

--- DRAFT pending participant feedback and further analysis ---

Summary Report

National Guideline Implementability Meeting

Friday April 27, 2012
8:30 am to 3:00 pm
The University Club of Toronto



University Health Network

Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital



CIHR IRSC

Canadian Institutes of
Health Research

Instituts de recherche
en santé du Canada

EXECUTIVE SUMMARY

Background

It is imperative that we improve, or seek new ways of implementing guidelines. A promising approach is to enhance guideline “implementability”: characteristics of guidelines to facilitate their implementation by users. We developed a framework of implementability tools, and identified and described tools within Canadian and international guidelines. Further research is needed to develop, harmonize and operationalize the implementability concept. Planning is best done through knowledge exchange with guideline developers, implementers and researchers.

Objectives

1. Share information about our guideline implementability research
2. Review current guideline implementability practices and tools
3. Solicit input on the identification and development of implementability tools
4. Prioritize goals for ongoing guideline implementability practice and research

Methods

We identified Canadian guidelines containing or accompanied by content or tools reflecting implementability framework elements of Resource Implications, Implementation and Evaluation to describe their format and content. Guideline developers, implementers and researchers were then assembled for a one-day nominal group meeting to issue recommendations for research on implementability tools reflecting the domains of interest.

Results

Participants: A total of 42 individuals participated in the meeting, including 10 researchers, 19 guideline developers and 10 guideline implementers. Practice: The beginnings of a framework for naming and defining tools emerged according to target user and purpose, further organized according to explicit advice versus considerations to prompt reflection and decision-making. A broad range of phenotypes were considered to be tools or tool delivery mechanisms. Different types of tools within each of the three domains were considered essential. Some thought that generic tools may be more transferrable while others believed that contextual factors may require tailored tools. Tool development should be integrated with guideline development and overall implementation planning to achieve particular quality improvement objectives, and therefore appropriately recognized and funded. Development of a tool inventory requires examination of tools located on organizational web sites. Tools should be evaluated prior to broad use to avoid users being inundated. Research: Participants recommended evaluating the impact of tools according to attributes (content/format/location/generic versus specific), delivery mechanism, intended user, and purpose. Tools should be evaluated prior to broad implementation while others could be made available on organization web sites and prospectively evaluated and refined based on user feedback. Overarching issues that require attention include responsibility for tool development, and how to prioritize for which guidelines tools should be developed.

Implications

This begins to establish a common understanding and language around the concept of implementability tools, and while not yet fully clear, serves as the basis upon which to build ongoing communication and collaboration. This will enable us and others to continue doing research that is more targeted and more meaningful to further develop these concepts, and operationalize and evaluate tools. Participants appreciated the interaction with other developers and implementers, and said they gained knowledge that will be further shared with, and benefit their organizations. This may lead to the development of policies, protocols or tools by guideline developers and implementers, and the formation of partnerships for ongoing research.

BACKGROUND

Guideline implementability

Guidelines are syntheses of best available evidence that, along with professional judgement and patient preferences, support decision making by clinicians, managers and policy makers about the organization and delivery of health care, but continue to be underused. Population-based studies from Canada and elsewhere demonstrate low compliance with guidelines produced by prominent agencies for chronic and acute conditions (1-7). It has been proposed that for a condition such as cancer, a third of cases could be prevented, another third cured, and the rest effectively managed if care consistently complied with existing guidelines (8). The same may be true of other conditions. External interventions to promote guideline use, including educational (materials, meetings), social (opinion leaders, educational outreach), embedded (clinical support systems, reminders), and incentive (audit & feedback, pay-for-performance) approaches are not routinely applied, and their effect is variable (9-17). Furthermore, numerous innovation-specific, individual, institutional and system level barriers challenge guideline implementation and use (18-21). Thus it is imperative that we improve, or seek new ways of implementing guidelines. A promising approach is to enhance guideline “implementability”. Implementability was first defined by Shiffman as characteristics of guidelines to facilitate their implementation by users (22). Considerable evidence suggests that we could modify guideline attributes so that they are more easily adopted (23-28). This evidence shows that guideline content and format may help users to themselves implement the guidelines by promoting greater understanding of how they are to overcome barriers, stimulating confidence in ability to practice the recommended behavior, leading to greater intent and actual use of guidelines.

Our collaborative implementability research

Gagliardi and Brouwers reviewed the medical literature to identify guideline attributes associated with use (29). The resulting framework included 22 elements within eight domains (Appendix 1). We then examined the content of 20 high quality international guidelines on various clinical topics (29). They did not contain most implementability elements, highlighting many opportunities to improve guideline use by integrating one or more of these elements. Brouwers and Bhattacharyya, through AGREE A3/Stream II and KT Canada initiatives, recently updated the implementability framework by reviewing the health, social and organizational sciences literature describing guideline attributes that influence use (30). The resulting framework included 700 elements in 28 categories within five domains (soon to be published). We interviewed 30 Canadian and international guideline developers who supported this approach, and requested tools to help them develop implementable guidelines (manuscript in progress). In June 2011, Gagliardi, Brouwers and Bhattacharyya were awarded CIHR Network Catalyst funding to establish an international network of guideline developers, implementers and researchers to develop and evaluate implementability tools, with a focus on the domains of Resource Implications, Implementation and Evaluation (Appendix 2). Collaborators include the Guidelines International Network (G-I-N), and guideline agencies in Australia, New Zealand, The Netherlands, Italy, Scotland, England, Sweden and the United States. The first step in this research is to identify currently available implementability tools, create a directory that links to those tools, extract unique elements from those tools, and assemble a catalogue of elements along with definitions and examples which guideline developers, implementers and researchers can supplement, and draw from to develop or adapt, and evaluate new implementability tools.

OBJECTIVES

Further research is needed to develop, harmonize and operationalize the implementability concept. Consolidation of the implementability research base, along with prioritization of ongoing practice and research is best done through knowledge exchange. In general, there has been limited interaction or collaboration among Canadian guideline developers, implementers and researchers to share information on best practice or jointly pursue common interests. The purpose of this initiative was to hold a national meeting with Canadian guideline developers, implementers and researchers to:

1. Share information about our guideline implementability research
2. Review current guideline implementability practices and tools
3. Solicit input on the identification and development of implementability tools
4. Introduce the CIHR-funded Guideline Implementability Research and Application Network
5. Prioritize goals for ongoing guideline implementability practice and research
6. Explore views about communication/collaboration mechanisms to support ongoing research

METHODS

Identifying and describing implementability tools

Approach:

To objectively and systematically identify Canadian guidelines containing or accompanied by content or tools reflecting implementability framework elements, we will review guidelines available on organization web sites for presence or absence of these elements based on methods used previously to examine the content of international guidelines (29). Manifest content analysis is a method that describes explicit content as reported in written, verbal, or visual communication qualitatively and/or quantitatively, without interpretation of its underlying meaning (31). We used a directed approach (32). This means data was explicitly coded using elements in a framework. In this case, we focused on the domains of Resource Implications, Implementation and Evaluation.

Sampling:

Canadian guideline developers were identified in a previous research study in which they were interviewed about guideline implementation practices. The list of organizations was updated by reviewing the Agency For Healthcare Research and Quality's Guideline Clearinghouse, the most comprehensive database of international guidelines on all health care indications. This information was supplemented by searching MEDLINE for [Canada AND guidelines as topic], and by referral from collaborators.

