A vision statement on guideline development for respiratory disease: the example of COPD

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Introduction

Professional societies, like many other organisations worldwide, have recognised the need to use rigorous processes to ensure that health-care recommendations are informed by evidence from the best available research. This vision statement summarises the main results and conclusions of the workshop Integrating and Coordinating Efforts in Guideline Development: COPD as a Case in Point, which was organised by the American Thoracic Society (ATS) and the European Respiratory Society (ERS) with participation of experts from more than 40 international organisations (listed in the webappendix).

The workshop content followed the recent review of WHO’s methods for guideline development. Although this vision statement represents the views of the programme development committee that planned and organised this workshop, it does not necessarily reflect the official opinions of the sponsoring or participating organisations. We intend this statement to stimulate discussions between relevant organisations that can identify collaborative strategies for further developing and realising the visions that we express in this Viewpoint.

Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of death worldwide, with a prevalence that is projected to increase over the next 20 years. COPD served as an example for this workshop because of the dilemma of multiple existing, overlapping, and sometimes conflicting COPD guidelines. Therefore, best possible clinical practice guidelines and implementation of guideline recommendations at the point of care represent crucial strategies for addressing the COPD epidemic.

The committee drew an overall conclusion from the conference: an international collaboration with common aims and free of proprietary influences seems to be an achievable goal and the most effective strategy for development of comprehensive evidence-based guidelines to advance the care of patients with respiratory disease and related comorbid disorders. Achieving this goal, however, will require a new structural approach and multidisciplinary collaborative framework for guideline development in respiratory disease, building on the unique strength of all contributors. This framework could include a central coordination unit and an innovative but secure approach to funding, updating, and implementing these guidelines. We will describe the call for proposals and ideas for such an approach in more detail below.

We will proceed by listing ten key visions that emerged from the conference and the rationales and necessary steps that a collaborative guideline effort should take to advance every vision. Implicit throughout this article is the principle that designing a new model for COPD guidelines can serve as a template to assist the efforts of guideline developers for other respiratory and non-respiratory diseases.

Ten key visions

1. Globalise the evidence

Aim—To develop a standardised database of existing evidence and gaps in evidence, addressing the management of COPD and its related comorbidities, and design the database to serve as a shared resource for participating organisations.

Rationale—in the era of international clinical trials and widely accessible electronic databases, all organisations developing COPD guidelines have access to the same scientific evidence. Unfortunately, organisations often independently appraise and summarise this evidence and do not make their appraisals available in standardised formats in central repositories. This non-integrated approach leads to overlap and duplication of work, insufficient awareness of the existence of evidence appraisals, and poor access to the evidence appraisals that are known. For example, the Canadian Agency for Drugs and Technology in Health (CADTH)—a participant of the conference—prepares high-quality, comprehensive evidence summaries about specific questions, but these summaries are not widely disseminated in the research community. Guideline developers, therefore, can be unaware of these highly relevant resources. At the same time, gaps in evidence exist that require identification. Although various organisations have begun to compile existing evidence and related gaps in knowledge, the methods for compiling this information have not met the needs of guideline developers. For example, organisations providing such resources either focus on maintaining a database of systematic reviews produced by one organisation (eg, the Cochrane Collaboration and its database of systematic reviews) or have no structured information about what is not known, which is especially notable for health outcomes that have not been addressed in systematic reviews or trials.

Methods—An extensive network of international partnerships that has been developed over the years by the workshop participants will be used to build a guideline development and implementation collaboration. This collaboration should involve all relevant organisations and resources, such as the Cochrane Collaboration and the Database of Reviews of Effectiveness, and should incorporate systematic reviews and health technology assessments and resources for all important patient outcomes addressed by guidelines. This approach will lead
to standardisation of methods for posting reviews of evidence that are adaptable for guideline developers and draw attention to both gaps in high-quality evidence and absences of high-quality evidence summaries. Information technology and widely accessible databases can be used to achieve this goal.

(2) Focus on questions that are important to patients and clinicians and include relevant stakeholders in guideline panels
Aim—To identify relevant questions for COPD guidelines and identify the best possible composition of guideline panels.

