The ROYAL COLLEGE of OPHTHALMOLOGISTS

www.nature.com/eye

EDITORIAL

Guidelines for patient management: considerations before adoption into practice

Eye (2022) 36:1135–1137; https://doi.org/10.1038/s41433-021-01898-z

Protocolized Implementation of rigorously developed [evidence-based] clinical practice guidelines can reduce inappropriate variation in practice and improve the concordance between evidence and clinical practice in order to optimize patient outcomes [1]. Guideline development has increased exponentially over the last three decades; however, 30–40% of patients do not receive care according to the most up to date and best available evidence [2]. One reason may be that clinicians and patients are often faced with numerous and sometimes variable, contradictory guidelines making it difficult for them to select which to adopt [2, 3]. Variation in guideline quality highlights the need for healthcare practitioners to appraise clinical practice guidelines before adopting them into practice. In addition to the trustworthiness of the guideline development process, clinicians should also consider accessibility and ease of use of recommendations.

Several tools have been developed to evaluate guideline credibility [3–5]. One prominent instrument is the 2011 Institute of Medicine (IOM) standards, which assess the transparency and rigor of clinical guidelines, and highlight key components that should be addressed during the development process (Table 1) [3, 6]. Another is the Appraisal of Guidelines, REsearch and Evaluation II (AGREE II) tool, an internationally accepted standard for assessment of the methodological reporting quality of guidelines [4]. The AGREE II tool evaluates six domains: [1] scope and purpose [2], stakeholder involvement [3], rigor of development [4], clarity of presentation [5], applicability, and [6] editorial independence. A 2015 study evaluated clinical practice guidelines for the management of adult cataracts developed by the American Academy of Ophthalmology (AAO), Canadian Ophthalmological Society (COS), and Royal College of Ophthalmologists (RCO) using the AGREE II tool [7–10]. They found that the AAO guideline scored lowest with regards to stakeholder involvement (scaled score of 36%) and highest in terms of editorial Independence (75%) [9, 10]. The COS guideline scored lowest in applicability (45%) and highest in clarity of presentation (94%) [7, 10]. The RCO guideline scored lowest in editorial independence (23%) and highest in scope and purpose and clarity of presentation (83% and 85%, respectively) [8, 10]. The authors emphasized that across all three guidelines, the rigor and transparency of guidelines' development as an area for improvement as well as increased attention to applicability; none of the cataract guidelines included summaries of recommendations or surgical checklists to facilitate use in practice. Neither guideline mentioned patient participation in their process; However, although the RCO guideline did report public involvement, it did not clearly describe what that entailed [8]. Also, neither guideline disclosed the process in which they identified and addressed potential conflicts of interests among voting panel members to avoid undue influence on final recommendations [10]. Major methodological limitations across all three cataract guidelines led to their appraisal as low or very low quality [10].

Another important factor to consider is the wording of the final recommendations to ensure clarity and facilitate appropriate adoption [11]. Guideline recommendations should be clear, easy, and simple to read and should include the intervention, comparator, population of interest and if necessary, the setting. For example, the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) approach adopted by many guideline developers worldwide has proposed a strategy for presenting recommendations [12]. Specifically, a four-category classification to standardize and simplify the recommendations and help ensure that the direction and strength of recommendations are properly understood and implemented. A strong recommendation for or against the intervention is made if the benefits of an intervention clearly outweigh the harms or vice versa [11]. On the other hand, a conditional (weak) recommendation for or against an intervention is made if the balance between the benefits and harms is less clear, the supporting evidence is low in quality, patient values and preferences are likely to vary appreciably, or there are important constraints regarding the setting in which the intervention will be implemented (e.g., availability, access, feasibility) [11].

