Nursing Best Practice Research Unit

Unité de recherche sur les pratiques exemplaires en soins infirmiers

REGISTERED NURSES' ASSOCIATION OF ONTARIO GUIDELINE DEVELOPMENT METHODOLOGY

REPORT

JUNE 2006

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Introduction

The Registered Nurses' Association of Ontario (RNAO) has been developing, pilot implementing, evaluating, disseminating and supporting the uptake of nursing best practice guidelines (BPGs)[1] in Ontario since 1999. To date, 29 best practice guidelines have been developed and their uptake across Ontario, as well as nationally and internationally is very encouraging. Numerous health care organizations in Ontario, within Canada, and internationally have accessed and integrated RNAO's BPGs in their practices. A wide range of supporting tools have been developed including translated guidelines in French, Health Education Fact Sheets for the general public, generic and specific BPG implementation resources as well as systems to support the dissemination and uptake of guidelines such as BPG newsletters, Best Practice Champions Network and Best Practice Spotlight Organizations.

Since the inception of the Nursing Best Practice Guidelines (NBPG) program, there have been ongoing enhancements made to the BPG development methodology. This process has been informed by developments in the guideline development methodology reported in the literature, experience by the RNAO through its development of 29 BPGs and through networking with guideline developers around the world. The RNAO aims to document the tremendous wealth of knowledge developed in guideline development in a comprehensive document for the purpose of knowledge transfer for future guideline development and to communicate in a summary document the methodology for general dissemination purposes. Most importantly, however, RNAO aims to continue its enhancement of the BPG development methodology. This report, therefore, provides the process and the outcomes of the review of the RNAO BPG development methodology and makes recommendations for further enhancement. Detailed component outcomes of the review are available in the Appendices.

In early 2006, a team of guideline developers from a multidisciplinary perspective, evidence appraisal experts (qualitative and quantitative), information specialist, guideline users and NBPG program staff was established. See Appendix A for Terms of Reference of the panel and Appendix B for Guideline Development Review Panel members. The overall purpose of the Guideline Development Review Team was to ensure the RNAO guideline development methodology is rigourous, with the highest standards based on best practices and which allows the unique contribution of nursing knowledge to best practice guideline development. The review process comprised of the following steps:

a) A comparative review of the RNAO guideline development methodology. Six international guideline development methodologies were reviewed in detail including the RNAO. See Appendix C for comparative review results. The review

[1] BPGs defined as "Systematically developed statements (based on best available evidence)to assist practitioner and patient decisions about appropriate health care for specific clinical (practice) circumstances" Field, M. J. & Lohr, K.N. (1990). Guidelines for clinical practice: Directions for a new program. Washington, DC: Institute of Medicine, National Academy Press.

focused on strengths amongst the methodologies and specifically, the rigor of guideline development.

b) A selective literature was reviewed and annotated bibliography prepared. See Appendix D for results.
c) The NBPG program staff reviewed the results of the above two items, added to the comparative review as well as conducted an initial set of recommendations to present to the Guideline Development Review Team.
d) Results of the above three items were reviewed by the Guideline Development Review Team on March 10th 2006 at a full day meeting. Draft recommendations were developed for enhancing the RNAO BPG methodology and commendations were made on the various areas of strength.
e) Draft report was sent to the Guideline Development Review Team as well as external group of guideline experts who had not been able to attend the in-person meeting (See Appendix B).
a) Final report developed and summary report made available on the RNAO website.

Commendations

The RNAO was commended for a number of processes that are part of the current guideline development methodology. Specifically, these included:

- Comprehensive approach to critical review of evidence and summarization of the literature
- Existing pre-determined practices of evidence assessment and the search strategies for new guidelines or new evidence
- Current links with academic nursing programs for integration into nursing curriculum
- Maintaining the initial scope of the clinical best practice guideline during the development and revision processes
- Assessment and utilization of qualitative research findings
- Discussion of evidence for each recommendation
- Establishment of recommendations based on clinical, education and policy/organization
- Provision of evaluation indicators
- Provision of implementation tools within the Appendices of the BPGs as well as other companion tools.

- A formal structure for maintaining an inventory of research gaps and incorporating research gaps into each Best Practice Guideline
- RNAO's extensive multi-faceted dissemination and uptake of BPGs.

II Recommendations for Enhancement

Recommendations for Enhancement

Recommendations and accompanying explanations from the review meeting will be highlighted in three specific areas:

a) Administrative
b) Process
c) Evidence

ADMINISTRATIVE

This section incorporates the information related to identification/selection of topic, determining scope and defining key/clinical questions, work plan development, research gaps, and updating guidelines (review/revision, monitoring, auditing).

Recommendation: Consider core expert membership for panels.

> Each RNAO BPG panel is unique, with minimal overlap of members between panels. A core expert membership will aid in maintaining consistency across BPG panels, which may include methodological experts to advise and support methodological consistency of reporting and interpreting evidence. One recognized challenge will be to ensure such expert members have the availability of necessary time to participate on the panel.

Recommendation: Place Appraisal of Guidelines Research and Evaluation (AGREE) Instrument results on RNAO website.

> Although the RNAO does not carry out strict guideline adaptation, it does ensure that existing guidelines congruent with the scope of the BPG to be developed are identified and assessed for quality and content. The AGREE instrument[2] is used to assess the quality of existing guidelines and as a learning process for the BPG development panel on the strengths and weakness of guidelines. The results of the review should be made available on the RNAO website for interested parties.

Recommendation: Adopt the current BPG review and revision process documentation tools; specifically, tool used by panel to formally arrive at consensus on the BPG recommendations.

> New tools were developed for the three-year review and revision process carried out by the RNAO for each BPG. These new tools need to be reviewed and

[2] The Agree Trust. Retrieved on October 18, 2006 from http://www.agreetrust.org

adopted in the initial BPG development process. One specific tool that has been successfully used is the Recommendation Agreement tool. This tool provides the panel with a consistent process to come to consensus and document each decision with respect to each recommendation. The documentation will allow for historical archiving of decisions as well as provide transparency of all decisions.

Recommendation: Consider changing the process for guideline publication to allow for user determined access for the level of detail user wishes to access. E.g. user may determine accessing a summary of recommendations, detailed evidence summaries as well as abstracts of references linked to literature databases. Such a change in process is recommended only as a pilot prior to full adoption.

There are processes at the Canadian Task Force on the periodic health examine and American physician groups that provide the user with three levels/elements within their guidelines: recommendations, abstracts and literature evidence. The reader determines the amount of information needed and accesses the information to fulfill in-depth knowledge requirements. This process is fundamentally different than the current BPG process and as a result a pilot is recommended.

Recommendation: Research Gaps

a) Determine best approach to partnering with academic institutions to develop relationship and collaborations in addressing research gaps.
b) Develop a marketing plan to publicize research gaps inventory and develop relationships with academic institutions for addressing the gaps. One strategy may be the development of a newsletter as a method of dissemination of the research gaps.

RNAO maintains an inventory of the research gaps which are identified through the panel's review of the research literature during the developing process. The research gaps are published in the BPGs and a compiled inventory is made available on the RNAO website. There is currently no process for follow through and determine usefulness of this information and whether gaps have been addressed and by whom. There was support and agreement that this information needs to remain a component of the BPG; however, it is not clear how well this knowledge is disseminated and used. Members commented that this information may be of great interest to faculty and students at nursing educational institutions.

PROCESS

This section incorporates information related to recruitment of panel members/selection of panel members, consumer involvement, role of panel members, composition and training, guideline adaptation, stakeholder review, components of a guideline, dissemination of guidelines, timeframes for BPG development, knowledge uptake of guidelines/implementation, and evaluation of uptake/impact.

Recommendation: Focus groups to evaluate the preferred format of BPGs for future publication formats.

Focus groups can provide information to determine the preferred format by end users to enhance uptake and utilization of BPGs. The members believe that BPG could potentially be made available in various short and long formats as well as general plain language formats such as recommended by CHSRF (1/3/25 - 1 page executive summary, 3 page summary, 25 page full document. The formats would meet the needs of different end users including policy decision makers.

Recommendation: Consider incorporating techniques such as:

a) Call for reviewers (this can be facilitated as soon as the scope is developed and stakeholders can be invited to participate at a future date)
b) Place drafts on website with a feedback questionnaire, and
c) Accessing consumer groups

There are a wide number of stakeholders that are currently approached to review and provide feedback on draft BPGs. Broadening the range of stakeholders including groups and organizations will help enlarge the diversity of feedback and to ensure an inclusive process to BPG development.

Feedback may also be encouraged if there were several potential methods available for stakeholders to use; for example, use of both quantitative (rating scales such as those used by Cancer Care Ontario and qualitative methods. Additionally, stakeholders who are organizational or policy level decision makers need to be specifically asked to provide feedback on the organizational/policy recommendations. It was felt that including both the clinical and policy/organizational recommendations together for the stakeholders discourages the non-clinician feedback. RNAO could also consider placing draft recommendations on the website to invite feedback from a broad spectrum of stakeholders including the public and other countries.

