

Dissemination and implementation of clinical practice guidelines: a longitudinal, mixed-methods evaluation of the Canadian Task Force on Preventive Health Care's knowledge translation efforts

Christine Fahim PhD MSc, Anupa (Jyoti) Prashad MSc, Kyle Silveira MPH, Arthana Chandraraj HBSc, Brett D. Thombs PhD, Marcello Tonelli MD SM, Guylène Thériault MD, Roland Grad MD MSc, John Riva DC PhD, Heather Colquhoun PhD OT Reg. (Ont.), Rachel Rodin MD MPH, Melissa Subnath MSc, Elizabeth Rolland-Harris PhD, Kim Barnhardt HBA, Sharon E. Straus MD MSc

Abstract

Background: The Canadian Task Force on Preventive Health Care (task force) develops evidence-based preventive health care guidelines and knowledge translation (KT) tools to facilitate guideline dissemination and implementation. We aimed to determine practitioners' awareness of task force guidelines and KT tools and explore barriers and facilitators to their use.

Methods: The task force's KT team completed annual evaluations using surveys and interviews with primary care providers in Canada from 2014 to 2020, to assess practitioners' awareness and determinants of use of task force guidelines and tools. We transcribed interviews verbatim and double-coded them using a framework analysis approach.

Results: A total of 1284 primary care practitioners completed surveys and 183 participated in interviews. On average, 79.9% of participants were aware of the task force's 7 cancer screening guidelines, 36.2% were aware of the other 6 screening guidelines and 18.6% were aware of the 3 lifestyle or prevention guidelines. Participants identified 13 barriers and 7 facilitators to guideline and KT tool implementation; these were consistent over time. Participants identified strategies at the public and patient, provider and health systems levels to improve uptake of guidelines.

Interpretation: Canadian primary care practitioners were more aware of task force cancer screening guidelines than its other preventive health guidelines. Over the 6-year period, participants consistently reported barriers to guideline uptake, including misalignment with patient preferences and other provincial or specialty guideline organizations. Further evaluations will assess tailored strategies to address the barriers identified.

Using evidence-based guidelines in practice is challenging.¹⁻³ Knowledge translation (KT) is the science and practice of using evidence in practice and policy.⁴ Effective KT enables evidence-informed decision-making, improved patient outcomes and health system efficiency.⁴ The Canadian Task Force on Preventive Health Care (task force) was reconstituted in 2009 by the Public Health Agency of Canada to develop preventive health care guidelines, with the aim of supporting primary care practitioners and patients in practice and decision-making.⁵⁻⁷ The task force comprises primary care and prevention experts from Canada, including family physicians, specialist physicians, allied health professionals and methodologists and is supported by experts in knowledge synthesis, guideline development and KT methods. Task force members are not paid for their contributions and a conflict of interest policy⁸

is adopted by all task force members, peer reviewers and experts. Since 2011, the task force has released more than 20 preventive health and screening guidelines, developed using rigorous methods.⁹ Input from clinical experts, peer reviewers and stakeholders (including practitioners and patients or the public) is included in guideline and KT tool development.¹⁰ Tools for KT (resources to support guideline

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Correspondence to: Christine Fahim, Christine.fahim@unityhealth.to

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use, such as patient or provider frequently asked questions [FAQs] and 1000-person diagrams) are created for each guideline.¹⁰ The KT Program of St. Michael's Hospital conducts an annual evaluation of the task force dissemination and implementation methods to assess primary care practitioners' engagement with task force guidelines.

The objectives of this study were to assess the level of awareness of task force guidelines and to identify factors affecting guideline and KT tool use. Our research questions were as follows: What is the level of awareness of the task force guidelines among primary care practitioners? What are the perceived facilitators and barriers to implementation of task force guidelines and KT tools? What strategies are recommended by study participants to improve the uptake of task force guidelines?

Methods

Study design

We conducted annual evaluations of task force activities between 2014 and 2020, using surveys and interviews. Using a mixed-methods approach (sequential explanatory design), we applied quantitative (cross-sectional surveys), followed by qualitative (interview) methods. We report our study using the Consolidated Criteria for Reporting Qualitative Research (COREQ)¹¹ and the Checklist of Selected Reporting Guidelines for Surveys,¹² respectively.

Setting and context

Task force guidelines and accompanying KT tools are disseminated using methods that include publications, presentations, direct distribution (e.g., conferences), media, social media (e.g., Twitter, websites, YouTube videos, podcasts), and webinars.

The annual evaluation occurs annually from January to March to measure the impact of the task force guidelines and KT tools from January to December of the preceding year (e.g., January 2021 to evaluate impact of the guidelines and tools for January–December 2020). Each evaluation focuses on the guidelines and associated KT tools published that year, and on guidelines that recommended a substantial change in practice from previous years. The annual evaluations included assessment of 16 task force guidelines published between 2011 and 2020^{13–28} (Table 1). Seven guidelines focused on cancer screening, 3 focused on lifestyle and prevention (e.g., obesity, smoking) and 6 were categorized as “other screening” (e.g., cognitive impairment). A total of 38 KT tools were developed with a range of 1–10 tools per guideline. Tools for KT included FAQs, guidance on risks and benefits of screening, shared decision-making tools and 1000-person tools (Table 1). Cancer screening guidelines, specifically breast cancer screening guidelines, had the greatest number of KT tools ($n = 29$ total; $n = 10$ for breast cancer). Cancer screening guidelines included patient- and clinician-facing KT tools, whereas other guidelines included clinician-facing KT tools only. The KT Program did not have any relationships with the evaluation participants.