Approaches such as GRADE allow guideline developers to make conditional recommendations to provide clinical flexibility in practice when one or more of the aforementioned issues are present [13]. This in turn helps healthcare providers individualize treatment decisions for specific patients by engaging in shared decision-making in which patients' values and preferences are necessary to make an informed decision [11]. As part of the guideline process, approaches such as GRADE also consider resource requirements, cost effectiveness, impact on equity, acceptability to stakeholders, and feasibility of the intervention prior to formulating recommendations [14]. For example, the cataract guideline by the AAO examined resource implications and the balance of benefits and harms but did not explicitly account for issues related to feasibility, equity or values, and preferences of patients [15].

Clinical practice guidelines are often lengthy reports that are difficult to implement at the point of care delivery. Therefore, guidelines should provide accessible summaries of their recommendations. For example, the MAGIC-app (Making GRADE the Irresistible Choice app), a web based collaborative tool, is an online platform that guides developers through the process of developing a guideline and provides clinicians with access to recommendations through a multi-layered and interactive app (https://app.magicapp.org/#/guidelines). This platform presents summaries of recommendations and the underlying supporting information, as well as decision-aids presenting effects on patient-important outcomes. Integrating guideline recommendations into decision aids facilitates shared decision-making between healthcare providers and their patients [16]. For example, a 2021

Received: 1 December 2021 Revised: 2 December 2021 Accepted: 6 December 2021
Published online: 24 January 2022

Table 1. Factors to consider.

Factors to consider	
IOM standards	Establishing transparency: The guideline document should explicitly state and make publicly available the processes used to develop the guideline and the source of funding.
	Disclosures of interest must be openly declared, and conflicts should be managed appropriately
	The guideline development group should be composed of multidisciplinary methodological experts, clinicians, and patient partners.
	Systematic reviews in accordance with IOM standards should be used to inform the guideline recommendations.
	The text should explain the evidence and the reasoning, behind the judgements related to the balance of benefits and harms and specify the level of confidence in the recommendation.
	Recommendations should be clearly stated and actionable.
	The draft guidelines should be posted for public comment, and revisions should be made when appropriate prior to submitting the guidelines for peer review
	Guidelines should explicitly state the plan to update when new evidence results in modifying the recommendations.
Accessibility and ease of use considerations	Methods of communication and forms of communication channels should be made available to facilitate access and ease of use

randomized controlled trial explored the impact of using decision aids on the quality of decision making in patients with age-related cataracts [17]. Patients randomly assigned to the control group reviewed the National Eye Institute booklet that included general information regarding cataracts and the related surgical procedure without detailed information regarding possible outcomes of undergoing or delaying surgery [17]. Patients in the intervention group were asked to go through a decision aid that included the same standard information as the control group, data related to the benefits and harms of cataract surgery and a worksheet related to their values and preferences regarding undergoing or delaying surgery [17]. The study found that the proportion of patients that made an informed decision in the intervention group were 22% higher than those in the control group [17]. Also, participants in the intervention group were found to have a higher adequate overall knowledge about cataract surgery compared to the control group (37% vs. 9%), and fewer participants that used the decision aids decided to undergo surgery (23% vs. 34%) [17].

Clinicians are increasingly exposed to clinical practice guidelines. However, rigorous development cannot be assumed, and credibility should be assessed with a validated tool (e.g., IOM standards, AGREE II) to ensure recommendations are trustworthy. If found to be sufficiently credible, clinical practice guidelines' accessibility, and ease of use should be assessed prior to adoption.

