Primary Health Care Data and Cardiovascular Disease Risk: A Spatial Analysis.

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INTRODUCTION: Cardiovascular disease (CVD) continues to be a leading cause of morbidity and mortality among adults worldwide. The objective of this study was to calculate a cardiovascular disease risk score from General Practice clinical records for a sample population and assess spatial variations in the distribution of CVD risk to identify areas with high and low prevalence levels of CVD risk.

METHODS: We used GP practice data for 4,748 men and women aged 30 to 74 years with no history of CVD. A 10 year absolute CVD risk score was separately developed for men and women based on the standard Framingham Risk Equation (FRE). The individual risk scores were aggregated by statistical area level one (SA-1) to predict area level CVD risk, and then the pattern of high and low CVD risk was visualised in the study area.

RESULTS: The overall ten year risk of CVD in our sample population was 14.6% (95% CI 14.29–14.94). Of the 4,748 patients in our study, 26.7% were at high risk, 29.8% were at moderate risk and 43.5% were at low risk for CVD over ten years. On the whole men had a much higher CVD risk score (20.2%) than women (10.6%). The geographic visualisation approach highlighted that the prevalence of CVD risk was substantially higher in the areas with lower socio-economic status.

CONCLUSIONS: The most immediate outcomes of this study are greater empowerment of participating practices and general practitioners in their use of clinical data and identification of hotspot areas of future CVD risk. The geospatial analyses of CVD risk identified areas with high levels of unmet need for CVD care which will enable policy makers to apply geographic targeting of effective preventive interventions to the right place, at the right time, to the right people.