Participant recruitment

We recruited primary care practitioners, including primary care physicians and nurse practitioners, through advertisements promoted via task force communication channels (e.g., newsletter, Twitter, website). We excluded nurses, medical students, allied health professionals (e.g., physiotherapists, occupational therapists), researchers and others who did not meet the inclusion criteria. We disseminated recruitment advertisements via other organizations (e.g., the Canadian Medical Association, *Canadian Medical Association Journal*, *Canadian Family Physician Journal*) using electronic newsletters, emails and social media messages. We also recruited participants from the task force interview and survey listserv. The listserv includes a database of emails from primary care practitioners who participated in previous task force KT activities and showed interest in being contacted to participate in future projects. From 2014 to 2019, we also recruited practitioners to participate in a shortened evaluation survey at the Family Medicine Forum conference, Canada's largest annual conference for family physicians. We did not pursue this strategy in 2020 because the conference was held virtually owing to the COVID-19 pandemic.

At the end of the survey, we asked respondents to indicate if they would be interested in participating in an interview. We aimed to include a sample of interview participants that was representative of the Canadian primary practitioner population with respect to demographics (e.g., age, gender, language), province or territory, and years in practice. To enhance participation, survey participants were entered into a draw to win an iPad. We gave interview participants \$100 in compensation; they were not eligible for the draw.

Quantitative methods

We designed surveys using the Theoretical Domains Framework^{29,30} to assess participants' awareness of, barriers and facilitators to implementation of task force guidelines, as well as self-reported use of the guidelines and KT tools. Each year, we evaluated outcomes of awareness (participants' self-reported knowledge of the task force guidelines that we queried about), use and implementation of the breast, cervical and prostate cancer screening guidelines. We evaluated these cancer screening guidelines each year, as these were identified via Google Analytics and media impressions as the most popular task force screening guidelines. We also assessed any guidelines newly released within the past 2 years from time of evaluation. Survey items included multiple choice, Likert-scale and open-ended questions (Appendix 1A, available at www.cmajopen.ca/content/11/4/E684/suppl/DC1). We engaged primary care physicians to pilot surveys for clarity before general distribution. We administered surveys in English (2014–2020) and French (2019–2020) using an online survey platform (Qualtrics). Participants were able to access the survey link via the recruitment materials. Participants also had the option of completing their survey at a later time, or to edit their responses to previous questions. Surveys were accessible for 4 weeks and required 20–30 minutes to complete. Survey responses were anonymous. We aimed to recruit at least 100 survey participants each year. We did not include surveys with less than 10% of responses completed in the analysis.

Qualitative methods

Experienced KT Program researchers (K.S., A.C., L.B., D.B., N.B., K.T.) conducted the interviews in English. All interviewers were KT Program staff (research coordinators or

assistants) who were trained in the conduct of qualitative research.³¹ All research staff were residents of Ontario, Canada, at the time of data collection and did not hold any personal or professional relationships with research participants.

Table 1: Canadian Task Force on Preventive Health Care guidelines and knowledge translation tools*

Guideline	Guideline release date	Associated knowledge translation tools	Year(s) assessed (via interviews, surveys)
Cancer screening guidelines			
Breast Cancer ¹³	November 2011	Patient algorithm Patient FAQ Risks & Benefits, Age 40–49 Risks & Benefits, Age 50–69 Risk & Benefits, Age 70–74	2014–2018
Breast Cancer (updated guideline) ¹⁴	December 2018	1000 Person Tool 1000 Person Tool, Age 40–49 1000 Person Tool, Age 50–59 1000 Person Tool, Age 60–69 1000 Person Tool, Age 70–74 Patient algorithm Shared decision-making tool, Age 40–49 Shared decision-making tool, Age 50–59 Shared decision-making tool, Age 60–69 Shared decision-making tool, Age 70–74	2018–2020
Cervical Cancer ¹⁵	January 2013	Clinician algorithm Clinician FAQ Patient algorithm Patient FAQ	2014–2020
Prostate Cancer ¹⁶	November 2014	1000 Person Tool Clinician FAQ Infographic Patient FAQ	2014–2020
Colorectal Cancer ¹⁷	March 2016	Clinician recommendation table Patient FAQ	2016
Lung Cancer ¹⁸	April 2016	1000 Person Tool Clinician FAQ	2016
Esophageal Adenocarcinoma ¹⁹	July 2020	Clinician FAQ Patient FAQ	2020
Lifestyle and prevention guidelines			
Obesity in Children ²⁰	April 2015	Clinician recommendation table	2015
Obesity in Adults ²¹	February 2015	Clinician algorithm Clinician FAQ	2015
Tobacco Smoking in Children and Adolescents ²²	February 2017	Clinician FAQ	2017
Other guidelines			
Cognitive Impairment ²³	January 2016	Clinician FAQ	2016
Developmental Delay ²⁴	May 2016	Clinician FAQ	2016
Hepatitis C ²⁵	April 2017	Clinician FAQ	2017
Asymptomatic Bacteriuria in Pregnancy ²⁶	July 2018	Clinician FAQ	2018, 2019
Impaired Vision ²⁷	May 2018	Clinician FAQ	2018
Asymptomatic Thyroid Dysfunction ²⁸	November 2019	Clinician FAQ	2019, 2020

*The 2011–2020 guidelines were evaluated between 2014 and 2020.

