# Going against the status quo in screening

## Call to action to improve teaching in preventive health care

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Screening as part of preventive health care is complex, and teaching these skills poses specific challenges. Multiple factors influence how clinician teachers elect to address screening. Direct-to-patient provincial screening programs and limited clinical time and resources make it easy to adopt a reflexive approach and screen all those who qualify. But is this the best approach? The perceived screening backlog created during the COVID-19 pandemic provides an opportune time to improve our approach and better understand the limits of screening.

During the past decade there has been a growing recognition of the potential trade-offs between the harms and benefits of screening. However, many physicians, medical trainees, and patients continue to think that, for a large proportion of the population, recommended screenings enable early diagnosis and treatment and prevent premature death. Although this is a long-standing belief among physicians and patients, evidence on screening now suggests that these benefits may be less pronounced than perceived.[1-3] In addition, there is a greater understanding of the harms of screening, which include overdiagnosis, false positives, and excessive testing.[1] Despite this recognition, there is minimal public knowledge and limited patient awareness of these potential harms, even in populations currently undergoing regular screening.[4,5] The challenges of screening are further magnified by conflicting guideline recommendations, strong patient and professional advocacy groups that promote specific screening interventions, and a plethora of information of variable quality from social media sources.[6]

Core foundational skills are needed to include individual patient expectations, values, and preferences effectively in screening decisions; however, many physicians, other health care providers, and learners struggle with the challenges of screening. For example, they may not have the critical thinking, statistical literacy, and communication skills required to understand and effectively explain the harms and benefits of screening to patients.[7-12] Data have shown that the teaching of evidence-based medicine that has taken place for at least the past 30 years has not really borne fruit. Patients also have trouble understanding information on the benefits and harms of health care interventions. It is estimated that more than 50% of Canadians have inadequate health literacy and numeracy skills, which make the communication and understanding of health issues potentially challenging.[13]

This is a call to action to enhance the training of physicians, other health care providers, and learners in the concepts and skills required to optimize their approaches to health outcomes. The following clinical scenario provides examples of issues physicians may encounter in preventive care and allows the reader to reflect on the adequacy of their related skills.

## Case description

Bara is a 54-year-old woman who has been a patient in your practice for several years. She recently received a letter from the provincial government's breast screening program indicating that she is overdue for breast cancer screening with mammography. Although Bara has no family history of breast cancer, she is quite anxious because one of her close friends was recently diagnosed with breast cancer. Her friend has responded well to treatment and believes this is primarily because of early diagnosis by mammography. Bara is quite upset that she did not have a referral for a mammogram earlier and that she had not been advised she should have mammograms annually to screen for breast cancer. Bara would like

### Key points

- Over the past decade, decisions about screening have become more complex owing to a better understanding of potential benefits and harms. Strongly held beliefs and screening advocacy from individuals and groups point to the need to understand and consider individual patient preferences and values in screening decisions.
- Many physicians, other health care providers, and learners find conflicting and misleading information on screening to be challenging.
- Most screening decisions include a trade-off between potential harms and benefits.
- Physicians should understand the evidence and communicate it using shared decision-making skills to arrive at an appropriate screening decision based on the individual values and preferences of their patients.

an urgent appointment with you to discuss a referral for mammography.

You reflect on your impending visit with Bara and the information you need to have for an informed discussion. You also consider how best to undertake this discussion, especially given Bara's request for more frequent than recommended screening. What information and tools on the potential benefits and harms of mammography will you need? What would you do? Clinical and educational issues resulting from Bara's concerns are outlined in **Table 1**.[13-17]

## What factors need to be addressed to improve foundational skills in screening?

The current approach to screening often follows a simple, linear, checklist format. In reality, preventive care is a complex and adaptive process involving physician, patient, and environmental factors.[18] The complexity is multifactorial and is based on challenges pertaining to understanding core screening concepts, a frequent lack of integration of patient preferences and values in the decision-making process, social media misinformation, and the multiplicity of guidelines and an inability to consider them critically. Conflicts of interest, gaps in knowledge, or an absence of rigour in the evidence underlying recommendations often result in confusion. This confusion contributes to the inappropriate and inconsistent application of screening recommendations.[19] Many provinces have adopted direct-to-patient communication and notification regarding screening for breast, cervical, and colorectal cancer.[20] Direct-to-patient screening does not address each patient's unique circumstances, assumptions, and understanding of preventive care, which may be predicated on social media myth, and it fails to leverage the opportunity to address modifiable risk factors that contribute to disease.[21,22] This failure is magnified at the clinician teacher–learner-patient interface, where factors such as perceived lack of time, statistical illiteracy,[11] lack of critical thinking,[10,12] fear of missing a diagnosis, fear of legal repercussions, and perceived patient preferences (to test just to make sure) all complicate the screening decision process for physicians and trainees alike.