Data collection and analysis:

Full versions of selected guidelines and adjunct products were retrieved from developer web sites. A form was developed and pilot tested through several iterations to extract content from each guideline according to the implementability domains of interest. Two individuals independently extracted data, and met to achieve consensus through discussion. A third individual participated in pilot testing of the data extraction form and resolved discrepancies. The presence of implementability elements within sampled guidelines was described using summary statistics including number and proportion. The number of guidelines addressing each element overall and by topic was summarized. The format and content of implementability tools were narratively summarized.

National nominal group meeting

Approach:

Guideline developers, implementers and researchers were assembled for a one-day nominal group meeting to issue recommendations for research on implementability tools reflecting the domains of interest. The nominal group technique is a consensus method widely used as a means of establishing priorities for program planning (33) and we have used it on numerous occasions for CIHR-funded planning and dissemination meetings.

Sampling and recruitment:

Guideline developers, implementers and researchers were recruited based on the previously compiled list. The aim was to recruit approximately 30 individuals. Eligible individuals were invited by email to attend the meeting.

Data collection and analysis:

The agenda for the one-day meeting is included in Appendix 3. Participants were seated in small groups according to a pre-planned scheme that ensured representation from the range of stakeholders at each table. A participant facilitator and staff note taker were assigned to each small group. Following a presentation of background research, small groups were asked to clarify implementability domain/element definitions, identify additional existing implementability tools, suggest additional putative tools, and prioritize tools according to Relevance, Feasibility and Impact, criteria compiled from studies of priority setting in health services research (34-40).

Criteria	Definition
Relevance	Constituents have expressed the need for, or would benefit from these tools
Feasibility	System capacity, resources and/or philosophical/political support are in place to develop or promote use of these tools
Impact	Evidence suggests that these tools may improve guideline implementation and use, or variations/uncertainties in practice exist that could be addressed/improved by these tools

An individual within each small group was nominated to report key discussion points and prioritized tools to the full group. The full assembly then discussed commonalities and differences in recommendations issued by small groups, and associated implications. A series of presentations were then delivered by guideline developers or implementers specifically selected to describe current or desired tool development and use. Small groups were then asked to review a list of potential research questions related to the development and evaluation of implementability tools and prioritize one or two of those questions, or other questions generated by the group. An individual within each small group was nominated to report key discussion points and the prioritized research questions to the full group. The full assembly then discussed the research recommendations issued by small groups, and associated implications. Lastly, participants held a full group discussion of the need for, and possible goals and mechanisms for ongoing interaction and collaboration. Following the meeting, support staff who took notes on deliberations and decisions compared findings and resolved any differences through discussion with the investigators who also attended the event.

RESULTS

Participants

A total of 42 individuals participated in the meeting, including 10 researchers, 19 guideline developers and 10 guideline implementers (Appendix 4).

Background information

A presentation was delivered to provide background information defining implementability and describing work to operationalize this concept. Data was presented summarizing the number of implementability tools representing domains of interest identified in Canadian and international guidelines, and describing the content of implementability tools identified in Canadian guidelines (Appendix 5).

Guidelines	Implementability Domains		
	Resources	Implementation	Evaluation
Canadian (n=28)			
guidelines	7	10	4
tools	14	19	6
International (n=72)			
guidelines	3	22	14
tools	4	47	20

Recommendations for practice

In small groups participants were asked to discuss conceptual issues that remained unclear, identify existing and recommended implementability tools, and examine differences in the need for implementability tools across constituents and contexts. Issues discussed among small groups are listed in Appendix 6. Key points reported by small groups are summarized here.

Group 1

- What is the phenotype of a tool: advice, protocolized directions for how to do something and how that can be applied across different contexts, or not what to do but questions to ask or issues to discuss to arrive at your own solution
- Tools may be suitable for different targets, some would address issues related to clinical practice, others would address organizational, contextual or system level issues and therefore be more suitable for managers or policy makers
- Examples of resource tools (PREPARE tool presented by George Browman to make funding decisions); implementation tools (RNAO order sets, Canadian Thoracic Society COPD care plans, Canadian Association of Radiologists symptom management, CPAC synoptic reporting templates, COSTAR symptom management protocols); and evaluation tools (QI development from the Netherlands and indicator development manual by Gagliardi)

Group 2

- Are PDSA or IHI programs considered generic tools, blended approach, incentives
- Tools simplify and summarize the recommendations to promote action
- Examples include bullet points, EMR prompts, posters, pocket tools
- Tools target different audiences: teams, managers, regulators and funders

- What is the bar for evidence? CDA guidelines promote use of a patient flow sheet and there is good evidence for that but should we set a lower bar for the tools since RCTs on tools may not be realistic

Group 3

- Implementation should be considered in the development of the guideline
- There should be specific funding for an implementation package including tool development
- Issues pertaining to tools are similar to those for implementation in general
- Not just the responsibility of the developer, the user is in the best position to implement
- Small specialty groups may not have the resources
- Developers often not aware of implementation strategies
- Context specific, who are you trying to get involved, different for specialists, family physicians, patients

Group 4

- Every guideline is an experiment and guidelines are never finished
- Guidelines are irrelevant if health outcomes are not changed, but confounded by SES
- A tool is anything that optimizes the uptake of guidelines by anyone from clinicians to government
- Ongoing assessment is key, tools should be monitored longitudinally
- Evaluations will be different for different stakeholders
- There are many tools available

Group 5

- Tools for resource implications and implementation overlap
- Can learn about tools from health technology assessment resources (Alberta)
- Tools are often not in guidelines so important to look elsewhere
- Many are not relevant to front line providers, resource tools aimed at policy makers who value cost effectiveness
- Implementation tools include educational resources, particularly for patients, applications for smart phones, electronic prompts
- Harmonization of recommendations across guidelines is needed for patients with multiple diseases
- Evaluation tools must enable assessment of process and outcome measures, and provide instructions for use of administrative data or surveys
- Examples of tools: 2010 Opioid Guidelines for Chronic Non-Cancer Pain offer Opioid Manager, a two page guide to prescribing

Full group discussion

Following small group reporting the full assembly engaged in further discussion. A number of issues and considerations were raised:

- Should all guidelines be implemented, we don't have sufficient resources to implement everything, potentially exacerbating inequities in access to services
- Consider not only evidence, but context, quality of life and patient preferences
- Economic evaluations can demonstrate that implementing guidelines saves money
- Guideline development and implementation should be linked, therefore both require funding

Key Themes

Our own analysis of small group discussion, small group reporting and full group discussion revealed the following key themes:

Definition

Participants were challenged to derive a definition for implementability tools. Some distinctions were noted according to the purpose of tools: provide explicit advice to simplify and facilitate operationalization of the recommendations versus provide considerations by which to prompt reflection such that local solutions are generated. Both mechanisms ultimately should promote appropriate uptake of the recommendations leading to measurable beneficial outcomes.

Priorities

There were no clear trends in the type of tools favoured by participants. Resource implication tools (particularly for costing), implementation tools (particularly barrier analysis, point-of-care guidance) and evaluation tools (particularly performance measures, comparative performance data) were recommended. In addition, participants noted the need for tools that supported multidisciplinary team processes and decision-making, and organizational readiness or culture change.

Context

The type and use of tools may be determined by multiple factors including user, setting of care, clinical indication and phase of adoption.

