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A practical approach to quality improvement: the experience of the RNZCGP practice standards validation field trial

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Abstract

Aim This paper describes the development, implementation and validation of general practice standards, supported by a continuous quality improvement (CQI) process that teaches practice teams how to work together to identify and enhance the quality of care they provide.

Methods Practice standards were developed through consensus by key stakeholders in general practice, pre-tested in four practices, and refined and piloted in 20 practices throughout New Zealand during 1999.[1] A further field trial was undertaken to validate the standards[2] and test the process of practice assessment. During 2000–2001, 74 practices volunteered to be assessed against the standards. Sixty one general practitioners, practice nurses and practice managers, nominated from independent practitioner associations (IPAs) or primary care organisations (PCOs), were trained to undertake the assessments.[3]

Results On five of 13 variables, no statistically significant differences at the 0.05 level were identified between the practices in the field trial and a random sample of practices studied by Kljakovic.[4] The Royal New Zealand College of General Practitioners (RNZCGP) standards were found to have excellent face validity and content validity, and good construct validity. Internal consistency was fair. Lessons from the evaluation have informed an improved version of the practice assessment tool.

Conclusions The validation field trial provided the RNZCGP with a framework and tool for an accreditation process based on the principles of CQI. The tool offers patients and other stakeholders a credible measure of quality and safety at the practice level through a process bridging quality control and quality improvement.

The Royal New Zealand College of General Practitioners (RNZCGP) sees accreditation of general practices as a means of enabling practice teams to identify and improve processes and outcomes of the care they provide, and be accountable. Practice accreditation can contribute to these ends by stimulating the development of systems for quality control and continuous quality improvement (CQI) in primary healthcare.[5] Consequently, a multidisciplinary team led by general practitioners (GPs) undertook to develop and validate both an accreditation tool and a process that could assist practices to demonstrate their ability to provide accessible, safe and effective care.

In May 1998, the RNZCGP, with individuals representative of the key stakeholder groups in general practice (RNZCGP, Practice Nurses Organisation NZNO, Practice Managers and Administrators Association of NZ, Maori, Consumer), developed

performance indicators of general practice care. The development process sought to put patients first and use a CQI approach based on the RNZCGP quality cycle (Table 1). The cycle helps practice teams to use practice assessments to achieve ongoing, small, incremental improvements in their delivery of care, which can meet or exceed patients' expectations. A CQI framework was adopted because it emphasises work processes, including team involvement, iterative problem solving, and the use of measurement to monitor progress toward defined outcomes.[6,7]

Table 1. The RNZCGP quality cycle: a framework for practice assessment[8]

1. Topic	Practice decision to undertake a practice assessment.
2. Plan	Planning of measurements to identify desired standards of care. *(Aiming for Excellence*[2] identifies indicators, criteria and standards for general practice, developed by a multidisciplinary team.)
3. Data	Data collection from the practice (audit). (*Aiming for Excellence*[2] identifies data sources). This is to involve: a) A self-assessment by the practice team before the visit. b) The assessment visit – peer review of the practice by assessors.
4. Check	Gap analysis/review of assessment results by assessors. Feedback session with the practice team to discuss the findings and possible solutions.
5. Act	Practice helped by assessors to develop an appropriate and feasible quality action/management plan. Assessors provide a written report for the practice to use as a guide to quality improvement.
6. Monitor	Practice team sets a process in place to review agreed changes. A review date (second or ongoing visit) is set to assess the changes agreed by the practice team.
A key principle of the RNZCGP quality cycle is that the practice team must be involved at every stage.	

This paper has three aims. The first is to evaluate the feasibility of using the accreditation tool in practice assessments. The second is to document validation of the RNZCGP practice standards. The third is to evaluate the ability of practice assessors to use the standards to guide practice teams through the RNZCGP quality cycle.

