

Clinical Practice Guideline Quality: An Appraisal Instrument for Busy End-users

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Background

From 2003 until 2013, there was only one published clinical practice guideline (CPG) quality assessment instrument (Agree - Appraisal of Guidelines ResEarch and Evaluation)^{1,2}. The current version (AGREE II) has 23 statements grouped into six domains; scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability and editorial independence. Each statement is scored from 1 (no agreement) to 7 (total agreement). The South African Medical Journal recommends use of AGREE II³.

In 2014, an Australian group produced the iCAHE (International Centre for Allied Health Evidence) instrument, an alternative to score CPG quality⁴. It was specifically designed to meet the needs of busy end-users who often need to make CPG decisions quickly, and on their own. The iCAHE instrument has 14 binary-scored (yes or no) items. The iCAHE instrument was co-developed with end-user policy-makers and clinicians, and includes their perceptions of important elements of CPG quality.

The iCAHE and AGREE II instruments share four common domains (Scope & Purpose, Stakeholder involvement, Underlying Evidence / Rigour, and Clarity). The iCAHE instrument includes three additional domains (not in AGREE II) (Currency, Summary of findings, Availability), whilst AGREE II includes two domains not found in the iCAHE instrument (Applicability, Independence). Table 1 lists the AGREE II and iCAHE statements and domains.

Objectives

To compare iCAHE and AGREE II instrument scores on a range of South African primary care CPGs to determine whether the iCAHE instrument is a valid alternative to AGREE II for busy South African end-users.

Table 1: Domains and Questions from the AGREE II and iCAHE quality appraisal instruments

	iCAHE	AGREE II
AGREE II Domain 1: Scope & Purpose	Q13. Are the purpose and target users of the guideline stated?	Q1. The overall objectives of the guideline are specifically described
		Q2. The health questions covered by the guideline are specifically described
		Q3. The population to whom the guideline is meant to apply is specifically described
AGREE II Domain 2: Stakeholder involvement		Q6. The target users are clearly defined
	Q11. Are the developers clearly stated?	Q4. The guideline development group includes individuals from all relevant professional groups
	Q12. Does the qualifications and expertise of the guideline developers link with the purpose of the guideline and its end users?	Q5. The views and preferences of the target population have been sought
AGREE II Domain 3: Rigour of Development	Q7. Does the guideline provide an outline of the strategy used to find underlying evidence?	Q7. Systematic methods were used to search for the evidence
	Q8. Does the guideline use a hierarchy to rank the quality of the underlying evidence?	Q8. The criteria for selecting the evidence are clearly described
	Q9. Does the guideline appraise the quality of the evidence which underpins its recommendations?	Q9. The strengths and limitations of the body of evidence are clearly described
	Q10. Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?	Q10. The methods for formulating the recommendations are clearly described
		Q11. The health benefits, side effects and risks have been considered in formulating the recommendations
		Q12. There is an explicit link between the recommendations and the supporting evidence
		Q13. The guideline has been externally reviewed by experts prior to its publication
New iCAHE Domain: Currency	Q4. Is there a date of completion available?	
	Q5. Does the guideline provide an anticipated review date?	
	Q6. Does the guideline provide dates for when literature was included?	
AGREE II Domain 4: Clarity of Presentation	Q14. Is the guideline readable and easy to navigate?	Q15. The recommendations are specific and unambiguous
		Q16. The different options for management of the condition or health issues are clearly presented
		Q17. Key recommendations are easily identifiable
AGREE II Domain 5: Applicability		Q18. The guideline describes facilitators and barriers to its application
		Q19. The guideline provides advice and/or tools on how the recommendations can be put into practice
		Q20. The potential resources implications of applying the recommendations have been considered
AGREE II Domain 6: Editorial Independence		Q21. The guideline presents monitoring and/or auditing criteria
		Q22. The views of the funding body have not influenced the content of the guideline
New iCAHE Domain: Availability	Q1. Is the guideline readily available in full text?	Q23. Competing interests of guideline development group members have been recorded and addressed
	Q2. Does the guideline provide a complete reference list?	
New iCAHE Domain: Summary	Q3. Does the guideline provide a summary of its recommendations?	

Methods

16 South African primary care CPGs were purposively sampled for testing, developed variably by professional associations, universities and National Department of Health. Selected guidelines focused on diagnosis, treatment and/or clinical management and were chosen on the basis that they reflected the conditions that children or adults largely present with at primary care level in South Africa (see Figures 1 and 2).