EVIDENCE

This section incorporates the information related to identifying the evidence (type of evidence admissible & search strategy), process of evidence review/evaluating the evidence quality appraisal/evidence summary, levels of evidence, incorporating health economics/balance sheet, and process for determining recommendations.

Recommendation: Use explicit criteria of evidence admissibility.

A clear set of evidence admission criteria are required in order to ensure all panel members are using the same set standards. There may need to be flexibility from guideline to guideline depending topic and scope. Unpublished evidence is examined on a case-by-case basis.

Recommendation: Complete a critical appraisal of the evidence appraisal tools currently in use and consider using study design specific tools for assessing the literature. This will provide for consistency of application.

The RNAO uses specific evidence appraisal tools to critically review the literature:

a) Qualitative assessment tool - evaluates population, design sample size (adapted from the Public Health Research Education and Development [PHRED] unit from McMaster University by Donna Ciliska & Helen Thomas). This tools aids in identifying weak, strong, moderate literature and incorporates applying a global score.
b) Systematic review quality assessment tool - assesses the quality of systematic reviews (PHRED).
c) Data extraction template - provides information on key content areas such as country, n = __, study design, findings, concerns
d) Quality Appraisal Template – documentation of results of the quality review, where quality rating is provided including all literature, and inclusion/exclusion criteria.

Recommendation: Consider a summary page that incorporates the recommendations and the references in one table within the BPG.

Revised guideline supplements will include recommendations and their literature references into one table. This process can be adopted within the guideline development process.

Recommendation: Training of panel members

a) Develop a manual for BPG development panels which provides guidance on the process of evidence appraisal to promote consistency with all panel members. The manual will outline expectations of documentation of consensus process as well as other detail of guideline development.
b) The process of BPG recommendation development can be enhanced to increase the understanding of recommendation development with an emphasis on, not questioning the evidence, but interpreting the evidence.

The guideline development panels are provided with information and guidance required to formulate recommendations. A launch is scheduled for each BPG development panel where education involves AGREE training, articles on wording of and how to write recommendations, levels of evidence, status of evidence and meta analysis as well as group process and organization of panel work. Consistency of BPG development panel training can be aided with the development and use of a Training Manual, which will outline the goals and objectives. Within the manual an emphasis can be placed on interpreting the evidence.

Recommendation: Formulating the recommendations

a) Consider using panel grades for recommendations that reflect the levels of evidence but use terminology such as “strongly recommend”, “should do” and “could do”. Terminology used should be defined in the guideline.
b) Strength of recommendation needs to be linked to the quality of the evidence by incorporating “must do” and “should do” terminology in the wording of the recommendation
c) Link the levels of evidence with the grade of the recommendations.

Strength of recommendations allows clinicians a clearer set of directions when levels of evidence are not congruent with clinical meaning or importance or when recommendation may not be feasible to implement.

Actionable messages in the recommendations are more in line with knowledge transfer field. SIGN uses practice points when there is no quantified evidence. The tone of the recommendation may be of more value to incorporate the evidence as the core values of nursing and their consequences. It also emphasizes the values the panel brings to the decision process.

Wording of the recommendations may incorporate value based judgments during discussion and debate. It is therefore necessary for BPG development panel members to identify their personal values within these discussions then assess recommendations to determine whether the evidence based recommendations reflect their individual values.

Recommendation: Linking needs of RNAO with nursing curriculum

a) Link the need for evidence review to the requirements of nursing curriculum.
b) Build in additional time for the evidence appraisers to present the evidence summary to the BPG development panel.

Some graduate nursing programs have components/ requirements that include skill development in critical appraisal of evidence. This is an opportunity to link the required work of the RNAO with nursing programs and curriculum. McMaster has a placement in research. University of Ottawa has a research course in the first year of PhD nursing program. York University offers a research practicum. There is an opportunity to link guideline development with the requirements for student learning. This will provide ongoing capacity development opportunities for the profession. Upon completion of the evidence summaries, this information could be integrated into the BPG development panel discussions.

Recommendation: Develop a glossary of terms on the wording used for BPG recommendations (for BPG development panels to use).

There is currently no glossary for recommendation wording in the RNAO documentation.

Recommendation: Develop a section specifically for researchers and examine whether this needs to be focused specifically on nursing

A section for researchers will provide information on research gaps identified by the RNAO. It was identified that this section will also be used by clinicians and administrators.

Recommendation: Consider inclusion of health economics into literature searches, possibly as part of scope.

A search of the economic literature associated with the topic can be part of the evidence review with a critical analysis. This information can then be outlined in the BPG, which may spur additional research in the area.

Recommendation: Develop a new section within the BPGs, separate from the recommendations entitled “practice resource implications”.

There is inconsistency in the inclusion of economic factors in guidelines developed around the world. RNAO could consider incorporating economic literature on a case-by-case basis depending on availability of evidence. These recommendations could also be placed in the organization/policy recommendations section if a new section is not warranted.

Recommendation: Evaluate the training provided to panel members and consider training needs in recommendation development process.

Transparency of recommendations is not well documented. Documentation of the recommendation development process will provide evidence of group process of decision-making. There is currently no process for the incorporation of value statements to guide decision-making. Integration of value statements at the beginning of the panel work may be a process to facilitate group dynamics.

III Prioritized Recommendations

In March 2006 a report was developed outlining a list of recommendations from an expert panel. Feedback was elicited from participants and key stakeholders (See Appendix B) to prioritize the administrative, process and evidence recommendations, which are noted below. The numbers indicate people rating low, moderate or high priority.

ADMINISTRATIVE RECOMMENDATIONS	PRIORITY		
	Low	Moderate	High
Consider core expert membership for panels.		3	8
Adopt the current BPG review and revision process documentation tools; specifically, tool used by panel to formally arrive at consensus on the BPG recommendations.		4	5
Consider changing the process for guideline publication to allow for user determined access for the level of detail user wishes to access. E.g. user may determine accessing a summary of recommendations, detailed evidence summaries as well as abstracts of references linked to literature databases. Such a change in process is recommended only as a pilot prior to full adoption.	3	4	4
Research Gaps: Develop a marketing plan to publicize research gaps inventory and develop relationships with academic institutions for addressing the gaps. One strategy may be the development of a newsletter as a method of dissemination of the research gaps. Determine best approach to academic institutions to develop relationship and collaborations in addressing research gaps.	3	3	3
Place Appraisal of Guidelines Research and Evaluation (AGREE) Instrument results on RNAO website.	6	6	
PROCESS RECOMMENDATIONS	**Low**	**Moderate**	**High**
Consider the merits of incorporating techniques such as: Call for reviewers (this can be facilitated as soon as the scope is developed and stakeholders can be invited to participate at a future date). Accessing consumer groups.	1	4	5

Placing drafts on website with a feedback questionnaire. RNAO is committed to transparency by placing information on the website.			
Focus groups to evaluate the preferred format of BPGs for future publication formats.	3	2	2
EVIDENCE RECOMMENDATIONS			
Use explicit criteria of evidence admissibility.		2	9
Complete a critical appraisal of the evidence appraisal tools currently in use and consider using study design specific tools for assessing the literature. This will provide for consistency of application.		3	7
Training of panel members: Develop a manual for BPG development panels, which provides guidance on the process of evidence appraisal to promote consistency with all panel members. The manual will outline expectations of documentation of consensus process as well as other detail of guideline development. The process of BPG recommendation development can be enhanced to increase the understanding of recommendation development with an emphasis on, not questioning the evidence, but interpreting the evidence. Evaluate the training provided to panel members and consider training needs in recommendation development process.		3	7
Linking the needs of RNAO with nursing curriculum: Build in additional time for the evidence appraisers to present the evidence summary to the BPG development panel. Link the need for evidence review to the requirements of nursing curriculum.	1	2	6
Develop a glossary of terms on the wording used for BPG recommendations (for BPG development panels to use).	2	3	6
Formulating the recommendations: The RNAO to consider the merits of using levels of evidence and grades of evidence. All panels should develop recommendations based on the evidence.	1	2	6
Consider a summary page that incorporates the recommendations and the references in one table within the BPG.	2	5	3
Develop a new section within the BPGs, separate from the recommendations entitled “practice resource implications”.	1	5	3
Consider inclusion of health economics into literature searches, possibly as part of scope.	2	6	1

Appendix A

Nursing Best Practice Guidelines Program
Guideline Development Methodology Review

Terms of Reference

Purpose

Ensure the RNAO guideline development methodology is rigourous, with the highest standards based on best practices and allows the unique contribution of nursing knowledge to best practice guideline development.

Objectives

1. To conduct a comprehensive review of the current RNAO guideline development methodology for guidelines (will be done prior to panel workshop).
2. Compare and analyze guideline development methodologies to identify best practices in methodologies. To identify unique strengths of the RNAO guideline methodology. Make recommendations for update and revision to RNAO guideline development methodology.
3. Analyze the quality of the development of theory and qualitatively driven guideline e.g. client centered guideline versus an empirically driven guidelines e.g. prevention of pressure ulcer guideline.

Deliverables

1. Report with discussion of the strengths and areas of improvement for the RNAO guideline development methodology. Report will include recommendations on improving the guideline development methodology.
2. Revised RNAO guideline development methodology manual.

Timeline

Report with recommendations by March 31, 2006.

