

Training a Diverse Team on Critical Appraisal

Using the AGREE II Instrument

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Clinical Practice Guidelines

Clinical practice guidelines (CPGs) are a core component of evidence-based medicine, and when rigorously, transparently developed, guidelines can help translate complex research into recommendations for clinical practice.

*"Clinical practice guidelines are statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options."*¹

Centre for Effective Practice

The Centre for Effective Practice (CEP) works to close the gap between best evidence and current practices by identifying healthcare gaps and barriers to appropriate care, and by producing practical solutions to address them.

To be successful, healthcare improvement interventions must be aligned with the relevant evidence; so the search, appraisal, and summary of evidence is a key element in CEP's overall approach to projects. Relevant, high quality clinical practice guidelines form the foundational clinical evidence for our projects, and as an organization we have identified, evaluated, and summarized clinical practice guidelines for hundreds of different topic areas.

Evaluating Guidelines: The AGREE II Instrument

The Appraisal of Guidelines for Research and Evaluation Instrument (AGREE Instrument) is a validated instrument designed to assess the methodological rigour and transparency of development of a guideline². Originally developed in 2003, it was subsequently updated and refined, and the current version (the AGREE II) was published in 2009. Each item in the AGREE II is independently evaluated on a scale from 1 (strongly disagree) to 7 (strongly agree).

AGREE II Instrument ²
Domain 1 - Scope and Purpose
1. The overall objective(s) of the guideline is (are) specifically described.
2. The health question(s) covered by the guideline is (are) specifically described.
3. The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described.
Domain 2 - Stakeholder Involvement
4. The guideline development group includes individuals from all relevant professional groups.
5. The views and preferences of the target population (patients, public, etc.) have been sought.
6. The target users of the guideline are clearly defined.
Domain 3 - Rigour of Development
7. Systematic methods were used to search for evidence.
8. The criteria for selecting the evidence are clearly described.
9. The strengths and limitations of the body of evidence are clearly described.
10. The methods for formulating the recommendations are clearly described.
11. The health benefits, side effects, and risks have been considered in formulating the recommendations.
12. There is an explicit link between the recommendations and the supporting evidence.
13. The guideline has been externally reviewed by experts prior to its publication.
14. A procedure for updating the guideline is provided.
Domain 4 - Clarity of Presentation
15. The recommendations are specific and unambiguous.
16. The different options for management of the condition or health issue are clearly presented.
17. Key recommendations are easily identifiable
Domain 5 - Applicability
18. The guideline describes facilitators and barriers to its application.
19. The guideline provides advice and/or tools on how the recommendations can be put into practice.
20. The potential resource implications of applying the recommendations have been considered.
21. The guideline presents monitoring and/or auditing criteria.
Domain 6 - Editorial Independence
22. The views of the funding body have not influenced the content of the guideline.
23. Competing interests of guideline development group members have been recorded and addressed.
Overall Guideline Assessment
1. Rate the overall quality of this guideline.
2. I would recommend this guideline for use.

Background

The Canadian Partnership Against Cancer is in the process of redeveloping its SAGE directory, a publicly available directory of English language cancer control clinical practice guidelines. To support this project, CEP was engaged to identify, review, and evaluate all CPGs addressing the cancer care continuum published since mid-2012. To date, over 550 guideline appraisals have been completed by our team using the AGREE II Instrument.

This project presented a unique opportunity to refine and build from our existing training program to ensure that CEP team members with diverse backgrounds are proficient in evaluating the methodological quality of guidelines.

To ensure that each guideline was appropriately evaluated and that the AGREE II scores were reliable, a rigorous evaluation process was established for this project.

Two guideline reviewers independently appraised each guideline, and the concordance between each reviewer's score was calculated based on the standard deviation of reviewer's scores within a domain³. If a guideline was flagged as not having appropriate concordance, a third reviewer would be assigned to complete an independent AGREE II assessment, and concordance was re-calculated across all 3 reviewers. If concordance is not satisfied at this step, the guideline would be reviewed by the original AGREE II trainer, all reviewers would meet to discuss areas of disagreement until consensus was reached, and additional training would be conducted.

Challenges with Applying the AGREE II

Applying the AGREE II Instrument consistently across different reviewers is challenging. Although there are many AGREE II training resources available, including those provided by the developers of The AGREE II Instrument⁴, there remains significant subjectivity in interpreting and applying criteria. This lack of inter-rater reliability can result in significant variability in scoring. This in turn can create additional work and costs as domains are re-examined, and third reviews are arranged. With hundreds of CPGs to evaluate for this project, the risks of disparities between reviewers was significant.