The methodological quality of these CPGs was independently assessed using the iCAHE and AGREE II instruments. To facilitate comparison, an overall AGREE II score was calculated for each CPG, using the rubric for two evaluators, but including the 1-7 response to each statement, in one overall calculation. The overall CPG quality score was then expressed as a percentage of the total possible AGREE II score (23 items * possible score of 7 = 161 points). This was compared with the percentage of the possible total of 14 items, which scored 'Yes' in the iCAHE instrument. The amount of time taken to complete critical appraisal of each CPG with each instrument was reported as the range in minutes.

Analysis: The scores were analysed in two ways:

- Using all statements in both instruments
- Using only the statements in the common domains (Scope & Purpose, Stakeholder involvement, Underlying evidence / Rigour and Clarity).

Correlation was reported as Pearson r coefficients, agreement was calculated using single factor ANOVA models (p value) and ICC (2,1) where the raters were considered as representative of a larger population of similar raters. Score differences > 10% were identified, with positive differences favouring the iCAHE instrument.

*Note that this is not usual practice when applying AGREE II, however the AGREE II domain quality scores could not be compared with the total iCAHE score.

Results

Irrespective of the analysis approach, methodological quality of the included CPGs was generally poor (See Figures 1 and 2). Few had quality scores higher than 50% on either instrument.

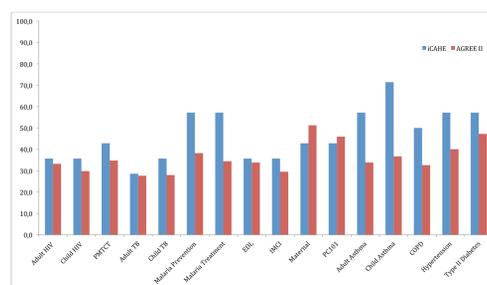


Figure 1. Comparison of quality scores for CPGs

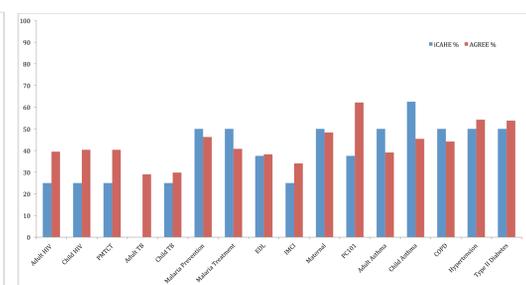


Figure 2. Comparing common domains

*HIV – human immune-deficiency virus; PMTCT – Prevention of mother to child transmission; TB – tuberculosis; EDL – Essential Drug List; IMCI – Integrated management of childhood illnesses; PC1010 – Primary Care 101; COPD – chronic obstructive pulmonary disease

Correlation between instrument scores was moderate and there were no significant score differences. The time to use the iCAHE instrument was 3-5 minutes per CPG, whilst the time to use AGREE II approximated an hour per CPG. Table 2 reports the findings for analyses 1 and 2.

Table 2: Assessment of Correlation between the iCAHE tool and AGREE II

	Correlation (Pearson r)	Agreement	CPGs with disagreements >10% between instruments	Size of disagreement
Analysis 1	0.39	P=0.39; ICC=0.06	Child Asthma Adult Asthma Malaria Treatment Malaria Prevention COPD Hypertension	34.8% 23.3% 22.7% 18.9% 17.4% 17.1%
Analysis 2	0.61	P=0.07; ICC=0.49	Adult TB PC101 Child HIV PMTCT Adult HIV Adult asthma Child asthma	-29% -24.7% -15.3% -15.3% -14.5% 10.9% 17.1%

Discussion

From Analysis 1, the low ICC and moderate correlation are attributed to the variant (different) attributes (domains) between instruments. The items in the iCAHE instrument were directed by end-users, who wanted information on ready availability, currency and a CPG summary. The AGREE II instrument does not provide this information. The CPGs with large differences in scores scored well on these domains.

Analysis 2 showed improved correlation and ICC scores, and highlighted different CPGs with large score differences. This suggests that the between-instrument differences in the number of statements in the common domains influenced the scoring. Overall, the AGREE II instrument had more statements in each domain, thus possibly directionally weighting the overall score.

AGREE II was developed for researchers and CPG developers, and its scoring system and time taken to score may present challenges for time-constrained end-users such as policy-makers and clinicians.

Implications for South African guideline users

Both the AGREE II and iCAHE instruments provide standard frameworks for assessing CPG quality. The binary 14 statement iCAHE instrument is recommended for busy end-users, and in situations where only one assessor is available, or for novice assessors who might struggle with subjective allocation of scores between 1-7 as required in AGREE II. AGREE II, on the other hand could be recommended to CPG end-users with more time who require a more rigorous approach to assessing nuances of CPG quality.

References

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