Andrea J. Darzi[1,2], Jason W. Busse[1,2,3], Mark R. Phillips[1], Rishi P. Singh[4], Frank G. Holz[5], Lehana Thabane[1,6], Mohit Bhandari[1,7], Varun Chaudhary[1,7]✉ and for the Retina Evidence Trials InterNational Alliance (R.E.T.I.N.A.) Study Group*

*[1]Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, ON, Canada. [2]Michael G. DeGroote National Pain Center, McMaster University, Hamilton, ON, Canada. [3]Department of Anesthesia, Faculty of Health Sciences, McMaster University, Hamilton, ON, Canada. [4]Cleveland Clinic Florida, Stuart, FL, USA. [5]Department of Ophthalmology, University of Bonn, Bonn, Germany. [6]Biostatistics Unit, St. Joseph's Healthcare-Hamilton, Hamilton, ON, Canada. [7]Department of Surgery, McMaster University, Hamilton, ON, Canada. *A list of authors and their affiliations appears at the end of the paper.*

✉*email: vchaudh@mcmaster.ca*

REFERENCES

1. Kuehn BM. IOM sets out "gold standard" practices for creating guidelines, systematic reviews. Jama 2011;305:1846–8.
2. Bosse G, Breuer JP, Spies C. The resistance to changing guidelines–what are the challenges and how to meet them. Best Pract Res Clin Anaesthesiol. 2006;20:379–95.
3. Steinberg E, Greenfield S, Wolman DM, Mancher M, Graham R, editors. Clinical practice guidelines we can trust. National Academies Press; National Academy of Sciences.; 2011 Jul.
4. Brouwers MC, Kho ME, Browman GP, Burgers JS, Cluzeau F, Feder G, et al. AGREE II: advancing guideline development, reporting and evaluation in health care. Cmaj 2010;182:E839–42.
5. Qaseem A, Forland F, Macbeth F, Ollenschläger G, Phillips S, van der Wees P. Guidelines International Network: toward international standards for clinical practice guidelines. Ann Intern Med. 2012;156:525–31.
6. Kung J, Miller RR, Mackowiak PA. Failure of clinical practice guidelines to meet institute of medicine standards: two more decades of little, if any, progress. Arch Intern Med. 2012;172:1628–33.
7. Canadian Ophthalmological Society Cataract Surgery Clinical Practice Guideline Expert Committee. Canadian Ophthalmological Society evidence-based clinical practice guidelines for cataract surgery in the adult eye. Can J Ophthalmol. 2008;43:S7–33.
8. Royal College of Ophthalmologists, Astbury N Cataract Surgery: Guidelines. Royal College of Ophthalmologists, 2001.
9. Chang DF, Henderson BA, Lee RH. American Academy of Ophthalmology Cataract and Anterior Segment Panel. Preferred Practice Pattern® Guidelines: Cataract in the Adult Eye. American Academy of Ophthalmology, San Francisco, CA. 2011.
10. Wu CM, Wu AM, Young BK, Wu D, Chen A, Margo CE, et al. An evaluation of cataract surgery clinical practice guidelines. Br J Ophthalmol. 2015;99:401–4.
11. Andrews J, Guyatt G, Oxman AD, Alderson P, Dahm P, Falck-Ytter Y, et al. GRADE guidelines: 14. Going from evidence to recommendations: the significance and presentation of recommendations. J Clin Epidemiol. 2013;66:719–25.
12. Guyatt G, Oxman AD, Akl EA, Kunz R, Vist G, Brozek J, et al. GRADE guidelines: 1. Introduction—GRADE evidence profiles and summary of findings tables. J Clin Epidemiol. 2011;64:383–94.
13. Schünemann H, Brożek J, Guyatt G, Oxman A. Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach. GRADE pro GDT. 2013. https://gdt.gradepro.org/app/handbook/handbook.html.
14. Alonso-Coello P, Oxman AD, Moberg J, Brignardello-Petersen R, Akl EA, Davoli M, et al. GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 2: Clinical practice guidelines. bmj. 2016;353:i2089.
15. Folk JC, Adelman RA, Flaxel CJ, Hyman L, Pulido JS, Olsen TW. Idiopathic epiretinal membrane and vitreomacular traction Preferred Practice Pattern® Guidelines. Ophthalmology. 2016;123:P152–81.
16. Correa VC, Lugo-Agudelo LH, Aguirre-Acevedo DC, Contreras JA, Borrero AM, Patiño-Lugo DF, et al. Individual, health system, and contextual barriers and facilitators for the implementation of clinical practice guidelines: a systematic metareview. Health Res policy Syst. 2020;18:1–1.
17. Ye G, Qu B, Tham YC, Zhong Y, Jin L, Lamoureux E, et al. A decision aid to facilitate informed choices among cataract patients: a randomized controlled trial. Patient Educ Counseling. 2021;104:1295–303.

