2019;7(2):e210-6.
- Légaré F, Thompson-Leduc P. Twelve myths about shared decision making. *Patient Educ Couns* 2014;96(3):281-6. Epub 2014 Jul 3.

- Stacey D, Légaré F, Lewis K, Barry MJ, Bennett CL, Eden KB, et al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Syst Rev* 2017;(4):CD001431.
- Grad R, Légaré F, Bell NR, Dickinson JA, Singh H, Moore AE, et al. Shared decision making in preventive health care. What it is, what it is not. *Can Fam Physician* 2017;63:682-4 (Eng). e377-80 (Fr).
- Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med* 2012;27(10):1361-7. Epub 2012 May 23.
- Grad R, Thériault G, Singh H, Dickinson JA, Szafran O, Bell NR. Age to stop? Appropriate screening in older patients. *Can Fam Physician* 2019;65:543-8 (Eng). e329-33 (Fr).
- Ottawa Hospital Research Institute. *Patient decision aids. Ottawa personal decision guides*. Ottawa, ON: Ottawa Hospital Research Institute; 2015. Available from: <https://decisionaid.ohri.ca/decguide.html>. Accessed 2020 Jan 30.
- Wennberg JE. Time to tackle unwarranted variations in practice. *BMJ* 2011;342:d1513.
- Mayo Clinic Shared Decision Making National Resource Center [website]. Rochester, MN: Mayo Clinic. Available from: <https://shareddecisions.mayoclinic.org>. Accessed 2020 Jan 30.
- Canadian Task Force on Preventive Health Care. *Breast cancer update (2018)*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2018. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/breast-cancer-update>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *Abdominal aortic aneurysm (2017)*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2017. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/abdominal-aortic-aneurysm>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *GRADE*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2018. Available from: <https://canadiantaskforce.ca/wp-content/uploads/2018/12/GRADE-info-for-website-blue-format-181220.pdf>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *Prostate cancer (2014)*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2014. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/prostate-cancer>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *Colorectal cancer (2016)*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2016. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/colorectal-cancer>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *Hypertension (2012)*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2012. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/hypertension>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *Cognitive impairment (2015)*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2015. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/cognitive-impairment>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *Asymptomatic thyroid dysfunction (2019)*. Montreal, QC: Canadian Task Force on Preventive Health Care; 2019. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/asymptomatic-thyroid-dysfunction>. Accessed 2020 Feb 10.
- Canadian Task Force on Preventive Health Care. *Tobacco smoking in children and adolescents—clinical FAQ*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2017. Available from: <https://canadiantaskforce.ca/guidelines/published-guidelines/tobacco-smoking-in-children-and-adolescents>. Accessed 2020 Feb 10.
- Hamann J, Heres S. Why and how family caregivers should participate in shared decision making in mental health. *Psychiatr Serv* 2019;70(5):418-21. Epub 2019 Feb 20.
- Ottawa Hospital Research Institute. *Patient decision aids. A to Z inventory of decision aids*. Ottawa, ON: Ottawa Hospital Research Institute. Available from: <https://decisionaid.ohri.ca/AZinvent.php>. Accessed 2020 Jan 30.
- Bruera E, Sweeney C, Calder K, Palmer L, Benisch-Tolley S. Patient preferences versus physician perceptions of treatment decisions in cancer care. *J Clin Oncol* 2001;19(11):2883-5.
- Canadian Task Force on Preventive Health Care. *Tools and resources*. Montreal, QC: Canadian Task Force on Preventive Health Care; 2020. Available from: <https://canadiantaskforce.ca/tools-resources>. Accessed 2020 Feb 10.
- Moore AE, Straus SE, Kasperavicius D, Bell NR, Dickinson JA, Grad R, et al. Knowledge translation tools in preventive health care. *Can Fam Physician* 2017;63:853-8 (Eng). e466-72 (Fr).
- Choosing Wisely Canada. *Using antibiotics wisely*. Toronto, ON: Choosing Wisely Canada; 2018. Available from: <https://choosingwiselycanada.org/campaign/antibiotics-2018>. Accessed 2020 Jan 30.
- Choosing Wisely Canada. *Recommendations and resources, by specialty*. Toronto, ON: Choosing Wisely Canada. Available from: <https://choosingwiselycanada.org/recommendations>. Accessed 2020 Jan 30.
- McCormack J, Elwyn G. Shared decision is the only outcome that matters when it comes to evaluating evidence-based practice. *BMJ Evid Based Med* 2018;23(4):137-9. Epub 2018 Jul 12.

This article is eligible for Mainpro+ certified Self-Learning credits. To earn credits, go to [www.cfp.ca](http://www.cfp.ca) and click on the Mainpro+ link.

La traduction en français de cet article se trouve à [www.cfp.ca](http://www.cfp.ca) dans la table des matières du numéro de mai 2020 à la page e149.

## Suggested reading

Elwyn G, Edwards A, Thompson R, editors. *Shared decision making in health care. Achieving evidence-based patient choice*. 3rd ed. New York, NY: Oxford University Press; 2016.

Elwyn G, Frosch DL, Kobrin S. Implementing shared decision-making: consider all the consequences. *Implement Sci* 2016;11:114.

Turgeon R. *Shared decision making (SDM) made easy!* Vancouver, BC: NERD: iNtErdisciplinary ResiDent journal club; 2015. Available from: <https://bit.ly/2uC37aR>. Accessed 2020 Feb 19.

Elwyn G, Durand MA. Mastering shared decision making. The when, why and how. Ipswich, MA: EBSCO Health; 2017. Available from: <https://bit.ly/2T3gyd8>. Accessed 2020 Feb 20.