Format

Intended user and use may dictate whether tools were located in the body of the guideline (clinicians, point-of-care decision-making) or elsewhere (managers or policy makers, resource implications). There were also many proponents of electronic prompts embedded within electronic medical systems. Others thought that generic tools were most useful as adjunct products. A broad range of phenotypes were considered to be tools including bullet lists, tables, algorithms, figures, electronic applications, pocket cards and posters.

Development

The process of developing tools differed considerably from the process of developing guidelines although the two efforts should be integrated, and informed by an overall quality improvement plan to achieve beneficial outcomes. Therefore tool development processes needed to be developed, funding was needed to support tool development (as a form of implementation), and tools should be evaluated prior to broad use to avoid users being inundated with an abundance of tools, and also longitudinally to ensure that desirable outcomes are being achieved. Additional tools were identified, many of which are not located in guidelines but on organizational web sites, therefore the development of a tool inventory may be more complete if further tools were examined. Development and evaluation could be prospective, whereby tools were made available on web sites for use, but users could provide feedback that could be used to refine the format and contact and delivery of those tools.

Participant presentations

A series of presentations were delivered by individuals who were specifically selected to describe current or desired development or use of implementability tools. Presenter biosketches appear in Appendix 7. Participants had the opportunity to ask questions and discuss lessons learned from the presenters, and then used this information in small group discussions to consider and prioritize options for ongoing research.

- George Browman, BC Cancer Agency, Canadian Partnership Against Cancer (resource implications)
- Richard Merchant, Royal Columbian Hospital, University of British Columbia (resource implications)
- Alice Cheng, Credit Valley Hospital, St. Michael's Hospital and Carolyn Gall Casey, Canadian Diabetes Association (implementation)
- Irmajean Bajnok and Monique Lloyd, Registered Nurses Association of Ontario (evaluation)
- Alexandra Papaioannou, Hamilton Health Sciences/McMaster University, Osteoporosis Canada (guideline developer perspective)
- Carol Digout, Atlantic Provinces Pediatric Hematology/Oncology Network (guideline implementer perspective)

Recommendations for research

In small groups, participants reviewed a list of potential research questions (Appendix 8), and were asked to select or propose one or two important research questions. A representative of each group reported their selection and discussion to the full group, followed by a full group discussion of the recommendations for research on promotion of PA in primary care. Discussion points raised in small group discussion are listed in Appendix 9. Prioritized research questions reported by small groups are summarized here.

Group 1

- #4 What are the attributes of a good implementability tool?
- #6 Which domains/elements are of highest priority to different stakeholders, and why?
- Also recommended the development or evaluation of generic tools which may be more broadly applicable and have a longer life span

Group 2

- #4 What are the attributes of a good implementability tool?
- #8 How do/would different users (clinicians, managers, policy makers) interpret/apply different implementability tools?
- #9 What is the behavioural impact of implementability tools
- Also recommended examining the transferability of tools from one context to another

Group 3:

- Focus on implementation, tools will emerge from that
- We currently have a lot of guidelines and little implementation
- Why plan the health system for our grandmothers instead of our children?
- The future is electronic records, we know how to embed clinical guideline alerts and pop-ups, so why don't we focus on that: point-of-care electronic tools

Group 4

- First we need better electronic systems where pop-ups cannot be over-riden, and they are better integrated with other guidelines and with care delivery
- Good tool for a bad guideline is not effective
- Q#4 What are the attributes of a good implementability tool?
- Q#8 How do/would different users (clinicians, managers, policy makers) interpret/apply different implementability tools?
- Q#7 How do needs/tools differ across the implementation spectrum (awareness, acceptance, adoption, adherence) and/or Knowledge to Action cycle?
- Also recommended investigating how to share performance data

Group 5

- Q#4 What are the attributes of a good implementability tool?
- Q#7 How do needs/tools differ across the implementation spectrum (awareness, acceptance, adoption, adherence) and/or Knowledge to Action cycle?
- Q#9 What is the behavioural impact of implementability tools
- Also recommended examining when to use different media (social media, paper, electronic health record)

Full Group Discussion

Following small group reporting the full assembly engaged in further discussion. A number of issues and considerations were raised:

- Electronic access to comparative performance reports was viewed as important tool or incentive for guideline implementation
- Others thought that electronic records may not promote implementation because it is just a delivery mechanism and was therefore not an ultimate or priority solution
- Canadian Primary Care Sentinel Surveillance Network is an example of comparative data available through EMR
- Distinguish guidelines from advocacy and resource constraints
- For what type of guideline should tools be developed
- First consider what you're interested in achieving, then define the tool that would enable it
- Are generic tools transferrable, do we need specific tools for each guideline or condition
- Tools that identify barriers or assist with barrier identification would be useful
- Engage end-users in guideline/tool development which is a way to ultimately implement the guideline because they are aware of it, buy-in, credibility
- Guidelines/tools could be living documents on web sites where users could provide input
- Use time series to evaluate impact because there may be early and late adopters

Key Themes

Our own analysis of small group discussion, small group reporting and full group discussion revealed the following key themes, which were consistently articulated across groups:

What is a tool?

What are the attributes of a good tool?

Which tools are needed by different users?

How can we optimize tool delivery, electronic medical records?

How can their impact be evaluated?

How do we prioritize for which guidelines tools are developed?
Who is responsible for tool development?
Are generic tools transferrable across context?

Ongoing communication/collaboration

The assembled group was asked to consider whether and how they were interested in ongoing communication about Resource Implication, Implementation and Evaluation guideline implementability tools. Responses were mixed. Some viewed ongoing collaboration as necessary for sharing of tools and information about tool development. Some did not want regular updates, only when major milestones were achieved. Several liked the idea of another in person meeting. Therefore the overall suggestion was to survey the group when the meeting summary report was distributed. Others thought that if interest was sufficient a group would naturally coalesce.

Meeting evaluation

Participants were asked to complete a one page survey to evaluate the meeting format, content and venue. Quantitative summary of rating scores is available in Appendix 10, and qualitative comments are listed in Appendix 11. The majority of participants agreed or strongly agreed that the length of meeting was suitable, the venue was comfortable, the agenda was logical and offered good progression, that presentations, and small group and large group discussion were useful, and that overall they were satisfied with the meeting. The majority of views on usefulness and clarity of the material in the meeting package ranged from somewhat to strongly agree. Meeting strengths included the diversity of participant expertise and perspectives, and learning that was achieved through presentations, and small and large group discussions that could be brought back to their own organization. Some limitations were noted. The overall objectives were not well-defined or focused, and perhaps could have been clarified through by offering pre-meeting background reading. Small groups were asked to address too many issues. More time for informal networking would have been useful for additional knowledge exchange. Fewer, shorter presentations would have improved adherence to agenda timing.

DISCUSSION

Implementability is a relatively new and complex concept so interaction with knowledge users is important to identify relevant and feasible components upon which to focus ongoing research. A total of 42 individuals participated in a one day meeting (10 researchers, 19 guideline developers, 10 guideline implementers).

