

# Improving access to cancer guidelines: feedback from health care professionals

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## ABSTRACT

**Purpose** We examined access to locally developed and other available clinical practice guidelines (CPGs) for the management of cancer and evaluated how to improve uptake.

**Methods** A 12-question online survey was administered to 772 members of 12 multidisciplinary tumour teams in a Canadian provincial oncology program. The teams are composed of physicians, surgeons, nurses, allied health professionals, and researchers involved in the provision of cancer care across the province. Many of these individuals construct or provide input into the provincial CPGs. The questionnaires were administered online and were completed voluntarily.

**Results** Responses were received from 232 individuals, a response rate of 30.1%. Most respondents (75.1%) indicated they actively referenced CPGs for cancer treatment. Of the 177 respondents who identified barriers to CPG access, 24.9% said that the cause was being too busy; 24.3% and 22.6% cited the user-unfriendliness of the Web site and a lack of awareness about the CPGs. When asked about innovative changes that could be made to improve access, the creation of CPG summary documents was identified as the most effective change (46.3%). The creation of summary documents was ranked highest by physicians, surgeons, and nurses.

**Conclusions** Clinical practice guidelines are important tools for standardizing treatment protocols and improving outcomes in health care systems, but support for their use is variable among health care professionals. We have identified barriers to—and potential mitigating strategies for—more widespread access to CPGs by the various health professions involved in cancer care. Local creation of succinct and easily accessible CPGs was identified as the single most effective way to enhance access by health care professionals.

**Key Words** Guidelines, knowledge translation, access, clinical practice guidelines

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## INTRODUCTION

Clinical practice guidelines (CPGs) are defined as “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances”<sup>1</sup>. As a form of knowledge translation, CPGs are an important tool to assure quality of care within health care systems. Although CPGs have been shown to have positive effects on health outcomes by helping to standardize care protocols within health systems<sup>2,3</sup>, their adoption into clinical practice has often fallen far short of their potential<sup>4,5</sup>. Reasons for low adoption have been explored and can include the quality of the CPG; the extent of dissemination; local physician input into CPG development; visible buy-in from senior physicians

and peers; other behavioural characteristics of health care professionals; and other system, resource, health care provider, patient, and public factors<sup>4,6</sup>.

Almost all cancer care in the province of Alberta is organized and delivered through the publicly funded health care system. The provincial cancer program, called CancerControl Alberta, includes 2 tertiary cancer centres, 4 associate cancer centres, and 11 community cancer centres. The provincial Guideline Resource Unit is responsible for partnering with CancerControl Alberta clinical teams to develop and maintain provincial CPGs related to cancer care. The one hundred currently available provincial CPGs are posted on a public Web site where they are readily accessible by members of the 12 oncology disease site teams across the province. The Web site also describes in detail

how the CPGs are developed by provincial tumour teams (<http://www.albertahealthservices.ca/cancerguidelines.asp>). Through both published<sup>7</sup> and as-yet unpublished audits, we are aware of variation in practice across the province despite the availability of the CPGs.

A key approach that has been identified to promote knowledge translation within a health care system is an evaluation of barriers and facilitators to uptake, particularly *local* barriers<sup>8</sup>. Because our Guideline Resource Unit works closely with the end users of the CPGs, we are in a pivotal position to respond to the needs of end users and to help develop CPGs tailored to the needs of the people who access them. Responding to those needs allows us to maintain a close working relationship with CPG end users and cancer care professionals in which feedback can be rapidly disseminated and incorporated into subsequent iterations of the CPGs. This system allows end users to feel engaged and integral to the CPG development cycle and leads to increased CPG access and uptake<sup>9</sup>. If CPG developers can engage medical opinion leaders in that process, then compliance by end users as a whole can be greatly increased<sup>10</sup>. Unfortunately, current research examining the efficacy of various *local* CPG implementation strategies is limited<sup>11</sup>.