In particular, items within domains such as *Stakeholder Involvement* (e.g.: "The guideline development group includes individuals from all relevant professional groups") and *Applicability* (e.g.: "The guideline describes facilitators and barriers to its application") are subject to differing interpretations of the criteria, and therefore are more challenging for reviewers to score consistently.

AGREE II Training

To ensure our projects are based on best available evidence, all members of the CEP team participate in a core 6-8 hour training session to understand the fundamentals of CPGs, and to gain skills in critical appraisal. This training features preparatory reading, an interactive training session led by an experienced guideline methodologist, independently completing the AGREE II Instrument for two disparate example guidelines, then discussing specific areas of agreement and disagreement as a group with other participants and a facilitator.

Those team members who would be completing AGREE II scores for the SAGE project underwent a more intensive advanced training over the course of 6 weeks (50-70 hours total) in an effort to ensure concordance. Similar to the core training program, the advanced training featured preparatory readings, individual exercises, and group discussion, but included additional focus on specific domains where consistently interpreting the AGREE II criteria is challenging.

Our team is composed of professionals with disparate backgrounds, including project managers, research managers, and project coordinators, with educational backgrounds including BA, BSc, MA, MSc, MLIS, and PhD. Training plans were individualized to account for this diversity, tailored to the skills and backgrounds of the participating individuals.

Advanced AGREE II Training Program

CEP's advanced AGREE II training program was developed by an information manager with over 10 years experience evaluating and developing guidelines (KLR). The training included:

- 1) Preparatory independent study material designed to provide an introduction to CPGs and the AGREE II Instrument, including:
 - Completing foundational readings (e.g. Institute of Medicine's Clinical Practice Guidelines We Can Trust⁵, Canadian Medical Association's Handbook on Clinical Practice Guidelines⁶)
 - Watching introductory videos (e.g. Understanding Clinical Practice Guidelines: A Video Series Primer by the Health Council of Canada⁶)
 - Reviewing the the AGREE II Instrument and Manual²
 - Completing the AGREE II Tutorial and Practice Exercise⁷
- 2) Weekly assignments of progressively more complex examples of guidelines to review, highlighting areas that are traditionally difficult to evaluate.
- 3) Weekly group training sessions where AGREE II assignments are reviewed, areas of disagreement are discussed, and agreement on interpretation is reached.

A qualified librarian reviewed all the exercises, and led discussions on differences in understanding and interpreting the AGREE II Instrument's evaluation measures.

Results

Seven members of the CEP team participated in the advanced training course, and after training completed over 550 guideline evaluations using the AGREE II Instrument to support the SAGE project. Following completion of training, concordance was 100% across all guidelines, with no guidelines requiring a third review.

Both the core and advanced AGREE II training programs improved the understanding and discourse around the importance and use of clinical evidence across the team, and 100% of participants in both courses reported improved confidence in their critical appraisal skills.

Conclusion and Discussion

The advanced training was successful in improving the consistency of AGREE II scores across all domains, and eliminated the need for third independent reviews to assess CPGs.

Training of this nature is valuable when evaluating CPGs, particularly in a project of this scale where inconsistencies could have led to a large number of third reviews.

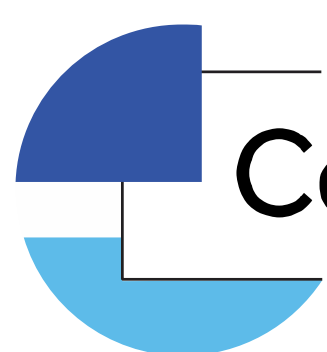
In addition to supporting the SAGE project, the evaluation of a large number of CPGs using a validated instrument that is applied in a consistent manner will serve as a valuable data set for future studies on improving the methodological rigour and quality of reporting in guidelines.

Concepts of quality appraisal are generalizable across publication types and types of evidence. Because evidence is core to CEP's work, the training programs help to create a larger appreciation and understanding of evidence that is applied across all projects.

We highly recommend intensive training of this nature when a project involving the assessment of multiple CPGs begins, to help ensure that the AGREE II Instrument is consistently applied with high concordance between reviewers.

References

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