Participants discussed the attributes of implementability tools specific to the domains of Resource Implications, Implementation and Evaluation, identified additional existing and desirable tools, and examined differences in the need for tools across constituents and contexts. While a concrete definition was not established, the beginnings of a framework for naming and defining tools emerged according to target user and purpose, further organized according to explicit advice versus considerations to prompt reflection and decision-making. A broad range of phenotypes were considered to be tools or delivery mechanisms for tools, including bullet lists, tables, algorithms, figures, electronic applications, pocket cards and posters. Given the range of contexts within which tools could be applied, no clear priorities emerged. Different types of tools within each of the three domains were considered essential. Resource implication tools (particularly for costing), implementation tools (particularly barrier analysis/organizational

readiness, teamwork, point-of-care guidance) and evaluation tools (particularly performance measures, comparative performance data) were recommended. Some thought that generic tools may be more transferrable while others believed that contextual factors specific to users, settings, or indication may require tailored tools. Tool development should be integrated with guideline development and overall implementation planning to achieve particular quality improvement objectives, and therefore appropriately recognized as a necessary activity, and funded. Additional tools were identified, many of which are not located in guidelines but on organizational web sites, therefore the development of a tool inventory may be more complete if further tools were examined. Tools should be evaluated prior to broad use to avoid users being inundated with an abundance of tools.

Similar research needs were articulated across groups. Participants recommended evaluating the impact of tools according to attributes (content/format/location/generic versus specific), delivery mechanism, intended user, and purpose. Some thought that tools should be evaluated prior to broad implementation while others thought that tools could be made available on organization web sites and prospectively evaluated and refined based on user feedback. Overarching issues that require attention include responsibility for tool development, and how to prioritize for which guidelines tools should be developed.

These findings are limited by issues inherent in any type of qualitative research. The views reflect those of the involved participants and recommendations may not be complete or relevant in other settings. To mitigate the limitations of this approach we consulted with individuals recognized experts and leaders, who represented different professional roles, perspectives and organizations. We solicited detailed feedback and information from them in a variety of ways, including small and large group discussion where detailed information was elicited through joint problem-solving that is enabled by group interaction, and prompted by specific criteria to solicit information about benefits, limitations and implications.

While a number of issues remain unclear, and will require further analysis and investigation, a number of positive outcomes were achieved:

- Joint planning and execution of the meeting brought together researchers interested in the concept of implementability as an approach to implementation that could be integrated with guideline development to harmonize respective research programs
- A taxonomy or framework by which to organize implementability tools is beginning to emerge
- This begins to establish a common understanding and language around the concept of implementability tools, and while not yet fully clear, serves as the basis upon which to build ongoing communication and collaboration
- This will enable us and others to continue doing research that is more targeted and more meaningful to further develop these concepts, and operationalize and evaluate tools
- Participants appreciated the interaction with other developers and implementers, and said they gained knowledge that will be further shared with, and benefit their organizations
- This may lead to the development of policies, protocols or tools by guideline developers and implementers
- Participants identified a number of specific and generic tools that warrant examination

- Participants helped us to prioritize issues and questions upon which we will base further research. This validates the relevance of currently planned research, and helps us to refine our approaches and methods so that findings and products will be optimally useful to guideline developers and implementers
- We hope that by interacting with participants at the meeting, and through ongoing communication we establish partnerships with them for the purpose of engaging them in ongoing research, either informally by providing period input or guidance or referring us to constituents for interviews, or more formally by working with us to develop and/or evaluate implementability tools

As noted at the meeting, guidelines continue to be produced and not optimally translated to action, and implementation needs to be better integrated with guideline development. By focusing on one approach to implementation, providing users with tools to facilitate adoption of recommendations, we investigate one way by which to integrate development and implementation, and by fostering a network of interested stakeholders, we take advantage of economies of scale. There exist numerous initiatives and examples upon which to build, and national experts and leaders appear supportive of this vision, so the time is ripe to take action. The recommendations generated at the one day meeting form the basis of further consultation and planning to realize this vision.

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APPENDIX 1. Guideline Implementability Framework

Domain	Definition	Element	Examples
Adaptability	The guideline is available in a variety of versions for different users or purposes	Sources	Internet, peer reviewed journal
		Versions	Full text, summary, print, digital
		Users	Tailored for patients or caregivers
Useability	Content is organized to enhance the ease with which the guideline can be used	Navigation	Table of contents
		Evidence	Narrative, tabulated or both
		Recommendations	Narrative, graphic (algorithms) or both; Recommendation summary (single list in full or summary version rather than dispersed)
Validity	Evidence is summarized and presented such that its quantity and quality are apparent	Number of references	Total number of distinct references to evidence upon which recommendations are based
		Evidence graded	A system is used to categorize quality of evidence supporting each recommendation
		Number of recommendations	Total number of distinct recommendations
Applicability	Information is provided to help interpret and apply guidelines for individual patients	Clinical considerations	Information such as indications, criteria, risk factors, drug dosing that facilitates application of the recommendations explicitly highlighted as tips or practical issues using sub-titles or text boxes, or summarized in tables and referred to in recommendations or narrative
Communicability	Resources for providers or patients to inform, educate, support and involve patients	Inform, educate, support	Informational, educational or supportive resources for patients/caregivers, or contact information (phone, fax, email or URL) for such resources
		Decision making	Questions or tools for clinicians to facilitate discussion with patients, or decision aids to support patient involvement
Relevance	The focus or purpose of the guideline is explicitly stated	Objective	Explicitly stated purpose of guideline (clinical, education, policy, quality improvement)
		Stakeholders	Specify who would deliver (individuals, teams, departments, institutions, managers, policy makers, internal/external agents) and receive the services (specify type of patients)
		Needs	Identification of stakeholder needs, perspectives, interests or values
Resource Implications	Anticipated changes, resources and competencies required to adapt and accommodate guideline utilization are identified	Technical	Equipment or technology needed, or the way services should be organized
		Regulatory	Industrial standards for equipment or technology, or policy regarding their use
		Human resources	Type and number of health professionals needed to deliver recommended services
		Professional	Education, training or competencies needed by clinicians/staff to deliver recommendations
		Workflow	Anticipated changes in workflow or processes during/after adoption of recommendations
		Costs	Direct or productivity costs incurred by acquiring resources or training to accommodate guidelines, or as a result of service reductions during transition from old to new processes
Implementation	Processes for planning and applying local strategies to promote guideline utilization are described	Identify barriers	Individual, organizational, or system barriers that could challenge adoption, or instructions for local needs assessment of guideline users
		Tailor guideline	Instructions, tools or templates to tailor guideline/recommendations for local context
		Integrated tools	Point-of-care templates/forms (clinical assessment, standard orders) to integrate guidelines within care delivery processes
		Promote utilization	Possible mechanisms by which to promote guideline utilization
Evaluation	Processes for evaluating guideline implementation and utilization are described	Implementation	Methods for evaluating the implementation process
		Utilization	Audit tools or performance measures/quality indicators to assess the organization, delivery and outcomes of guideline recommended care