Methods

Tool development During 1998–1999, the multidisciplinary group described above developed a draft RNZCGP tool for practice accreditation. It was developed first from quality tools used in New Zealand and internationally, and then through a consensus-building approach at two national workshops. The tool comprised a range of indicators of the quality of services offered by practices. These indicators and a process of assessment were tested in four practices, revised, and further refined in a pilot study of 20 general practices.[1]

Subsequently, the RNZCGP undertook a national field trial. It sought principally to validate standards associated with 49 indicators in 11 groups covering five practice domains: factors affecting patients; physical factors affecting the practice; practice systems; practice and patient information management; quality assurance and professional development. Table 2 reproduces a sample standard (indicator) from the last domain. A standard is a defined level of performance. The RNZCGP standard is that a practice achieves all 'essential criteria'. An 'essential' criterion is either a legal requirement or regarded by the RNZCGP as essential to safe practice performance. Other criteria are considered merely 'desirable'. Achievement of all desirable criteria is the gold standard. Both sets of criteria measure key steps in achieving indicators, where the purpose of an indicator is to provide a point of reference that describes the desired outcome.

Table 2. Example of an indicator

Indicator E.11.5 **The practice has a documented strategic plan**
Criteria: Essential • The practice has a documented long-term strategic plan • The practice has completed an annual plan Desirable • All staff have input into the strategic plan • Patient input is gathered for this purpose and used in practice planning processes • The strategic plan is reviewed every 3 years *The RNZCGP standard is that all essential criteria are met.*

Subsidiary aims of the trial were to establish a standard for training practice assessors and to refine the process of assessment. Sixty one practice assessors (GPs, practice nurses and practice managers) were nominated by their independent practitioner association (IPA) or primary care organisation (PCO). Two four-day workshops were held to train the assessors to undertake assessment visits. Training covered use of the measurement tool, the principles of CQI, and the provision of oral and written feedback to practices.

Sampling Seventy four volunteer practices were assessed in a national field trial after receiving an invitation from a College Faculty, from an IPA or a PCO, or by newsletter. The representativeness of these practices was assessed by comparing them with Kljakovic's 1998 random sample.[4] Kljakovic's study had produced the best information available about the characteristics of New Zealand general practices.

Data collection Two groups of independent, external assessors were trained to undertake practice assessments in field trial practices. The training sessions were based on active learning processes involving action and reflection. Assessors were tested on their confidence in dealing with difficult situations, their knowledge of the principles of quality in healthcare, and their understanding of the measurement tool and its application.

Each practice was responsible for undertaking a self-assessment before an assessment visit by trained assessors. The assessors worked in pairs (a GP with either a practice nurse or practice manager) to collect information from the practice on the agreed day of assessment. The assessment included an initial meeting with the practice team, followed by interviews with designated practice team members, observation of practice facilities and processes, and a review of records, practice facilities and equipment. Feedback was provided to the practice team in a one-hour debriefing session. Assessors were required to facilitate a discussion with the practice team to identify and prioritise the main areas of concern and develop an agreed action plan. They subsequently produced a written report for the practice and the RNZCGP, which included recommendations to the practice. Each assessor and practice team was asked to evaluate the practice assessment process after the practice visit. Practices used a six-point Likert scale, ranging from 1 (very inefficient) to 6 (very efficient), to define the efficiency of assessors. The RNZCGP contacted all of the practices and assessors by telephone to clarify their perceptions of the assessment experience.

A further questionnaire was circulated to 48 practice assessors and 12 members of the RNZCGP Professional Development Practice Sub-Committee and the Practice Standards Validation Field Trial Management Group. The questionnaire required each respondent to rate the relevance of each indicator and criterion in the tool against a four-point rating scale: 1 = extremely irrelevant, 2 = irrelevant, 3 = relevant, and 4 = extremely relevant.

Data analysis Quantitative data on content validity, construct validity and internal consistency were analysed using the statistical computer software package, StatsDirect. A qualitative software package,

NVivo, was used to help analyse the information gathered on the feasibility of the assessment process and on assessor competence and performance.

The content validity index (CVI) was calculated for each indicator and criterion (Table 3) to identify relevance and show the proportion of all persons giving a score of 3 or 4 (relevant or extremely relevant). As a measure of construct validity, the 'unidimensionality' of the set of criteria defined by each standard was assessed through a principal components analysis; ordinal ratings of the criteria were assumed not to distort seriously the underlying metric scaling.[9] Also assessed was how closely the criteria describing each indicator were related to other criteria with which theoretically they should be related (convergent validity) or not related (divergent validity). In this exercise, criteria pairs with a correlation coefficient >0.6 were compared with a matrix of relationships expected a priori. Kendall's tau b test was used to test for mutual independence between the paired criteria. Cronbach's a test was measured to show the consistency with which criteria were rated for a given indicator.