Revised Guideline Development Methodology – by June 30th, 2006.

Chairs

Dr. Ian Graham and Tazim Virani

Resources

Funding available for 1 in-person meeting (8-9 people travel and accommodations) and 2 teleconferences (for international members – use teleconference)
Honorarium
Literature searches
Courier/mailing

Appendix B

Guideline Development Review Team Members

List of attendees to review meeting on March 10, 2006 at the RNAO, Toronto

Tazim Virani, RNAO, (Co-Chair)
Dr. Ian Graham, University of Ottawa, (Co-Chair)
Beverley Tezak, RNAO (Recorder)
Margaret Aliharan, University Health Network
Dawn Kingston, McMaster University
Stephanie Lappan-Gracon, RNAO
Heather McConnell, RNAO
Dr. Valerie Palda, Guideline Advisory Committee
Tim Pauley, West Park Health Care
Dr. Beryl Pilkington, York University
Karen Ray, Saint Elizabeth Health Care
Tracey Skov, RNAO
Melanie Stansfield, Niagara Health System

Participants providing written feedback

Dr. Margaret Harrison, Queen's University, Ottawa Hospital
Dr. Jo Logan, University of Ottawa
Dr. Melissa Brouwers, McMaster University, Hamilton Regional Cancer Centre
Dr. George Browman, McMaster University, Hamilton Regional Cancer Centre
Dr. Donna Ciliska, McMaster University
Dr. Jane Underwood, McMaster University

Appendix C

Comparison of BPG Development Methodology

The following pages are tables formatting

Registered Nurses' Association of Ontario
Nursing Best Practice Guidelines Program

Comparison of BPG Development Methodologies, February 2006[3]

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
Identification/ Selection of Topic	**Topic identification** is derived from focus groups, defined priority for nursing practice, website submissions of proposed topic by interested groups or individuals, through a contact us form, and partnerships with formal associations (Heart & Stroke). Additional topics may be from Ministry of Health Long Term Care (**MoHLTC**) in Ontario reform priorities such as mental health, gerontology, home health care, emergency care, and primary health care. Topics are based on health risks/benefits, variations in practices, quality of evidence available, population	Topic is chosen from bodies not involved in the guideline development or its oversight (Dept of Health & the Welsh Assembly Government - Health Authority). Topics are referred to the advisory committee selecting the topic by clinical specialties (urgent topics), groups that monitor new clinical ideas &/or approaches, by individual patients, patient groups, professionals, professional groups, National Health Service (**NHS**) - UK, industry & other organizations. The advisory committee considers the topic using a list of criteria/questions: strategic alignment with	Topic chosen on the basis of burden of disease (to reduce mortality or morbidity), existence of variation in practice, potential to improve outcome, iatrogenic diseases or interventions carrying significant risks, clinical priority areas (CVD & general medicine, mental health & learning disabilities, primary care, surgery, women's & children's health) or perceived need by network of relevant stakeholders. May be posed by any individual or group. Once topic meets selection criteria they are accepted into guideline development programme by SIGN	The topic is clinical important & affect large number of people based on the burden of illness, is complex to initiate debate, there is evidence of variation of care, no relevant guideline is available, evidence available to support guideline development, recommendations will be acceptable to users, implementation is feasible. Suitability screen is used to establish how successful the development of a guideline will be to establish significant positive changes in outcomes are likely. Examines whether leader is available, change is

[3] Two additional guideline development methodologies were reviewed. Permission to include the assessment of these two methodologies was not received for the purposes of inclusion.

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	health burdens, & based on patterns in practices. Topics may be brought forward from past BPG panel members. Receipt of topics though website, email, phone, in-person. An inventory is kept & reviewed annually. Internal topic identification based on needs identified through task forces, government reports, building on scope of previous guidelines. When examining a topic it is reviewed to ensure that the scope of the topic is not covered by the degree for nursing practice issues. **Topic selection** is based on patient need, which nurses identify as potential area for improvement in care, from health concerns, if the topic is relevant and important as identified by	priorities of government, significant need in the population, significantly improve mortality/quality of life, significantly reduce impact on financial & other resources, evidence availability, variation in practice across health sector. Topic is assigned to one of the National Collaborating Centers (**NCC)** to develop the scope of the topic.	Council who then prioritizes using a suitability screen tool. Advisory group overseeing progress of subgroup development team. One meeting per year dedicated to prioritization of topics. Algorithm for process provided. Has an application procedure & if topic is selected a preliminary literature search is carried out, once judged as broadly scoped submitted to SIGN Council. Links with NICE to prevent duplication of efforts.	measurable, availability of existing guideline, brief literature search findings, effort required & value of that effort, & reasonable likelihood of implementable change.

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	MoHLTC and the nursing profession, if the topic is within the scope of nursing practice, is within a wide range of topics, based on perceived needs, encompasses the continuum of care in a range of practice settings, and is based on the evidence in the literature Consideration is provided to preventing duplication of efforts and guidelines in existence are reviewed using validated tools. An internal review is completed prior to recommendation of topics to executive and MOHLTC. Funder (government) endorses topic before final selection.			
Determining Scope Defining Key / Clinical Questions	Scope must be confined to key clinical questions, population, setting, interventions & be feasible within an 8 to 12 month period of time. Use of modified PICO	Questions vary depending on scope but must be clear, focused & closely define the boundaries of the topic. Questions guide literature review & formulation of	Key questions must address the population concerned, the intervention (or diagnostic test, etc.) under investigation, the type of control used, & the outcome measures used to	Assesses condition/situation at issue, intended care providers, groups of consumers guideline relevant for, description of consumers not covered by guidelines,

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	methodology (population, intervention, comparison, outcome). Expert panel defines the scope at their first meeting facilitated by RNAO coordinator/ An information specialist is available for clinical questions. Identifies "what is the specific scope of the guideline and what is not included" – based on nursing practice. Part of the scope includes identification of research gaps, evaluation and monitoring of guideline, strategies for implementation and a host of tools to support implementation Questions are clear & focused on care providers, are broad based for inclusion of RNs and RPN nursing practice. Questions are limited to 3 – 5 per guideline. It is acknowledge that	recommendations. The Guideline Development Group (**GDG**) determine number of questions, selection of questions from the scope, formulating & structuring clinical questions & examine questions about intervention, diagnosis, prognosis, & service-delivery guidance. NICE use of PICO for formulating research questions.	measure the effectiveness of the intervention.	type of setting in which guideline will be used, specific interventions to be critiqued for purposes for guideline. Questions support the guideline structure; focus on evidence relevant to consumers & clinicians, making research more efficient. Use PECOT as guide for question development (patients, exposure, comparison, outcome, & time). Provides tables for summarizing the questions used for critical appraisal for different study designs (cross-sectional, cohort, harm/causatory benefit, cohort case control & RCTs).

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	effective health care depends on a coordinated interdisciplinary approach incorporating ongoing communication between health professions. Clinical questions are in 3 areas clinical, educational, & organization / policy			
Work plan development	"12 easy steps" is a summary of the work plan with dates and times outlined for each guideline. The work plan is developed with facilitation expertise from RNAO BPG Team, which includes terms of reference for the panel. An internal budget is developed and monitored for each guideline. The panel mandate document includes the overall project objectives, scope, guiding principles, primary and secondary stakeholders, project structure with roles,	Includes information on specific methods, timelines & costing for each guideline. An internal document which becomes the formal agreement. Information in the work plan include: membership of the GDG, identification of evidence (existing guidelines/ Health Technology Advancement (**HTA**) review, evidence identification & synthesis, areas lacking evidence, economic considerations), approach to assessing clinical & cost effectiveness, key priorities for implementation (5 – 10), stakeholder		

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	responsibility & accountabilities, approach and plan for guideline development with specific deliverable and timelines. Key milestones are clearly demarked. For example there is a full day meeting at the onset titled "Guideline Development Launch", Draft stakeholder review celebration, Guideline completion celebration, and Publication celebration.	involvement, writing of the guideline, review processes, project management (including Gantt chart), costing & timelines. Instructions for completing the work plan are provided with a template.		
Recruitment of Panel Members/ Selection of Panel Members	Volunteer panel member nominees are provided through vast infrastructure of RNAO & other networks. Individuals can nominate themselves. A short list is developed by the BPG team based on expertise, geographic representation, current roles & expertise/discipline. The members are invited to submit their CVs, intent to	Draft scope requires consultation with clinical experts & patients & guides NCCs to define expertise & experience required within GDG. The NCC (7 of them – one is for nursing & supportive care) recruit a GDG. However, NICE remains involved by providing consultation, direction & approval of drafts at	Panel represented by relevant physician groups, patients, other HC providers as appropriate. SIGN Executive discusses composition with topic proposer, Specialty group, & SIGN Council. Development groups generally have 15 – 25 members, ensuring geographic, organization, specialties representation	Team varies but incorporates diverse interests.