APPENDIX 2. Implementability Framework Domains/Elements of Interest

Domain/Elements	Definition	Putative Tools	Example: Canadian Stroke Strategy
RESOURCES <ul style="list-style-type: none"> • Technical • Regulatory • Human resources • Competencies • Workflow process • Organizational considerations • Costs 	Equipment or technology needed; industrial standards; type and number of professionals needed to deliver services; competencies needed by staff to deliver services; anticipated changes in workflow during or after adoption, organizational considerations to support adoption, costs	<ul style="list-style-type: none"> • Literature search strategies for identifying these elements for condition specific guidelines • Template statement for inclusion in guidelines 	<u>Unit Care Implementation Guide:</u> Print and electronic booklet including definitions and key components of stroke units, steps for setting up a stroke unit, and staffing models
IMPLEMENTATION <ul style="list-style-type: none"> • Barriers and facilitators • Interventions • Contextual tailoring • Point-of-care tools • Organizational or policy strategies to support implementation 	Identifying individual, organizational and system barriers associated with adoption; selecting and tailoring implementation strategies that address barriers, point-of-care tools in which recommendations are embedded, and other strategies by which policy or organizations support implementation	<ul style="list-style-type: none"> • Literature search strategies for identifying barriers • Criteria and algorithms for selecting interventions • Options for tailoring interventions • Template statement for inclusion in guidelines • Surveys to facilitate systematic barrier analysis and mitigation 	<u>Implementation Toolkit:</u> Educational modules on recommendations for each part of the care continuum, examples of their application, slide decks with notes and handouts for workshops, self-directed learning resources
EVALUATION <ul style="list-style-type: none"> • Performance measures • Benchmarks • Evaluation instructions • Quality improvement instructions 	Tools based on performance measures that can be used by organizations or individuals to assess their baseline and post intervention compliance with recommendations, and plan and execute improvement	<ul style="list-style-type: none"> • Performance measures • How to measure and interpret performance • Program evaluation kit • Self-audit kit 	<u>Performance Measurement Manual:</u> Framework, benchmarks for stroke care, instructions on how to select, implement and monitor performance measures

APPENDIX 3. Nominal Group Meeting Agenda

National Guideline Implementability Meeting
Friday, April 27, 2012
8:30 am to 3:00 pm
The University Club of Toronto
380 University Avenue, Main Lounge

Timing	Activity
AM 8:30	<i>Breakfast</i>
9:00	Welcome and presentation of background information Presentation: Guideline implementability – completed and ongoing research
9:20	Small group discussion #1: What is an implementability tool? Refine and expand definitions of implementability domains and elements, identify existing tools, suggest additional tools, prioritize tools and explore needs/differences across groups
10:00	Small groups report findings (additional tools, priorities, differences), full group discussion
10:30	<i>Break</i>
10:45	Participant presentations George Browman , BC Cancer Agency, Canadian Partnership Against Cancer (resource implications tool) Richard Merchant , Royal Columbian Hospital, University of British Columbia (resource implications tool) Alice Cheng , Credit Valley Hospital, St. Michael’s Hospital and Carolyn Gall Casey , Canadian Diabetes Association (implementation tools) Irmajean Bajnok and Monique Lloyd , Registered Nurses Association of Ontario (evaluation tools) Alexandra Papaioannou , Hamilton Health Sciences/McMaster University, Osteoporosis Canada (guideline developer perspective) Carol Digout , Atlantic Provinces Pediatric Hematology/Oncology Network (guideline implementer perspective)
11:45	Full group discussion of implications
PM 12:00	<i>Working lunch</i> Small group discussion #2: Implementability tool research priorities Breakout groups discuss current practice and challenges associated with developing implementability tools, and identify priorities for ongoing research on tool development
1:00	Small groups report recommendations for ongoing research, full group discussion
2:00	Full group discussion of ongoing communication/collaboration Explore interest in, and communication/collaboration mechanisms for ongoing research
2:30	Next steps
3:00	Adjournment

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APPENDIX 4. Participants

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APPENDIX 5. Tools identified in Canadian guidelines

RESOURCE IMPLICATIONS

Elements	1	2	3	4	5	6	7
Technical	✓	---	---	---	---	---	---
Regulatory	✓	---	---	---	---	---	---
Human resources	✓	---	---	---	---	---	---
Competencies	✓	✓	✓	---	---	---	---
Workflow	---	---	---	---	---	---	---
Costs	---	---	---	✓	---	---	---
Organizational considerations	---	---	---	---	✓	✓	✓

1/ Canadian Anesthesiologists' Society

2, 3/ Registered Nurses Association of Ontario

4/ Canadian Task Force on Preventive Health Care

5/ Canadian Task Force on Preventive Health Care

6/ Canadian Diabetes Association

7/ Canadian Association of Gastroenterology

IMPLEMENTATION

Guideline	1	2	3	4	5	6	7	8	9	10
Elements										
Identify barriers	✓		---	---	---	---	---	---	---	---
Tailoring intervention	---	---	---	---	---	---	---	---	---	---
Implementation strategies	---	---	✓	✓	✓	✓	---	---	---	---
Point-of-care tools	---	---	---	✓	✓	---	---	✓	✓	---
Organizational planning	---	---	---	---	✓	✓	---	---	---	---

1/ Osteoporosis Canada

2/ Canadian Rheumatology Association

3/ Canadian Stroke Network

4/ Canadian Diabetes Association

5, 6/ Registered Nurses Association of Ontario

7/ Canadian Task Force on Preventive Health Care

8/ Medical Services Commission (Ministry of Health, British Columbia)

9/ Cancer Care Ontario- Program in Evidence-based care

10/ Canadian Anesthesiologists' Society

--- DRAFT pending participant feedback and further analysis ---

EVALUATION

Elements \ Guideline	1	2	3	4
Performance measures	✓	✓	✓	✓
Instructions for measuring	---	---	---	---
Quality improvement	✓	---	---	---

1/ Canadian Stroke Network

2, 3/ Registered Nurses Association of Ontario

4/ Canadian Task Force on Preventive Health Care

APPENDIX 6. Presenter biosketches

George Browman, MD, MSc, FRCPC

George Browman is a medical oncologist at the BC Cancer Agency and “Expert Lead” for guidelines with the Canadian Partnership Against Cancer. He has extensive experience with guideline development and implementation in the cancer field, including the development of provincial guideline development & implementation programs in Ontario and Alberta. He is a member of the CIHR funded PICCNet (Priorities in Cancer Control Network) and the Canadian Cancer Society funded ARCC Research Program (Canadian Centre for Cancer Control), both dedicated to optimizing the use of evidence and guidelines in clinical and policy decisions for cancer control. Dr. Browman is also one of the BC provincial appointees to the Provincial Advisory Group for the pan Canadian Oncology Drug Review). He is Clinical Professor of the School of Population and Public Health at UBC.

Richard Merchant, MD, FRCPC

Richard Merchant is a Clinical Professor of Anesthesia at the University of British Columbia. He completed anesthesiology residency in London ON and UBC. He was staff anesthesiologist at University Hospital in London, ON until 1990 when he took up his current position at the Royal Columbian Hospital in New Westminster BC. He is both Past President, and Past Chair of the Patient Safety Committee of the BC Anesthesiologists' Society, and current Chairman of the Standards Committee for the Canadian Anesthesiologists' Society, responsible for the "Guidelines to the Practice of Anesthesia".

Alice Y.Y. Cheng, MD, FRCPC

Alice Cheng is a member of the Division of Endocrinology and Metabolism at Credit Valley Hospital in Mississauga and St. Michael's Hospital in Toronto, and an Assistant Professor in the Department of Medicine at the University of Toronto. She served on the Expert Committee for the 2003 Canadian Diabetes Association clinical practice guidelines, and the Steering and Expert Committees for the 2008 revision, along with the Dissemination & Implementation committee. She is serving as Chair for the 2013 CDA clinical practice guidelines.

Carolyn Gall Casey, BASc

Carolyn Gall Casey is the Director of Education at the Canadian Diabetes Association. She joined the Association in the spring of 2009, and along with her team, has responsibility for translation of clinical practice guidelines into practical tools, and dissemination and implementation of those tools. Examples include the CPG Clinical Practice Guidelines Tool Kit, *Canadian Journal of Diabetes*, as well as diabetes educator nutrition tools. Carolyn has a BASc from the University of Guelph in Clinical Nutrition plus recent training in organizational leadership, program implementation and communications. She spent 17 years in the food and clinical nutrition industry where her main focus was creating optimal nutrition and wellness communication and education tools for Canadians.

