

Practice organization for preventive screening

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All screening programmes do harm; some do good as well.

J.A. Muir Gray¹

Until fairly recently, guidance to primary care practitioners on achieving high-quality preventive screening focused solely on the importance of high test uptake in the eligible patient population.² Messages would typically emphasize a few crucial organizational requirements: accurate, up-to-date information on patients so that the target population for each test could be identified; a system to proactively invite and if necessary remind individual patients about specific screening tests for which they were eligible; posters and leaflets displayed in the patient waiting area to raise general awareness of screening and its importance in promoting health; knowledgeable practitioners confidently communicating positive attitudes about screening to their patients; and education materials, suitable for the patient population, available to reinforce the advice being offered by the professionals. A practice would know how well it was doing through regular audit of indicators such as patient satisfaction, false positive rates, and—very important—uptake rates for each of the screening tests offered. In many jurisdictions, financial reward in the form of performance-related payments would follow.^{3,4}

How well does this paradigm serve today's primary care practice? Let's visit with Nadia.

Case

Nadia is a 60-year-old woman who smokes. She comes in to discuss her lipid profile, which was requested by one of your colleagues. You notice she has not had a Papanicolaou test for 4 years. You do not have a recent blood pressure measurement for her, and her last hemoglobin A_{1c} measurement was done 5 years ago. (You make a mental note that you need to do a CANRISK [Canadian Diabetes Risk Assessment Questionnaire] assessment with her.) You need to discuss mammography screening with her—she has never heard about the pros and cons. She is also now in the age group for colon cancer screening and might meet the criteria for a careful discussion about lung cancer screening.

How would you measure “good performance” in preventive screening in this situation? We see 7 guidelines published by the Canadian Task Force on Preventive Health Care that are relevant to consider (Table 1).⁵⁻¹¹ Readers who have followed this series by the Canadian Task Force on Preventive Health Care will anticipate our position, which is that a practice that judges its performance on positively ticking the “screened” box for each of Nadia's issues is missing the most important point of preventive screening: “to improve health outcomes that matter to the patient.”¹² A high-quality preventive screening system is essentially a high-quality decision

Key points

- ▶ In most preventive screening interventions, there is a trade-off between potential harms and benefits. Because individual patients' values and preferences can alter the balance for or against screening decisions, practice organizational approaches to enhancing prevention need to incorporate shared decision making as a core component.
- ▶ Core skills for physicians and multidisciplinary teams in this area include assessing the quality and appropriateness of preventive screening guidelines, understanding appropriate outcome measures for preventive screening, using best approaches to risk communication, and knowing how to undertake shared decision making, including eliciting patient values and preferences.
- ▶ Practice information systems (ie, electronic medical records) should incorporate high-quality point-of-care knowledge translation tools and patient decision aids to support shared decision making.
- ▶ Because many patients have multiple chronic diseases and multiple screening options, shared decision making practices should be organized to allow physicians and multidisciplinary team members to provide complementary and supportive roles in shared decision making with patients.
- ▶ Outcome and quality assessment processes for preventive screening should focus on outcome measures that reflect the importance of shared decision making and the potential for individual patients to make different, but appropriate, screening decisions on the same preventive strategy, based on their individual values and preferences.

Table 1. Canadian Task Force for Preventive Health Care recommendations relevant to Nadia

GUIDELINE	RELEVANT POSITIVE RECOMMENDATION (STRENGTH OF RECOMMENDATION)
Cervical cancer ⁵	For women aged 30 to 69 we recommend routine screening for cervical cancer every 3 years (strong)
Hypertension ⁶	We recommend blood pressure measurement at all appropriate primary care visits (strong)
Diabetes ⁷	For adults at low to moderate risk of diabetes (determined with a validated risk calculator), we recommend not routinely screening for type 2 diabetes (weak) For adults at high risk of diabetes (determined with a validated risk calculator), we recommend routinely screening every 3 to 5 years with hemoglobin A _{1c} level (weak) For adults at very high risk of diabetes (determined with a validated risk calculator), we recommend routine screening annually with hemoglobin A _{1c} level (weak)
Breast cancer ⁸	For women aged 50 to 69 years we recommend routinely screening with mammography every 2 to 3 years (weak)
Colorectal cancer ⁹	We recommend screening adults aged 60 to 74 years for colorectal cancer with FOBT (either guaiac FOBT or FIT) every 2 years or flexible sigmoidoscopy every 10 years (strong)
Lung cancer ¹⁰	For adults aged 55 to 74 years with at least a 30 pack-year* smoking history who currently smoke or quit < 15 years ago, we recommend annual screening with LDCT up to 3 consecutive times. Screening should only be carried out in health care settings with expertise in early diagnosis and treatment of lung cancer (weak) For all other adults, regardless of age, smoking history, or other risk factors, we recommend not screening for lung cancer with LDCT (strong)
Obesity ¹¹	These recommendations apply to apparently healthy adults ≥ 18 years of age who present to primary care We recommend measuring height and weight and calculating body mass index at appropriate primary care visits (strong)

FIT—fecal immunochemical testing, FOBT—fecal occult blood testing, LDCT—low-dose computed tomography.

