GENOMICS AND SOCIETY BRIEFINGS NO.2

Research findings from the Economic and Social Research Council's Genomics Network on the social, political, economic and ethical implications of advancing fields in genomics science.

Family history in the prevention of coronary heart disease in general practice

Coronary heart disease (CHD) is the leading cause of death in the UK. The US Centers for Disease Control (CDC) has suggested using family history to identify individuals at risk of heart disease and to offer them targeted lifestyle advice and medications. The UK Department of Health is also considering family history as a preventive tool.

We have conducted two research projects on assessing family history of heart disease from the patient point of view. The first explored how clinicians and patients communicated about and interpreted family history. The second (on-going) study investigates how individuals at high risk of heart disease perceive and react to assessing family history and other risk factors, lifestyle advice and medications. The latter study also evaluates the impact of incorporating family history on heart disease risk assessment towards motivating lifestyle change, as well as critical appraisal of the psychological consequences and cost-effectiveness of this new approach to preventing heart disease.

Not only genes

In our first study we found that primary care clinicians interpreted family history as "genetic" and immutable and focused on changing behaviour. Patients were more likely to have a complicated understanding of family history. They associated familial risk not only with inheritance but also with their relatives' behaviours as well as social environment, such as stressful or "hard" life, social class, gender and ethnicity.

Family history does not only indicate a genetic risk. Family history also encompasses other risk factors shared by family members, such as family lifestyle, socioeconomic position, ethnicity and place of living (neighbourhoods and regions).

We concluded:

- A multifactorial understanding of family history as reflecting shared genes, behaviour and environment among families is most accurate in terms of epidemiological evidence.
- Discussing family history in the broad context of inheritance, family lifestyle and social background fits with patients' understanding of heart disease and best enhances understanding and motivation in a clinical consultation.
- Interpreting family history as indicating genes only narrows its public health potential. The fact that family history encompasses biological, behavioural and social determinants of health makes it a tool that could help to target individuals at risk for a range of the most relevant reasons.

Targeting high or moderate risk?

Our first study focused on individuals who had a low or moderate risk of heart disease (less than 20% chance of developing heart disease in the next ten years), and our second study focuses on those at high risk (over 20% risk, usually prescribed statins). Individuals with a low or moderate risk were often in their forties, with a mixture of professionals and manual workers. Many of them were already interested in their health; undergoing the assessment of overall risk and family history of heart disease often encouraged them to make small changes in their lifestyle or to "keep up the good work". However, some individuals with a low risk of heart disease but a positive family history felt that the clinician was too forceful in suggesting lifestyle change. Some individuals, who did not lead a particularly healthy life (e.g. smoked) also did not appreciate being advised about lifestyle.

Individuals at high risk of heart disease were older (in their fifties and sixties) and more frequently manual workers. They commented that they had considered introducing small changes into their lifestyle or had begun to take prescribed medications. However, they were less engaged with their risk of heart disease than those at moderate risk. For them risk of illness seemed a natural part of getting older, they also often had other illnesses either personally or in the family and sometimes felt constrained by, for example, long or shift working hours.

We concluded:

- Family history may be a useful way of identifying younger individuals at moderate risk of heart disease and to encourage them to make small changes to their behaviour at a time when they expect and want to be healthy.
- Lifestyle advice should not be too forceful; individuals at low risk and those who do not want to change their behaviour may be offended by forceful advice.
- Individuals at high risk of heart disease benefit from assessing their risk factors and family history and advice on lifestyle and medications. However, for individuals who are older, poorer or have other illnesses, the risk of heart disease is less salient. This underlines the need for programmes that tackle social deprivation and ill health of older people more generally.

Methods

The first, qualitative study involved video-recording consultations about overall risk of heart disease and family history between 23 patients and 9 clinicians; clinicians and patients were also interviewed two weeks after. The second study involves interviews with patients (20 recruited, 40 to be recruited), who have been identified as at high risk of heart disease based on family history and/or other risk factors two weeks after their consultation. The latter project is part of a larger randomised study involving approximately 700 individuals, which will assess the behavioural, psychological and cost implications of incorporating family history into heart disease risk assessment in primary care. Patients have been recruited from 24 general practices in Devon/Cornwall and Nottinghamshire. The results of the latter study are expected in 2008.

The projects are funded by Economic and Social Research Council (ESRC) and the Department of Health.

Research team

Dr Philip Evans (Peninsula Medical School), Dr Hannah Farrimond (Egenis), Ruth Hall (Egenis), Professor Steve Humphries (UCL), Dr Nadeem Qureshi (University of Nottingham), Dr Paula Saukko (Egenis)

For further information on this project, contact: Dr Paula Saukko, ESRC-Centre for Genomics in Society (Egenis), University of Exeter **(p.saukko@ex.ac.uk)**

The ESRC Genomics Network is one of the largest social science investments in the ESRC's current portfolio and has established itself as an internationally recognised source of analysis, commentary and guidance on the social, political, economic and ethical implications of advancing fields in genomics science. The Network consists of 3 funded ESRC research centres, **Cesagen, Innogen and Egenis and the ESRC Genomics Policy and Research Forum**. These investments range across 5 universities and involve over 100 researchers from professors to PhD students, as well as administrative and support staff, and a rotating cast of visiting research fellows.

For further information visit
www.genomicsforum.ac.uk or contact:
Dr Rod Taylor, ESRC Genomics Forum, St John's Land, Old Moray House, Holyrood Road, Edinburgh, EH8 8AQ.
Tel: 0131 651 4797 Email: rodney.taylor@ed.ac.uk