The task force commissions the KT Program to conduct an annual evaluation, but both the KT Program and task force have strict conflict-of-interest policies in place; the interviewers had no conflicts to declare and task force members were not involved in data collection or analyses.

We used a descriptive qualitative approach for the interviews, using³² a semistructured interview guide (Appendix 1B) to assess participants' perceptions and use of task force guidelines, barriers and facilitators to guideline and KT tool use, and suggestions on how to improve uptake of task force guidelines. The guide was piloted in year 1 of the evaluation with 2 members of the task force KT Working Group. We conducted 1-hour interviews by telephone or teleconference computer software. After obtaining participant consent, we recorded the interviews and transcribed them verbatim. We aimed for a minimum of 20 interviews per year, but continued interviewing each year until data saturation was reached.

Data analysis

We analyzed quantitative data using SPSS to generate descriptive statistics. We calculated overall mean awareness scores for guidelines categories (e.g., cancer screening guidelines) by averaging awareness scores for each year.

To facilitate qualitative analysis, the research team developed a codebook that was rooted in the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) evaluation framework.^{33,34} We used the RE-AIM categories as the parent nodes; child and grandchild nodes were developed deductively using the interview data. Although the guide was rooted in the entire framework, in this manuscript we focus on reporting for the Implementation category — particularly, on the barriers and facilitators that affected use of the guidelines. The initial codebook was developed using a sample of 5 interview transcripts; each year, the research team reviewed the codebook and added or removed child or grandchild nodes to reflect the interview data, as required. Researchers leading the interviews reflected on their biases and positions on guideline dissemination and evaluation as part of the coding process. Interview data were double coded using a deductive approach by 2 experienced KT Program researchers using a framework analysis approach on NVIVO qualitative software. The Framework Approach is an analytical framework that provides a series of steps to guide qualitative analysis, including transcription, familiarization, developing a coding framework, coding and charting the data into a framework matrix (i.e., developing themes).³⁵ Coders targeted an interrater agreement of more than 0.65. We discussed discrepancies until consensus was reached and derived themes from the coded data. We calculated agreement using a “realistic stance,”³⁶ with the aim of examining whether coders assigned the same codes to a passage, rather than assessing whether all codes were identical, recognizing that there is heterogeneity in the length of the passage coded. Our team worked iteratively to assess agreement and discuss discrepancies, as needed.

Ethics approval

This study received research ethics board approval from the Unity Health Toronto Research Ethics Office (REB# 17-372).

Results

Characteristics of study participants

A total of 1284 practitioners contributed to the surveys and 183 of them participated in interviews between 2014 and 2020 (interview response rates: 2014: 29%; 2015: 20%; 2016: 20%; 2017: 15%; 2018: 12%; 2019: 9%; 2020: 8%). Of survey participants, 67% were female and 61% were in practice for 1–10 years at time of participation. Participants from Ontario comprised 47% of the survey sample ($n = 689$). About 58% of survey participants worked in urban regions ($n = 842$), 59% in community-based and 27% in multipractitioner clinics ($n = 668$); interview participant demographics were similar. Table 2 provides details of participant characteristics.

Awareness of guidelines

Survey data showed that awareness of cancer screening guidelines ranged from 27% to 93%; the mean awareness score for cancer screening guidelines was 80% (Table 3). On average, 81% of participants reported being aware of both breast cancer guidelines, 87% of cervical cancer guidelines and 82% of prostate cancer guidelines. Only 27% of participants were aware of the 2020 esophageal adenocarcinoma guideline. Of participants, 47% were aware of the 2018 breast cancer guideline update in its year of release (the survey was conducted in January 2019 and the guideline was released in December 2018), but awareness rose to 84% the following year. Awareness of lifestyle and prevention guidelines ranged from 16% to 22% (mean awareness 18%) and for other guidelines, from 17% to 62% (mean awareness 36%).

Barriers and facilitators affecting guideline uptake

The most commonly reported barrier to task force guideline implementation was a perceived misalignment of the guideline recommendation with patient expectations or preferences (Table 4). Participants particularly highlighted the challenge of implementing guidelines where the screening recommendations had changed since previous iterations (e.g., recommendation not to screen instead of screen). Misalignment of the guideline with other provincial or specialty guidelines, perceptions of evidence strength (e.g., of task force or weakness of recommendation) and lack of consensus among health care practitioners on guideline recommendations were also commonly reported barriers over the evaluation period (Tables 4 and 5). Practitioners also found it difficult to explain to patients why screening was not needed, particularly within visit time restraints (Table 5 shows illustrative quotes). Additional barriers included misalignment of task force recommendations with provincial or territorial health care coverage or fee-for-service billing schemes, out-of-date guidelines, time constraints to implementing guideline recommendations (e.g., given that annual preventive health exams are no longer recommended,