Physicians, medical trainees, and patients potentially all have different understandings of key screening concepts, making appropriate and informed decision making challenging.[23,24] It is important to emphasize that screening guidelines are not *rules*, and that using them properly requires understanding the evidence behind them. Critical thinking skills are key to understanding how to communicate screening to patients (such as using infographics and decision aids) through a shared decision-making approach.[2,25,26]

**Table 1. Examples of clinical and educational issues arising from the patient's concerns**

| PATIENT ISSUE | CLINICAL ISSUES | EDUCATIONAL ISSUES |
|---|---|---|
| The patient may not be aware of the trade-offs between the harms and benefits of screening[13] | What information does the physician need to inform this discussion? What is the best way to present this information to the patient? Some issues to consider:<br>• Approximately 50% of Canadians have inadequate health literacy and numeracy skills[13]<br>• Well-designed knowledge translation tools can provide information on harms and benefits that support decision making | • What is the natural history of cancer progression and the natural history of breast cancer?<br>• What is the concept of overdiagnosis, and how does it apply to screening for breast cancer?<br>• What outcome measures should be used to determine the benefits of screening? What outcome measures are potentially misleading?<br>• How should knowledge translation tools be used to support decision making on screening? |
| The patient feels she should be screened more frequently than recommended for breast cancer | There are conflicting guideline recommendations on screening intervals for mammography:<br>• The Canadian Task Force on Preventive Health Care recommends screening every 2-3 y[14]<br>• The Canadian Association of Radiologists and the Canadian Society of Breast Imaging recommend screening every 1-2 y[15] | • How do we assess the quality of guidelines providing recommendations on screening for breast cancer?<br>• How are screening interval recommendations determined? |
| The patient is anxious and has concerns regarding her risk for breast cancer[16] | • In clinical circumstances where there is a trade-off between harms and benefits, shared decision making is the desired approach<br>• Patient values and preferences do influence screening decisions<br>• The physician might feel pressured to pursue further screening as a way to manage the patient's health anxiety | • Adequate skills in shared decision making (communicating risk and eliciting the patient's preferences and values) are necessary<br>• Adequate skills in the management of health anxiety are required |
| The patient has increased awareness of breast cancer because of her friend's illness | Strong statements and beliefs on the benefits of screening are often provided by cancer survivors and advocacy groups | • Understand the paradox of screening, which is an increased incidence and a perceived sense of benefit as a result of increased screening[17] |

## How do we improve physician skills in screening?

Physicians and other health care providers are faced with 2 main educational challenges in attempting to improve knowledge and skills to foster more appropriate screening. The first challenge is the development of educational content on key concepts related to screening (**Table 2**).[21,27-29] The Prevention in Practice series published in *Canadian Family Physician* provides useful content for physicians and other health care providers.[25,30] A more detailed outline of the skills needed for screening will be found in a subsequent paper in this series.

The second challenge is the development of educational strategies to bring the teaching and uptake of these concepts into the core of medical education at the levels of the medical student, resident, and practising physician. Family physicians and other health educators will need to consider carefully how to best teach these skills and integrate them into routine practice. Some examples of how this might occur are outlined in **Table 3.**[10] Educational strategies are necessary, but they alone may not be sufficient. Knowing the information does not always translate to applying the information. Lessons learned from the lack of success in teaching evidence-based medicine need to be considered.[9-11] Meaningful change requires system-level changes that align with the educational strategies suggested in **Table 3**[10] and help clinician teachers, learners, and patients better understand screening.[7,8,25,31]

## Case resolution

In preparation for Bara's visit, you review the Canadian Task Force on Preventive Health Care (CTFPHC) guideline that recommends screening for breast cancer every 2 to 3 years with mammography.[14] You realize it does not give much detail on why it recommends that interval. You also review a US modeling study comparing different screening intervals.[32]

Bara attends your office a few days later. You review with her the national guideline that recommends screening for breast cancer every 2 to 3 years with mammography. She remains unconvinced; she has found recommendations online from professional organizations and advocacy groups that recommend annual screening. You acknowledge her concerns and indicate that you are aware of different guideline recommendations on screening for breast cancer. Although you raise the issue of harms related to screening, Bara indicates that it "only makes sense" that more frequent screening has a better chance of finding early breast cancer. You acknowledge that it appears to make sense that more frequent testing likely will find more; the question is how much difference that makes to a patient's life versus how much more harm may occur. You discuss the information on the decision aid from the CTFPHC. She has trouble understanding the concept of overdiagnosis, so you do your best to explain it. After this discussion, Bara still wishes to have annual screening.

