# The QUIT-CA Index (Questionable In-Training Clinical Activities): associations of low-value clinical activities and relationship to RACGP Fellowship examination performance.

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## Aim and objectives

- To establish an index of key non-evidence-based and low-value clinical practices – The QUIT-CA (Questionable In-Training Clinical Activities) Index- based on the Choosing Wisely Australia / NPS MedicineWise 'things clinicians and consumers should question' criteria, and constructed by an expert panel convened as part of this study. The QUIT-CA index will be expressed as a score, using data from the Registrar Clinical Encounters in Training (ReCEnT) study.
- To explore registrar, practice and patient factors associated with scores on the QUIT-CA Index, using ReCEnT data.
- To establish the utility of QUIT-CA scores in predicting RACGP Fellowship examination performance.
- To establish the association of measures of non-observed clinical performance (QUIT-CA scores) with observed clinical performance (performance in Clinical Teaching Visits (CTVs))

## Method

NPS Choosing Wisely recommendations were included in the QUIT-CA index if they met the criteria of being both relevant to general practice and measurable with ReCEnT study data. Recommendations (n=208) were downloaded from the NPS Choosing Wisely website on 8th October 2020. Initial scoping by the project team found 143 recommendations that clearly failed to meet both criteria. The remaining 65 recommendations were reviewed by an expert panel. 55 recommendations met the criteria for inclusion. Of those 55 recommendations six were duplicates, leaving 49 recommendations. Recommendations were assigned to pairs of expert panel members to reconcile ICPC-2 (diagnoses) and ATC (medication) codes with the recommendations. Two recommendations were determined to rely on contextual knowledge not extractable from the ReCEnT data and were thus excluded. Two recommendations involved two distinct clinical activities. Thus, the final index consisted of 47 individual recommendations and 49 individual low-value clinical activities.

Analysis was restricted to those problems/diagnoses where the registrar was 'at risk' of performing a questionable activity from the index. For each registrar, the QUIT-CA index was calculated as the number of low value clinical activities performed divided by the number of times the registrar was 'at risk' of performing a low value clinical activity. To establish the associations of registrar, patient, practice and consultation factors with the QUIT-CA index, data was aggregated at the registrar-term level and negative binomial regression was used within the generalised estimating equation (GEE) framework. To establish associations of the QUIT-CA index with observed practice, Competency Assessment Grid (CAG) data collected during CTVs was used. Data was aggregated to the registrar-term level and linear regression within the GEE framework used for each of the CAG factors. To establish associations of the QUIT-CA index with RACGP exam performance, data was aggregated at the registrar level. Linear regression was used for exam scores. Logistic regression was used for the binary outcomes (pass/fail).

## Results

ReCEnT data was collected from 2010 to 2020. There were 3,207 registrars contributing 7,927 registrar-terms of ReCEnT data to this analysis. 406,907 'at risk' problems were seen. Upper respiratory tract infections were the most common 'at risk' problem and 25% of the low value clinical activities recorded by registrars related to these infections.

Significant results from the associations of registrar, patient, practice, and consultation factors with QUIT-CA index are presented in Table 1 as adjusted incidence rate ratios (IRR). IRRs above 1 signify an increase in QUIT-CA index and indicate that those registrars are more likely to perform QUIT-CAs. Four registrar factors were significantly associated with QUIT-CA index. Older registrars had a decrease in QUIT-CA index, with each year increase in age resulting in a 1% decrease in QUIT-CA index. Term 2 registrars had a 9% decrease and Term 3 registrars had a 15% decrease in QUIT-CA index compared to Term 1 registrars. Registrars with a more recent medical graduation year also saw a decrease in QUIT-CA index. Training region was also associated with QUIT-CA index.

Three practice factors were associated with the QUIT-CA index. Higher SEIFA decile and working in smaller practices were associated with a higher QUIT-CA index, while registrars working in practices that routinely bulk bill all patients had a lower QUIT-CA index.

Two patient factors were associated with the QUIT-CA index. Registrars with a higher proportion of patients from NESB and patients they had not seen before had higher QUIT-CA indexes (IRR 1.24, p=0.014 and IRR 1.31, p<0.001 respectively).

Three consultation factors were associated with the QUIT-CA index. Longer consultation durations and number of problems seen per encounter were associated with lower a QUIT-CA index. An increase in learning goals generated was associated with an increase in the QUIT-CA index.

Table 1: Statistically significant multivariable associations with QUIT-CA index

| Covariate | Class | IRR (95% CI) | p |
|---|---|---|---|
| **Registrar Factors** | | | |
| Registrar age | | 0.99 (0.98, 0.99) | <0.001 |
| Term | Term 2 | 0.91 (0.86, 0.96) | <0.001 |
| | Term 3 | 0.85 (0.80, 0.90) | <0.001 |
| Graduation year | | 0.97 (0.97, 0.98) | <0.001 |
| **Practice Factors** | | | |
| Socio-Economic Indexes for Areas (SEIFA) | | 1.01 (1.00, 1.02) | 0.015 |
| Practice size | Small | 1.05 (1.00, 1.11) | 0.031 |
| Practice routinely bulk bills | Yes | 0.94 (0.89, 1.00) | 0.039 |
| **Patient Factors** | | | |
| Proportion NESB*, across term | | 1.24 (1.05, 1.48) | 0.014 |
| Proportion patients new to registrar, across term | | 1.31 (1.13, 1.51) | <0.001 |
| **Consultation Factors** | | | |
| Mean consult duration, across term | | 0.99 (0.99, 1.00) | 0.030 |
| Mean number problems, across term | | 0.84 (0.78, 0.89) | <0.001 |
| Proportion learning goals, across term | | 1.21 (1.03, 1.41) | 0.018 |

*Non-English-speaking background

Six registrar factors (gender, country of medical graduation, having worked at the practice before, years of hospital practice, full time status), one practice factor (rurality), four patient factors (age, gender, Aboriginal or Torres Strait Islander status, and existing patients of the practice) and one consultation factor (using sources of in consultation assistance) were not associated with QUIT-CA index.

Our analyses of associations of the QUIT-CA index with CTV performance and RACGP fellowship examination performance are currently being conducted (some technical challenges with the statistical approach have been resolved).

## Discussion

The decrease in QUIT-CA index across term provides a degree of validation of the QUIT-CA with the more experienced registrars who are further through their training having lower QUIT-CA indexes. The increase in QUIT-CA index in registrars seeing higher proportions of NESB patients could be explained by language barriers and a limited ability for registrars to negotiate outcome and practice shared decision making. Longer consultation time is associated with quality care (a lower QUIT-CA index) in this study.

Importantly, we found that rurality was not associated with the QUIT-CA index.

## Implications

The associations we have found with our marker of quality, evidence-based, practice are of considerable import for GP vocational training. For example, the association with consultation duration can be thought to indicate continued emphasis on structural aspects of training (limits on patient numbers). An increased focus on consultation skills for NESB patients would be a reasonable response to the observed association of greater QUIT-CA index with NESB consultations.

## Future research - outline areas for future research that your work identified

Further research may include a cluster analysis of the QUIT-CA index to see which QUIT-CAs occur together.

Other future analyses may look at some of the individual recommendations that have yet to be explored in the ReCEnT data in more detail e.g. avoid prescribing pregabalin and gabapentin for pain which does not fulfil the criteria for neuropathic pain.

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