Table 2: Characteristics of participants in evaluations of Canadian Task Force on Preventive Health Care activities

Characteristic	No. (%) of participants in survey <i>n</i> = 1284*	No. (%) of participants in interview <i>n</i> = 183*
Gender		
Male	351 (27.3)	64 (35.0)
Female	855 (66.6)	116 (63.3)
Nonbinary	17 (1.3)	–
Prefer not to say	116 (0.9)	–
Not reported	50 (3.9)	3 (1.6)
Age, yr		
20–39	731 (56.9)	89 (48.7)
40–59	407 (31.7)	38 (20.7)
60–79	80 (6.2)	7 (3.9)
≥ 80	0.0	0.0
Not reported	65 (5.1)	49 (26.8)
Years of practice		
1–10	783 (61.0)	121 (66.1)
11–20	182 (14.2)	28 (15.4)
21–30	140 (10.9)	22 (12.0)
31–40	80 (6.2)	10 (5.5)
≥ 40	12 (0.9)	2 (1.1)
Not reported	87 (6.8)	0.0
Region		
Urban	749 (58.3)	93 (50.8)
Suburban	191 (14.9)	14 (7.7)
Rural	340 (26.5)	37 (20.3)
Not reported	59 (4.2)	49 (26.8)
Clinic type†		
Hospital-based	239 (18.6)	25 (13.7)
Community-based	758 (59.0)	98 (53.6)
Multidisciplinary clinic	347 (27.0)	60 (32.8)
Not reported	80 (6.2)	49 (26.8)
Number of clinicians†		
Single-practitioner clinic	72 (5.6)	4 (2.2)
Multipractitioner clinic (physician group clinic or family health team)	582 (45.3)	86 (47.1)
Not reported	630 (49.1)	49 (26.8)
Province or territory†		
Ontario	606 (47.2)	83 (45.4)
British Columbia	119 (9.3)	20 (11.0)
Manitoba	86 (6.7)	10 (5.5)
Saskatchewan	39 (3.0)	13 (7.1)
Alberta	110 (8.6)	14 (7.7)
Quebec	92 (7.2)	13 (7.1)
Northwest Territories	8 (0.6)	13 (7.1)
Nova Scotia	60 (4.7)	2 (1.1)
New Brunswick	41 (3.2)	6 (3.3)
Prince Edward Island	21 (1.6)	9 (5.0)
Yukon	1 (0.1)	1 (0.5)
Newfoundland and Labrador	30 (2.3)	2 (1.1)
Not reported	73 (5.7)	2 (1.1)

*Surveys — 2020: *n* = 295; 2019: *n* = 263; 2018: *n* = 244; 2017: *n* = 198; 2016: *n* = 102; 2015: *n* = 127; 2014: *n* = 96. Interviews — 2020: *n* = 23; 2019: *n* = 23; 2018: *n* = 30; 2017: *n* = 29; 2016: *n* = 20; 2015: *n* = 26; 2014: *n* = 28.

†Number of participants within a category may not add up to the total number of participants because some primary care providers gave demographic characteristics for multiple clinics in which they work and some did not select certain options.

some practitioners stated that they had less opportunity to engage with patients in discussions on preventive health care), complexity of guideline (e.g., a lack of support on how to implement recommendations) and lack of awareness of the guideline or KT tools.

Facilitators to use guidelines were the converse of the reported barriers (Tables 4 and 5). The following were specifically identified as facilitators: availability or awareness of updated guidelines and tools, public and patient awareness of guideline recommendations, consensus among health care providers or colleagues on recommendations, ease of guideline use and strength of guideline evidence. The most commonly reported facilitators were integration of guidelines into electronic prompts, electronic medical record reminders and mobile apps for patients (Table 4). Additionally, participants reported financial incentives for screening as a facilitator; this was not a common theme, reported only in 2014 and 2019.

Participants' suggested strategies to improve uptake of task force guidelines

During the key informant interviews, participants suggested a number of strategies to overcome barriers and leverage

facilitators to improve guideline uptake. These are presented in Box 1 and were categorized as strategies to raise public and patient awareness of and buy-in for task force guidelines, promote practitioner awareness and use of task force guidelines, and overcome health system constraints to implementing guideline recommendations.

Interpretation

This study presents a longitudinal evaluation of the task force's KT efforts. Our findings suggest that primary care practitioners are most familiar with cancer screening guidelines, particularly for breast, cervical and prostate cancers. Familiarity with other preventive health guidelines varied, with participant awareness of other task force guidelines ranging from 17% to 62%. The breast, cervical and prostate cancer guidelines had the greatest number of corresponding KT tools; it is possible that the prevalence of KT tools (which may be more readily disseminated) increased participant awareness and subsequent use of these guidelines. Evidence confirms that practitioners who receive both a guideline and a corresponding tool are more likely to follow

Table 3: Survey participants' awareness of Canadian Task Force on Preventive Health Care guidelines*