Rationale—To guide resources and meet the most compelling patient needs, guideline developers have to set priorities in selecting the clinical questions that they will address, and refrain from including material in guidelines that is not directly relevant to the needs of the guideline user. Resulting approaches should avoid the development of classic textbook-like guidelines that inundate consumers—ie, all users of guidance documents: patients, clinicians, researchers, policy makers, administrators, etc—with excessive and unnecessary background information about the disease, but instead provide practical information. Panels for guideline development should prioritise their efforts and identify which questions should be answered first. The appropriate composition of guideline panels to best serve this responsibility has yet to be established. Many organisations have developed experience with different models of the composition of the guideline panel, and the effect of these models on the effectiveness of panels to identify the important questions needs careful assessment. Most often these models are multidisciplinary and incorporate the patient’s perspective in some way.

Methods—Organisations’ experience in prioritising clinical questions and establishing recommendations for the most effective composition of guideline panels, including relevant stakeholders, should be sought and compiled. This effort will build on published work resulting from the conference and close collaborations with participating organisations.

(3) Undertake collaborative evidence reviews relevant to health-care questions and recommendations
Aim—To achieve availability of high-quality evidence summaries for all relevant questions in COPD management.

Rationale—A strong collaborative effort is required to achieve complete evidence reviews and ensure that all important questions are addressed. A centralised and organised approach that divides the responsibilities of summarising evidence that has either not been compiled appropriately or—in areas for which summaries are outdated—needs updating, will help with guideline development. Organisations will gain a sense of ownership, responsibility, and assurance that their efforts will be enhanced through participation in large-scale projects (eg, common guidelines).

Methods—A strong collaboration of organisations that participated in the conference should be formed and charged with producing evidence summaries. This effort would rely on a strong association with the Cochrane Collaboration with its ongoing work and other organisations developing systematic reviews, to build on expertise and established methods while avoiding duplication of efforts. Qualified and interested organisations that participate in a proposal to funding organisations will have assigned roles. For example, the endocrine professional societies could be responsible for undertaking systematic reviews on topics related to the effect of the disease and related therapies on endocrine outcomes (eg, the effects of inhaled steroids on the adrenal gland and bone-mineral density). Similarly, the World Organization of Family Doctors could be asked to identify the most common comorbidities of COPD on the basis of systematic reviews of the published work. The Infectious Disease Societies (eg, Infectious Disease Society of America and European Society of Clinical Microbiology and Infectious Diseases) could focus on questions relating to infection in COPD. Funding to achieve addressing relevant questions completely will be divided between participating organisations. The collaborative effort will integrate and identify patient views and undertake systematic reviews of patient values and preferences.

(4) Use a common metric to assess quality of evidence and strength of recommendations
Aim—To integrate and standardise the way evidence is graded and recommendations are developed across guidelines.

Rationale—Different systems for grading the quality of evidence and strength of recommendations, many of which have important shortcomings, are used by guideline developers. These disparate systems complicate guideline development and confuse guideline readers. Translation of guideline recommendations into improved patient care would be advanced by standardised grading methods. The ATS, ERS, American College of Chest Physicians, Cochrane Collaboration, UK National Institute for Health and Clinical Excellence, WHO and, increasingly, the Agency for Healthcare Research and Quality use a common or closely related approach: the grading of recommendations assessment, development and evaluation (GRADE) approach.5–9 Other organisations have expressed interest in adopting this system.

Methods—A common system such as the GRADE approach should be used for development of evidence profiles and recommendations for collaborative COPD guidelines. These profiles can be used to produce adaptable guidelines and provide a transparent rationale for recommendations.
(5) Consideration of comorbidities in guideline development

**Aim**—To improve the methods for integration of comorbidities into guideline recommendations.

**Rationale**—COPD has become recognised as a systemic disease with several comorbidities that seem to have a causal relation. COPD, for example, is an independent predictor of cardiac disease and lung cancer. Patients with COPD often present to their physicians with other comorbid disorders that might not have a causal relation with COPD yet they affect patient care. Clinicians question whether guidelines that focus on individual diseases, such as COPD, are applicable to real-world patients who have many comorbidities. Developers of clinical guidelines must consider in grading evidence whether results from clinical trials address these real-world patients (sometimes called effectiveness) or apply only to select patients who met study entry criteria (sometimes called efficacy). Grading systems have to address whether clinical-trial outcomes justify strong recommendations or whether additional so-called practical trials (similar to pragmatic trials) should be undertaken to answer real-world questions of effectiveness. Such trial designs will help with developing guidelines for other primary diseases (eg, heart disease). Identification of evidence gaps will help planning and prioritisation of new trials.

