(false negatives and false positives) were prominent as part of the translational pathway from quantitative summary estimates of test accuracy to management decisions. Summary measures that separate the two dimensions of test accuracy in the absence of prevalence information (for example sensitivity and specificity) appeared to result in a misplaced emphasis on one or other of false positive or false negative test errors. Presenting test accuracy data using the 2x2 diagnostic table or a pictograph attenuated this effect.

Conclusion Choice of test accuracy metric appears to have a profound effect on diagnostic decision making. Understanding, contextual factors and motivational biases are likely to be contributing factors to the observed variability. It is unclear to what extent any advantage of test accuracy metric for informed decision making is based on familiarity as opposed to their intuitive nature. Simultaneous illustration of both dimensions of test accuracy in order to facilitate informed diagnostic decision making requires further exploration.

Plenary Session

A SIMPLE MORBIDITY SCORE FOR UK PRIMARY CARE: A NEW TOOL FOR RESEARCH AND HEALTHCARE OUTCOME MONITORING

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1IM Carey, 1SM Shah, 1T Harris, 1S DeWilde, 1DG Cook. 1Division of Population Health Sciences and Education, St George’s University of London, London, UK

Background Adjustment for morbidity level is important in ensuring fair comparison of outcomes between patient groups and healthcare providers. The Quality and Outcomes Framework (QOF) in UK primary care, which records numerous diseases systematically, offers potential for developing a standardised morbidity score that can be easily applied in research and service settings.

Methods Using The Health Improvement Network (THIN), a large primary care database of 375 UK general practices in 2008–9, half the practices were randomly selected as a training set to derive a morbidity score based on chronic conditions recorded in QOF, and the other practices formed a validation set to assess predictive performance. A total of 653,780 patients aged 60 and over registered in 2008 were included, and mortality at one year was assessed.

Results Nine QOF conditions were identified as robust co-predictors (Hazard Ratio ≥1.2) of morbidity independent of age and sex, and were assigned integer score weights based on the strength of their association with mortality. Cancer (HR=3.4) and Dementia (HR=2.8) were the strongest predictors. In a Cox model with age and sex included, the addition of the QOF score improved model discrimination in predicting mortality (c-statistic=0.82 vs. 0.78), performing similarly to the Charlson index, an established morbidity index. In a multilevel logistic model, an individual’s QOF score explained more of the variation in mortality between practices than the Charlson index (46% compared to 32%). At practice level, the mean QOF score per patient was strongly correlated with practice standardised mortality ratios (r=0.64) and explained more variation in practice death rates than the Charlson index.

Conclusion A simple score derived from routine QOF recording provides a morbidity index which is highly predictive of one year mortality in older UK Primary Care patients, is simpler to implement than existing morbidity scores, and explains practice level variations in mortality. This new score has potential utility in research and healthcare outcome monitoring and could be easily implemented nationally through existing mechanisms for anonymised collection of QOF data from practices.