# Rethinking screening during and after COVID-19

## Should things ever be the same again?

James A. Dickinson MBBS PhD CCFP FRACGP    Guylène Thériault MD CCFP  
Harminder Singh MD MPH FRCPC    Olga Szafran MHSA    Roland Grad MD CM MSc CCFP FCFP

### 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<sup>1,2</sup> and Practicing Wisely workshops.<sup>3</sup> 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.<sup>4</sup> Other authors have discussed how overall practice should change,<sup>5</sup> 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 pre-pandemic 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<sup>6</sup> 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.<sup>7</sup> Many patients give greater weight to addressing acute symptomatic conditions than to addressing chronic disease or prevention<sup>8</sup>; 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<sup>9,10</sup>). 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**

CONSIDERATIONS	POSSIBLE TIMELINES		
	COVID-19 PANDEMIC (MONTHS)	CATCH-UP PHASE (2-3 Y)	NEW NORMAL (>3 Y)
Characteristics	<ul style="list-style-type: none"> <li>• Disruption in medical practice</li> <li>• Rapid switch to virtual visits owing to the need for physical distancing</li> <li>• Access to preventive screening tests and investigations suspended by some provincial health agencies</li> <li>• Interruption to medical education</li> </ul>	<ul style="list-style-type: none"> <li>• Increased use of telephone and virtual visits: further development of e-consultation</li> <li>• Resource limitations for preventive screening owing to economic effects of COVID-19</li> <li>• Focus on catch-up on elective procedures</li> <li>• Education is modified</li> </ul>	<ul style="list-style-type: none"> <li>• Redefinition of role and organization of family physicians to meet the needs of patients</li> <li>• Practice includes more focused preventive screening activities</li> <li>• Continued resource limitations will focus type and frequency of preventive screening</li> <li>• New education processes in place</li> </ul>
Screening activities to maintain	<ul style="list-style-type: none"> <li>• Maintain recall lists and patient disease registries</li> <li>• Reconsider role of family physicians in public health interventions such as vaccination</li> </ul>	<ul style="list-style-type: none"> <li>• Services will be done more slowly, so capacity will be less</li> <li>• Reevaluate preventive screening guidelines and recommendations</li> <li>• Prioritize preventive screening activities by their effectiveness</li> <li>• Further evolution in roles of multidisciplinary health care team members to include preventive screening activities</li> <li>• Better integration of family physicians with public health to ensure increased capacity for the “next pandemic”</li> </ul>	<ul style="list-style-type: none"> <li>• Continue developing and implementing reminders for screening guidelines, using EMRs and team members</li> <li>• Use patient self-administered screening tests</li> <li>• Better incorporate individual patient characteristics and preferences in determining screening need and intervals</li> <li>• Increase use of shared decision making in preventive health care</li> <li>• Further develop practice infrastructure to reduce the frequency of inappropriate screening</li> </ul>
Practice and financial implications	<ul style="list-style-type: none"> <li>• Fewer visits; most virtual, which are now paid by Medicare</li> <li>• Procedures halted</li> <li>• Income reduced</li> <li>• Need to reduce overhead costs, including staff</li> </ul>	<ul style="list-style-type: none"> <li>• Increased visits but maintaining many virtual visits</li> <li>• Rebalance mix of prevention vs acute care</li> <li>• Limited procedures</li> <li>• Change threshold with non-family physician specialist care</li> <li>• Income rises</li> </ul>	<ul style="list-style-type: none"> <li>• New normal of virtual visits</li> <li>• Fewer, more focused preventive visits</li> <li>• Income restored</li> </ul>

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.<sup>11,12</sup> 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,<sup>13</sup> 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.<sup>14</sup> 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.<sup>15</sup> 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.<sup>16,17</sup> As screening programs are restarted, it is probably a good idea that they return in some different format.<sup>18</sup> 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<sup>19</sup> is exaggerated.<sup>20</sup>

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.<sup>21</sup> 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.<sup>22</sup> 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.<sup>23,24</sup> 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.<sup>25,26</sup> 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
<b>Cardiovascular disease</b>			
• Hypertension	Strong	3-5 y	No
• Dyslipidemia	No CTFPHC recommendation • Men > 40 y, women > 50 y <sup>21</sup>	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
<b>Cancer</b>			
• 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.<sup>11,24</sup>

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,<sup>27</sup> 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.<sup>28</sup>

The pandemic is once more emphasizing that disease is distributed inversely to social opportunity.<sup>29,30</sup> 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.<sup>16,31</sup> 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?”<sup>32</sup>

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.<sup>8</sup> 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,<sup>15</sup> 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.



**Dr Dickinson** is Professor in the Department of Family Medicine and the Department of Community Health Sciences at the University of Calgary in Alberta. **Dr Thériault** is Academic Lead for the Physicianship Component and the Director of Pedagogy at Outaouais Medical Campus in the Faculty of Medicine at McGill University in Montreal, Que. **Dr Singh** is Associate Professor in the Department of Internal Medicine and the Department of Community Health Sciences at the University of Manitoba in Winnipeg and in the Department of Hematology and Oncology for CancerCare Manitoba. **Ms Szafran** is Associate Director of Research in the Department of Family Medicine at the University of Alberta in Edmonton. **Dr Grad** is Associate Professor in the Department of Family Medicine at McGill University.

#### Competing interests

All authors have completed the International Committee of Medical Journal Editors' Unified Competing Interest form (available on request from the corresponding author). **Dr Singh** reports grants from Merck Canada, personal fees from Pendopharm, and personal fees from Ferring Canada, outside the submitted work. The other authors declare that they have no competing interests.