Irmajean Bajnok, RN, MScN, PhD

Irmajean Bajnok is Director of Registers Nurses Association of Ontario's International Affairs and Best Practice Guidelines Centre, where she oversees the development, dissemination, and evaluation of the RNAO Best Practice Guidelines. She also oversees the RNAO Centre's extensive national and international conference and events program and works closely with numerous health care professionals and organizations in Canada and internationally, who receive the Center's consultation services and programs. In her role as Co-Director of the Nursing Best Practice Research Unit, she participates in numerous studies related to knowledge transfer and the impact of BPG implementation.

Monique Lloyd, RN, PhD

Monique Lloyd is a Registered Nurse and graduated with a Ph.D. in Nursing from McMaster University in 2009. Prior to arriving at the RNAO, Monique held positions as Senior Policy Analyst in the Ontario Ministry of Health and Long-Term Care, Program Coordinator of the CHSRF/CIHR Chair in Advanced Practice Nursing, and freelance research consultant to McMaster University, York University, and Ryerson University. As Research Manager in the IaBPG program, Monique leads the development and implementation of Nursing Quality Indicators for Reporting and Evaluation, an international quality measurement program in the Best Practice Spotlight Organization® initiative based on RNAO best practice guidelines. Monique oversees the implementation of systematic review methodology in the RNAO Best Practice Guideline development and revision process. She is also a co-investigator on a Ministry funded study examining the cost-effectiveness of advanced practice nurses on patient and provider outcomes.

Alexandra Papaioannou, BScN, MSc, MD, FRCPC, FACP

Alexandra Papaioannou is a Professor in the Department of Medicine, and a Geriatrician at Hamilton Health Sciences. She holds a Canadian Institute of Health Research – Eli Lilly Chair in Osteoporosis and Fracture Prevention. She is Past Director, Division of Geriatric Medicine, McMaster University with joint appointment in the Division of Rheumatology, and Associate Member in the Department of Clinical Epidemiology and Biostatistics and Medical Sciences. She is a member of the Scientific Advisors of Osteoporosis Canada and the International Osteoporosis Foundation. Alexandra was lead author of the Osteoporosis Canada Guidelines published in the October 2010 issue of Canadian Medical Association Journal. Dr. Papaioannou is past Chair of the Scientific Advisory Council of Osteoporosis Canada and the former Chair of the Board. She is the project lead for the Ontario Osteoporosis Strategy for Fracture Prevention in Long-term Care, Co-Director of the Hamilton Canadian Multi-Centre Osteoporosis Study (CaMos), and leading the Fracture Think Osteoporosis project, a chronic disease management program in Hamilton, Ontario.

Carol Digout

Carol Digout is the Executive Director of the Atlantic Provinces Pediatric Hematology/Oncology Network (APPHON). APPHON has as its mandate the development/adoption and implementation of pediatric hematology/oncology guidelines for all of Atlantic Canada. Carol has worked as a national facilitator for the Guideline Adapte project for the Canadian Partnership Against Cancer and has worked on test cases of tools for guideline development. Carol is a member of the C17 guideline review team (group of Canadian tertiary pediatric hem/oncology centers) and is a member of the Cancer Care Nova Scotia Guideline Review team. Carol has worked on both National and Regional adult and pediatric guidelines.

Appendix 7: Small group recommendations for practice

Group 1

Definition

- Advice for operationalizing the recommendations
- Maps the process for applying recommendations
- A process or tool that establishes or generates accountability for standards (which are accredited and must be followed, which distinguishes standards from recommendations)
- A guide to operationalize the guideline for different users

Priorities for tool development

- More is known about implementation, there is a need to identify resources required to implement guidelines since cost is a barrier, and evaluation of guideline use
- Allocation of resources can be thought of as an implementation tool
- Users want a recipe to implement guidelines
- Tools may also be needed to translate guidelines into policy, accreditation programs, etc.
- Resources may be site specific so tools are needed to support implementation of national guidelines
- Each guideline has so many barriers, what we don't have are tools by which to assess barriers

Challenges/Considerations

- Barriers are many and context specific so tools need to be tailored or tailorable
- So many context-specific considerations that perhaps identifying and addressing those considerations are the kind of tools we need
- A tool should offer user-specific information: managers think about resources, clinicians think about patient populations, training, etc.
- Dependent on the condition and guideline, for some guidelines an organizational tools may be more relevant
- Tools may be located on organization web sites and not necessarily in guidelines

Examples of tools

- RNAO remote protocols for telephone symptom management, best practice order sets
- Canadian Thoracic Society – COPD patient tools
- Screening media, client reminders
- Cancer reporting (ASCO guideline?) – order sets
- CPAC – protocol for symptom management
- Canadian Association of Radiology – guidelines integrated in software to help physicians diagnose and manage patients based in symptoms

Group 2

Definition

- Simplifies the guideline, moves the guideline to action
- Directed to different audiences
- Group agreed that posters, pocket cards, electronic prompts, apps, diagrams, tables, figures, bullet points are tools but didn't agree if they were good tools

Priorities for tool development

- Tools to support group skills and group decision-making: teams require tools that differ from those needed by clinicians to define their roles
- Other audiences for tools: patients, management, regulators.
- Point-of-care tools are the most useful, ie. clinicians refer to pocket cards until it's in their head.

- Incentive tools, reward systems, feedback reports associated with implementation suggestions
- Policy (financial or governmental regulation) is the best way to change behaviour. Perhaps advocacy tools in guidelines would help to influence policy

Challenges/Considerations

- Guidelines are aimed at different audiences so different tools will also be needed by various users
- Language is important to prompt action and active thought, tools should use active, positive voice
- Visuals are great for end-users
- There is an element of interpretation of guideline that is needed. There is only so much a clinician can read and take in. Should be a prompt for reflection or action.
- Tools should help to go beyond the clinical recommendation/beyond clinical behavior.
- Tools may need to vary over the lifetime of a guideline: pre and post adoption phase.
- A tool should take the concept and aid the transformation into measurable behavior.
- Tools depend on target audience, phase of stage, and lifetime of guideline.
- Context important, ie. peer assessments may not be possible in community/rural settings where resources may be limited
- Users are already overwhelmed with too many guidelines, so too many tools will be ignored
- Integrate tools into electronic decision aids
- How to choose which tools are developed, many guidelines contain a large number of recommendations, tools cannot be created to each one, and different users may be interested in different recommendations
- Who is responsible for developing and evaluating tools?
- Tool development not costly, but implementation is
- Need to develop another arm of the guideline development process to encompass tool development, which may influence the guideline development process, guideline format/content

Future research

- Further research needed to examine whether/which/how tools work, and whether they should be included in guidelines or as adjunct resources
- Pilot some of these implementation tools and measure if they work prior to broad implementation
- Evaluation is a complex task: do we evaluate every tool? What is a valid measure of impact (behavior, outcome)?
- Easiest to show doctors and ask if they would use it (not if they did) or if they are aware of it
- CDA tool trial found no change in behaviour, so perhaps this is not a reasonable measure

Group 3

Priorities for tool development

- Tools that support culture change, education when new guideline is introduced in an organization
- Tools should help people think for themselves, particularly for guidelines with little strong evidence, so they should support professional judgement in the face of uncertainty
- Tools that help clinicians reflect on their own performance, perhaps comparative to benchmarks
- Tools that help clinicians determine which of the numerous recommendations apply to them

Challenges/Considerations

- Many developers do not have operational funding for development or implementation, including tool development, for example, the Canadian Rheumatology Association acquired research funding to develop a guideline but were not successful in getting research funding for implementation
- Guideline development should be linked from the outset with implementation, and development of tools is one way to integrate the two
- Currently guideline development and implementation are fragmented: who should develop tools?