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	participate form & a letter of employer support. Those most appropriate for the topic are invited to participate on the panel. A team leader is pre-identified by the BPG team from within the group that agrees to be panel members. The process of identifying & selecting team leaders & panels is convened prior to panel selection. The steps include contacting them, providing panel mandate, invitation to a teleconference to discuss panel requirement, the submission of the 3 items identified above. Once reviewed confirmation of participation on the panel is done. Each panel members is made aware of expectations of active participation and mandatory attendance to all meetings.	various stages. Others involved, however are NICE, Patient Involvement Unit (**PUI**), Guideline Review Panels, Stakeholders, & the Citizen's Council (meets 2X yearly to advise NICE & produces a public report – social-value judgments). 10-12 members plus technical team are recruited for the panel with expertise in reviewing evidence, clinical & cost-effectiveness, integrating clinical understanding & taking into account patient views. All members are asked to declare personal interests & conflict of interest.	with focused attention to psychology of group dynamics recognizing impact of hierarchy. Chairperson is aware of hierarchies with skills in supporting full participation by all group members. Uses algorithms for process All members complete a declaration of interests, both personal & non-personal.	

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	Team leader is chosen for excellence in team leading & communication skills. RNAO program coordinator supplements facilitation expertise. Technical group is hired to do a quality appraisal of data extraction. Additional elements considered for identifying include insuring panel members have long-term commitment to the topic/issue & are considered a champion in the field. All members are asked to declare conflict of interest and confidentiality in writing. Panel membership includes 12 – 14 members to represent the domains of nursing practice (practice, education & organization & policy), regional representation (urban and rural), exceptional experts from external to Ontario			

Criteria	RNAO Registered Nurses' Association of Ontario	NICE National Institute for Clinical Excellence	SIGN Scottish Inter-collegiate Guidelines Group	NZGG New Zealand Guideline Group
	will be recruited when necessary. Snow balling technique, published identified experts, known experts, may also become members of panel. Composition Is primarily in the domains of nursing with key interdisciplinary representation based on the topic area Travel and other related expenses are covered/reimbursed			
Consumer Involvement	Individuals, patient advocacy groups & patient/carer focus groups are used to review draft guidelines. Feedback is elicited from consumers, families, and patient advocacy groups through consumer groups for guidelines and consumer fact sheets.	A formal Patient Involvement Unit is part of NICE. Their main role is to ensure patient/carer involvement & ensure the views of patients & carers are integrated in the guideline process at all stages, With 2 lay members with experience and/or knowledge of issue Two other resources available through HTA. a) Eliciting public preferences for healthcare:	Include both patients & carers. Important to reflect their needs, concerns, & perspectives. Are involved in 3 broad ways: 1) identifying patients & carers views, (target organizations advocating for patients/carers views eliciting their input 4 months prior to 1st meeting of development group) 2) recruitment to guideline development group (2 patient reps 3) consultation process (upon completion of a draft	A minimum of 2 consumer representatives nominated by an established health consumer group & their representatives. Appendix 1 is Guidelines for the involvement of consumers in guideline development & provides guiding principles, objectives & benefits of involving consumers, process, national action plan & key points for involving consumers.

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		a systematic review of techniques b) Involving consumers in research & development agenda setting for the NHS: developing an evidence-based approach.	guideline& peer review stage). Defines role of patient/carer representative.	
Role of Panel Members	Defines scope, clinical questions, critically appraises existing guidelines, reviews summary of evidence document (AGREE review) as well as short list of key documents that are selected by the panel from previously developed list. Panel members supplement with additional grey literature. Smaller sub groups review specific areas of the guideline usually by clinical question. Consensus is then done with whole panel. Recommendations are developed using consensus process but	Leader guides the group in terms of task (developing the guideline) & process (how the group works) ensuring all members work in the spirit of collaboration & balanced contribution of all members. Panel members are identified through nomination or expression of interest & are interviewed prior to appointment. Professional members represent perspective of health care workers involved in the care of patients affect by the topic. Technical experts are lead systematic reviewer, information specialist, health economist, project	Chair skilled in facilitation, SIGN programme manager is assigned to each group, who may be the co-chair. Group members are required to give full commitment to group & the tasks involved in & indicating areas of concern. Groups meet every two months & are supported administratively & financially the Executive.	

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	based on evidence or expert opinion where evidence is lacking. Panel also identifies research gaps, evaluation indicators & implementation direction. Panel members do provide support in writing of the draft guideline.	manager. Roles include defining clinical questions, including stakeholder questions, identifies, assesses & synthesizes evidence, recommendations based on evidence, expert consensus where evidence is lacking, reviews guideline drafts. Members are paid for travel & expenses.		
Composition & Training	A panel "Launch" includes AGREE training, discussions on facilitated and using smaller working groups, articles on wording of & how to write recommendation, levels of evidence, status of evidence, meta analysis. E-Learning on Critical Appraisal of Research is available for all panel members. A copy of a published RNAO guideline is provided as a template.	NCC has responsibility for running the GDG. Leader is provided support & training re NICE GD process & group processes with a focus on Task & Process. Training is provided based on individual & group members needs. PIU offers training to all patient & carer members. Team is multidisciplinary, reflects ethnicity & includes group leader, professional members, patients/careers	SIGN Council approves group composition Training seminars on - systematic review of the literature - critical appraisal (Introductory & Advanced) - regular presentations on SIGN methodology Has developed a multi-professional continuing professional development toolkit.	Team members include clinicians, other health professionals, consumer group representatives, experts in research methods, health economists, public health specialists, professional group representatives (Colleges) regulatory agency representatives. All consumers should attend a consumers' guideline training course.

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	Ongoing assistance and support with motivating group, group process is provided by coordinator. Just in time coaching is available for recommendation formulation	members & technical experts. Patient/carer - 2 lay members for each DGD		
Guideline Adaptation	Existing English written guidelines published within the last five years, are evidenced based, and are available for full retrieval are identified, are short listed and appraised using the AGREE tool. Components & recommendations are evaluated to potentially build on them. Once gaps are identified a focused literature search & critical appraisal is completed. A decision making process is followed to endorse, modify, accept the recommendations or supplement the gap with an additional guideline if appropriate.			Local adaptation addresses ownership & recognition of clinical issue to be addressed (the gap) by obtaining backing from respected opinion leaders (involvement of local clinical staff), organizational structures, & contextual issues, taking into account specific local circumstances acknowledging involvement of local clinical staff. Local step shown to increase uptake of local protocols by improving ownership, may take place as part of a quality improvement program & is thought to be the key to an effective & credible implementation strategy.

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	Adaptation is placed in the Canadian health care system context with emphasis on maintaining the scope of the issue. Process for permissions to use content is outlined			Adaptation of previously developed guidelines are assessed using AGREE instrument, analyzing scope & applicability, obtain permission for use of contents, assesses gaps & sources of evidence, assess quality of recommendations, re-run search strategy & redesign implantation strategies for local circumstances. Recommends 2 meetings for completion of the review. Algorithm of process provided.
Identifying the Evidence: Type of Evidence Admissible Search Strategy	Admissible evidence: Accept RCTs, meta analysis, systematic reviews, expert opinion, evidence based grey literature, qualitative research questions, existing guidelines, unpublished research studies client experiences but not part of the formal process. Only English evidence that is local, national and international,	A preliminary literature search is completed to identify clinical need & clinical management of the condition, identifies systematic reviews & guidelines relevant to the topic & the volume of literature on the topic signifying workload requirements. Evidence is from 2 main sources: electronic databases by technical	Use of systematic reviews. Literature is identified according to an explicit search strategy, selected according to defined inclusion & exclusion criteria, & evaluated against consistent methodological standards. Separate search on patient issues in advance of 1st meeting, both qualitative & quantitative evidence. Uses standard search filters: guideline; meta-	Internal data collection is performed first i.e. patient treatment details, track outcomes, adverse effects, & resource utilization, demographic characteristics of a patient population, current clinical outcomes & process of care used including interventions. Includes 2 searches a) quick look search as part of suitability screen

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	Research – hierarchy with systematic reviews of RCTs at the high end. Other research design methodologies are permitted if RCTs are not available. Qualitative research is used to address appropriate questions. Search strategy – a preliminary search is conducted of existing guidelines, systematic reviews & meta-analysis using a preliminary set of terminology developed by the BPG team. Data bases used are CINAHL. EMBASE, Medline, Cochrane Collaborative. Also include hand searches, reference lists, & direct contact with researchers. Structured internet search, including 52 sites, are done where systematic reviews, meta analysis, and guidelines	staff of NCC & stakeholder organizations invited to submit relevant information. Databases searching involves 3 stages: Stage 1 – identification of systematic reviews & guidelines Stage 2 – identification of RCTs on standard databases only (EMBASE, Medline, Cochrane Library & CINAHL) Stage 3 – supplementation of primary research evidence identified in stage 2 to include subject-specific databases & wider sources if these are considered important by the GDG. Date parameters are set by GDG to account for specificity & sensitivity.	analyses & systematic reviews; randomized controlled trials; observational studies; diagnostic studies; economic studies; & qualitative studies Period of search will be within 10 -15 year limit As a minimum Cochrane Library, EMBASE, Medline, Internet, specific sources on topic & health economic literature & meet specific methodological criteria. Initial sift by SIGN executive staff normally by individual carried out the search, final sift carried out by 1 or 2 individuals from GDG. Only after this process will papers be acquired. Allows for more weight to be given to recommendations supported by good quality observational studies where RCTs are not available for practical or ethical reasons.	b) more thorough comprehensive search strategy to incorporate a range of sources including several relevant electronic databases, abstracts of relevant scientific meetings, printed bibliographies/ reference lists, which includes international evidence. Databases for searches include: a) electronic including Medline, Cochrane Library, EMBASE, CINAHL, PsycINFO, ERIC, b) internet (many sites provided) c) hand searching d) reference lists e) direct contact with pharmaceutical companies/researchers Provides information on search strategies.