Promoting the use of CPGs can be complex. One aspect is making CPGs more accessible to the end user: faster to access, more meaningful to the clinician's personal practice environment, and more readable. The aims of the survey reported here were to assess local awareness and reference to the cancer CPGs across the province, to identify barriers to CPG access, and to determine the innovative implementation strategies that might help to increase reference to CPGs. The present study focused primarily on access to CPGs; we did not focus on adherence by clinicians to the information contained within the CPGs in their clinical practice.

## METHODS

A 12-question online survey (Table 1) was administered to 772 health care professionals involved in cancer treatment and care across the province of Alberta who had all identified themselves as belonging to one or more of CancerControl Alberta's disease site teams. Provincial tumour teams are multidisciplinary networks of health care professionals involved in cancer care across the province of Alberta; they are organized by disease site.

The survey included demographic and practice-specific questions, questions about how CPG developers could increase use of the CPGs, and questions about barriers to accessing the CPGs. An earlier version of the survey was initially piloted with one tumour team (distributed during that team's annual provincial meeting). Feedback from the pilot, including changes to the language of the survey and expansion of the questions to the remaining teams, was incorporated into the final version. The final version of the survey was subsequently distributed by e-mail on behalf of the provincial leader of each of the tumour teams. Three follow-up reminders were sent over a period of 2 months.

Comparisons between groups were analyzed using the chi-square test for independence. All statistical analyses were performed using the SigmaPlot 12.0 (build 12.2.0.45: Systat Software, San Jose, CA, U.S.A.)

and InStat (version 3.06: GraphPad Software, La Jolla, CA, U.S.A.) software applications.

## RESULTS

### Respondent Characteristics

Responses were received from 232 tumour team members, for an overall response rate of 30.1%. Respondents included 100 generalist and medical specialist physicians (43.1%), 42 surgeons (18.1%), 49 nurses and nurse practitioners (21.1%), 9 pharmacists (3.9%), and 32 other health care workers, including allied health professionals and health researchers (13.8%). Responses were received from members of all 12 tumour teams. Not all respondents answered all questions in the survey.

### Current Access to Cancer CPGs in Alberta

Tumour team members were asked "Do you currently reference any clinical practice guidelines for cancer treatment?" Of the 217 respondents who answered this question, 163 (75.1%) indicated that they referenced some form of CPG for cancer treatment. Self-report of access was significantly different ( $p = 0.0082$ ) between the professions: The highest CPG reference rate was reported by pharmacists (100%), followed by generalist and medical specialist physicians (82.5%), nurses (75.0%), surgeons (65.8%), and others (55.2%).

Of the 160 respondents who answered the question "Which guideline(s) do you reference," 121 (75.6%) indicated that they accessed the Alberta provincial cancer CPGs. Other CPGs mentioned included the BC Cancer Agency cancer guidelines (43.8%), the U.S. National Comprehensive Cancer Network guidelines (38.8%), and the American Society of Clinical Oncology guidelines (34.4%). That trend was consistent across professional groups.

When asked specifically whether they accessed the Alberta provincial cancer care CPGs, most respondents (65.9%, 137 of 208) indicated that they had accessed them at least once. As with access to CPGs generally, access to the Alberta guidelines specifically was significantly different ( $p = 0.01$ ) between the professional groups, with pharmacists having the highest rates of access (100.0%), followed by nurses (71.4%), physicians (70.2%), surgeons (55.6%), and others (44.4%). Of the 136 respondents to the question "How often do you access the Alberta provincial cancer care guidelines," 22.1% indicated accessing them "very rarely"; 47.1%, "a few times per year"; 22.1%, "a few times per month"; and 8.8%, "a few times per week." No significant differences in the frequency of access by profession was observed ( $p = 0.79$ ).

### Barriers to Accessing CPGs and Methods to Increase Access

Of the 232 survey respondents, 177 identified barriers to accessing the CPGs, including a lack of relevance to practice (13.0%,  $n = 23$ ), the fact that the treatments described in the CPGs were already familiar (21.5%,  $n = 38$ ), a lack of awareness about the existence of the CPGs (22.6%,  $n = 40$ ), the user-unfriendliness of the Alberta CancerControl CPG Web site (24.3%,  $n = 43$ ), and being too busy to access the guidelines (24.9%,  $n = 44$ ).