**Methods**—With use of the common GRADE framework, consumers of guidelines will understand how to consider comorbidities in application of guideline recommendations to the specific patient and where research gaps considering comorbidities exist. Identification of evidence gaps will help planning and prioritisation of new trials.

(6) Identify ways that help guideline consumers (clinicians, patients, and others) understand and implement guidelines using the best available tools

**Aim**—To produce guidelines that can be readily understood and effectively implemented.

**Rationale**—Ambiguous wording of recommendations exists throughout important COPD guidelines, leaving practitioners with insufficient information to guide their clinical practice. Ambiguous wording also hinders the construction of implementation methods such as algorithms for developing computer decision support systems. Furthermore, the most effective implementation strategies need to be considered at the outset of developing guidelines to plug the holes of the leaky pipeline from evidence to implementation. Most guideline developers do not consider these and other issues related to the implementation of their recommendations as they write their reports and complete their development work. In the future, quality-of-care indicators will increasingly be integrated in the guideline development process with standardised criteria. These measures will be used to establish the adherence of clinicians and health-care organisations to guideline recommendations. All these factors in guideline implementation will rely on modern technologies, such as computer decision support systems, to improve patient outcomes. However, localising and contextualising decisions needs reporting of evidence and developing guidelines that can be adapted to specific circumstances and conditions, including those of low-income and middle-income countries where modern technologies are not presently available.

**Methods**—An international collaboration of leaders in the various fields is required to develop guidelines that help with implementation. Primary research for presentation, wording, and understanding of guidelines is crucial to achieve this aim. Furthermore, a collaborative effort of appropriate organisations focusing on the development of methods to identify quality-of-care indicators is required. These efforts will help to identify areas for application of information technology in guideline development and implementation, and to produce information material for clinicians that is adequate for different practice circumstances (eg, different materials are needed in high-income countries compared with low-income countries).

(7) Deal with conflicts of interest (COI) and guideline sponsoring transparently

**Aim**—To keep COI to a minimum in guideline development, especially in the formulation of recommendations.

**Rationale**—Avoidance of all COI in composing panels is nearly impossible when developing clinical practice guidelines. However, management of COI in a way that preserves the unbiased outcomes of guideline efforts is crucial. Non-transparent reporting and inadequate management of COI detract from the credibility of guidelines and the adoption of their recommendations. Guideline panels, particularly panel chairs and staff of sponsoring organisations, do not have clear guidance about how to deal with COI because consensus policy statements do not exist for either the consistent and full disclosure of financial relations with industry nor the appropriate management of individual or organisational COI relevant to guideline development. Because of the absence of established norms, many guideline panels have received funding from industry for guidelines addressing a specific treatment. International standards for managing COI for guideline panels are required.

**Methods**—Identification and reporting of COI will be eased by developing a central COI database based on common disclosure categories and definitions, which could be done in collaboration with members of guideline panels and participating organisations. On the basis of existing literature reviews, guidance for chairs of guideline committees about how to deal with COI in sponsored guidelines should be developed in collaboration with existing entities that have already devoted time and effort...
to this aim. Several of these organisations participated in the conference. Finally, consensus on a framework that clearly establishes whether and how for-profit sponsors can participate in funding of guidelines will provide long needed guidance for guideline developers.

(8) Support development of decision aids to assist implementation of value and preference sensitive guideline recommendations
Aim—To invite researchers with expertise in decision making to participate in guideline development.

Rationale—Many, if not most, recommendations are highly value and preference sensitive. For many of these recommendations, patient preferences might not be known. Guidelines developed by central international organisations may be limited by their global view in the value structures that they can address. Thus, implementation of guideline recommendations requires adaptation of decisions to specific values.