You give Bara a requisition for a mammogram and a copy of the CTFPHC infographic, and you invite her to discuss her desire for annual screening next year. After the visit you remain troubled; you are not sure why the guideline recommendations are different, and you wonder if you could have done a better job of communicating the benefits and harms to Bara.

**Table 2.** Factors contributing to the need for improved teaching in preventive health care

| FACTOR | CONCEPTS FOR TEACHING |
|---|---|
| Evolving understanding of the harms and benefits of screening | • There is a trade-off between benefits and harms<br>• A better understanding of concepts, such as overdiagnosis and the natural history of disease, related to screening decision making is needed |
| Multiplicity of guideline recommendations on screening | • Guidelines can have conflicting recommendations on screening for the same condition |
| Rise of social media and online sources of health care information on screening | • Patients have many sources of information that can be biased or misleading<br>• Consider the media reliance of the survivor[21,27] |
| More rigorous methods for evaluating the quality of evidence | • Use GRADE: Grading of Recommendations Assessment, Development and Evaluation[28] |
| New tools to evaluate guideline trustworthiness and quality | • Use G-TRUST: Guideline Trustworthiness, Relevance, and Utility Scoring Tool[29] |
| Need for effective communication with patients on the potential harms and benefits of screening | • Use natural frequencies to foster insight<br>• Use knowledge translation tools in decision making with patients<br>• Recognize and employ shared decision making in clinical situations where there are trade-offs between harms and benefits |
| Evolution of strong patient advocacy groups on screening | • Understand how belief systems influence clinical decision making |
| Need to understand the complex, adaptive nature of primary care | • Screening decisions can be influenced by factors including patient values and preferences<br>• Different patients with similar issues will make different screening choices |

**Table 3.** Strategies for improving preventive health care education

| CHALLENGE | STRATEGIES FOR IMPROVING TEACHING | COMMENTS |
|---|---|---|
| Need for learning objectives and implementation of new resources | • Use a case-based guidebook illustrating how to apply theory to practice<br>• Use real clinical cases that cite applied evidence | There is a need to move away from sporadic evidence-based teaching to a more integrated approach linked to day-to-day practice and direct interactions with patients |
| Limited or outdated understanding of core concepts in screening | • Translate learning objectives into strategies for teaching<br>• Ensure there are structured learning opportunities on core concepts<br>• Provide updated information on the key concepts of screening | Many physicians and educators are unaware of the key concepts that have become well known over the past 10 y |
| Limited training time and available resources | • Leverage academic faculty members to adapt the curriculum<br>• Ensure these topics are seen at many points and reinforced throughout the curriculum<br>• A longitudinal learning approach starting in medical school is needed<br>• Engage stakeholders, including medical schools, provincial regulatory bodies, and the College of Family Physicians of Canada | Reinforce the key concepts through existing learning and continuing professional development formats |
| More effective integration of screening at the time of the patient encounter[10] | • Facilitate the integration of shared decision making as an effective approach to addressing conflicting recommendations and enabling better screening decisions<br>• Teach shared decision making<br>• Teach and use knowledge translation tools<br>• Assemble a package of knowledge translation tools<br>• Consider a visit dedicated to prevention and screening | Shared decision making improves decision quality and patient outcomes, and it supports better health care resource use. A key challenge to address is the need to provide tools that can be used at the point of care. |

## Call to action

Clinician teachers, learners, professional societies that develop guidelines,[33,34] screening agencies, and academic institutions should reconsider the optimal approach to the uptake and implementation of guidelines. This change in focus should encompass the breadth of learners from undergraduate medicine to continuing professional development as well as the breadth of stakeholders from patients to agencies. Now is the time to swim against the tide and reconsider our approaches to teaching and communicating prevention and screening information, and to ensure they encompass an understanding of complexity, core concepts, and best practices.

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## Suggested reading

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