**TABLE I** Survey instrument

1.	What is your profession? [Select one]				
	<input type="checkbox"/> Medical oncologist	<input type="checkbox"/> Radiation oncologist	<input type="checkbox"/> Other physician	<input type="checkbox"/> Surgeon	<input type="checkbox"/> Nurse
	<input type="checkbox"/> Nurse-practitioner	<input type="checkbox"/> Pharmacist	<input type="checkbox"/> Allied health	<input type="checkbox"/> Research	
2.	What tumour team(s) are you currently part of? [Select all that apply]				
	<input type="checkbox"/> Breast	<input type="checkbox"/> CNS	<input type="checkbox"/> Cutaneous	<input type="checkbox"/> Endocrine	<input type="checkbox"/> Gastrointestinal
	<input type="checkbox"/> Genitourinary	<input type="checkbox"/> Gynecological	<input type="checkbox"/> Head and neck	<input type="checkbox"/> Hematology	<input type="checkbox"/> Lung
	<input type="checkbox"/> Sarcoma	<input type="checkbox"/> Supportive care			
3.	Do you currently reference any clinical practice guidelines for cancer treatment? [Select one]				
	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
4.	Which guideline(s) do you reference? [Select all that apply]				
	<input type="checkbox"/> Alberta Health Services	<input type="checkbox"/> Scottish Intercollegiate Guidelines Network			
	<input type="checkbox"/> BC Cancer Agency	<input type="checkbox"/> National Institutes for Clinical Excellence			
	<input type="checkbox"/> National Comprehensive Cancer Network	<input type="checkbox"/> European Society of Medical Oncology			
	<input type="checkbox"/> Cancer Care Ontario	<input type="checkbox"/> American Thyroid Association			
	<input type="checkbox"/> American Society for Clinical Oncology	<input type="checkbox"/> Other			
5.	Have you ever accessed the AHS/GURU cancer care guidelines? [Select one]				
	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
6.	How often do you access the AHS/GURU guidelines? [Select one]				
	<input type="checkbox"/> Very rarely	<input type="checkbox"/> Yearly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Weekly	
7.	How do you access the AHS/GURU guidelines? [Select one]				
	<input type="checkbox"/> Personal computer	<input type="checkbox"/> Print	<input type="checkbox"/> Smartphone	<input type="checkbox"/> Tablet	
8.	How likely is it that you would use a smartphone or tablet app that displays the guidelines, algorithms, recommendations, etc., if one existed? [Select one and comment]				
	<input type="checkbox"/> Very unlikely	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Neutral	<input type="checkbox"/> Likely	<input type="checkbox"/> Very likely
9.	From the list below, please select those choices that prevent or impede your access to the AHS/GURU guidelines. [Select all that apply]				
	<input type="checkbox"/> Guidelines not relevant to practice	<input type="checkbox"/> Not aware the guidelines exist			
	<input type="checkbox"/> Already familiar with treatments	<input type="checkbox"/> Guidelines are too dense/lengthy			
	<input type="checkbox"/> Web site not user friendly	<input type="checkbox"/> Difficult to access			
	<input type="checkbox"/> Too busy	<input type="checkbox"/> Other (please comment)			
10.	What changes would encourage you to access the AHS/GURU guidelines? [Select all that apply]				
	<input type="checkbox"/> Update guidelines more regularly	<input type="checkbox"/> Create a smartphone/tablet app			
	<input type="checkbox"/> Create guideline summary documents	<input type="checkbox"/> Advertise better			
	<input type="checkbox"/> Create more algorithms	<input type="checkbox"/> Integrate guidelines with order set software			
	<input type="checkbox"/> Make Web site more user-friendly	<input type="checkbox"/> Create newsletter with guideline updates			
	<input type="checkbox"/> Other (please comment)				
11.	Our current guidelines mainly focus on treatments. What other types of guidelines would be useful to you? [Select all that apply]				
	<input type="checkbox"/> Symptom management	<input type="checkbox"/> Alternative therapies			
	<input type="checkbox"/> Supportive care	<input type="checkbox"/> Radiation therapy special topics			
	<input type="checkbox"/> Follow-up	<input type="checkbox"/> Prevention			
	<input type="checkbox"/> Screening	<input type="checkbox"/> Other (please comment)			
12.	Do you have any additional comments on how we can support you better? [Please comment]				

CNS = central nervous system; AHS = Alberta Health Services; GURU = Guideline Resource Unit.