Methods—Collaborating organisations should identify relevant questions and recommendations and support the development of decision aids that help patients make decisions and choices that are consistent with their values and preferences. Conference participants with expertise in this area and members of the GRADE working group could support this network, applying information technology to achieve this aim.

(9) Maintain a collaboration of international organisations
Aim—To maintain a collaborative network of organisations with interest in COPD guideline development that will coordinate their efforts and combine their resources.

Rationale—Conference participants voiced a strong interest in working together to advance guideline development and implementation in respiratory disease. A concerted effort will bring improved results through shared and complementary expertise, while conserving resource expenditure.

Methods—A strong international collaboration with a solid funding structure is required. This collaboration must include new strategies to maintain a productive partnership with open channels of communication. Collaborations between respiratory and non-respiratory professional societies, existing guideline developers, the GRADE working group, the Guidelines International Network, and the other participants of this workshop could support this aim. A working group that was identified from our workshop participants could play a central part in supporting the organisation and development of this structure.

(10) Examine collaborative models for funding guideline development and implementation
Aim—to examine new models for funding guideline development and implementation that will combine resources from funding organisations, professional societies, governmental agencies, and patient-interest groups, and manage revenues.

Rationale—to achieve the aims listed in this statement will require substantial resources. Although some of these resources could be generated from avoiding overlap of present expenditures, additional funding streams must be explored. Additional sources of funding are needed since knowledge translation efforts, such as guideline development and implementation, require their own research and expertise and are supplemental to knowledge generation. Thus, funding organisations supporting the fight against respiratory disease worldwide have to recognise that generating knowledge—eg, through clinical-trial research by itself—is insufficient for improvement of patient care if it is not followed by appropriate systematic evidence summaries of all research and appropriate guidance development. Funding organisations and many of the present guideline developers must also recognise that unique skills, which are different from those of expert clinicians and clinical investigators, are required to achieve appropriate guidance development.

Methods—Professional societies have produced most clinical practice guidelines through various funding models. Many of these guideline development efforts did not consider the inclusion of individuals with necessary skills in knowledge translation, partly because of insufficient funding. A broad collaboration of organisations relevant to a multisystem disorder, such as COPD, will require new models for funding for best guidance development. These models should include several stakeholders and their contributions to developing, updating, and implementing clinical practice guidelines.
Organisational approach

Proprietary or single approaches to guideline development have not achieved the important visions described in this statement. We therefore believe that an international organisational structure guided by a collaborative spirit with equal partners is needed, and propose its development. In proposing a convening role to move these developments forward, we ask for feedback and ideas based on what we have considered so far to be some of the essential elements of such an organisation. Representatives of other specialties who face similar challenges are strongly invited to offer suggestions and feedback. The panel shows our working list of essential elements of an international collaboration.

A steering committee would guide the collaboration’s efforts. International and national not-for-profit funding agencies should provide support and monitor progress. Such sources of funding will prevent organisations with vested interests inappropriately influencing the guidelines. The collaboration’s task and mission are those described in this statement. The collaboration could participate in organisation of the preparation of guidelines through various efforts, including an educational role at professional society meetings to assist the training of the next generation of guideline developers. In view of the heightened public expectations for rigorous methodologies to ensure valid guidelines, that concerted efforts to teach guideline development methodology do not exist is surprising. The collaboration could assemble what is known in this area and begin offering a curriculum for an international masters’ degree in guideline development and foster research into guideline development.

Conclusions and request for comments

The marketplace of ideas increasingly demands greater rigor in the development of recommendations that guide clinical practice. Moreover, the rapid translation of valid recommendations into clinical practice needs more effective strategies for guideline implementation than those that exist now. These requirements outstrip the resources of most single guideline development organisations. We propose a new model of international collaboration in response to these challenges and the shortcomings of existing guidelines for respiratory disease. Important advantages of this model include seamless knowledge exchange, coordination of international expertise, integration of diverse perspectives, pooling of resources, avoidance of duplicative efforts by individual organisations, and an organisational structure that can compile evidence and methodologies to assist guideline developers. We believe that this collaboration would serve as a model for other organisations that develop and implement non-respiratory guidelines in this new era of globalisation. It will not limit efforts of individual organisations to develop guidelines but enhance their effectiveness through a collaborative partnership and shared resources and expertise.