#### Correspondence

**Dr James Dickinson**; e-mail [dickinsj@ucalgary.ca](mailto:dickinsj@ucalgary.ca)

#### References

- Grad R, Pluye P, Tang D, Sulha M, Slawson DC, Shaughnessy AF. Patient-Oriented Evidence that Matters (POEMs)<sup>™</sup> suggest potential clinical topics for the Choosing Wisely<sup>™</sup> campaign. *J Am Board Fam Med* 2015;28(2):184-9.
- Shaughnessy AF. Of wise choices, evidence that matters, and leaving old friends behind. *Am Fam Physician* 2016;94(7):540.
- Thériault G, Bois G, Wittmer R, Lachance-Fortin G. 61 'Practicing wisely': a hands-on workshop to decrease overuse at the level of the consultation in primary care [oral presentation]. *BMJ Evid Based Med* 2018;23(Suppl 2):A28.
- Hoffman J, Maclean R. Slowing the coronavirus is speeding the spread of other diseases. *The New York Times* 2020 Jun 14. Available from: <https://www.nytimes.com/2020/06/14/health/coronavirus-vaccines-measles.html>. Accessed 2020 Jun 29.
- Wintemute K, Thériault G. Post-COVID primary care reboot? [blog]. *Can Fam Physician* 2020 May 7. Available from: <https://www.cfp.ca/news/2020/05/07/5-07>. Accessed 2020 Jun 29.
- Korownyk C, McCormack J, Kolber MR, Garrison S, Allan GM. Competing demands and opportunities in primary care. *Can Fam Physician* 2017;63:664-8 (Eng), e371-6 (Fr).
- Treadwell JS, Wong G, Milburn-Curtis C, Feakins B, Greenhalgh T. GPs' understanding of the benefits and harms of treatments for long-term conditions: an online survey. *BJGP Open* 2020;4(1):bjgpopen20X101016. Epub 2020 Mar 4.
- Arvidsson E, André M, Borgquist L, Andersson D, Carlsson P. Setting priorities in primary health care—on whose conditions? A questionnaire study. *BMC Fam Pract* 2012;13:114.
- Klarenbach S, Sims-Jones N, Lewin G, Singh H, Thériault G, Tonelli M, et al. Recommendations on screening for breast cancer in women aged 40–74 years who are not at increased risk for breast cancer. *CMAJ* 2018;190(49):E1441-51.
- Canadian Task Force on Preventive Health Care. Recommendations on screening for colorectal cancer in primary care. *CMAJ* 2016;188(5):340-8. Epub 2016 Feb 22.
- Bouck Z, Calzavara AJ, Ivers NM, Kerr EA, Chu C, Ferguson J, et al. Association of low-value testing with subsequent health care use and clinical outcomes among low-risk primary care outpatients undergoing an annual health examination. *JAMA Intern Med* 2020;180(7):973-83. Epub ahead of print.
- Dickinson JA, Pimlott N, Grad R, Singh H, Szafran O, Wilson BJ, et al. Screening: when things go wrong. *Can Fam Physician* 2018;64:502-8 (Eng), e299-306 (Fr).
- Smith GD, Spiegelhalter D. Shielding from covid-19 should be stratified by risk. *BMJ* 2020;369:m2063.
- Dittmann S, Wharton M, Vitek C, Ciotti M, Galazka A, Guichard S, et al. Successful control of epidemic diphtheria in the states of the former Union of Soviet Socialist Republics: lessons learned. *J Infect Dis* 2000;181(Suppl 1):S10-22.
- Li P, Rourke L, Leduc D, Arulthas S, Rezk K, Rourke J, Rourke Baby Record 2017. Clinical update for preventive care of children up to 5 years of age. *Can Fam Physician* 2019;65:183-91 (Eng), e99-109 (Fr).
- Marmot M. *The health gap. The challenge of an unequal world*. London, Engl: Bloomsbury; 2015.
- Berwick DM. The moral determinants of health. *JAMA* 2020 Jun 12. Epub ahead of print.
- Bewley S. Things should never be the same again in the screening world [blog]. *BMJ Opinion* 2020 Apr 14. Available from: <https://blogs.bmj.com/bmj/2020/04/14/susan-bewley-things-should-never-be-the-same-again-in-the-screening-world/>. Accessed 2020 Jun 14.
- Cousineau ME. Crainte d'une vague de cancers du sein. *Le Devoir* 2020 May 2. Available from: <https://www.ledevoir.com/societe/sante/579609/crainte-d-une-vague-de-cancers-du-sein>. Accessed 2020 Jun 24.
- Breault P, Thériault G, Wittmer R, Boudreault S, Laberge C, Landry H, et al. Et si la COVID-19 vous avait sauvé(e)? *Le Devoir* 2020 Jun 15. Available from: <https://www.ledevoir.com/opinion/idees/580791/et-si-la-covid-19-vous-avait-sauve-e>. Accessed 2020 Jun 24.
- Allan GM, Lindblad AJ, Comeau A, Coppola J, Hudson B, Mannarino HB, et al. Simplified lipid guidelines. Prevention and management of cardiovascular disease in primary care. *Can Fam Physician* 2015;61:857-67 (Eng), e439-50 (Fr).
- US Preventive Services Task Force. *Final recommendation statement. High blood pressure in adults: screening*. Rockville, MD: US Preventive Services Task Force; 2015. Available from: <https://www.uspreventiveservicestaskforce.org/uspstf/document/RecommendationStatementFinal/high-blood-pressure-in-adults-screening>. Accessed 2020 Mar 17.
- Birthwhistle R, Bell NR, Thombs BD, Grad R, Dickinson JA; Canadian Task Force on Preventive Health Care. Periodic preventive health visits: a more appropriate approach to delivering preventive services. *Can Fam Physician* 2017;63:824-6 (Eng), e449-51 (Fr).
- Rothberg MB. The \$50 000 physical. *JAMA* 2020;323(17):1682-3.
- Krogshøll LT, Jørgensen KJ, Larsen CG, Gøtzsche PC. General health checks in adults for reducing morbidity and mortality from disease: Cochrane systematic review and meta-analysis. *BMJ* 2012;345:e7191.
- Si S, Moss JR, Sullivan TR, Newton SS, Stocks NP. Effectiveness of general practice-based health checks: a systematic review and meta-analysis. *Br J Gen Pract* 2014;64(618):e47-53.
- Liddy C, Bello A, Cook J, Drimer N, Dumas Pilon M, Farrell G, et al. Supporting the spread and scale-up of electronic consultation across Canada: cross-sectional analysis. *BMJ Open* 2019;9(5):e028888.
- Canadian Medical Association. *CMA Health Summit. Virtual care in Canada: discussion paper*. Ottawa, ON: Canadian Medical Association; 2019. Available from: [https://www.cma.ca/sites/default/files/pdf/News/Virtual\\_Care\\_discussionpaper\\_v2EN.pdf](https://www.cma.ca/sites/default/files/pdf/News/Virtual_Care_discussionpaper_v2EN.pdf). Accessed 2020 Jun 29.
- Marmot M. Just societies, health equity, and dignified lives: the PAHO Equity Commission. *Lancet* 2018;392(10161):2247-50. Epub 2018 Sep 24.
- Owen WF Jr, Carmona R, Pomeroy C. Failing another national stress test on health disparities. *JAMA* 2020 Apr 15. Epub ahead of print.
- Office of Disease Prevention and Health Promotion. *Healthy People 2020. Leading health indicators*. Washington, DC: Office of Disease Prevention and Health Promotion. Available from: <https://www.healthypeople.gov/2020/Leading-Health-Indicators>. Accessed 2020 Jun 29.
- Berwick DM. Choices for the "new normal." *JAMA* 2020;323(21):2125-6.

