phg foundation
making science work for health

Improving disease prediction

New proposals from the PHG Foundation could help ensure patients have reliable information about their risk of important diseases.

The latest report *Quality Standards in Risk Prediction* sets out a framework to assess risk prediction models, which estimate the likelihood of an individual developing a specific disease in the future. Such models are becoming more influential in health services; however, there is currently no systematic approach to assessing the clinical benefit of any given model, or comparing how well different models perform. The report provides recommendations to address this gap and improve the uptake of well-tested risk prediction models into medical practice.

Pinpointing the best risk prediction model for specific diseases and populations will help doctors and patients make better decisions about potential treatment of disease. For example, treatments for prostate cancer can have very serious side-effects such as incontinence or erectile dysfunction. However, most men with slowly progressing forms of the disease survive many years without treatment. The right risk prediction model for prostate cancer will help identify those patients for whom immediate treatment is unnecessary, or those for whom it carries a greater risk of harm.

Inaccurate risk prediction may undermine good quality care in other diseases too, such as breast cancer, Alzheimer's disease and coronary heart disease.

Public health consultant Dr Tom Dent says: " *This report is a constructive first step in understanding how we can use our growing knowledge of the origins and interactions of disease risk to improve health, while avoiding harm and wasted resources. With the drive towards personalised health care and the increasing number of diseases, risk factors and models, this issue is becoming more important*".

The report draws on an international expert symposium on risk prediction models held by the PHG Foundation in 2010. Rather than identify a standardised method of assessing models, the report recommends a practical framework for evaluating any medical risk prediction model, based on assessments of three key 'quality domains – the model itself, the medical context in which it is to be used, and issues relating to clinical implementation of the model.

Quality standards in risk prediction is freely available from the PHG Foundation website:

www.phgfoundation.org

For more information, please contact Dr Philippa Brice:

007505092081 (press office)   philippa.brice@phgfoundation.org

- Ends –

Notes to Editors

- The PHG Foundation is a genetics policy think-tank and health service development NGO based in Cambridge, UK
- Our mission is *making science work for health* – identifying the best opportunities for 21st century genomic and biomedical science to improve global health, and to promote the rapid, fair and effective translation of scientific innovation into medical and public health policy and practice
- We generate knowledge, evidence and ideas to inform, educate, and stimulate debate
- We also provide expert research, analysis, health services planning and consultancy services for governments, health systems, and other non-profit organisations