Barriers to access varied by profession. In this section of the survey, respondents were allowed to select all reasons that applied. Physicians stated that their existing familiarity with the new treatments was the biggest barrier to access (30.9%), followed by a user-unfriendly Web site (24.7%). Similarly, surgeons said that being familiar with new treatments was their reason for not accessing the CPGs (33.3%), followed by concerns about the density or length of the CPG documents (30.3%). Nurses gave equal rankings to a user-unfriendly Web site, being too busy, and being unaware that the CPGs existed as barriers to access. Being too busy was overwhelmingly given as the primary barrier to CPG access by pharmacists (42.9%). Other professionals said that a lack of relevancy to practice was the major reason they didn't access the CPGs (33.3%, Table II).

After identifying potential barriers, respondents were asked to rate the means that might be used to increase access to the CPGs (Table III). As they had with the barriers, respondents were able to select all means that applied.

Finally, respondents were asked if there were CPG topics that they would find useful for their practice. Several potential examples were listed in the survey, including the special topics of symptom management, supportive care, follow-up, screening, prevention, alternative therapies, and radiotherapy. The three highest-ranked options were for CPGs on follow-up care (53.8%), symptom

management (51.3%), and supportive care (44.1%). In general, physicians and surgeons were most interested in follow-up CPGs (53.9% and 68.6% respectively); nurses (70.0%) and pharmacists (88.9%) were most interested in symptom-management CPGs.

## DISCUSSION

Ready access to high-quality cancer guidelines is believed to be an important contributor to the delivery of high-quality care to cancer patients and improved population-based cancer control. To that end, a Canadian national cancer control organization has developed a Web site that provides access to evidence-based cancer care guidelines from around the world and extensive tools to support guideline use (<http://www.cancerview.ca/>). That initiative—and many others, including guidance from the American Society of Clinical Oncology—has resulted in a paradoxical situation: ready access to information about evidence-based cancer care is available, and yet often that information is not widely accessed or used by health care providers<sup>4</sup>.

### Current Access to CPGs

Approximately three quarters of the health professionals surveyed in our study indicated that they refer to some

**TABLE II** Barriers to clinical practice guideline (CPG) access

Barrier	Respondents (%)						p Value
	Overall	Physicians	Surgeons	Nurses	Pharmacists	Others	
Not relevant to practice	13.0	16.0	3.0	5.7	0.0	33.3	0.0075
Already familiar with new treatments	21.5	30.9	33.3	2.9	0.0	4.8	0.0006
Web site not user-friendly <sup>a</sup>	24.3	24.7	21.2	28.6	14.3	23.8	0.9232
Too busy	24.9	19.8	30.3	28.6	42.9	23.8	0.5349
Not aware the CPGs exist <sup>a</sup>	22.6	18.5	24.2	28.6	0.0	33.3	0.2911
Guidelines are too dense or lengthy, or both <sup>a</sup>	23.2	21.0	30.3	31.4	14.3	9.5	0.2864

<sup>a</sup> Only these factors could be addressed by a CPG development team.

**TABLE III** Methods to increase access to clinical practice guidelines (CPGs)

Method	Respondents (%)						p Value
	Overall	Physicians	Surgeons	Nurses	Pharmacists	Others	
Create summary documents	46.3	49.5	47.2	47.5	33.3	34.8	0.6907
Develop smartphone app	38.8	41.9	47.2	40.0	33.3	13.0	0.0907
Make Web site user-friendly	35.8	44.1	36.1	25.0	33.3	21.7	0.1463
Create clinical care pathways	34.8	32.3	36.1	40.0	44.4	30.4	0.8562
Advertise CPGs	29.9	26.9	27.8	35.0	44.4	30.4	0.7558
Create newsletters	28.4	23.7	11.1	37.5	55.6	47.8	0.0038
Update CPGs more frequently	21.4	26.9	16.7	10.0	44.4	17.4	0.0814
Integrate CPGs with order-set software	15.9	14.0	19.4	12.5	44.4	13.0	0.1612