# Preventive health care and the media

Guylène Thériault MD CCFP Pascale Breault MD CCFP James A. Dickinson MBBS PhD CCFP FRACGP  
Roland Grad MD CM MSc CCFP FCFP Neil R. Bell MD SM CCFP FCFP Harminder Singh MD MPH FRCPC Olga Szafran MHSA

## Case description

You are at a loss. You have just watched a webinar on cancer screening and were taken aback when the benefit of mammography screening for women in their 50s was discussed. One death from breast cancer is prevented for every 1333 women screened over 7 years.<sup>1</sup> However, in the newspaper this morning, you read about the expected tsunami of breast cancer as mammographic screening was suspended during the coronavirus disease 2019 pandemic.

Linda, your first patient of the afternoon, has read the same article. She is worried because her screening mammogram has been delayed. Linda is 54 years old and has no symptoms and no specific risk factors for breast cancer. She wants you to assist her in scheduling her mammogram as soon as possible.

You wonder about the diverging information on breast cancer screening and how to make sense of these opposing views.

Certain affirmations can have a profound effect on the hopes and fears one can have about health and the promise of medicine. Screening for disease directly echoes what most wish for their care—that is, early detection of diseases leading to longer survival with less pain and no lasting undesirable effects. “Prevention is better than cure” and “earlier is better” are maxims so well known that it appears difficult to go against what seems to be common sense.<sup>2</sup>

Evidence suggests that most people—including physicians—tend to overestimate benefits and underestimate harms of health interventions, including screening.<sup>3,4</sup> The reasons underlying this phenomenon are complex and are linked to our cognitive processes. Our intuition is often misguided by what we refer to as the *therapeutic*

*illusion*, an unjustified enthusiasm for tests or treatments.<sup>5</sup> It takes a conscious effort to step back from what our instincts tell us.

The media plays a special role—often unrecognized and thus unaddressed—in shaping our views and expectations toward health care and the outcomes of screening. Stories offering information about benefits (eg, avoided deaths) and harms (eg, overdiagnosed cases and false positives) in a transparent way are uncommon, even if this information is key to making a decision about screening.<sup>6</sup> (In an unpublished study reviewing 1173 unique media stories on early detection tests [the protocol has been previously published], only 37% mentioned harms, while 97% mentioned benefits [only 14% used absolute numbers]. Of those stories where views potentially conflicted, only 12% had a disclosure [M. O’Keeffe, personal communication, August 26, 2020].) Narratives and anecdotes of survivors are powerful, but can often be misleading. The paradox of screening<sup>8</sup> is almost never explained, leading to an increased sense of prevalence of disease and a biased estimation of possible benefits. This unbalanced information can explain why so many patients are surprised that there are possible harms associated with screening tests.<sup>9</sup>

To best inform the public and our patients, it is important for media stories to be congruent with the scientific data available and with the values of those who will ultimately bear the burden of screening. Physicians and patients need to be aware of the shortcomings that affect media reports on screening interventions. It is not an easy task when uncertainty is not presented, and thus positive outcomes are exaggerated and generalized. As physicians, we owe it to our patients to be familiar with common reporting shortcomings and how they affect coverage of preventive health care.

## Key points

- ▶ In most preventive screening interventions, there are trade-offs between potential harms and benefits. These trade-offs, if misrepresented, might contribute to unjustified expectations.
- ▶ Physicians must be aware of the shortcomings of many media reports (print press, social media, radio, or television) that shape a distorted image of preventive health care.
- ▶ Shared decision making requires an understanding of the magnitude of the benefits and harms of screening interventions in easy-to-understand or simple terms.
- ▶ We should seek measures of benefit or harm expressed by absolute risk reduction or through natural frequencies. Decision aids provide such measures and assist shared decision making.

## Physicians and therapeutic illusion: the why

In media reports, increased disease detection or increased 5-year cause-specific survival is often described as if directly showing benefit from screening.<sup>10</sup> Information about diagnostic testing in symptomatic people is often confused with screening, and common biases, such as lead-time bias, length-time bias, overdiagnosis, and overtreatment, are often ignored.

Excessively optimistic views (arising from a cognitive illusion called the *optimism bias*) let physicians believe in the necessity of screening, thus triggering the ordering of tests even if not congruent with a patient's values.<sup>11</sup> This silent epidemic of misreading our patients' preferences is nurtured by lopsided reports in scientific and lay literature. Physicians with a good comprehension of the evidence and adequate numeracy skills do recommend against ineffective screening, while others might inadvertently misinform their patients.<sup>12,13</sup>

Medical practice involves constant decision making. Most of the time we rely on quick, intuitive, automatic strategies (heuristics) to make decisions under uncertainty.<sup>14</sup> One of the most potent heuristics is the *availability heuristic*, which leads us to overestimate the likelihood of certain diagnoses by more easily recalling recent or unusual cases<sup>15</sup> (eg, that one patient in whom we found a cancer with a screening mammogram).

Other factors also play into our inability to be rational when we practise. Keeping track of the literature is a daunting task—more so because knowledge is increasing exponentially. The tendency is to repeat what we believe has worked well in the past, without approaching our practice with a critical lens. Many health care workers tend to harbour a pathophysiologic representation of disease, which is limiting and often wrong. Cancers were once thought to be a relentless progressive disease. We now know that some progress rapidly, some cause death, and some progress slowly or not at all.

## Media and therapeutic illusion: the how

Journalists are subject to constraints that affect their work, including time pressure, word counts, scarce resources, and editing processes. They are also confronted by the biases of their sources, the challenge of explaining scientific content, and the constant demand for “newsworthiness.”<sup>16,17</sup> These pressures are even worse with increasing competition. Social media has become a force in today's culture. As a result, journalists of the traditional media have lost their monopoly on information sharing and must compete fiercely to keep their jobs. The revenues of the written press are declining,<sup>18</sup> making it difficult for reporters to get the resources they need to cover a complex story with the balance that readers deserve.

Unambiguous messages can increase demand for screening.<sup>19,20</sup> In the context of strong recommendations for a screening test, this is probably overall a good thing.

But when a screening test has a closer balance between benefits and harms, the media should put forward the message in a way that would help individuals to make an informed choice. Too often, this does not occur. The option or the “appropriateness” of not doing something is seldom presented. Therefore, when a patient comes in, both the doctor and the patient are unconsciously prone to act. Often what they believe has little to do with factual knowledge of benefits and harms.