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	are found (Cochrane Collaborative, DARE, Health Technology Assessment, TRIP) A second & more in-depth search of the literature is conducted after the scope is defined & panel provides input in the terminology & clinical questions. An information specialist conducts the searches while panel facilitator & team leader conduct review of abstracts & identify relevant literature to review/summarize.			
Process of Evidence Review / Evaluating the Evidence Quality Appraisal Evidence Summary	Panel members assess existing guidelines using the AGREE tool. A nurse skilled in advanced research and critical appraisal is assigned one topic at a time to review abstracts, summarize the evidence using a pre-established evidence summary template. Appraisal of the	Technical staff of NCC perform electronic databases. Updated searches are done 6-8 weeks before 1st consultation. Cross reference of stakeholder submissions are completed. The process includes 4 steps: 1) selecting studies of	Methodology used in each study is assessed to ensure validity, with a focus on the study design results reported, & conclusions drawn. Utilizes MERGE (Method for Evaluating Research & Guideline Evidence) checklists for a balance between methodological rigor & practicality of use. Each study is evaluated by	Includes information on qualitative research (phenomenology, grounded theory & ethnographic studies) & inclusion in literature review, viewed as complementary to quantitative research. Where information is not available from a systematic search, lower levels of

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	literature is conducted as part of the summary & methodological flaws & inappropriate conclusions by the authors are flagged. Steps include: Evidence review; Reading of entire articles; Structured critical appraisal process; Document in template Structure appraisal process includes two forms a) quality assessment primary studies which includes criterion, selection bias, study design, confounders, blinding, data collection methods, withdrawal and dropouts, and comments. b) Data extraction which includes citation, study type, sample,	relevance - is done by information scientist or reviewer carrying out the search, relevant articles are retrieved in hard copy, periodic double sifting is done to eliminate bias, 2) assessing the quality of the studies - an algorithm is used to guide process, studies are provided a grade of ++, +, or -, grey literature & unpublished work follow same process of assessment, other guidelines are assessed using AGREE instrument 3) synthesizing the results - use of a standard template for evidence table, sensitivity analysis for missing data & use of forest plots 4) grading the evidence – see below	2 group members independently with differences being discussed by whole group. SIGN introduced 'considered judgment' as a summary view of the total body of evidence with target parameters expected to be documented	published evidence & expert opinion may be included. Grading of evidence is a 2 tier process: first based on an (objective) assessment of the design & quality of each individual study (quality scores) & second on a judgment (more subjective) on consistency, relevance & applicability of body of evidence (graded recommendation)

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	intervention, measures, outcomes/results, limitations, and overall quality rating score All feedback is documented including minority opinions and rationale. Process is supported and coached by the facilitator and team leader.			
Levels of Evidence	Levels of evidence include Ia, Ib, IIa, IIb, III & IV. Some guidelines are based on qualitative research, theory and consensus and therefore do not follow level of evidence criteria.	Grading system includes 1++, 1+, 1-, 2++, 2+, 2-, 3 & 4. A scale for diagnostic studies includes levels IA, IB, II, III, & IV	Grading system includes 1++, 1+, 1-, 2++, 2+, 2-, 3 & 4	Quality scores of "+, neutral OR –" for each study with use of GATE (Generic Appraisal Tool for Epidemiology) appraisal tool & based on summary checklist
Incorporating health economics / balance sheets	This is not addressed in the guidelines	Health economist is a core member of the NCC technical team & should attend all GDG meetings. Helps to identify the clinical issues or questions for economic analysis, reviews economic literature &		Balance sheet is a formal itemization of costs & health benefits of a program or intervention. It is not a full economic evaluation as does not account for all economic costs or consumer

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		carries out or commissions cost-effectiveness analysis cost-utility analysis using QALYs. Aids GDG to consider economic consequences of recommendation in addition to clinical implications Links are made when appraisals are developed or being revised & vice versa for guidelines to ensure they are consistent & complementary. Also assesses resource impact & technology appraisal program into guideline development Appraisals focus on individual or groups of technologies such as new drugs, surgical procedures or medical devices & are linked during the scoping stage.		benefits, nor does it take into account changes over time. At times background decision analytic model (Markov model) is used for an illness with recurring health states. Use of an economic evaluation is costly & usually not necessary as funds may not be available to support it. May not include all indirect costs. Does not require a health economist, person can be drawn from development team who has the required analytical & statistical skills. Decision to include balance sheet based on whether it is worth doing, feasible, the move to define the task, construct a comprehensive spreadsheet analysis, & obtain peer review.

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Process for determining recommendations	Based on evidence, panel consensus & stakeholder feedback. Subgroups review the evidence appraised, consider the evidence, determine whether there is a basis for recommendations and where there is no basis – there is no recommendations. Practice recommendations with weak evidence and evidentiary issues are duly noted. The subgroup then develop draft recommendations on their assigned components and brought to the whole panel Evidence is debated and recommendations are developed based on evidence.	Collective decisions are made on clinical questions, agreeing on best evidence to answer the questions & to formulate recommendations. Focus groups are used to inform the decision making process. Formal consensus methods used are Delphi technique, nominal-group technique, consensus development conference, with all proceedings documented. Challenges & possible solutions to guideline development are provided. Recommendations are stand alone, action oriented, avoid directives, assigned a class, incorporate patient preferences & use should VS must. Recommendations are classed as A, B, C, D, D(GPP) – good practice point) & IP – recommendation from NICE Interventional	Are differentiated between those based on strong evidence & those based on weak evidence. Use of objective assessment of design & quality of each study & subjective judgment on consistency, clinical relevance & external validity to ensure is evidence-based & implementable. Grading of recommendation does not relate to the importance of the recommendation but to the strength of the supporting evidence (predictive power of the study designs), i.e. if the recommendation is implemented the predicted outcome will be achieved. Moving to incorporate qualitative methodologies to identify issues of concern to patients but remains an issue for further consideration. Grades of recommendations are A, B, C & D.	Body of evidence relating to the question(s) as a whole is assessed. Use term "considered judgment" form where issues of quantity/ consistency, applicability, & clinical impact. Use of considered judgment form provides a summary statement based on synthesis of entire body of evidence with quality scores of evidence recorded. Key elements include volume of evidence, applicability & generalizability, consistency, clinical impact, other factors, evidence statement, & recommendation. The grade of the recommendation is based on: design & quality of individual studies that answer the question posed; quantity, consistency, applicability & clinical impact of body of evidence; & consensus of

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		Procedures guideline. For diagnostic tests the classification is A(DS), B(DS), C(DS), & D(DS). Recommendations are prioritized based on implementation priorities & criteria - high clinical impact (patient outcomes), high impact on reducing variation, more efficient use of NHS resources & patient reaches points on critical pathway quicker.	Recommended best practices are provided with a boxed checkmark.	the GD team. Grading of recommendation A (good evidence), B (fair evidence), C (expert opinion only), & I (insufficient evidence). Recommendations advise a course of action, followed by an indication of the strength of the recommendation.
Stakeholder Review	Stakeholders are identified as the panel is being developed. Key interest groups are included for identification of stakeholders. Draft guideline is distributed with a questionnaire and responses are collated with the feedback. The panel meets to review the feedback; response to feedback is documented on an action plan. The action plan is used to guide the revisions to the	7 Guideline Review Panels – assigned to review guidelines developed by one of the NCCs established by NICE. Stakeholder Interest Registration Form is used. Stakeholder organizations representing healthcare professionals, NHS, patients & carers, & companies with topic interest can register to be a stakeholder. They are involved at various stages: scope, nomination of members to the guideline	Pilot testing before publication, at the local level. Feedback to discuss draft recommendations is elicited through: a) national open meeting with 150 – 300 attendees, b) posted on website for a limited period of time, and c) circulated to directors of public health & health service organizations at a later stage (more as a courtesy). Peer Review by independent expert	Draft of guideline sent to all stakeholders & give 4 – 6 weeks to provide comments.