- Link implementation planning with quality improvement officers or networks, however many clinicians have their own offices which lack quality improvement infrastructure
- What medium is most useful by which to implement guidelines
- Guidelines and tools need to be tailored to different users
- Tools should not cover up limitations of guidelines such as lack of evidence or ambiguity

Examples of tools

- Canadian Hypertension Educational Resources
- Canada Implements, Cancer View Canada

Group 4

Definition

- A tool is not a recommendation but something that deals with the recommendation
- The mechanism for getting recommendations used in clinical practice/point-of-care, ie. an algorithm, a one-page synthesis of a 60-page guideline, or a tool for tracking results
- Any tool or instrument that optimizes appropriate implementation/uptake of the guideline by patients, members of the public, health care providers, policy makers, organizations, and managers

Priorities for tool development

- Tools that track or evaluate patient outcomes according to desirable indicators
- Tools that assess which patients benefit from the recommendations, value the recommendations, or can access the recommended care

Challenges/Considerations

- The tool may need to differ by user: who do you expect to act on these recommendations, and what tools do they need to accomplish that?
- Can you track use of tools by monitoring web site hits or downloads

Examples of tools

- Canadian Cardiovascular Society web site offers different versions of guidelines, ie. phone apps

Group 5

Priorities for tool development

- Difficult to prioritize, tool development will be costly so have to decide where to apply resources, but all domains (resources, implementation, evaluation) are important
- Cost benefit should it be included, most of the time you don't have this kind of analysis, and it is important for decision making by government
- Resource guide for implementation
- Educational tools: power point presentations, patient education tools, pre printed orders so you have all the algorithms
- Integration of recommendations from potentially multiple guidelines for those with comorbid conditions in EMR, point of care tools, reminders
- Evaluation tools should include indicators to measure implementation and to measure use of, and outcomes associated with use of the recommendations

Challenges/Considerations

- Won't work if tools make the guideline longer and harder to use
- Resource tools more likely to be used by administrators than clinicians, perhaps place in Appendix or as an adjunct document
- How can we evaluate use of guideline recommendations/tools: very disconcerting, the money and time put into guidelines and no one knows if they really are being used

--- DRAFT pending participant feedback and further analysis ---

Examples of tools

- Canadian Diabetes Association is preparing a report that describes the processes and financial resources used to develop their implementation resources
- Cardiovascular guidelines have cost-effective modeling
- Alberta has a decision making framework/process based on a health technology assessment approach that could be adapted to consider/plan implementation

Appendix 8: Potential research questions

No.	Objective/Question	Approach	Data Collection	Analysis
1	Conduct a more comprehensive search for all tools in the domains of interest (how comprehensive do we need to be; how do we find them?)	MEDLINE search, internet search, wide consultation with experts	Literature review, content analysis, interviews	Qualitative
2	Should all guidelines offer implementability tools?	Engage individuals with different perspectives to identify and describe relevance by type of guideline	Focus groups	Qualitative
3	What is an implementability tool (how can we identify and describe them)?	Solicit input to define minimum parameters for format, content	Delphi or modified Delphi	Quantitative
4	What are the attributes of a good implementability tool?	Given minimum parameters, develop and evaluate tools for the development and appraisal of tools	Develop, pilot test and evaluate the inter-rater reliability, etc.	Quantitative
5	Which domains/elements are of highest priority to different stakeholders, and why?	Engage individuals with different perspectives to prioritize tools	Focus groups followed by self-completed survey	Qualitative, quantitative
6	How do needs/tools differ across the implementation spectrum (awareness, acceptance, adoption, adherence) and/or Knowledge to Action cycle?	Identify and describe relevance by type of guideline	Focus groups, followed by self-completed survey	Qualitative, quantitative
7	How do/would different users (clinicians, managers, policy makers) interpret/apply different implementability tools?	What are the cognitive and potential behavioural impact implementability tools?	Interviews	Qualitative
8	What is the behavioural impact of implementability tools	Do implementability tools support guideline use?	Before-after or time series study	Quantitative
9	How is guideline implementability complementary to other strategies for implementing guidelines?	Is implementability an independent or complementary to other strategies?	Randomized controlled trial	Quantitative, qualitative
10	What tools/services are needed to support developer development, and implementer implementation of implementability tools?	Identify and describe resource and practice implications of developing and promoting use of implementability tools	Interviews or focus groups or ethnographic study	Qualitative

APPENDIX 9. Small group recommendations for research

Group 1

- What constitutes a guideline?
- What are the attributes of a good implementation strategy?
- Once defined we can develop tools that match those attributes
- This links with Q#9 and #4, also #3
- What is a tool, who are they for, and should they be generic, or guideline specific?

Group 2

- What kind of measures is Q#4 referring to?
- Q#8 and #6 can be combined
- Q#9, the word behaviour is too broad, is this awareness, practice, outcome?
- Q#9 is the umbrella question and #8 is specific to users
- Q#11 should be reworded to ask who is responsible
- New question: are tools transferrable across users or indications?

Group 3

- Q#9 should be quantitative so that we evaluate tool impact
- Q#9 and #10 are linked, and should be part of an overall QI program
- The focus needs to be on implementation rather than on tools
- What is a tool?
- Are we talking about tools within guidelines or as adjunct products? Developers need to be cognizant of these issues while writing the guidelines.
- We created an evaluation program for “Dealing with distress” and several people said look we’re not interested in the academic perspective but just want to know how to evaluate this, what are the indicators. There is a cultural rejection of the academic process by front line so you need to carefully introduce tools
- Influential clinicians sometimes use their own experience over guidelines, while this may make sense for experienced clinicians, the same may be true with respect to use of tools, regarded as too formulaic or mechanistic
- The implementation strategy should focus on how to get messages integrated with the electronic record. Looking at the paper based solutions is not going to work. The future is to embed the clinical guideline recommendations in the online tools. The research questions on this form are not a long term goals and therefore are not sustainable.