Guideline	Evaluation year							
	2014	2015	2016	2017	2018	2019	2020	
Cancer screening guidelines (% surveyed who were aware of guideline)								
Breast cancer	85	89	91	90	75	–	–	
Breast cancer — update	NR	NR	NR	NR	47	84	90	
Cervical cancer	88	89	93	89	82	83	87	
Prostate cancer	77	81	83	88	81	84	82	
Lung cancer	NR	NR	49	–	–	–	–	
Colorectal cancer	NR	NR	84	–	–	–	–	
Esophageal adenocarcinoma	NR	NR	NR	NR	NR	NR	27	
Mean awareness score across cancer screening guidelines, %								79.9
Lifestyle and prevention guidelines (% surveyed who were aware of guideline)								
Obesity in children	NR	18	–	–	–	–	–	
Obesity in adults	NR	22	–	–	–	–	–	
Tobacco smoking in children and adolescents	NR	NR	NR	16	–	–	–	
Mean awareness score across lifestyle prevention guidelines, %								18.6
Other guidelines (% surveyed who were aware of guideline)								
Cognitive impairment	NR	NR	24	–	–	–	–	
Developmental delay	NR	NR	24	–	–	–	–	
Hepatitis C	NR	NR	NR	38				
Asymptomatic bacteriuria in pregnancy	NR	NR	NR	NR	33	48	–	
Asymptomatic thyroid dysfunction	NR	NR	NR	NR	NR	62	44	
Impaired vision	NR	NR	NR	NR	17	–	–	
Mean awareness score across other task force guidelines, %								36.2

Note: NR = guideline not released, task force = Canadian Task Force on Preventive Health Care.
 **“–” indicates guideline was not evaluated that year.

guideline recommendations than practitioners who receive a guideline only.³⁷ Similarly, a Cochrane review determined that printed educational materials disseminated to health care professionals may slightly improve health care professionals' practice outcomes.³⁸

Our data provide additional insight on factors affecting Canadian practitioners' use of task force guidelines. Perceived misalignment of the guideline with patient preferences was the most commonly reported barrier to guideline implementation, along with time constraints, complexity of guidelines,

lack of awareness of guideline and corresponding tools, lack of agreement among practitioner colleagues, and lack of resources to facilitate recommendation (e.g., lung cancer screening access). These barriers are consistent with existing literature, including a recent meta-review of 25 systematic reviews of barriers and facilitators to guideline implementation.³⁹ Other Canadian studies⁴⁰ and a systematic review⁴¹ echo these findings and suggest that practitioners perceive the application of guideline recommendations to individual patients to be impractical. This sentiment is attributed to the

Table 4: Barriers and facilitators to implementation of Canadian Task Force on Preventive Health Care guideline

Perceived barrier	Year barrier reported						
	2014	2015	2016	2017	2018	2019	2020
Misalignment of guideline with patient expectations and preferences	X	X	X	X	X	X	X
Misalignment of task force guideline with other provincial or specialty guidelines or unsure which guideline to follow or use	X	X	X		X	X	X
Perceptions of evidence strength or lack of consensus among health care professionals about recommendation	X	X	X		X	X	X
Time constraints to implement guideline or recommendation	X	X	X			X	X
Complexity of guideline or tool or lack of clarity on how to implement recommendation	X			X		X	X
Lack of awareness of guideline or KT tools	X		X			X	X
Misalignment of task force recommendation and provincial or territorial health care coverage or fee-for-service billing scheme		X		X	X	X	
Guideline out of date or not recently updated					X		
Concern about overlooking a diagnosis		X			X		
Unintended outcomes of reduced screening				X			
Patient understanding of the value of screening (perceptions often shaped by the media, social media)				X	X	X	X
Lack of resources to facilitate screening (e.g., limited in Northern or remote communities)		X			X		
Perceived facilitator	Year facilitator reported						
	2014	2015	2016	2017	2018	2019	2020
Electronic prompts, EMR reminders or mobile apps for patients	X	X	X		X	X	X
Availability or awareness of updated guidelines or tools	X	X	X		X	X	
Public or patient awareness of guideline recommendations	X				X	X	
Consensus on recommendation among health care practitioners or colleagues	X				X	X	
Financial incentive for screening	X					X	
Ease of guideline use		X	X		X	X	
Strength of guideline evidence		X			X	X	X

Note: EMR = electronic medical record, KT = knowledge translation, task force = Canadian Task Force on Preventive Health Care.

tensions of trying to follow guideline recommendations while respecting patient preferences, and beliefs that “blanket” guidelines reduce physician autonomy, cannot be applied to individual patients and may increase litigation risk if followed.^{40,41}

Given the prevalence and consistency of these reported barriers over the past 2 decades, it is imperative to identify additional and innovative strategies to support use of guidelines alongside shared decision-making. Tools that support shared decision-making and practical interpretation of

Table 5 (part 1 of 2): Sample illustrative quotes for barriers and facilitators to Canadian Task Force on Preventive Health Care Guideline implementation