Repeated one-sided or unbalanced messages arise in part from the therapeutic illusion. These messages become entrenched in the minds of patients and physicians alike, leading to false beliefs. The magnitude of the effect of preventive care and intervention is often perceived to be well above reality. Even when experts might interpret an article as recommending against a screening test, laypeople might get a different message.<sup>21</sup> Thus, many are surprised when they see the absolute numbers presented in clinical decision aids about screening.

Readers of this series will know that we have previously discussed at length both the possible benefits and harms of screening. We have also described tools to enhance shared decision making that can help us convey these difficult concepts.<sup>22</sup> Visual aids are helpful in getting this counterintuitive message across.<sup>23</sup>

## Over the smoke screen: the good, the bad, and the ugly of screening in the media

**The good: nuance and accurate information.** Print journalists and those who share information on social media and radio need to get the message right. They have a critical role to play, as they reach a wide audience. Highlighting the balance between possible benefits and harms can be achieved, and some do provide just and accurate information (**Box 1**).<sup>24</sup> A brilliant example is Renée Pellerin's book *Conspiracy of Hope* about breast cancer screening.<sup>25</sup>

Some journalists have the resources to dig deeper and offer the full story, which is never as simple as “screening saves lives.” Ultimately they depend on their sources and this represents a challenge. Individuals who directly profit from more screening seldom make that information transparent or available and might not give opposing arguments. Acquiring original sources instead of relying on press releases is helpful in balancing information.

Discussions about screening need to be nuanced. They need to reflect what is known on the subject to tackle myths and misconceptions. The goal of a good report is not to influence, but to inform. Explaining that earlier detection is not equal to increased survival and that possible benefit needs to be balanced by possible harms is difficult and demands deeper thinking.

**The bad: nurturing our therapeutic illusion.** Many journalists do not have the background knowledge to understand what screening can and cannot do, and would probably benefit from basic epidemiology

### Box 1. Checklist of criteria for high-quality health reporting

#### How do you tell if a media report is presenting balanced information?

- The story adequately quantifies the benefits of screening:
  - The numbers are presented in absolute terms
  - The reported results are clinically important (not just statistically significant)
  - The difference between population risk and individual risk is explained
  - The story explains how this might affect health or quality of life (does not report only on surrogates)
  - The story does not rely too much on anecdotes
  - The story reports all outcomes (not just the secondary ones that show a positive result; eg, reporting on increased detection but not on patient-oriented outcomes such as the effect on mortality)
- The story adequately explains or quantifies the harms of screening:
  - There is an explanation about common harms (eg, false positives, overdiagnosis) and their common consequences (eg, labeling, overtreatment, unnecessary tests)
  - The numbers are presented in absolute terms
- There is a discussion about the balance of benefits and harms
- The story compares different alternatives (screening vs not screening)
- The story clearly reports for whom this might be an appropriate option (eg, which age group) without inferring that it might apply more broadly
- The story discusses the quality of the evidence:
  - Explains the scientific basis of the recommendation
    - a systematic review of the literature vs an expert opinion
    - randomized trials or observational data
  - Discusses the shortcomings of the evidence
- The story does not incite “disease-mongering” (ie, it promotes public awareness, not the selling of tests or treatments)
- The story uses independent sources and identifies conflicts of interest
  - The story relies on the recommendations given by independent bodies (eg, the Canadian Task Force on Preventive Health Care)
  - If there are conflicts, the story reports how were they handled

Adapted from HealthNewsReview.org.<sup>24</sup>

training.<sup>26</sup> They might not appreciate the pitfalls of “medicine by press release” as opposed to the benefits of a critical analysis of primary research. Other hazards include reporting on studies that asked the wrong question; presenting statistically significant results as if they were clinically important; and not recognizing

studies with inappropriate designs and biased samples, or which analyze data incorrectly. While this might lead to faulty communications or incomplete information, there is no intent to mislead.

A common pitfall is to present benefit with relative numbers and harm with absolute numbers. If we say that prostate cancer screening decreases this specific cancer mortality at 10 years by 15% and tell you that the risk of being overdiagnosed is 3% (given a true diagnosis of cancer, but the cancer you have would not have given you any symptoms), would you realize that 15% was a relative number (representing 1 fewer prostate cancer death per 1000 men screened over 13 years) while the 3% was an absolute number, equivalent to 33 men per 1000 screened?

Reporting numbers in relative terms without specifying it and without providing the information in absolute terms is misleading and should be avoided. Putting forward outcomes that are not important to patients (eg, doubling of creatinine level) while ignoring outcomes important to patients (eg, amputation) is also misleading. Examples of common shortcomings in media reports are given in **Table 1**.<sup>2,27-39</sup>

**The ugly: willingly promoting interests different from patients' interests.** One cannot underestimate the importance of the media in setting the public agenda. Many organizations are aware of how powerful the media can be in promoting their own interests under the cover of promoting patients' wellness. Unfortunately, at times there is deliberate misrepresentation of the facts and such untruths then become “real facts” for many. Some organizations (eg, device manufacturers, pharmaceutical companies, patent or shareholders, screening organizations) wish to manipulate public opinion and allow false beliefs to become “evidence” (eg, antivaccination groups still citing Wakefield's flawed study about the measles-mumps-rubella vaccine and autism<sup>40</sup>). This promotes sharing and resharing of skewed information. A study by Döbrössy et al notes that “unscientific statements shared by lay people are frequently not minor misunderstandings but fundamental to the scientific rationale of screening.”<sup>41</sup>

For example, if a company is selling diagnostic equipment, they are happy to report how their technology reveals more cancers. However, they are unlikely to divulge that they have no studies demonstrating that this discovery decreases either mortality or the development of advanced cancer (eg, the stable incidence of metastatic breast cancer in screened populations<sup>42</sup>). It is not enough to rely solely on diagnosing more early cancers. This is never a direct proof of benefit, as more sensitive technologies increase the risk of overdiagnosis and lead-time bias is present.