We are eager to discuss mechanisms, timing, and requirements for this collaboration with organisations that would consider partnering in this effort. We also request feedback on this statement and suggestions for making this vision operational to guide our next steps.

Contributors

All authors contributed to the development of the ideas in the manuscript. HJS wrote the first draft and collated comments from authors and reviewers for subsequent iterations. All other authors listed on the by-line contributed ideas about structure and content and provided feedback. All authors read and approved the final manuscript.

HJS acts as the guarantor for this manuscript.

Conflict of interest statement

HJS a member of the GRADE working group and supports the implementation of the GRADE approach worldwide. The GRADE working group is an informal collaboration of people with an interest in developing a common, sensible, and transparent approach to grading quality of evidence and strength of recommendations. Honoraria and consulting fees from for-profit organisations for activities in which the work with GRADE is directly relevant go to support the academic clarity research group, of which HJS is a part. He is the documents editor for the American Thoracic Society and senior editor of the American College of Chest Physicians Antithrombotic and Thrombolytic Therapy Guidelines, and both organisations receive income from for-profit organisations. Other institutions or organisations that he is affiliated with probably receive funding from for-profit sponsors that are supporting infrastructure and research that might serve his work. MW has acted as an unpaid scientific adviser to GlaxoSmithKline about a specific research project, and has previously (more than 2 years ago) received payment for travel to meetings and lecture fees from Bayer and Pfizer. ASB has been a member of advisory boards for GlaxoSmithKline, Merck, Pfizer, Septracor, Novartis, and ALTANA. AA is a member of the GOLD Executive and Scientific committees, and supports the implementation of the GOLD guidelines recommendations. He received honoraria and consulting fees from Bayer-Schering Pharmaceutical, Pfizer, GlaxoSmithKline, Boehringer-Ingelheim, Septracor, and Schering Plough Corporation. He has been the principal investigator for research grants, and the University of Texas Health Science Center at San Antonio was paid for participating in multicentre clinical trials sponsored by Boehringer-Ingelheim, Bayer-Schering Pharmaceutical, BARD, Lilly, GlaxoSmithKline, and the US National Institutes of Health. WM has been reimbursed for attending conferences by GlaxoSmithKline, Zambon, and Boehringer Ingelheim, and has received honoraria from GlaxoSmithKline and Zambon for participating as a speaker at various scientific meetings. He also serves on an advisory board for GlaxoSmithKline and as a consultant for Pfizer and SMB Pharmaceuticals. Pfizer funds work carried out in his laboratory by a Clinical Research Fellow. WM also has funding for two multicentre clinical trials, one with Pfizer and one with GSK. KFR is a member of the GOLD Executive and Scientific committees, and supports the implementation of the GOLD guidelines recommendations. He has consulting arrangements with AstraZeneca, Boehringer Ingelheim, Novartis, Pfizer, Altana, GlaxoSmithKline, and Roche, and has received research support from AstraZeneca, Merck, Altana, and Boehringer Ingelheim. He served on the speakers’ bureau for AstraZeneca, Boehringer Ingelheim, Novartis, Pfizer, Altana, GlaxoSmithKline, and Roche. JH declares that he has no conflict of interest.

Acknowledgments

Funding for this conference was made possible (in part) by 1IR1HL 90085-01 from the US National Institutes of Health. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention of trade names, commercial practices, or organisations imply endorsement by the US Government. Additional funding was provided by the

www.thelancet.com Vol 373 February 28, 2009
American Thoracic Society and the European Respiratory Society, and the societies providing travel support for their participating members. The funding sources were provided with a draft of this report for review but had no significant role in the decision about its content. This vision statement has been endorsed by the American Thoracic Society. The programme development committee included the following individuals: Antonio Anzueto, co-chair; Sonia Buist; John Heffner; William MacNee; Klaus Rabe; Holger Schünemann, chair; and Mark Woodhead, co-chair.

References