PSA screening reply

In his *Back to Back* argument in favour of PSA screening, Robin Smart claims that PSA screening performs well compared to other screening programmes.[1] He gives a number needed to screen to save one life of 80, and number needed to treat to save one life of two to five. The source for these figures is not given, but they are very different from the preliminary estimates from the ERSPC study (which he quotes elsewhere) which found the number needed to screen over nine years to prevent one death was 1410 and that the number needed to treat to prevent one death was 48.[2]

If men are to make an informed decision about whether to have a PSA test, then it is important that they are provided with the best estimates of the potential benefits and harms of the test. Smart's figures give a misleadingly optimistic impression.

Dr Ben Hudson

References

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Cardiovascular disease risk profile tools and New Zealand—absolutely the best way forward

In December 2009, the *Journal of Primary Health Care* published a non–peer reviewed essay about the use of cardiovascular disease (CVD) risk profile tools in New Zealand.[1] The authors of this essay, Boland and Moriarty, used a cross-section analysis undertaken by our research group (Bannink et al. 2006)[2] and an outdated systematic review (Brindle et al. 2006)[3] to argue against the use of CVD risk profile tools. As co-authors of the Bannink et al. paper we would appreciate the right of response.

Boland and Moriarty are correct that our paper described the CVD risk factor status of the first 18 000 patients profiled in routine general practice in New Zealand using the PREDICT-CVD tool. They also correctly stated that the PREDICT decision support system is based entirely on evidence-based guidelines—the updated PREDICT CVD-Diabetes containing recommendations from the New Zealand Guidelines for CVD Risk Assessment and Management and the Management of Type 2 Diabetes.

However, the authors of the essay inappropriately criticise this paper as not being able to show evidence of effectiveness of CVD risk profile tools. The Bannink paper was simply a cross-sectional analysis of risk factor profiles generated opportunistically in general practice. The purpose of this first paper by the PREDICT investigators was to describe the baseline characteristics of a cohort to be used to generate new risk prediction tools and to demonstrate how a cohort study could be undertaken in routine primary care practice using a web-based clinical decision support system (CDSS). This paper never was nor ever could be a study of effectiveness of decision support tools, nor would ever be included in a systematic review of the impact of CVD risk profile tools. It represented the first stage of a large New Zealand cohort study, the most appropriate study design for generating risk prediction equations.

The Framingham equation used in New Zealand CVD risk assessment and management guidelines[4] has long been acknowledged as having deficiencies leading to over-prediction of risk in low risk populations and under-prediction of risk in high risk populations.[3] In the six years since the publication of Bannink et al., New Zealand GPs and practice nurses have produced a cohort of over 120 000 participants using the PREDICT decision support system. By linking the risk profiles in this cohort to hospitalisations and deaths, it will be possible to develop up-to-date risk prediction equations relevant for all New Zealanders and for specific high risk population subgroups such as those of Maori, Pacific and South Asian ethnicities. Boland and Moriarty raise concerns about possible missing ethnicity data. As ethnicity is an integral variable in New Zealand risk prediction algorithms, it is not possible to get a risk prediction score using PREDICT without having complete data entry. Indeed, there is no missing risk assessment data on anyone in the PREDICT cohort.

Letters may respond to published papers, briefly report original research or case reports, or raise matters of interest relevant to primary health care. The best letters are succinct and stimulating. Letters of no more than 400 words may be emailed to: **editor@rnzcgp.org.nz**. All letters are subject to editing and may be shortened.

The authors develop a debate against the effectiveness of CVD risk profile tools citing the systematic review by Brindle et al. published in 2006. They state that '...this review found no conclusive evidence that the use of CVD risk profile tools significantly improves patient care.'

The review, now out-dated, found that 'four randomised controlled trials confined to people with hypertension or diabetes found no strong evidence that a cardiovascular risk assessment performed by a clinician improves health outcomes.' The four randomised controlled trials investigated the impact of giving patients a CVD risk score. CVD risk assessment and management requires a long-term committment to our patients. It is well-known that one-off advice rarely leads to persisting changes in patient behaviour. So it is not surprising that providing a CVD risk assessment at one point in time did not change patient health outcomes. Furthermore, two of the trials had a CDSS, the others did not. In the two trials using a CDSS there was very poor uptake of the systems by practitioners, and one was not integrated with the patient's electronic medical record—one of the most important factors shown to support uptake and use of CDSSs.[5] PREDICT is integrated into practitioners' patient management systems, provides decision support at the time and location of decision-making and generates a comprehensive, personalised set of evidence-based management recommendations, not just a risk score. The latter functionalities have also been shown to be critical independent predictors of improved clinical practice.[5]

Furthermore, Boland and Moriarty did not base their argument on up-to-date evidence of the effectiveness of CDSS for CVD. A more relevant systematic review was conducted in 2008.[6] This review identified 42 randomised controlled trials of computerised systems for assessment and management of CVD risk or risk factors in primary care. All of the older trials including non–user friendly, non-integrated systems were included. The evidence for the impact of CDSS in general has been moderately favourable in terms of improving desired practice. Of the randomised trials of CDSS for assessing or managing CVD risk, about two-thirds reported improvements in provider processes (such as improved documentation, increase in recommended examinations, investigations, providing advice or management plans) and two-fifths reported some improvements in intermediate patient outcomes (reduction in CVD risk, BP or cholesterol levels). Most importantly, no harms were reported.

We believe that CVD risk profile tools incorporated within general practice management systems have significant potential to improve the quality of patient care in New Zealand. The unique advantage offered by the PREDICT system is its ability to also provide real-time aggregated reports to individual practices on their patient care and to generate a cohort study for developing new risk prediction tools that are based on New Zealand populations. Moreover we have now integrated into PREDICT the 'Your Heart Forecast' (www.yourheartforecast.co.nz) tool that we developed in collaboration with the National Heart Foundation to support and improve risk communication. This has been well-received by clinical users. Evaluation to determine whether Your Heart Forecast faciltates patient understanding of a CVD risk score and supports behaviour change is underway.

We challenge Boland and Moriarty to find both more appropriate and more up-to-date evidence to support their arguments.

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COMPETING INTERESTS

PREDICT was developed by a collaboration of clinical epidemiologists at the University of Auckland, IT specialists at Enigma Publishing Ltd (a private provider of online health knowledge systems), primary health care providers, secondary care specialist opinion leaders, primary health care organisations, non-governmental organisations (New Zealand Guidelines Group, National Heart Foundation, Diabetes New Zealand, Diabetes Auckland), several district health boards and the Ministry of Health. PREDICT software platform is owned by Enigma Publishing Ltd (PREDICT is a trademark of Enigma Publishing Ltd). The PREDICT research project has support by HRC grants 03/183 and 08/121 from the Health Research Council. TR and SW are co-principal investigators (Maori–non Maori partnership) and RJ is the supervisory investigator. SW, TR and RJ have no commercial involvement in PREDICT.