Group 4

- We need a better solution for electronic media because clinicians can over-ride prompts or pop-ups in EMR
- Recommendations should be integrated across guidelines and tools should reflect those common goals
- Many guidelines are relevant to teams, so tools might provide guidance on group decision making
- The group chose questions number 4, 7 and 8 for ongoing research
- A good tool for a bad guideline is not really very effective
- What outcomes should be measured when evaluating tool impact?
- Knowing what other people are doing is really important, how can tools convey comparative assessment data

Group 5

- Which recommendations do you develop tools for? Only those with strong evidence?
- Q#4 transparent, effective, tailored to the knowledge users, these are important questions, almost like AGREE for a tool to be created
- For efficiency of development/resources, are tools transferrable across users, conditions?
- Examine tool effectiveness by type of tool, formats, language, online or print
- First define an outcome and then develop a tool to achieve that
- Interactive education tools, educating the patient to ask the physicians
- What medium is the best or most effective for transmitting these tools?
- Q#4 wording needs to be changed from “good” to “effective”, we want to know if it works!
- Q#7 are different tools needed for different users or outcomes?
- Readiness to adopt the recommendation is a huge concern, if people are not ready it is useless to try to push tools on them
- Q#2 develop a tool to assess readiness of a community to adopt a tool
- How effective are tools, from an evidence perspective we should look at a guideline and whether it contains these tools. More steps than AGREE goes through, make it more comprehensive.
- We should start with Q#3 to really know what a tool is what they do
- For family physicians Q#9 is important

Appendix 10. Meeting evaluation, rating criteria

Criteria	Responses n (%)								
	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree	No Answer	Mean, Median, Range
Content and format of meeting package materials was clear	0 (0)	0 (0)	0 (0)	5 (16)	16 (50)	7 (22)	3 (9)	1 (3)	5.1,5,4-7
Length of meeting was appropriate	0 (0)	0 (0)	1 (3)	5 (16)	7 (22)	13 (41)	6 (19)	0 (0)	5.6,6,3-7
Venue was suitable and comfortable	0 (0)	0 (0)	0 (0)	0 (0)	5 (16)	5 (16)	22 (69)	0 (0)	6.5,7,5-7
Agenda topic progression was logical	0 (0)	0 (0)	2 (6)	4 (13)	11 (34)	12 (38)	3 (9)	0 (0)	5.3,5,3-7
Presentation contributed to my understanding	0 (0)	1 (3)	3 (9)	3 (9)	11 (34)	12 (38)	2 (6)	0 (0)	5.1,5,2-7
Small group assignments were relevant and thought-provoking	0 (0)	1 (3)	2 (6)	2 (6)	11 (34)	13 (41)	3 (9)	0 (0)	5.3,5.5,2-7
Small group discussions generated useful ideas	0 (0)	0 (0)	1 (3)	4 (13)	10 (31)	13 (41)	4 (13)	0 (0)	5.5,5.8,3-7
Full group discussion generated useful ideas	0 (0)	1 (3)	0 (0)	2 (6)	10 (31)	15 (50)	3 (9)	0 (0)	5.5,6,2-7
Overall satisfaction	0 (0)	0 (0)	1 (3)	1 (3)	14 (44)	14 (44)	2 (6)	0 (0)	5.4,5.5,3-7

Appendix 11. Meeting evaluation, comments

Criteria	Responses
<p>Constructive comments/suggestions related to any of the rating criteria</p>	<p>Workshop Material and Presentation</p> <ul style="list-style-type: none"> • Pre-reading material would have been helpful • Research questions hard to understand • Details of exploration and next stage • Additional background information • In preparation, more conversations with other specialty societies • Need to define more clearly why this is needed, what are we trying to achieve • Try to be more specific, concrete • Focus on implementation approaches • A number of very promising models presented <p>Organization of Meeting</p> <ul style="list-style-type: none"> • Well organized • Could be more directed • Clearer instructions for small group discussion • Too much expected for each task • More time/format for networking • Better time control • More time for group (small or plenary) discussion and less presentations • Shorter presentations, dispersed throughout the day • Wonderfully robust agenda and meeting organization <p>Setting</p> <ul style="list-style-type: none"> • Good meeting • Nice room setting • Hard to hear at back of room
<p>Name/describe one thing you liked most about the meeting, and why</p>	<p>Workshop Material and Presentation</p> <ul style="list-style-type: none"> • Discovered some tools that might be useful to my organization • Presentations were great- nice to see how everyone implements their own guideline • Presentations, immense value to other guideline developers and prospective developers • Hearing out some of the presenters' experiences in developing tools • Hearing about approaches to knowledge translation • Being made aware with other initiatives going on • The range and diversity of information was very thought provoking • Came away with good resources and ideas, better understanding of all issues to challenge

	<ul style="list-style-type: none"> • Being able to make my suggestions to improve guidelines <p>Organization of Meeting</p> <ul style="list-style-type: none"> • Small group-small, manageable, meaningful, excellent discussion of concepts and issues • Discussions (big and small groups)- Added value for large group discussion- good exchange of information and opinions • Group reporting • Really enjoyed the small groups • Really liked working through lunch <p>Quality and Diversity of Participants</p> <ul style="list-style-type: none"> • Table composition so well done on mixing us up • Lots of different people and different backgrounds • Exchange of ideas • Lots of good perspective • Discussions with experts • Good breadth of group • Wide representation-excellent discussion with clear interest • Meeting other researchers • Networking opportunity
<p>Name/describe one thing you liked least about the meeting, and how it could be improved</p>	<p>Length of Presentations/ Meeting</p> <ul style="list-style-type: none"> • Limiting the number of presentations from participants • Not sticking to the schedule/agenda • Presentations running over time, keeping them to a time limit • Too many presentations <p>Focus/Objective of Meeting</p> <ul style="list-style-type: none"> • Work predominantly focused on implementation (not both implementation and evaluation) • Putting more tightly focused topics for discussion would have helped • The intended goal/objective of your work and what you were asking for was unclear • Small group work could be more focused on key problems issues to resolve, too many to tackle • Some presentations not on point to implementation/barriers • Define more specifically accomplishable and deliverables at the end of the meeting <p>Workshop Material</p> <ul style="list-style-type: none"> • Small group discussion #1. Felt that definitions might have been provided in packages the discussion would have focused on what tool (s) might apply, where at, what stage of implementation <p>Organization of Meeting</p> <ul style="list-style-type: none"> • I have mixed feelings about small groups- by and large positive that the mixed views, points/perspectives sometimes made discussion fluid • Initial small group discussion

	<p>Miscellaneous</p> <ul style="list-style-type: none"> • Tables don't have enough room for laptops and papers • Would like to have vegetarian choices • Individuals asking questions to identify themselves/organizations • Choice of panel speaker could have been more representative in the guideline area • Presenters to bring more materials to the meeting
<p>Do you have any further suggestions for policy, practice or research related to implementing new surgical devices?</p>	<p>Ongoing Research and Resources</p> <ul style="list-style-type: none"> • Rather than face to face or phone meetings only, consider a community of practice • Benefit of generic guidelines vs. one that is sensitive to cultural safety: what works for the dominant culture may be inappropriate for others • Examine transferability (including efficacy) of implementation and extra tools • Study suggested by hypothetical question #9 might capitalize upon impacts realized in organizations that have applied existing implementation strategies and tools to anticipate behavioural and other (financial, healthy outcomes) impacts that may be realized upon transfer of these to other settings/sectors • Generic implementation tools need to be in scope and maybe even be your focus to generate "best practice" around developing implementation tools • Think about how is what your going to do help us: 1) providers 2) developers 3) implementers 4) organizations • Electronic Medical Records and Electronic Health Records are becoming much more widespread. These provide huge opportunities and challenges for CPG implementation and for evaluation of effectiveness. We need to study this form of implementation and evaluation much more intensively and rigorously • Like to see a tool to give stakeholders for the external review which deals with barriers to and implementation • Please be aware of the work of Council of the Federations and what already is happening <p>Miscellaneous</p> <ul style="list-style-type: none"> • The idea of general vs. specific tool is a false dichotomy • Don't forget grey literature, wonderful work is being done by professional associations that doesn't appear to be acknowledged • Clarify language/develop lexicon for ongoing research