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	draft document. Options for providing feedback are in hard copy, electronic, phone, e-mail, what ever is easiest for reviewer. Ad hoc focus groups are also used depending on the topic. Stakeholder feedback is requested from: national and provincial associations, client and family representatives, nurses with a range of expertise in topic area, nurses not known for expertise in topic area, nurses working along the continuum of health based on topic, interdisciplinary team, nurse educators / professors, RNAO interest / specialty groups, government stakeholders, and when appropriate international reviewers.	development panel, development phase (questions, evidence), validation phase (2 phases with 2 drafts), dissemination phase. Registration is on-line however, NCC goes to great lengths to invite/inform potential stakeholders to register – press release, website, calling previous registrants, consumer groups, etc. Initial meeting advise stakeholders of their role & first consultation is done on scope at the same time. 2 consultations are included in the process a) first consultation – draft versions available on website, sent to expert reviewers, guideline review panels (**GRP**) send comments to chair of GRP b) second consultation – 3 documents: full guideline, NICE guideline & information for public are	referees who comment on the comprehensiveness & accuracy of interpretations of evidence, physicians & practitioners working in primary care review in addition to lay reviewers for patient's perspective. SIGN editorial group do a final review prior to publication to minimize bias. Development members asked to formally approve final guideline	

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		available on website & limited to whether initial comments have been addressed & not to raise new issues. Quick reference guide is not subject to consultation. GDG 'reviewer' is assigned to ensure consistency with all documents with NCC having final responsibility prior to final version.		
Components of Guidelines	Guideline includes: a) summary of recommendations, b) responsibility for guideline development c) purpose & scope d) guideline development process e) definition of terms f) background context g) interpretation of evidence h) practice recommendations i) education recommendations j) organizational & policy recommendations k) evaluation & monitoring	Principles of guideline are provided (language & style, bulleted lists, tables & figures, abbreviations, & algorithms) Guideline structure include: a) Summary of recommendations b) Introduction (responsibility & support for guideline development, funding, GDG membership, patient & carer involvement , epidemiological data, experience of those receiving care, or service use, outcomes, clinical issues, aim & scope of the	Introduction, clear statement of the question/issue, explanation of the treatment options, summary of conclusions drawn from evidence, recommendations, brief discussion of practical points, use of 'good practice points' when no evidence is available. Guideline should also include key points for audit, suggested outcome measures, recommendations for further research, information for patients/carers in addition	Manual's appendix 5 provides template for completed guidelines, title page, table of contents, scope & purpose of the guideline, about the guideline, introduction, summary, clinical questions, balance sheet, implementation, evidence tables, algorithms, references, appendices & glossary. Summary guideline is also developed, which has key points & recommendations, algorithms, endorsements, team members & process,

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	l) process for update/review of guidelines m) references n) bibliography o) appendices Supplements include: a) Health education fact sheet b) Evaluation tools c) Implementation tools	guideline) c) Methods (literature-search strategy, sifting & reviewing the literature, synthesizing the evidence, economic analysis, assigning levels to the evidence, areas without evidence & consensus methodology, forming recommendation, consultation, related guidance: details of related NICE technology appraisals or clinical guidelines that are published in preparation) d) Guideline Recommendations (evidence statements, recommendations, audit criteria, schedules review of the guideline, recommendations for research) e) Referenced f) Clinical questions g) Appendices (may include evidence tables, details of search strategies)	to brief details of systematic review. Each guideline is published with a Quick Reference Guide (available on the back cover of the guideline as well as a separate leaflet). Also includes 'information for patients & carers' section.	brief outline of the grading system used & information on where to get access to the full guideline. Leaflet / information sheet is developed based on the guideline.

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		4 types of tools are developed: 1. Full guideline 2. Short form 3. Quick reference guide 4. Information for the public		
Dissemination of Guidelines	All guidelines are published free of charge, which are available electronically for downloading. Hard copies of guidelines are available on a cost recovery basis. Yearly publication of guidelines also available in CD format for purchase. There is a broad reach to nursing. Partnerships are used to ensure accessibility of all guidelines. Structured dissemination plan is developed for each guideline that includes key stakeholders & associations. All guidelines have a registered ISBN number. All nursing libraries are provided a hard copy of		Published electronically on website. Distributed free of charge through NHS but recommend active educational intervention as dissemination of choice for increased effectiveness.	Steps & options for dissemination & implementation are developed by the GD team. This can be done at 3 levels: the individual level, the system level, & the policy level. Provides table of consistently effective, variably effective, little or no effect & unknown effectiveness for guideline implementation. Steps involved in dissemination & implementation are: develop statement of purpose of strategy, individual involved in project, identify target audiences, analyze current gaps, distil key messages, consider barriers, decide appropriate strategies for local setting, consider cost implications, & evaluate success of implementation.

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	each guideline. Links have been developed with National Guideline Clearinghouse & Sigma Theta Tau.			Pre-testing of the guideline in a variety of settings in both primary & secondary care.
Time Frames for BPG development	Within 8 – 10 months as per "12 step plan"	Full guideline developed within 12 – 18 months. 6 – 12 months for an update	30 months – see Fifty Easy Steps document. Meetings are held every 2 months, with subgroup meetings also scheduled, table outlining time & expected task completion is provided.	Usually 3 – 5 years & when new evidence is available. Meetings are scheduled for full days & 3 – 4 meetings are required to develop a guideline.
Knowledge Uptake of Guidelines / Implementation	Various tools have been developed and include: a) Robust marketing plan b) Website c) Guideline Implementation Toolkit d) Educators' Resource e) Establishment of an active set of nurses who champion the BPGs through the Best Practice Champions' Network f) 12 week full time fellowships provided to individuals to gain knowledge and skills		Provide an opportunity for practitioners to improve shared clinical decision-making, increase team working, expand their evidence-based knowledge & reduce variation in practice. Identifies barriers to implementation as structural factors, organizational factors, peer group, individual factors, & professional-patient interaction.	

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	in knowledge transfer and guideline implementation g) Annual BPG Summer Institute – develop capacity for guideline implementation h) Biennial International BPG Conference i) Several PhD fellowships ($25,000 per fellowship for up to 3 years) – research on knowledge transfer and impact with BPGs j) Projects are funded to integrate BPGs in educational curriculum. k) Partnerships with academics and practitioners to form communities of practice – formally, informally, funded and unfounded. l) Advocating for resources in underserviced areas such as long-term care		Implementation is a local responsibility. Clinical Governance Support Teams in NHS Boards have audit & clinical effectiveness facilitators with resources to help local implementation, which encourages team work / cooperation within primary & secondary care. Has a guideline distribution policy. Recognizes the difficulties re need for personal, organizational or cultural change. Provides implementation strategies that are both variable effective & largely effective in addition to table on methods, effectiveness & local considerations. Provides 6 "practical steps towards guideline implementation"	

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	m) Supporting robust plan with specified resources for Long term care – defined framework, strategies and deliverables to implement and evaluate BPGs in this sector n) Partnerships with multiple stakeholders to link websites, embed evidence in systems, policy, technology, etc. o) Public communications campaign by education, raising awareness, correcting public misconceptions – using print, TV, and other media. p) Distribution of materials – through partnerships, ads, communication networks, etc.			
Evaluation of Uptake / Impact	Nursing Best Practice Research Unit established – a partnership between University of Ottawa and			Guideline is assessed using the AGREE instrument impact is assessed from perspective

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	RNAO: A multitude of research studies are underway including a five year program of study funded by CHSRF. Additional research studies are with funding from the Ontario Ministry of Health to develop and test evaluation measures. Studies involving Best Practice Spotlight Organization, PhD fellows. Partnership with the Canadian Nursing Foundation has been established to fund 3 BPG related studies per year across Canada.			of a) has gap between current & ideal care been assessed? b) has dissemination been effective i.e. did guideline reach right people & are they familiar with it?, c) has gap between current & best practice narrowed?, and d) how has resource utilization changed?
Research Gaps	Each of the BPGs has a section identified with clear research gaps and priority areas for research conduct are identified. Inventory of research gaps from across all existing BPGs is maintained and available	Identification of areas where good evidence is lacking. A framework for formulating research recommendations & for selecting research recommendations is included in guideline. May focus on effectiveness, accuracy of test or clinical	Guidelines act as a stimulus for research by highlighting gaps in the evidence base. Each guideline contains a chapter or annex which makes recommendations for research.	

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	on the RNAO website. Other strategies are used to communicate research gaps to researchers and graduate students with view to reducing the research gap.	prediction rules, rate of harms or other events, patient's experience, patient defined outcomes, costs, & service delivery & organization.		
Updating Guidelines Review/Revision Monitoring auditing	To identify impact on current recommendations: a)Current awareness review is completed every 6 months b) Structured website searches are completed yearly "9 step for review" is followed for all guideline reviews. Every three years a review and revision of entire guideline is completed. Relevant feedback received over the preceding 3 years is incorporated. The scope of guideline is maintained for all reviews.	Guidelines review starts 4 years after publication date therefore reviewed guideline expected 5-6 years after previous version with responsibility resting with NCC. A rapid update assessment is done 2 years after publication. Process for updating a guideline follow those of development: scoping (including post publication comments), evidence review, development of guideline recommendations & consultations. Auditing include 5 – 10 criteria in each audit table & include 5 steps (mapping	Intent is a 'living' document with details of updates available on website. Although was 2 years they have changed the review to be as new evidence becomes available due to evidence being published at different rates. Comments received are provided to GDG for immediate response or for more detailed consideration. Process involves circulation to specialty subgroup & expert referees to: elicit feedback; report of impact of the guideline; note changes in the field; note new treatments available; and note improved or new evidence.	Some development panels are ongoing & meet regularly to consider if new evidence is available.