### Final thoughts

A physician's recommendation is an important predictor of the uptake of screening interventions.<sup>43</sup> That underlines

**Table 1. Common shortcomings of media reports**

POTENTIAL SHORTCOMING	EXAMPLE OF BAD REPORTING	EXAMPLE OF GOOD REPORTING
Using a relative risk instead of (or without) an absolute risk	<b>Press release by the NIH</b> Screening for lung cancer decreases your risk of dying by 20%. <sup>27</sup> The press release states the number of deaths in each group, but not the absolute risk reduction	<b>Canadian Task Force on Preventive Health Care</b> A discussion tool gives absolute numbers: 3 fewer individuals per 1000 will not die of lung cancer out of 1000 heavy smokers screened <sup>28</sup>
Confusing diagnostic procedures with screening	<b>Fox News story</b> Posts a story and a video about a 32-year-old woman who got a colonoscopy because of abdominal discomfort and weight loss. She encourages all young people to get screened <sup>29</sup>	<b>HealthNewsReviews.org</b> Explains the distinction between a diagnostic procedure and a screening procedure. In a screened population (without symptoms), the prevalence of disease is much less, so the benefits are less likely, but the harms are still present <sup>30</sup>
Only talking about benefits	<b>Websites</b> 98% of reports on lung cancer screening mention benefits, while only 48% present any harms <sup>31</sup>	<b>Article about communicating risk</b> Reports benefits and harms of screening tests using absolute (or natural) numbers with the same denominator <sup>32</sup>
Reporting benefits in relative terms and harms in absolute terms	<b>Time article about SPRINT</b> SPRINT reported a 38% reduction in heart failure and a 43% reduction in deaths from heart problems (relative risk) with a 1% to 2% increase of side effects apart from falls (absolute risk) <sup>33</sup>	<b>The published SPRINT results</b> The absolute reduction for heart failure was 0.8% and for cardiovascular mortality was 0.6% <sup>34</sup>
Equating increased 5-y survival with benefits	<b>Radio advertisement, New Hampshire, 2007 Oct 29</b> "I had prostate cancer 5, 6 years ago. My chances of surviving prostate cancer, and thank God I was cured of it, in the United States, 82%. My chances of surviving prostate cancer in England, only 44% under socialized medicine" <sup>35</sup>	<b>HealthNewsReview.org</b> Explains how 5-y survival statistics should not be used to report benefits of screening. Lead-time bias and overdiagnosis will increase the 5-y survival rate in the screened group, even if there is no true benefit <sup>36</sup>
Assuming benefit when screening leads to more detection of disease	<b>Press release from a company making 3D mammography technology</b> "We remain resolute in our commitment to developing innovative new technologies ... which [detect] more invasive cancers than conventional mammography, improving a woman's chance of survival" <sup>37</sup>	<b>Testing Treatments</b> "Finding more disease is not evidence of effectiveness. The possibility of overdiagnosis (which increases survival statistics) is always present. In the absence of studies confirming a benefit, we shouldn't imply one" <sup>2</sup>
Thinking screening is the only reasonable choice	<b>A video on Facebook</b> Promotes prostate cancer screening by digital rectal examination or PSA. <sup>38</sup> No explanations are provided about the total lack of evidence on the effectiveness of the digital rectal examination. There is no discussion about the option of not being screened, or about the possibility of being overdiagnosed	<b>Globe and Mail column</b> After reviewing the facts, the column clearly states that men should be informed before deciding to be screened or not <sup>39</sup>

NIH—National Institutes of Health, PSA—prostate-specific antigen, SPRINT—Systolic Blood Pressure Intervention Trial.

the need for primary care providers to understand the benefits and harms of screening; the need to refrain from recommending unproven screening tests; and the need for shared decision making when the benefits and harms are in close balance (eg, breast cancer screening).

Physicians will be asked by patients to discuss media stories that present incorrect or incomplete information about benefits and harms. To do this well, we need usable, balanced information (good knowledge translation tools) and the skills to understand how best to communicate benefit, risk, and effect size to patients.

## Case resolution

You are more aware of the different ways information is conveyed. You now know you need to look for absolute

risk and balanced information about the benefits and risks of screening. You use the decision aid from the Canadian Task Force on Preventive Health Care on breast cancer screening<sup>1</sup> to inform Linda. She is surprised about the possible harms and understands there is no rush for her next mammogram. She is grateful for this information. She did not know there was a decision to make. She will continue to think about this and will make a decision later as to whether she will be screened.

You keep in mind the suggestions of Cochrane and Holland: "If a patient asks a medical practitioner for help, the doctor does the best possible. The doctor is not responsible for defects in medical knowledge. If, however, the practitioner initiates screening procedures the doctor is in a very different situation. The doctor should,

in our view, have conclusive evidence that screening can alter the natural history of the disease in a significant proportion of those screened.<sup>144</sup>

**Dr Thériault** is Academic Lead for the Physicianship Component and the Director of Pedagogy at the Outaouais Medical Campus of McGill University's Faculty of Medicine in Gatineau, Que. **Dr Breault** is Clinical Lecturer in the Department of Family Medicine at Laval University in Quebec city, Que. **Dr Dickinson** is Professor in the Department of Family Medicine and the Department of Community Health Sciences at the University of Calgary in Alberta. **Dr Grad** is Associate Professor in the Department of Family Medicine at McGill University. **Dr Bell** is Professor in the Department of Family Medicine at the University of Alberta in Edmonton. **Dr Singh** is Associate Professor in the Department of Internal Medicine and the Department of Community Health Sciences at the University of Manitoba in Winnipeg and in the Department of Hematology and Oncology of CancerCare Manitoba. **Ms Szafran** is Associate Director of Research in the Department of Family Medicine at the University of Alberta.

#### Competing interests

All authors have completed the International Committee of Medical Journal Editors' Unified Competing Interest form (available on request from the corresponding author).

**Dr Singh** reports grants from Merck Canada, personal fees from Pendopharm, and personal fees from Ferring Canada, outside the submitted work. The other authors declare that they have no competing interests.