AUTHOR CONTRIBUTIONS

AJD was responsible for writing, critical review, and feedback on paper. JWB was responsible for writing, critical review, and feedback on paper. MRP was responsible for conception of idea, critical review, and feedback on paper. RPS was responsible for critical review and feedback on paper. FGH was responsible for critical review and feedback on paper. LT was responsible for critical review and feedback on paper. MB was responsible for conception of idea, critical review, and feedback on paper. VC was responsible for conception of idea, critical review, and feedback on paper.

COMPETING INTERESTS

AJD: Nothing to disclose. JWB: Nothing to disclose. MRP: Nothing to disclose. RPS: Consultant: Novartis, Genentech/Roche, Alcon, Regeneron, Bayer, Optos, Genentech, Apellis – unrelated to this study. FGH: Research funds: Acucela, Allergan, Apellis, Bayer, Bioeq/Formycon, Roche/Genentech, Geuder, Heidelberg Engineering, IvericBio, Kanghong, Novartis, NightStarX, Zeiss; Personal fees: Boehringer-Ingelheim, Grayburg Vision, LinBioscience, Pixium Vision, Stealth BioTherapeutics, Aerie, Oxurion – unrelated to this study. LT: Nothing to disclose. MB: Research funds: Pendopharm, Bioventus, Acumed – unrelated to this study. VC: Advisory Board Member: Alcon, Roche, Bayer, Novartis; Grants: Bayer, Novartis – unrelated to this study.

ADDITIONAL INFORMATION

Correspondence and requests for materials should be addressed to Varun Chaudhary.

Reprints and permission information is available at http://www.nature.com/reprints

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

FOR THE RETINA EVIDENCE TRIALS INTERNATIONAL ALLIANCE (R.E.T.I.N.A.) STUDY GROUP

Varun Chaudhary[1,7]✉, Mohit Bhandari[1,7], Charles C. Wykoff[8,9], Sobha Sivaprasad[10], Lehana Thabane[1,6], Peter Kaiser[11], David Sarraf[12], Sophie J. Bakri[13], Sunir J. Garg[14], Rishi P. Singh[15,16], Frank G. Holz[5], Tien Y. Wong[17,18] and Robyn H. Guymer[19,20]

[8]Retina Consultants of Texas (Retina Consultants of America), Houston, TX, USA. [9]Blanton Eye Institute, Houston Methodist Hospital, Houston, TX, USA. [10]NIHR Moorfields Biomedical Research Centre, Moorfields Eye Hospital, London, UK. [11]Cole Eye Institute, Cleveland Clinic, Cleveland, OH, USA. [12]Retinal Disorders and Ophthalmic Genetics, Stein Eye Institute, University of California, Los Angeles, CA, USA. [13]Department of Ophthalmology, Mayo Clinic, Rochester, MN, USA. [14]The Retina Service at Wills Eye Hospital, Philadelphia, PA, USA. [15]Center for Ophthalmic Bioinformatics, Cole Eye Institute, Cleveland Clinic, Cleveland, OH, USA. [16]Cleveland Clinic Lerner College of Medicine, Cleveland, OH, USA. [17]Singapore Eye Research Institute, Singapore, Singapore. [18]Singapore National Eye Centre, Duke-NUD Medical School, Singapore, Singapore. [19]Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital, East Melbourne, VIC, Australia. [20]Department of Surgery (Ophthalmology), The University of Melbourne, Melbourne, VIC, Australia.