

# Validation of a Comprehensive Scale Measuring Quality of Prescribing

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## Statement of Purpose:

Improving the quality of prescribing relies on accurate patient assessment combined with up-to-date knowledge of therapeutics evidence. Current measurements of appropriate-ness of prescribing rely on the implicit judgement of experts, lack evaluation of reliability and validity, and often do not incorporate a "levels of evidence" approach. We have developed a comprehensive, explicit, evidence-based appropriateness of prescribing evaluation questionnaire (APEQ). We describe the validation process.

## Methods:

The APEQ has 10 questions each scored 0 to 2 or "don't know". The questions relate to indication, previous therapy, optimal drug choice in terms of benefit/risk evidence, dose, duration, contraindications, etc. The musculoskeletal APEQ (MAPEQ) has proceeded through validation including reliability, face, content and construct validity and responsiveness (does the score change with change in appropriateness?) using a nominal group panel process. Questions were grouped into 3 domains each with 3 possible scores. Realistic primary care case scenarios were formulated to represent each of these 27 situations with 9 blinded repeat cases inserted to test reliability. A later set of 36 cases presented follow-up visit information to allow for validation of responsiveness of MAPEQ. Panel ratings were compared to an independent expert scoring using the MAPEQ.

## Results:

Questions were reviewed and modified by a core panel of 8 clinicians and therapeutics experts until face validity was maximized. 16 stakeholder representatives (specialist, family physician, pharmacist, industry, drug program regulator, consumer, etc) grouped in 2 panels rated the 72 patient case scenarios. ANOVA of panel ratings showed that each of the three domains were detectable in the cases ( $P=0.008$ ,  $0.012$ ,  $0.042$ ) and 2 domains interacted. Pearson correlation of panel ratings to MAPEQ scores was  $0.52$  ( $P=0.0009$ ) Responsiveness of the scale was confirmed as the slope of panel rankings of improved prescribing was positively related to increases in MAPEQ scores ( $P=0.0073$ ) and negatively related to decreased MAPEQ scores ( $P<0.0001$ ) for prescribing judged to be worse at follow-up.

## Conclusions:

We have successfully validated a rigorous and comprehensive scale to measure the appropriateness of prescribing.