*Pack-year is defined as the average number of cigarette packs smoked daily multiplied by the number of years smoking.

making system, and we must adjust our view of what constitutes good performance and accept that achieving this is challenging.

Preventive screening practice within a broader context

To understand the shifting paradigm underpinning preventive health care (Figure 1), we reflect on 2 important converging trends.

First, irrespective of the culture of care, practitioners often have to make sense of “weak” or “conditional” guideline recommendations and help their patients make screening decisions based on their values and preferences. A conditional recommendation means that the guideline developers judge that most patients would follow it (whether for or against screening), but some would not. At least 3 issues can feed into a conditional recommendation: the overall balance of benefits and harms is close, there is considerable uncertainty in the research evidence underpinning the recommendation, and there is uncertainty about the outcomes that are most important to patients.¹³ When patients are presented with such uncertainty in the form of conditional recommendations, we expect some variation in what they choose to do.

Second, it is argued that we are witnessing an ongoing cultural shift in health care—once termed *patient-centred care*, now sometimes called *collaborative health*.¹⁴ The defining attribute of collaborative health (care) is not

just a shift to shared decision making or greater patient engagement, it is the relocation of power from professionals and the system to individual patients, citizens, and families. “Increasingly people can source information widely, integrate and manage their financial, social and domestic, and medical spheres, and decide who and who not to share information with.”¹⁵ The health professional’s role as medical authority is evolving into one of trusted adviser. In the current discussion about preventive screening, this changed perspective places competence in facilitating shared decision making as the very least that should be expected of a health professional.

What does this mean for organizing preventive screening in a primary care context?

In simple terms, a primary care team aspiring to organize itself to comprehensively implement evidence-based preventive screening in a collaborative care approach faces a number of important tasks:

- as a team, identifying the priorities for preventive screening;
- identifying and selecting relevant, credible guidelines¹⁶;
- developing systems within the practice to support implementation, such as alerts and reminders,¹⁷ and protocols shared with other team members to facilitate efficient patient assessment (eg, for Nadia, calculating her diabetes risk category,⁷ calculating her pack-years of smoking for lung cancer screening eligibility,¹⁰ taking her blood pressure adequately,⁶ and

Figure 1. Paradigm shift in preventive screening practice organization**Check-box or all-in strategy**

- The goal is to increase the proportion of eligible patients who receive the screening maneuver
- Screening is believed to be beneficial
- Automatic systems are in place to prompt patients, often without need for discussion between the patient and the health care provider
- Information provision is standardized and focuses on persuasion
- The professional's role is to respond to patients' questions and reassure them as necessary
- The most important outcome measures quantify the proportion of eligible patients who receive the screening maneuver

Growing recognition of potential for screening to cause harm (overdiagnosis, false-positive test results)



Growing emphasis on patient-centred and collaborative health care (shared information, shared accountability)

Collaborative care or shared decision making strategy

- The goal is to promote informed decision making by patients about screening
- Screening is understood to cause potential harm as well as provide potential benefit
- Discussion between patient and health care provider is of central importance
- Information provision focuses on evidence of benefits and harms
- The health care professional's role is to help patients work out personal values and preferences and provide relevant, credible, accurate information to facilitate an informed decision
- The most important outcome measures reflect patients engaging in shared decision making

measuring her height and weight to calculate her body mass index¹¹);

- assembling a portfolio of tools to support shared decision making, such as information sheets and patient decision aids¹⁸;
- attending to team members' needs for education to support shared decision making—including their ability to understand and communicate risk information to patients accurately and understandably,¹⁹ and eliciting patient values and preferences¹³; and
- developing an audit or evaluation system to check in on the effectiveness of their efforts, focusing on shared decision making outcomes rather than counting tests ordered.²⁰

Importance of a team approach

Although it presents a substantial agenda, the list of tasks above is no more than a high-level road map for shifting a practice toward a successfully implemented

preventive approach. Developing systems to support implementation, in particular, suggests the need for involving many different team members. Many clinical activities in primary care are already carried out by nurses, nurse practitioners, or other colleagues, and working as a team to develop a practical system of preventive care is a logical route to the most efficient use of time and human resources. There are also other compelling reasons for collaborating in a team approach: it makes good use of complementary professional skill sets, it helps ensure congruence in the messages communicated by different professionals seeing the same patient, it increases opportunities for a team to build relationships and trust with patients, and it encourages team members to collaborate in developing a genuinely practice-led approach to preventive care.