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		key priorities for implementation, drafting audit table, define audit criteria, define exceptions, & define terms for definitions) & prioritized (as with recommendations) on key priority for implementation. Compliance to criterion should be determined locally to determine subsequent improvement. Practical steps to developing audit criteria provided using what, who & when to guide process.	Once information is gathered specialty subgroup & Advisory Group determine need for review & prepare a review proposal for SIGN Council. Four outcomes are full review, updating the guideline, guideline achieved its purpose (no change) or no longer relevant & archived. Key points for audit are identified during development of guideline where process & outcome indicators are presented in the form of a minimum data set specific to the guideline topic. Audits then inform guideline reviews & further improve implementation of specific recommendations	
Research	Primary research conduct is not undertaken by RNAO at this time.			

References:

RNAO: Current Best Practice Guidelines currently available at www.rnao.org , Focus group, Internal documents.

NICE: Guideline Development Methods: Information for National Collaborating Centres and Guideline Developers. National Institute for Clinical Excellence. Obtained at www.nice.org.uk.

SIGN: SIGN 50: A Guideline Developer's Handbook. Scottish Intercollegiate Guidelines Network. (2001). Obtained at www.222.sign.ac.uk/guidelines/fulltext/50/index.html

NZGG: Handbook for the Preparation of Explicit Evidence Based Clinical Practice Guidelines. New Zealand Guidelines Group. Obtained at www.nzgg.org.nz

Appendix D

ANNOTATED BIBLIOGRAPHY

GUIDELINE DEVELOPMENT METHODOLOGY

Registered Nurses' Association of Ontario

February, 2006

Burgers, J., Grol, R. Klazinga, N., Makela, M. & Zaat, J. (2003). Towards evidence-based clinical practice: an international survey of 18 clinical practice programs. *International Journal for Quality in Health Care.* 15(1): 31-45.

This article describes a 32 item survey distributed to 18 international key informant and prominent guideline organizations in United States, Canada, Australia, New Zealand, & nine European Countries. Participants were asked to describe systematically the structures and working methods of guideline programs. There was 100% response for both the survey and follow up confirmation from participants. The respondents had "leading roles" in guideline development. All countries had one organization participating in the study while England, France and the United States each had two organizations.

Many of the respondents alluded to quality, decreased practice variation, research or evidence based practice as rationale for guideline development. The target users encompassed the multi-disciplinary team along the continuum of health including public health, primary, secondary and tertiary care with some organizations focusing on one or more levels. The scope of the guidelines was on screening, prevention, diagnosis, treatment and management, alone or in combination of these elements. The objectives for all participating organizations were on appropriate care with the additive of cost containment for seven organizations.

One benefit of this article is that there was international information elicited for organizations developing guidelines. There is a potential decrease in bias related to AGREE project countries being used as respondents. There was also a 100% response rate to both the survey and the validation procedure.

The limitations of the article is that they only used AGREE project countries and possibly missed relevant and vital information from other associations developing guidelines. Another limitation is the small number of targeted organizations. The authors provide all information in both summarized prose format and table format which resulted in duplicate information.

The authors conclude by identifying that pragmatic approaches are need for subjects not covered by exiting reviews. There is also the suggestion from another author Browman to establish a registry of clinical guidelines under development to prevent duplication of effort in the development of guidelines.

Schunemann, H., Best, D., Vist, G., & Oxman, A. for the GRADE Working Group. (2003). Letters, numbers, symbols and words: how to communicate grades of evidence and recommendations. *CMAJ*. 169(7):677-680.

The articles describes the advantages and disadvantages of using letters, numbers, symbols and words to represent grades of evidence and recommendations. There is currently lack of comparative studies in this area. There are currently three categories being used: letters (A, B, C, etc), numbers (I, II, III, etc.) and mixed letters and numbers (Ia, Ib, IIa, etc) resulting in practitioners often being puzzled by the message a grade conveys). Grading systems are not fulfilling their intended functions and to examine the topic in more detail formed a GRADE Working Group to come to agreement on a common, sensible approach to grading quality of evidence and strength of recommendation.

The search for comparative studies of alternative ways of representing ordered categories in any context, noting that there is no health care research that addressed directly or indirectly

ways to present grades. The authors identified their search encompassing: Medline and PsychLit databases for a period of 1966 to 2002; theoretical work and qualitative research; relevant texts, bibliographies and researchers; and contacted organizations responsible for popular grading schemes not related to health care.

One advantage of this article is the identification of issues related to using each of the identified categories (letters, numbers, or combination) and how context, environment, language and culture impact the use of grading quality of literature and recommendations. It also identifies that the number of categories should be limited to 7 based on Miller's work on humans' capacity to perceive differences. The article identifies that presentation should be distinguished between 2 basic concepts: the quality of evidence (the extent to which one can be confident that an estimate of effect is correct) and the strength of the recommendation (extent to which one can be confident that adherence to the recommendation will do more good than harm). The tables provide ease of comparative analysis between numbers, letters and variety of symbols such as circles, stars, thumbs, traffic lights and arrows.

Limitations of the article is that variations on various symbols, letters and numbers were provided to guide decision making but no clear recommendation is made. There is the hint of advocacy for use of numbers identified in the table. The authors identify that the GRADE Working Group has developed a system for grading evidence and recommendations and is evaluating its reliability and sensibility but was not provided in the article. The databases searched may have been expanded to ensure all relevant studies are included.

The final table outlines the criterion when assessing the category of grading schema to use and evaluates based on ease of comprehension, associations, succinct, literacy, language, verbalization, culture, number of levels clear, direction clear, limits clear, and conveys 2 dimensions.

Raine, R., Sanderson, C. & Black, N. (2005). Developing clinical guidelines: a challenge to current methods. *BMJ*. 331:631-633.

The authors provide expert opinion on the challenges related to consensus building in guideline development. The four main challenges are current approaches often lack sufficient transparency, fail to make clear what influence the level of resources in the health system has, lack sufficient reliability and will never achieve comprehensive and timely coverage of whole range of health care. Three types of consensus methods are outlined and include: nominal group technique; Delphi survey; & a hybrid of the two, which provide for more transparent ways of synthesizing individual judgments, reduce influence of dominating personalities and 'group think', and provide valuable information on the extent and reasons for differences of opinion.

There are four concerns related to current methodology. First, format although structured, is often not sufficient to allow the reasons for judgments to be fully transparent. Second, resource constraints faced in group members' clinical work affect their views. Third, reliability particularly for the use of a nominal group is both an advantage (is a forum for detailed discussion) and a disadvantage (lead to unrepresentative and therefore unreliable judgments). Fourth, sustainability of existing programs to develop guidelines given the time and cost involved is an issue.

One advantage this article provides is that it explains the use of consensus panels and the benefits and challenges related to each. The authors provide their concerns over existing

methodologies and pose a guide to improve the process yet meeting all of the requirements for rigor. The authors state that guidelines should be evaluated every two years and reconsidered in light of new research evidence.

The main limitation is that the article does not evaluate the use of meetings only as an option of developing guidelines. This article is an expert opinion article therefore no research evidence is provided to validate the process internationally and how guidelines are developed based on professional groups or associations.

The authors conclude by advocating for three meetings for guideline development as outlined below.

a) First meeting – identify specific issues to be examined, complete review and synthesize the research evidence, examine effectiveness, cost and cost effectiveness, develop and pilot a questionnaire. Questionnaires are to be completed by guideline development group members privately. Meeting is audio taped to enable thematic analysis of extent to which issues such as cost, effectiveness priority, feasibility and acceptability influence ratings.
b) Second meeting – a report is provided to group on the valuations and how these affect their judgments and members are invited to rate the results and to comment on the overall guidelines.
c) Third meeting – group then turns their appropriateness ratings into recommendations

Glasziou, P., Vandenbroucke, J. & Chalmers, I. (2004). Assessing the quality of research. *BMJ*. 328:39-41.

The authors identify five issues that need to be considered in any revision or alternative approach to helping practitioners to find reliable answers to important clinical questions. First, different types of research are needed to answer different types of clinical questions. There needs to be an understanding of indications and contraindications for different types of research evidence. Second, irrespective of the type of research, systematic reviews are necessary. Hierarchies are used to determine the effects of interventions, where randomized trials can give good estimates of treatment efforts but poor estimates of overall prognosis. Case reports should also be considered as valuable evidence for harms/benefits of treatments.

Third, adequate grading of quality of evidence goes beyond the categorization of research design. The disadvantages pf grading quality are that the definitions of levels vary within hierarchies, novel or hybrid research designs are not accommodated in these hierarchies and most importantly hierarchies can lead to anomalous rankings. Fourth, risk benefits assessments should draw on a variety of types of research. Systematic reviews may not be available to answer the specific research question. Fifth, clinicians need efficient search strategies for identifying reliable clinical research. Practitioners need to be knowledgeable on how to determine quality of studies when diversity exists.

There are three advantages for this article. The first is that it reviews the importance of all forms of evidence to support clinical decision making. It defines limitations and exclusionary information of evidence assessments such as quality of conduct of study, absolute and relative size of effects, and confidence intervals. The article also provides examples of how examination of one topic may have various permeations i.e. oral contraception can be evaluated from the perspective of impact on acne or on dysmenorrhea.