Perceived barrier or facilitator	Illustrative quote
Perceived barrier	
Misalignment of guideline with patient expectations or preferences	“So, when I have a discussion — even though it’s not a brand-new guideline for cervical cancer, they may have had a physician who’s just told them that they need an annual Pap test. So, when I try to re-educate the patient, I often find that ... ‘Oh, there’s new evidence now, newer guidelines suggest that you only need to do it every 3 years as long as your Pap test results are normal,’ but patients are often [not] open to being re-educated. They often have their own perception about what is needed and can be adamant about getting that done — even if they don’t have a lot of deeper understanding about the implications of doing that testing.” — P004 (2020)
Misalignment of task force guideline with other provincial or specialty guidelines	“What would make it easier ... if it corresponds with provincial recommendations, it will be easier to implement.” — P010 (2020)
Perceptions of evidence strength or lack of consensus among health care professionals about recommendation	“I know that there is a recommendation ... it is weak. So I kind of defer to — in fairness, see what other physicians have been practising and their thoughts on it and see if that has played a role.” — P020 (2020)
Time constraints to implement guideline or recommendation	<p>“When you only have such an amount of time with each of your patients, you don’t have the luxury of time to go into explaining everything as far as preventive medicine goes because in that same 15- to 20-minute appointment, they also need refills, a blood pressure check, their oxygen checked or their big toe looked at. You’re constantly trying to multitask while you’re talking to them and examining them about ‘are you up to date to on your colon screening, are you up to date on your breast cancer screening, your cervical cancer screening.’ Then, usually they’re never up to date on everything, so then you have to educate them on ... ‘okay, will you book an appointment with Nurse XXX [name at 22:55], she’ll do your Pap for you.’ And you’ll have to explain to them how to book that and stuff like that.” — P007 (2020)</p> <p>“I figure, they’re here, they’re undressed. It’ll take me 30 seconds. Why not just examine their breast? I’m using breast as an example because that’s the one thing that really threw us [recommendation was different from previous common practice]. So, yeah. It’s difficult and, frankly, the path of least resistance is to just do it. I can’t explain to them in 30 seconds why I shouldn’t do it” — P023 (2019)</p> <p>“So [shared decision-making conversations] could be tricky because I think, you know, in a primary care setting, unfortunately we’re constantly seeing patients for acute issues, and ... so the vast majority of these visits are focused on addressing their concerns acutely, and we try to squeeze in health prevention where there is time. So, it doesn’t usually leave a lot of time to focus on health prevention, to be honest.” — P011 (2019)</p>
Complexity of guideline or tool or lack of clarity on how to implement recommendation	“Another aspect of it is the complexity of the guidelines, so if ... I’d probably spend more time talking to my patients and have longer appointment times than the average family doctor. I really value the opportunity to explain things to my patients, so that we essentially agreed on plans for investigating or treatment. So, trying to explain the pros and cons of doing cancer screening in a 15-minute appointment when you’re also trying to cover all of their routine screening and maybe addressing a couple other complaints that the patient brought in to talk about that day, makes it difficult. So, the simpler guideline is, the easier it is to implement as well.” — P004
Lack of awareness of guideline or KT tools	<p>“I think the biggest barrier is just ... are people aware of it, right?” — P001 (2020)</p> <p>“I think just awareness, right? Sometimes you forget. You get busy in your practice.” — P001 (2019)</p>
Guideline out of date or not recently updated	“I just hope that the task force continues to use good-quality, up-to-date evidence for their guidelines.” — P005 (2017)
Concern about overlooking a diagnosis	“I think if you had a patient who had a very bad outcome when you followed a recommendation, that would make it hard. If, for example, I had a patient who I didn’t screen for prostate cancer who then had it, that would probably make me a little more anxious and I would remember that patient when I saw similar patients and I’d have an instinct to screen them more ... if I felt that by changing my screening habits or by screening the way I was, I was missing people or I’d done someone harm by acting that way, I might change my practice.” — P020 (2018)

guideline recommendations are warranted; however, the success of using these tools may depend on patient literacy and interest in actively participating in their care.⁴² The task force has focused on developing such tools (e.g., a shared

decision-making tool for the 2018 breast cancer guideline), and work is under way to support practitioners to use these in practice.⁴³ Improving efforts to include patient values and preferences in guideline development and transparency

Table 5 (part 2 of 2): Sample illustrative quotes for barriers and facilitators to Canadian Task Force on Preventive Health Care Guideline implementation