Table 3. Distribution of content validity index (CVI): scores by indicators and criteria

CVI scores	Indicators (%) (n = 49)	Criteria (%) (n = 243)
<70	4	12
70–79	8	13
80–89	8	28
90–99	53	36
100	27	11
Total	**100**	**100**

Results

Feasibility of assessment process Assessors reported that the assessment process was feasible. However, they struggled to interpret and apply some standards (Table 4). They also noted that the practices least organised during visits were those that had not completed self-assessments. One reason for the last finding was that the instructions to practices were sometimes unclear. Assessors found the assessment of medical records time consuming and, in some cases, stressful because of lack of familiarity with different medical record-keeping systems.

Practices reported that the peer discussion with assessors during data collection was a valuable 'learning tool'. Practices said that the practice assessment, and in particular the feedback session, was a positive experience. It provided important information and was a mechanism for team discussion and increased practice team activity. A successful session depended on the confidence and presentation skills of assessors and their ability to manage the 'Commend, Recommend, Commend' (CRC) process. This process worked well in most practices and, where it was not successful, practices reported that more constructive feedback would have been useful. Not all team members attended the session and this was considered a potential barrier to change by those who participated.

Most practices anticipated that the quality of their services would improve as a result of using information from the assessment process to implement changes in practice systems. Lack of immediate access to the resources needed to make changes was a barrier to making improvements. Cost recovery for assuring quality and for ongoing

compliance was a concern reported by some practices, particularly small and rural practices.

Table 4. A sample of indicators that were difficult to assess, from each domain

Domain	Description	Problem identified by assessors
Factors affecting patients	Patients are able to obtain appropriate and accurate repeat prescriptions in a timely manner.	This indicator is difficult to measure. Practice systems need to provide evidence that the process has worked to assist with measuring this indicator.
Physical factors affecting the practice	The practice has appropriate disinfection and sterilisation facilities available for infection control.	No additional guide or information was available for assessors.
Practice systems	Appropriate clinical management guidelines are used to ensure consistent, high-quality patient care.	More information is needed to be able to interpret this indicator.
Practice and patient information management	Records are sufficient to meet legal requirements to describe and support the management of healthcare provided.	This indicator is time consuming and stressful to apply. Knowledge and training are needed to obtain information from different computer systems. It is suggested that the RNZCGP find improved ways to extract the information required.
Quality assurance and professional development	The practice has a critical incident management system to address serious or potentially serious practice problems.	This indicator caused confusion for practices and assessors. There was no explanation or guide for assessors, and no resource available for practices to understand how to achieve this indicator.
Assessors need increased training and a guide to assist them with the interpretation of indicators and criteria that are subjective.		

Validity and reliability of tool The RNZCGP tool was able to indicate the quality of practice services. The field trial in 2001 demonstrated the face validity of the tool, as did international peer review. In terms of content validity, the relevance of each indicator and criterion was rated by 21 assessors, 10 management group members and seven unidentifiable respondents (38/60), giving a response rate of 63%. Eighty per cent of the 49 indicators recorded a CVI ≥90%, and 88% recorded a CVI of ≥80%. Three quarters of the 243 criteria recorded a CVI ≥80%. These results indicate excellent content validity of the indicators and, to a lesser extent, the criteria associated with them. The most relevant indicators and criteria described physical factors affecting the practice; practice systems; and practice and patient information management. No statistically significant differences were detected between the management group members' ratings and the assessors' ratings ($p < 0.01$).

Seventeen of 43 (40%) sets of five criteria in the assessment tool were found to be unidimensional, and 31 of 40 (78%) sets of essential criteria were unidimensional. Fifty seven of the 71 criteria pairs (80%) with a correlation coefficient >0.6 were expected to have a close relationship, suggesting good convergent validity. The remaining 14 criteria pairs (20%) with a correlation coefficient >0.6 were not

expected to have a close relationship. All 71 criteria pairs recorded a statistically significant lack of independence ($p < 0.05$). With regard to internal reliability, the mean Cronbach's a was 0.6.

