Selecting high-risk patients for heart screening

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Using routine data from electronic patient records to select individuals at high risk of developing heart disease, rather than screening all adults aged between 40 and 74 years of age, is just as effective at saving lives but will be cheaper to run, according to research published in the British Medical Journal today.

Despite a significant decrease in heart disease in the last twenty years, heart problems remain the leading cause of ill health and death in the UK. Heart disease also costs the UK economy around £30 billion every year.

In an attempt to tackle this major health problem, the UK government is introducing a national vascular screening programme to identify individuals at high risk of developing heart disease. All adults between the ages of 40 to 74, free of diagnosed diabetes, heart disease and high blood pressure, will be invited to their surgery for a health check. This assessment will include blood tests, blood pressure monitoring and a heart disease review. Individuals will receive further treatment depending on the results of their tests.

The screening programme is expected to prevent 9,500 heart attacks and strokes every year and will cost around £250 million.

The authors, led by Dr Simon Griffin from the MRC Epidemiology Unit, investigated how the government screening programme would compare to systems where high risk patients would be pre-selected and

invited for assessment and possible treatment.

Griffin, Chamnan and colleagues assessed data from participants in the UK EPIC-Norfolk study, a major European investigation into the causes of cancer and other chronic diseases. Almost 17,000 men and women between the ages of 40-74, who were free from heart disease and diabetes at the start of the study, took part in the research.

The researchers examined different screening strategies to determine which ones were most effective. These included inviting all 40-74 year olds for vascular screening (Department of Health recommendation), inviting 50-74 year olds for screening, inviting overweight men and women for screening, asking patients to complete a heart disease risk questionnaire (those with a high score would be invited for screening), and finally inviting patients whose data from their electronic patient records would flag them up as high risk.

The results show that the final strategy - using routine data to select high risk patients - is just as effective at the government screening programme at preventing new cases of heart disease and will save costs. A similar benefit could be achieved by inviting all 50 to 74 year olds for vascular screening (rather than starting at the age of 40).

In conclusion, the authors say that: "a universal screening programme for cardiovascular disease might prevent an important number of new cardiovascular events in a population, but it may be unrealistic to implement in increasingly resource constrained health systems… policy makers have to decide on the balance between the number of people needed to screen or treat and the number of cases that can be prevented in the population."

In an accompanying editorial, Tom Marshall from the University of Birmingham, agrees that targeted screening programmes should be used.

He says: "there are untreated patients at high risk of cardiovascular disease, most of whom can be identified from their electronic primary care records … we should act on this information."

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