form of CPG protocol. However, the prevalence of that knowledge-seeking behaviour varied considerably across professions: pharmacists, generalist and medical specialist physicians, and nurses had high rates of reference to any CPGs; surgeons, allied health professionals, and researchers had lower rates. The reasons for those differences are likely multifactorial. Frontline medical staff involved in the day-to-day care of cancer patients are perhaps under more pressure to keep up with the rapid pace of new drug developments and changes in radiation protocols and other management strategies, the details of which might be of less importance to other professions involved in cancer care. Although that hypothesis could explain the difference in uptake by physicians, nurses, and pharmacists compared with allied health professionals and researchers, the reasons for lower uptake by surgeons is less obvious. Informal feedback suggests that surgeons obtain up-to-date information through channels other than CPGs, such as local surgical rounds and other local education events. However, some publications have suggested that, compared with other physicians, some surgeons have more skepticism of CPGs<sup>3,12,13</sup>.

A study of 262 clinicians examining attitudes and behaviours toward CPGs found that, compared with other types of physicians, general surgeons harboured the most negative views of CPGs<sup>3</sup>. In contrast, physicians in general medicine had the most positive views. The reasons for the difference were not further characterized in the study. A study by Kitto *et al.*<sup>12</sup> examined responses from 25 descriptive surveys administered to surgeons in Australia. Those authors reported that surgeons had lower confidence in the adoption of evidence-based medicine practices, including CPGs. The reasons were multifactorial, including having lower confidence in CPGs compared with other sources of evidence, and reporting that research summaries in journals were more useful than CPGs in clinical decision-making. The authors suggested that the “culture of surgery” be included as an important factor in mobilizing surgeons to increase their CPG use<sup>12</sup>. To that end, a multinational initiative titled “Enhanced Recovery After Surgery”—known by its acronym, ERAS—has resulted in widespread uptake of evidence-based guidelines for surgical and perioperative care, particularly cancer care. Where ERAS has been implemented, clinical outcomes often have dramatically improved<sup>14</sup>.

Measuring adherence to guidelines and providing individualized feedback to physicians is known to improve adherence. However, attention to detail is important. A study from the Netherlands found that surgeons had positive attitudes toward evidence-based practices, but that methodologic shortcomings of research reports were major barriers<sup>13</sup>. Research into inter-professional variance in CPG uptake is an important emerging area, and future research into this topic could help CPG developers and policymakers to create knowledge tools more directly relevant to each group of health care professionals.

Although, in our survey, the Alberta provincial CPGs were the most frequently referenced CPGs across all groups in general, the proportion of cancer care professionals that referred to their own locally constructed, evidence-based tools was, in our opinion, surprisingly low. Surgeons and

other professionals (including allied health workers and researchers) had the lowest rates of reference to local CPGs (55.6% and 44.4% respectively). Pharmacists, physicians, and nurses all had rates greater than 70%. One explanation for the variation might be that the primary focus of many of the local provincial CPGs is on delivery of chemotherapy and radiation therapy, which might be of less direct relevance to surgeons, allied health professionals, and researchers. In contrast, compared with most of the other professions included in our survey population, surgeons had higher rates of reference to the U.S.-based National Comprehensive Cancer Network CPGs, which often provide guidance that is more surgery-focused. In previous studies, engagement of stakeholders directly in the CPG development process has also been shown to be an effective strategy to increase uptake<sup>3</sup>. For CPGs to have a significant positive effect on the quality of cancer care, we reason that they should be rapidly and readily accessible and relevant to all members of the health care team.