Evaluation of assessors Sixty seven of the 74 practices (91%) completed and returned an evaluation form. Assessor performance in managing the site visits was reported to be acceptable to practices. Practices identified the mix of skills that assessors used during their visits as a reason for acceptability. The ability of assessors to engage with the practice team and their flexibility were noted, as was the efficiency of the data collection process and feedback. The majority of practice teams stated that the practice assessment process was efficient and that the visit provided them with significant or important information.

A number of practices commented on their high level of anxiety before the visit. By the end of the visit, most of these practices had changed from feeling threatened to non-threatened. They attributed this change to the assessors' skill in working with the practice teams to identify and manage issues from the commencement of the visit. In every case a critical factor was the role of the lead assessor and the ability of that person to establish good communication and clarify requirements.

Assessors reported that working with co-assessors was a positive experience. Key factors were: being flexible, adapting to different styles, and confidence in the ability of the co-assessor (particularly in the feedback session with the practice team). Assessors described the feedback session as the most challenging and rewarding part of the visit. It was identified as the most significant area of need for their own professional development.

The post-visit report written by assessors posed challenges. Time management and familiarity with a computer emerged as important skills for report writing. A small number of practices commented on the lateness of reports as detrimental to the process and responsible for a subsequent lack of interest in continuing the quality improvement process. Throughout the trial assessors suggested improvements to the report format and their own report writing became more consistent as the number of visits increased. The standard of report writing was high when assessed against a set of 20 criteria developed by the project team. Fourteen of the 20 criteria (70%) were met by more than 80% of assessors' reports to practices. Areas identified for improvement were style of reporting, presenting options for overcoming barriers, action plan development, identifying and allocating individuals in the practice to take responsibility for change/improvement, and providing an overall recommendation.

Discussion

The application of accreditation standards in the New Zealand general practice context is unique. The standards were feasible to implement, have excellent face validity and content validity, have good construct validity, and have fair internal consistency. Practice assessors were equipped to use them to guide practice teams through the RNZCGP quality cycle. These results accord with evaluations of Australian and UK standards against which peer-review teams can assess the management, organisation and delivery of practice services to give increased control over, and aid improvement of, quality.[10,11]

The method of practice accreditation trialled in New Zealand was feasible in terms of the process and cost. Sustained feasibility will depend on whether practice teams can commit to working together to achieve improved outcomes despite multiple expectations at an individual level. Continued financial commitment to a voluntary process is unlikely to be an ongoing or viable option. Adequate resources and funding are essential for practice teams to engage in, and support, ongoing improvement. Ignoring pressures on practice teams will impact negatively on the implementation of practice accreditation. The process of a professionally led, multidisciplinary approach to the design, implementation and monitoring of the tool, an emphasis on improvement, and a commitment to team processes are all critical success factors for practice accreditation.

The tool itself showed encouraging evidence of validity but revealed scope for improvement with further development of outcome measures. Clinical outcome measures remain an area for development.[12] Evidence for improvement in patient outcomes requires open and transparent accountability. This is an increasingly important issue for general practice, the public and other stakeholders.

The New Zealand trial was unable to assess the inter-assessor reliability of the tool. A sub-sample of the pairs of assessors did not furnish the data requested in order to assess it. In Australia, however, the Local Demonstration Trials of Standards and Accreditation had documented acceptable inter-assessor reliability for objective standards.[13] The question is whether dependence on these standards alone is sufficient to measure improvements in practice performance.[14] The RNZCGP trial was also unable to assess the criterion-related validity of the standards because there was no known external variable (the criterion, or gold standard) against which to assess the individual criteria defining them.

Assessors' communication skills and ability to manage improvement had a positive effect in changing practice perceptions of the assessment and are flagged as important components of success. However, the New Zealand experience highlights the need for improved training of external assessors, and future trials of practice accreditation standards should, at the outset, ascertain assessors' understanding of their task. Assessor standardisation, professionalism and competence are key issues and will ensure that standards development remains professionally driven. It is important to maintain the whole process without separating its components. This will prevent a loss of focus on the professional quality and systems quality that the RNZCGP supports.

In conclusion, these findings show that the validation field trial, undertaken between November 2000 and August 2001, provides research evidence that the RNZCGP practice accreditation standards, and their application, are appropriate. The trial confirmed that the process offers a feasible, valid and realistic framework for practice accreditation in New Zealand, which practice team members consider extremely worthwhile.

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