#### Correspondence

**Dr Guylène Thériault**; e-mail [guylene.theriault@mcgill.ca](mailto:guylene.theriault@mcgill.ca)

#### References

- Canadian Task Force on Preventive Health Care. *Breast cancer update—1000 person tool, age 50–59. Updated task force recommendations for women*. Ottawa, ON: Canadian Task Force on Preventive Health Care; 2020. Available from: <https://canadiantaskforce.ca/tools-resources/breast-cancer-update/1000-person-tool-age-50-59/>. Accessed 2020 Aug 24.
- Earlier is not necessarily better. In: Evans I, Thornton H, Chalmers I, Glasziou P. *Testing treatments: better research for better healthcare*. 2nd ed. London, Engl: Pinter and Martin; 2011. p. 31–49.
- Hoffmann TC, Del Mar C. Clinicians' expectations of the benefits and harms of treatments, screening, and tests: a systematic review. *JAMA Intern Med* 2017;177(3):407–19.
- Hoffmann TC, Del Mar C. Patients' expectations of the benefits and harms of treatments, screening, and tests: a systematic review. *JAMA Intern Med* 2015;175(2):274–86.
- Casarett D. The science of Choosing Wisely—overcoming the therapeutic illusion. *N Engl J Med* 2016;374(13):1203–5.
- Pillay J, MacGregor T, Featherstone R, Hartling L. *Breast cancer screening: part B. Systematic review on women's values and preferences to inform an update of the Canadian Task Force on Preventive Health Care 2011 guideline*. Ottawa, ON: Canadian Task Force on Preventive Health Care; 2018. Available from: [https://canadiantaskforce.ca/wp-content/uploads/2018/11/Womens-Values-and-Preferences-on-Breast-Cancer-Screening\\_FINAL.pdf](https://canadiantaskforce.ca/wp-content/uploads/2018/11/Womens-Values-and-Preferences-on-Breast-Cancer-Screening_FINAL.pdf). Accessed 2020 Aug 24.
- O'Keefe M, Barratt A, Maher C, Zadro J, Fabbri A, Jones M, et al. Media coverage of the benefits and harms of testing the healthy: a protocol for a descriptive study. *BMJ Open* 2019;9(8):e029532.
- Dickinson JA, Pimlott N, Grad R, Singh H, Szafran O, Wilson BJ, et al. Screening: when things go wrong. *Can Fam Physician* 2018;64:502–8 (Eng), e299–306 (Fr).
- Schwartz LM, Woloshin S, Fowler FJ Jr, Welch HG. Enthusiasm for cancer screening in the United States. *JAMA* 2004;291(1):71–8.
- Bell NR, Dickinson JA, Grad R, Singh H, Kasperavicius D, Thombs BD. Understanding and communicating risk. Measures of outcome and the magnitude of benefits and harms. *Can Fam Physician* 2018;64:181–5 (Eng), 186–91 (Fr).
- Jefferson A, Bortolotti L, Kuzmanovic B. What is unrealistic optimism? *Conscious Cogn* 2017;50:3–11. Epub 2016 Nov 1.
- Petrova D, Mas G, Navarrete G, Rodríguez TT, Ortiz PJ, García-Retamero R. Cancer screening risk literacy of physicians in training: an experimental study. *PLoS One* 2019;14(7):e0218821.
- Petrova D, Kostopoulou O, Delaney BC, Cokely ET, García-Retamero R. Strengths and gaps in physicians' risk communication: a scenario study of the influence of numeracy on cancer screening communication. *Med Decis Making* 2018;38(3):355–65. Epub 2017 Sep 8.
- Del Campo C, Pauser S, Steiner E, Vetschera R. Decision making styles and the use of heuristics in decision making. *J Bus Econ* 2016;86(4):389–412.
- Croskerry P. Achieving quality in clinical decision making: cognitive strategies and detection of bias. *Acad Emerg Med* 2002;9(11):1184–204.
- Winsten JA. Science and the media: the boundaries of truth. *Health Aff (Millwood)* 1985;4(1):5–23.
- Yang JH. Constraints on environmental news production in the U.S.: interviews with American journalists. *J Int Area Stud* 2004;11(2):89–105.
- Assemblée nationale du Québec. *Commission de la culture et de l'éducation. Mandat d'initiative - avenir de médias d'information*. Québec city, QC: Assemblée nationale du Québec; 2019. Available from: <http://www.assnat.qc.ca/fr/travaux-parlementaires/commissions/cce/mandats/Mandat-40735/index.html>. Accessed 2020 Aug 24.
- Morrell S, Perez DA, Hardy M, Cotter T, Bishop JF. Outcomes from a mass media campaign to promote cervical screening in NSW, Australia. *J Epidemiol Community Health* 2010;64(9):777–83. Epub 2009 Oct 12.
- MacArthur GJ, Wright M, Beer H, Paranjothy S. Impact of media reporting of cervical cancer in a UK celebrity on a population-based cervical screening programme. *J Med Screen* 2011;18(4):204–9. Epub 2011 Dec 7.
- Elstad EA, Sheridan SL, Lee JGL, Rini C, Earp JA, Brewer NT. Have screening harms become newsworthy? News coverage of prostate and colorectal cancer screening since the 2008 USPSTF recommendation changes. *J Behav Med* 2014;37(6):1242–51. Epub 2014 May 24.
- Moore AE, Straus SE, Kasperavicius D, Bell NR, Dickinson JA, Grad R, et al. Knowledge translation tools in preventive health care. *Can Fam Physician* 2017;63:853–8 (Eng), e466–72 (Fr).
- Petrova D, García-Retamero R, Cokely ET. Understanding harms and benefits of cancer screening: a model of factors that shape informed decision making. *Med Decis Making* 2015;35(7):847–58. Epub 2015 Jun 4.
- HealthNewsReview.org [website]. *Our review criteria*. Minneapolis, MN: HealthNewsReview.org. Available from: <https://www.healthnewsreview.org/about-us/review-criteria>. Accessed 2020 Aug 24.
- Pellerin R. *Conspiracy of hope. The truth about breast cancer screening*. Fredericton, NB: Goose Lane Editions; 2018.
- Pai M. Journalists need to get it right: epidemiology training can help. *Forbes* 2020 Aug 9. Available from: <https://www.forbes.com/sites/madhukarpai/2020/08/09/journalists-need-to-get-it-right-epidemiology-training-can-help/#4b5661a66a2>. Accessed 2020 Aug 24.
- National Institutes of Health. *Lung cancer trial results show mortality benefit with low-dose CT* [news release]. Bethesda, MD: National Institutes of Health; 2010. Available from: <https://www.nih.gov/news-events/news-releases/lung-cancer-trial-results-show-mortality-benefit-low-dose-ct>. Accessed 2020 Aug 24.
- Canadian Task Force on Preventive Health Care. *Lung cancer screening*. Calgary, AB: Canadian Task Force on Preventive Health Care; 2016. Available from: <https://canadiantaskforce.ca/wp-content/uploads/2016/05/ctfphlung-cancerclinician-faqfinalv2-1.pdf>. Accessed 2020 Aug 24.
- Hein A. Mom diagnosed with colon cancer urges others to get screened early. *Fox News* 2018 Sep 5. Available from: <https://www.foxnews.com/health/mom-diagnosed-with-colon-cancer-urges-others-to-get-screened-early>. Accessed 2020 Aug 24.
- Lomangino K. Why one woman's emotional plea for early colon cancer screening may harm instead of help. *HealthNewsReview.org* 2018 Sep 6. Available from: <https://www.healthnewsreview.org/2018/09/why-one-womans-emotional-plea-for-early-colon-cancer-screening-may-harm-instead-of-help>. Accessed 2020 Aug 24.
- Woloshin S, Black WC, Kramer BS. Lung cancer screening websites—balanced information vs advertisement. *JAMA Intern Med* 2020;180(6):821–3.
- Naik G, Ahmed H, Edwards AGK. Communicating risk to patients and the public. *Br J Gen Pract* 2012;62(597):213–6.
- Park A. Why your blood pressure might actually be too high. *Time* 2015 Nov 12. Available from: <https://time.com/4109849/should-your-blood-pressure-be-way-lower-than-it-is>. Accessed 2020 Aug 24.
- SPRINT Research Group; Wright JT Jr, Williamson JD, Whelton PK, Snyder JK, Sink KM, et al. A randomized trial of intensive versus standard blood-pressure control. *N Engl J Med* 2015;373(22):2103–16. Epub 2015 Nov 9. Erratum in: *N Engl J Med* 2017;377(25):2506.
- RudyGiulianiHQ. *Rudy Radio – “Chances.”* YouTube; 2007. Available from: [https://www.youtube.com/watch?v=\\_csATVGNHMc&feature=youtu.be](https://www.youtube.com/watch?v=_csATVGNHMc&feature=youtu.be). Accessed 2020 Aug 24.
- Schwitzer G. Five year survival rates can mislead – message to medical educators, medical journals, journalists and the public. *HealthNewsReview.org* 2013 Feb 6. Available from: <https://www.healthnewsreview.org/2013/02/five-year-survival-rates-can-mislead-message-to-medical-educators-medical-journals-journalists-and-the-public>. Accessed 2020 Aug 24.
- Hologic. *Sheryl Crow named Hologic's national celebrity spokesperson for new breast cancer educational campaign* [press release]. Marlborough, MA: Hologic; 2016. Available from: <https://investors.hologic.com/press-releases/press-release-details/2016/Sheryl-Crow-Named-Hologics-National-Celebrity-Spokesperson-for-New-Breast-Cancer-Educational-Campaign/default.aspx>. Accessed 2020 Aug 24.
- Diaz AC. Dirty good job: Mike Rowe gets a prostate exam on camera. Erich & Kallman's film for Zero. *AdAge* 2018 Oct 9. Available from: <https://adage.com/creativity/work/zero-mike-rows-prostate-exam/952196>. Accessed 2020 Aug 24.
- Wente M. Prostate cancer dilemma. *Globe and Mail* 2010 Feb 8. Available from: <https://www.theglobeandmail.com/life/health-and-fitness/prostate-cancer-dilemma/article623311>. Accessed 2020 Aug 24.
- Kata A. A postmodern Pandora's box: anti-vaccination misinformation on the Internet. *Vaccine* 2010;28(7):1709–16. Epub 2009 Dec 30.
- Döbrössy B, Girasek E, Susánszky A, Koncz Z, Györfy Z, Bognár VK. “Clicks, likes, shares and comments.” A systematic review of breast cancer screening discourse in social media. *PLoS One* 2020;15(4):e0231422.
- Welch HG, Kramer BS, Black WC. Epidemiologic signatures in cancer. *N Engl J Med* 2019;381(14):1378–86.
- O'Farrell CM, Green BB, Reid RJ, Bowen D, Baldwin LM. Physician-patient colorectal cancer screening discussions by physicians' screening rates. *J Am Board Fam Med* 2012;25(6):771–81.
- Cochrane AL, Holland WW. Validation of screening procedures. *Br Med Bull* 1971;27(1):3–8.