There are also three limitations. First, the article places considerable onus of identifying and evaluating evidence on the practitioner with one mention of clinical guidelines as sources of evidence synthesis. The authors provide evidence that grading of evidence is not only confusing to clinicians, but is left open to interpretation of what the levels of evidence means and offers broad alternatives such as improve or abolish grading systems. Even though the authors recommend abolishing grading systems and allowing practitioners to become evidence evaluators, there is evidence to support time constraints and immediacy of clinical decision making which disallows synthesis of evidence. The last limitation is that this is an expert opinion article with no research evidence to support discussion of topics.

In conclusion the authors offer two options: a) to extend, improve, and standardize current evidence hierarchies or b) abolish the notion of evidence hierarchies and levels of evidence. The second option would require teaching practitioners general principles of research and if this is not done need to educate practitioners to determine reliability of clinical guidelines.

Delaney, B. (2001). Updating guidelines on asthma in adults. *BMJ.* 323:1380-1381.

The author identifies the necessity to update guidelines to ensure they are useful in guiding physician clinical practice. There is the notation that it is vital to state guideline development process with a precisely formulated question rather than being driven by the available evidence. Using RCTs information the evidence is systematically graded with the recommendation explicitly linked to the evidence. The article also emphasizes the necessity to continuously update guidelines based on new evidence. Relevant questions and high quality evidence synthesis drive evidence based practice and pull research towards the most relevant unanswered questions for day to day patient care.

One advantage is that the author also identifies the importance of linking with similar focused organizations (i.e. thoracic society and asthma society) to maintain element of consistency in messaging and how research planning needs to be evident.

One limitation is that the author explains changes to clinical practices related to medication administration and the information practitioners need to change their prescribing practices.

The author concludes by emphasizing the necessity to operationalize guidelines by various interventions such as academic detailing, prompts and reminders, templates and managed care systems. Guidelines need to be translated into educational activity, clinical governance, and local computer template and protocols.

Cancer Care Ontario. Ontario Cancer Plan 2005-2008. 47-56. Retrieved at: http://www.cancercare.on.ca/documents/OntarioCancerPlan.pdf

This report outlines the priorities, targeted investments and actions plans with specific timelines and outcomes to support cancer care in Ontario. Specifically for guideline development multidisciplinary disease site groups are responsible for developing guidelines using broach and consultative process. Uptake is further enhanced through large group of practitioners involved in final review of guidelines, publication in peer-reviewed journals, internet access and regular updates. The plan incorporates systems improvement to do more, do things differently and do things right. There is a list of priorities including: they develop provincial standards for practice, reporting, radiotherapy guideline, and clinical indicators; review link with supportive care; and

create opportunities for links with patient safety. Additional area of development includes the broadening of the scope of program standards and guidelines across the continuum of care specifically in the areas of cancer-related imaging, pathology and palliative care.

There are three specific advantages in this article. One, it identifies a knowledge gap in specific areas of cancer treatment and provides statistical figures to support statements i.e. 50% of stage 3 colon cancer patients did not receive adjuvant chemotherapy after surgery. Second, it identifies screening procedures in Ontario which fall below the national standard (for colorectal cancer and breast cancer) resulting in areas for focus over the next three years. Third, the plan outlines the first action to facilitate continuing professional development and the rapid incorporation of new knowledge into practice, which support knowledge transfer.

The limitation is that this is focused on one area of health care; however it also defines the many stakeholders involved in the action plan. Information on the plans for guideline advancement is given but specific methodology related to development is not precisely provided. The plan outlines the necessity to improve uptake of existing and future guidelines and continue to invest in systems and tools to support and monitor uptake.

Supplementary power point on Cancer Care Ontario by Dr. Carol Sawka entitled “Using guidelines and accountability strategies to improve patient outcomes (no date) was also reviewed. Identified is the challenge of absence of direct operational authority for cancer service delivery and how CCO can drive accountability for quality in the cancer system. Four strategic directions include Data/Information, Knowledge (including clinical guidelines), Performance Management and Transfer. It highlights that guidelines are developed for use by clinicians, to inform the public, as a quality improvement initiative and for performance management. The emphasis on knowledge brokering is identified as a give and receive knowledge partnership.

Shiffman, R., Skekeel, P., Overhage, J., Slutsky, J., Grimshaw, J. & Deshpande, A. (2003). Standardized Reporting of Clinical Practice Guidelines: A Proposal from the Conference on Guideline Standardization. *Annals of Internal Medicine*. 139(6):493-498.

The article describes a conference developed to define a standard for guideline reporting that would promote guideline quality and facilitate implementation. Using a 2-stage modified Delphi process a checklist of components necessary for evaluation of validity and usability was intended to minimize the quality defects that arise from failure to include essential information to promote development of recommendations statements that are more easily implemented.

The authors provide eight desirable attributes of guidelines: validity, reliability and reproducibility, clinical applicability, clinical flexibility, clarity, documentation, development by a multidisciplinary process and plans for review. The checklist supported a systematic reporting of precise details that are critical for understanding a guideline’s development, its recommendations, and potential issues in its application.

The advantage of this article is that the authors define experts in the field of guideline development to support the development and modifications to the checklist and support guideline developers who are inexperienced in guideline development, a form of sharing knowledge for potential new developers. The authors describe that the intended checklist was to reduce variability and standardize the documentation in the structure of the guideline hence, supporting wider implementation.

One limitation is that the authors address the necessity to follow up on maintenance revisions, but do not explicitly state the expected timeline for revisions.

Duff, L., Kitson, A., Seers, K. & Humphries, D. (1996). Clinical Practice Guidelines: an introduction to their development and implementation. *Journal of Advanced Nursing*. 23:887-895.

Clinical guidelines are produced nationally and locally, and written by a group, which supports its validity and acceptability. The importance of a multi-professional team working with patient/client representatives ensures that all aspects of care of a particular condition or intervention are to be covered.

The authors provide 3 reasons for representation of stakeholders involved in providing care:

a) limited information available for guideline development needs to be supplemented by a the interpretations of these stakeholders
b) legitimate conflicts over values need to be resolved
c) successful introduction of a guideline requires that all key disciplines contribute to its development to ensure ownership and support.

One major advantage of the article is that the methods of clinical guideline development are identified in 8 stages: identification of a topic; systematic review of literature; develop recommendations; consultation with health care providers; achievement of consensus; develop clinical guideline; localization of clinical guideline; and pilot testing of the guideline. The authors reiterate the desirable attributes of a guideline as noted in Shiffman, et al. above. Another major advantage is that there is a direct link of clinical guideline use with quality improvement activities and identifies possible uses for clinical guidelines that examine practice variations, research, options for care delivery, decision making discussions, definitions of quality of care, and negotiation and justification of expenditures.

Graham, I. & Harrison, M. (2005). EBN user's guide: Evaluation and adaptation of clinical practice guidelines. *Evidence Based Nursing.* 8:68-72.

This article outlines the most important benefit of clinical practice guidelines is their potential to improve both the quality or process of care and patient outcomes. The process for adopting or adapting guidelines to a specific clinical practice setting provides application of the 10 step adaptation cycle. Each phase of the cycle is outlined, defined and application to case study is completed throughout the article. The 10 steps include:

1. Identify a clinical area to promote best practice
2. establish an interdisciplinary guideline evaluation group
3. establish guideline appraisal process
4. search for and retrieve guidelines
5. assess guidelines for quality, currency, content
6. adopt or adapt guidelines for local use
7. seek eternal review (practitioners and policy makers feedback, expert peer review)
8. finalize local guidelines
9. obtain official endorsement and adoption of local guideline
10. schedule review and revision of local guidelines

One of the major advantages of the article is the application case study. The article also provides information on how the cycle can be used in organizations and provides important information on search terms, web searches, defining the parameters and databases. The article outlines how to assess existing guidelines with step by step instructions and links to valuable resources. The only limitation of the article is that is focused on only one aspect of the guideline methodology which may also be perceived as an advantage.

The article outlines the importance of documentation at each step to ensure there is consistent explicit and transparent processes which will lead to credibility. The article concludes with the importance of improving processes of care and ultimately patient outcomes.

Michie, S. & Lesker, K. ((2005). Words matter: increasing the implementation of clinical guidelines. *Quality & Safety in Health Care*. 14:367-370.

The article goal was to determine if writing recommendations in behaviourally specific "plain English" language increases the likelihood of their implementation by service users. The article outlines the importance of increasing focus on the role of patients in facilitating implementation by producing public version of guidelines in the form of patient information leaflets, audiotapes, and videos. The authors use theory of planned behaviour (motivational theory of behaviour) as intention to perform a behaviour is the most important determinant.

The limitation of the article is that it does not identify if the modified recommendations was pilot tested prior to implementation. It identifies that mental health users to answer questions from a schizophrenia perspective but does not identify the education provided to the participants on schizophrenia prior to the study. The study identifies the use of "plain English" but does not identify the grade level the recommendations were written from. The article identifies an RCT methodology with what appears to be convenience sampling methods as two inner city London boroughs were used.

The authors conclude that "plain English" guidelines led to stronger intentions to implement the guidelines with more positive attitudes towards them and greater perceived behavioural control over using them.