Perceived barrier or facilitator	Illustrative quote
Perceived barrier	
Patient understanding of the value of screening (perceptions often shaped by the media, social media)	<p>"I think patients are just inundated with information to have their thyroid checked. So, sometimes I just give in." — P005 (2020)</p> <p>"Well, some patients are pretty persistent. They want their thyroid checked when they are having trouble losing weight, or even though we just had it done 6 months ago, it was normal. So, sometimes doing the education with them ... sometimes, regrettably, we might order a test just to appease a patient." — P001 (2019)</p> <p>"Particularly with the PSA test, I have to say for the Canadian task force, [news provider; 8:08] and all the news media outlets are the worst there, because ... I've been at the gym and I watch these urologists come on and say 'every man should have a PSA' and I sit there and I think 'are you kidding? I've just finished explaining to all these men why they shouldn't have a PSA and then the head of urology in the [association name; 8:28] says every man should get a PSA every single year. Don't listen to anybody else.' So, what are they doing? They're listening to the news and then they're coming in and insisting that they get a PSA every year." — P021 (2018)</p>
Lack of resources to facilitate screening (e.g., limited in Northern or remote communities)	"We have to take ... you know, we limited resources. So travel's important. We have isolated communities. We have 11 official languages. We have, you know, technology sometimes can be a challenge and ... ultimately, does it benefit our patients?" — P019 (2018)
Perceived facilitators	
Electronic prompts, EMR reminders or mobile apps for patients	"When we actually do a complete physical with the patient and we have our template, at the end they have a screening part, you know just as a reminder to us, you know, screening for colon cancer, to make sure that this is up to date or mammogram, but I've never actually seen the lung cancer screening or the AAA screening on those templates ... So, I find that even having those on those templates are kind of a reminder to be like, 'Oh, does the patient fit this screening?' and if so, we should probably do it. So, that's probably one way that probably I could use them more and maybe I could even talk to my colleagues about including that on the templates, just so we remember to do that." — P009 (2019)
Public or patient awareness of guideline recommendations	"Patients being aware of the guidelines. It's really hard to have that conversation and convince them to not do those things, and I try to have those conversations, but sometimes it doesn't go well, or let's say the annual physical. They're like 'My doctor has always been doing this. Why aren't you [doing] this,' and then they think I'm a worse doctor for not doing it, and I try to talk to them and say, 'hey, listen.' It takes me longer to have this conversation than for me to just do those manoeuvres, or order the tests and be done with it, and then, they're like 'Maybe, but my doctor always did it.' I think having that public perception and shifting that." — P022 (2019)
Consensus on recommendation among health care practitioners or colleagues	"The more consensus there is, the more trust we have. So if 2 societies agree on a guideline, then I'm going to be implicitly more inclined to do that ... like if you had 'we recommend this and this and this' and then you have 'this also agrees with X and X society,' that automatically ties in my trust in these societies, and the more consensus I see, the more trust I have with the guidelines." — P016 (2018)
Financial incentive for screening	"I would say, to an extent, preventive care bonuses. Like ... the ones that are for cervical cancer and for breast cancer and the FOBT; it's a little bit easier to implement in the sense that you're kind of keeping that in your mind and so there is some of that incentive to actually be focusing particularly on those at a re-visit." — P004 (2019)
Ease of guideline use	"Also — and what's fascinating is I found I trust guidelines more if the evidence is presented in and clear and understandable way." — P007 (2018)
Strength of guideline evidence	"I personally think that the fact that it always comes with the level of evidence ... what level of evidence it comes with. I find that makes it easier to implement because if it's weak evidence, then I use more discretion, and if it's strong evidence — if it's a strong recommendation, I kind of use it more as something that I should really commit to doing. So, I think that the weakness or strength of the evidence helps me to implement it because it helps me with my decision-making process, whether or not I accept that guideline." — P002 (2020)
<p>Note: EMR = electronic medical record, FOBT = fecal occult blood test, KT = knowledge translation, Pap = Papanicolaou, PSA = prostate-specific antigen, task force = Canadian Task Force on Preventive Health Care.</p>	

Box 1: Suggested strategies to facilitate uptake of Canadian Task Force on Preventive Health Care guidelines

Strategies to raise patient and public awareness of and buy-in for task force guidelines

- Practitioners should:
 - Aim to discuss screening with patients or not raise the issue of screening when the task force does not recommend
 - Use patient tools to facilitate decision-making
- The task force should:
 - Use media campaigns and build the task force brand (emphasis on methodology)
 - Use media campaigns to orient patients and public to preventive health concepts
 - Develop patient-facing tools not tied to a single guideline (e.g., a tool for screening for older adults, people who are pregnant)
 - Develop shared decision-making tools

Strategies to raise practitioner awareness and use of task force guidelines

- Embed recommendations into electronic medical records
- Educate practitioners on how to assess quality of guideline evidence; emphasize that evidence may evolve over time
- Develop media campaigns and build the task force brand (emphasis on methodology)
- Build partnerships with professional organizations to encourage alignment of provincial and territorial and specialty guidelines with the task force
- Expand dissemination of guidelines and KT tools to practitioners
- Develop tools to support interpretation of conditional recommendations and provide pragmatic guidance on how to implement recommendations
- Ensure guidelines are updated frequently, particularly if another body produces a guideline on the same topic

Strategies to overcome health system constraints to implement guidelines:

- Try to align health exams with screening intervals, if feasible
- Place printed copies of KT tools in visible locations in clinics
- Improve involvement of nurse practitioners in screening processes, if feasible

Note: KT = knowledge translation, task force = Canadian Task Force on Preventive Health Care.

about these processes may also improve guideline use.^{44,45} Additional work to facilitate implementation of these tools and strategies in practice is required, and should be accompanied by evaluations to determine whether these strategies actually mitigated implementation barriers.