### Barriers to Accessing CPGs and Methods to Increase Access

Of critical relevance both to the cancer care professionals in our study and to health professionals more generally is the need to identify barriers to CPG access and mitigating factors that will facilitate access. Our results suggest that several factors might act concurrently as barriers to CPG access. Those factors include an existing familiarity with new treatments, difficulty in accessing and navigating Web sites, being too busy, being unaware of the existence of the CPGs, and finding the CPGs to be too dense or lengthy. Being too busy to access up-to-date information points to a larger, more complex problem of health care provider workload. However, of the barriers that CPG developers can address, it appears that providing summaries or other abbreviated-content documents, increasing the usability and user-friendliness of CPG Web sites, and better advertising the CPGs could be effective methods to diminish the barriers that prevent health professionals from accessing high-quality evidence-based information.

Indeed, almost half the respondents indicated that summary documents that would allow health professionals to quickly access needed recommendations and information would improve the usability of the CPGs. The next three most-frequently cited strategies, in almost equal proportion, were to create accompanying algorithms or clinical care pathways, to make Web sites more user-friendly, and to develop a mobile application for smartphones or tablets. When strategies were analyzed by profession, the creation of summary documents was identified as the most important way to increase access by physicians, surgeons, and nurses. Pharmacists and other health professionals identified the creation of newsletters as the most effective way to increase CPG access in their professions. Of little benefit to almost all professions were an increase in the rate at which CPGs are updated and the integration of the CPG recommendations with the computerized order set software, although pharmacists identified the latter as being important—not surprising, given the powerful effect of chemotherapy order sets on the safety and efficiency of pharmacy practice. In summary, health care professionals



want information that is easy to find and access, succinct, and simple to follow.

### Meeting the Needs of Local CPG End Users

A primary purpose of the present study was to determine the ways in which a CPG development team could help to increase the rate of CPG access by end users within their organization. Part of that task involved developing ways to facilitate feedback directly from end users; the feedback could then inform planning for future CPG development. The results we obtained will guide the development of an improved strategy to create and distribute CPGs to the larger CancerControl Alberta organization. The importance of adapting CPGs to the needs of end users resulted in the creation of the knowledge-to-action cycle that is now a key component of CPG development<sup>9</sup>. Indeed, that cycle has been adapted by major research funding organizations as a means to encourage researchers to make their work directly relevant to end users. An understanding is emerging that the creation of high-quality CPGs is only a part of the solution required in changing practice. Uptake of knowledge does not occur with simple dissemination: a purposeful, directed effort is required to provide the content in CPGs to its end users, the cancer health care professionals<sup>11</sup>.

The results of the present study indicate that pharmacists are keenly supportive of CPGs, and the linkage of CPGs to their work environment—such as through computerized order sets linked to CPGs—could be predicted to enhance uptake of evidence-based care. Nursing staff are interested in the delivery of symptom control, and all clinicians would welcome documents that summarize CPGs. We are now evaluating how to implement those targeted strategies to better meet the needs of CPG end users in the Alberta cancer community.

Surveys like ours allow CPG developers to engage with a large number of end users so as to better understand gaps in knowledge access; however, our survey has several inherent limitations. First, even though the number of respondents was large ( $n = 232$ ), the response rate was low (30.1%), and the results might not be generalizable to the needs of all provincial tumour teams. Because the survey was disseminated in a passive manner (using a membership e-mail list function) to a large stakeholder group, it risked failing to obtain responses from the very individuals whose input was most hoped for: the disengaged. In addition, surveys—which are designed to be brief so as to respect the time constraints of the individuals being surveyed—can fail to obtain key information. For example, we used only limited open-ended questions. However, given the iterative nature of our efforts to promote knowledge translation within the health care environment, wrong conclusions of the survey can be predicted to result, over time, in further feedback as we engage in additional discussions with end users.

### CONCLUSIONS

Clinical practice guidelines are understood to be important tools in standardizing treatment protocols and improving outcomes within health care systems. However, the uptake of CPGs by health care professionals is variable. In the present study, we found that barriers to CPG access in oncology

varied considerably across professions. We successfully executed a brief survey of a large number of disease site team members to identify the means that might be used to improve access to CPGs. The resulting data support the creation of short summaries as a way to potentially increase access.

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### CONFLICT OF INTEREST DISCLOSURES

We have read and understood *Current Oncology's* policy on disclosing conflicts of interest, and we declare that we have none.

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