This article is eligible for Mainpro+ certified Self-Learning credits. To earn credits, go to [www.cfp.ca](http://www.cfp.ca) and click on the Mainpro+ link.

La traduction en français de cet article se trouve à [www.cfp.ca](http://www.cfp.ca) dans la table des matières du numéro de novembre 2020 à la page e287.

### Suggested additional sources

Aimaenergy. *Au nom de tous les seins - incertain dépistage\_France 5\_2016\_01\_12\_20\_45* [video]. Vimeo; 2016. Available from: <https://vimeo.com/151632825>. Accessed 2020 Aug 24.

Gigerenzer G, Gaissmaier W, Kurz-Milcke E, Schwartz LM, Woloshin S. Helping doctors and patients make sense of health statistics. *Psychol Sci Public Interest* 2007;8(2):53-96. Epub 2007 Nov 1.

Pellerin R. *Conspiracy of hope. The truth about breast cancer screening*. Fredericton, NB: Goose Lane Editions; 2018.

Pursuing health with less diagnosis. In: Welch HG, Schwartz LM, Woloshin S. *Overdiagnosed. Making people sick in the pursuit of health*. Boston, MA: Beacon Press; 2011. p. 180-91.

*HealthNewsReview.org* [website]. Minneapolis, MN: University of Minnesota School of Public Health. Available from: <https://www.healthnewsreview.org>. Accessed 2020 Aug 24.

THE COLLEGE OF  
FAMILY PHYSICIANS  
OF CANADA



LE COLLÈGE DES  
MÉDECINS DE FAMILLE  
DU CANADA

CFP MFC  
CANADIAN FAMILY PHYSICIAN • LE MÉDECIN DE FAMILLE CANADIEN

ARE YOU A FAMILY  
MEDICINE RESIDENT  
IN CANADA ENGAGED  
IN RESEARCH OR  
MEDICAL WRITING?



*Canadian Family Physician* wants to hear from you. This is a great opportunity to get your work on a current issue in family medicine published in a high-quality peer-reviewed medical journal!

*CFP* publishes its Residents' Views section quarterly. This is a dedicated space for family medicine residents in training to publish.

Submit your article today!  
[www.cfp.ca/content/Author-Instructions](http://www.cfp.ca/content/Author-Instructions)

Manuscript submission deadline dates:

March 1

June 1

September 1

December 1

See a sample of past publications [www.cfp.ca/content/65/11/838](http://www.cfp.ca/content/65/11/838)