The Canadian Partnership Against Cancer is in the process of redeveloping its SAGE directory, a publically 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 domain. 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 Instrument, 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 Trust, Canadian Medical Association’s Handbook on Clinical Practice Guidelines).
   - Watching introductory videos (e.g., Understanding Clinical Practice Guidelines: A Video Series Primer by the Health Council of Canada).
   - Reviewing the AGREE II Instrument and Manual.
2) Completing the AGREE II Tutorial and Practice Exercise.
3) Weekly assignments of progressively more complex examples of guidelines, with feedback from the trainer.
4) 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 99% 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 rigor and quality of reporting in guidelines.

Concepts of quality appraisal are generalizable across publication types and types of evidence. Because evidence is core to CEPs 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
4. Zitzelsberger and Kerynn Wang for their leadership on the project.

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