Complexity of typical primary care practice

Every reader will appreciate that the blueprint provided above cannot be more than a starting point at best. Primary care teams exemplify the idea of a complex adaptive system,²¹ and some argue that members' "natural tendency ... to learn, form patterns of relationships, organize and evolve"²² might be usefully harnessed to develop more change interventions that are more likely to be effective than simplistic, prescriptive approaches. **Table 2** summarizes 4 of the key attributes of complex adaptive systems.²² Drawing on this, we recognize that setting up an electronic medical record-based alert system would not address complexity, but linking reminders to relevant background information and the rationale for a recommendation would (*agents who learn*). Similarly, other complexity attributes might be within the scope of a practice's approach—for example, physicians and nursing staff working together to develop practical shared decision making processes (*interconnectedness*), different professional groups agreeing to work out for themselves how to make different activities sustainable in practice (*self-organization*), and adapting processes as a team, as members gain experience with the system over time (*co-evolution*). Perhaps this seems like a formalization of on-the-ground common sense? Leykum and colleagues²² provide evidence that implementation approaches embedding complexity thinking appear more likely to be effective than simple interventions. This evolving area of implementation science seems to support the argument that it is primary care practitioners themselves who are best placed to develop and adapt their practice to achieve, for their own patient populations, the preventive screening goals that they themselves have prioritized.

Back to Nadia

Primary care is not a schedule of discrete encounters and services, but the orchestration of care delivered over time, across problems, and through conversations.

W.R. Phillips²³

Table 2. Attributes of complex adaptive systems

ATTRIBUTE	DEFINITION	PRIMARY CARE PREVENTIVE SCREENING EXAMPLES
Agents who learn	People can and will process information, as well as react to changes in information	Team members access knowledge translation tools to understand a conditional recommendation and then apply the knowledge in discussions with patients
Interconnectedness	Individuals and groups connect and interact in multiple ways, formally and informally and changing over time	Different practice staff groups (physicians, nurses, nurse practitioners, administrative staff) are involved in developing pathways toward shared decision making that respect patients' preferences about cancer screening
Self-organization	Order is created in a system without explicit hierarchical direction	Nurse practitioners develop their own approach to organizing patient flow for diabetes risk assessment, which is then included in the practice's overall preventive screening plan
Co-evolution	The system and the environment influence each other's development	Over the course of a year, recognizing that the practice waiting times for doctor appointments are rising, the team pilot-tests additional monthly nurse-led group information sessions about cancer screening tests

Adapted from Leykum et al.²²


In a genuinely collaborative care approach, what we do not yet know about Nadia is more important than knowing which guidelines seem to apply to her. **Table 1** embeds a disease-specific, vertical approach and, considered in isolation, communicates an implicit pressure on the practitioner to find a way to work through it in shopping-list style.⁵⁻¹¹ Do we start by discussing the results of the lipid profile ordered by a colleague, then turn to the strong recommendations? Is measuring blood pressure the easiest screening intervention (perhaps it was already done)? Maybe we can step back a little and try to elicit a bit of insight into her understanding and values as they apply to screening in general—does she have a realistic sense of her disease risks? Is her faith in screening tests overly optimistic? These are all places to start the conversation that will hopefully morph into a shared decision making approach.

However, proponents of the collaborative care approach would probably start somewhere else altogether—who is Nadia in her own terms? What is her life like? What are her most important relationships and how are they going? What are her own perspectives on her health and health care decisions? And is she just hoping we will listen to her instead of talking at her?²⁴ At some point, we will get to exploring her personal thoughts about preventive screening interventions, working out whether she is OK with the disruption that following preventive recommendations might cause,²⁵ and following her lead on where to start, if anywhere. As Phillips suggests, the continuous relationship of a patient with her personal physician is central to family medicine, “the specialty devoted to care of the whole patient the whole time.”²³

Conclusion

Any practice seeking to implement the kind of organizational change discussed here will recognize it as an important activity that has to be approached as a

process. The shift from a data- and systems-centred approach to one that emphasizes collaborative care and a team working together (**Figure 1**) means that effective professional education is crucial but also requires critical examination of attitudes, habits, and cultural norms within a practice organization.

The changing context for preventive health care takes place against more widespread changes in social culture. We point to the combination of relatively poor population health literacy^{26,27} and the proliferation of social media-facilitated dissemination of health misinformation.^{28,29} A side effect of democratizing access to health information might be the “echo chamber” effect³⁰: our human tendency to close off competing perspectives and seek out views that reinforce what we already believe. If this is real, then the widely held belief that screening is overwhelmingly beneficial might prove resistant to challenges and does not take into account the potential for real harms to people.³¹ This is all the more reason for primary care professionals to pursue a day-to-day, patient-by-patient approach to evidence-based preventive screening within a collaborative paradigm—to be part of a quiet revolution to promote well-informed personal health decision making. 

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