Misalignment with other guidelines, perceptions of evidence strength behind guideline recommendations and lack of clarity on how to interpret guideline recommendations (particularly for weak or conditional recommendations) were also prevalent barriers. Notably, we saw these barriers persist over time (e.g., implementation barriers related to “complexity of the guideline” or “lack of clarity”), despite the task force’s efforts to use clear language in guideline recommendations

and develop KT tools to facilitate guideline use. Herein lies an opportunity to appraise the types of KT tools we produce and disseminate, and determine whether there are innovative strategies to support practitioners to interpret “weak” recommendations.⁴⁶ For instance, the 2018 task force breast cancer screening guideline changed recommendations from “weak” to “conditional” depending on a woman’s preferences and values regarding screening benefits and harms. Framing recommendations in this manner may improve clarity while emphasizing the importance of shared decision-making, yet evaluations to assess impact are needed.^{46,47} The task force has also created complementary shared decision-making tools to facilitate discussions between patients and providers.⁴⁸ In addition, there is an opportunity to educate the public on the nature of scientific evidence and how guideline recommendations are made. The task force has assembled a panel of patient and public partners, titled the Task Force Public Advisors Network (TF-PAN), which will aim to include the views of patients and the public throughout the guideline life cycle, including when it comes to guideline recommendations and implementation. Members of the TF-PAN will receive training on evidence appraisal and guideline methodology and will provide guidance on whether and how such concepts should be disseminated to the public to facilitate understanding of complex guideline processes.^{49,50}

Further, participants suggested developing partnerships with professional organizations, particularly provincial and specialty guideline developers, to encourage alignment of guideline recommendations. Coordination across guideline developers would not only reduce practitioner confusion on which guideline to use but also reduce duplication of efforts and subsequent research waste. Although the task force engages relevant stakeholder groups, it does not currently partner with other organizations, owing to challenges navigating potential conflicts of interest in guideline development; however, research on potential models of collaboration to streamline guidelines is under way.

There exist multiple opportunities at the patient and public, provider and health systems levels to improve uptake of preventive health guidelines. However, the impact of these strategies is unknown, given the paucity of high-quality research assessing their impact.³⁷ There is limited literature that reports on the implementation quality or development processes of KT tools, particularly with respect to preventive health guidelines. Improved reporting on strategies and testing to implement and evaluate interventions to promote guideline uptake, in partnership with key stakeholders, is warranted.⁶

Limitations

Although we aimed to recruit a representative sample of Canadian primary care practitioners, our sample included an overrepresentation of female practitioners, practitioners who were in early practice (1–5 yr) and participants from Ontario (although this reflects the geographical distribution of primary care providers in Canada). There was an underrepresentation of practitioners from rural areas, single-practitioner

clinics and French-speaking practitioners; therefore, it is possible the perceptions are not representative of all primary care practitioners in Canada. Participants who engaged in these evaluations were more likely to complete the survey or interview if they were aware of the task force; as such, our findings may overestimate awareness of practitioners' awareness of task force guidelines and tools. Additionally, data were based on participants' self-reported awareness and use of task force guidelines and tools. It is possible that participants' responses were affected by social desirability and recall biases. In Table 3, we report participants' level of awareness of certain guidelines, over time. We observe that levels of awareness were relatively stable, or slightly increased over time, but certain anomalies warrant additional exploration (e.g., thyroid cancer guideline level of awareness at 62% in 2019 and 44% in 2020). Our study was not designed to assess statistically significant differences in awareness over time, and fluctuations in awareness rates may be attributed to sampling bias, given our use of convenience sampling. Additional exploration of theories of dissemination are warranted, particularly to determine when, how often and how (i.e., modality) to optimize dissemination of screening guidelines, and then sustain use.⁵¹⁻⁵⁴ In addition, longitudinal studies with cohorts of primary care practitioners might provide insights into individuals' use and awareness of guidelines over time.

Finally, Table 4 outlines barriers and facilitators highlighted by participants in the key informant interviews. We illustrate these data by year to show that many barriers and facilitators remained unchanged, over time. However, absence of a theme in any given year does not necessarily indicate that a barrier or facilitator did not exist; rather, that interview participants did not mention the theme. Future evaluations can probe to assess individual barriers and facilitators (rather than using an open-ended approach, as we did), to provide further granularity to these data.

Conclusion

Primary care practitioners are generally aware of task force cancer screening guidelines, specifically for prostate, breast and cervical cancers. Knowledge of other screening and preventive health guidelines vary significantly. Over 6 years, consistently reported barriers to guideline uptake reflect challenges described in the Canadian and international literature. Opportunities to develop innovative strategies to improve uptake of clinical practice guidelines and corresponding KT tools exist at the public and patient, provider, and health systems levels.

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Affiliations: Knowledge Translation Program (Fahim, Prashad, Silveira, Chandraraj, Straus), Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Ont.; Faculty of Medicine (Thombs, Thériault), McGill University; Lady Davis Institute for Medical Research (Thombs), Jewish General Hospital, Montréal, Que.; Cumming School of Medicine (Tonelli), University of Calgary, Calgary, Alta.; Department of Medicine (Grad), McGill University, Montréal, Que.; Department of Family Medicine (Riva), McMaster University, Hamilton, Ont.; Department of Occupational Science and Occupational Therapy (Colquhoun), University of Toronto, Toronto, Ont.; Public Health Agency of Canada (Rodin, Subnath, Rolland-Harris); *Canadian Medical Association Journal* (Barnhardt), Ottawa, Ont.; Department of Medicine, Faculty of Medicine (Straus), University of Toronto, Toronto, Ont.

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