On 2nd March, HERC – in conjunction with the Centre for Personalised Medicine (CPM) at St Anne’s College at the University of Oxford – hosted the first conference on Personalised Medicine and Resource Allocation. The main aim of the conference was to explore ways to overcome the challenges associated with implementing genomic medicine into widespread clinical practice. Approximately 70 researchers attended the conference including speakers from the UK, the USA, and Europe.

The day featured a varied programme of presentations beginning with talks from three key figures in health economics and genomics, Kathryn Philips, University of California; Katherine Payne, University of Manchester and Wolf Rogowski, German Research Centre for Environmental Health. The speakers provided both national and international perspectives on the role of health economics in personalised medicine decision-making. The morning then continued with presentations based on submitted abstracts on topics such as practical and ethical issues for individualised cost-effectiveness analysis in risk-based screening, and opportunities and challenges in diagnostic embryo selection during assisted reproduction.

In the afternoon discussions moved towards the challenges of resource allocation decisions in practice. Adrian Towse, Director of the Office of Health Economics, discussed the valuation of next-generation sequencing platforms in healthcare, HERC members James Buchanan and Jilles Fermont described methodological issues surrounding economic evaluation of genomic technologies, and Maarten IJzerman, University of Twente, considered the potential benefits of early stage modelling in this context.

The final session focused on ethical issues. Frances Flinter, Chair of the Medical Genetics Clinical Reference Group, spoke about commissioning clinical and laboratory medical genetics services in the NHS, describing the work of the UK Genetic Testing Network. Mike Parker, Chair of the Genomics England ethics committee and Director of Ethox, University of Oxford, then addressed ethical issues with particular reference to the 100,000 Genomes project. The day was rounded off by philosophers Roger Crisp and Theron Pummer, University of Oxford, who left attendants with food for thought about the use of QALYs in health care allocation, and how personalised medicine could impact on health inequalities.

Both HERC and CPM would like to thank all those that took part in such a successful day.

For more information:
Blood transfusion is the preferred treatment for acute anaemia after cardiac surgery, but may also be harmful. There is little evidence about the optimal threshold for initiating transfusion after cardiac surgery; most decisions are based on a patient’s haemoglobin (Hb) level, but the level causing doctors to transfuse varies widely.

To address this uncertainty HERC researchers recently completed an economic evaluation alongside the Transfusion Indication Threshold Reduction (TITRe2) trial, a multicentre RCT funded by the NIHR Health Technology Assessment (HTA) Programme designed to evaluate different approaches to giving blood transfusions after cardiac surgery. Work on the trial was led by researchers at the universities of Bristol and Leicester, and the results were recently published in the New England Journal of Medicine.

In the trial, over 2,000 patients whose Hb level after surgery was less than 9g/dL were randomised to transfusion only when their Hb was less than 7.5g/dL (the ‘restrictive’ group) or transfusion straightaway (the ‘liberal’ group). The trial results indicated that there was no significant difference between the two groups in terms of the primary outcome measure of serious infectious or ischaemic complications within 3 months of surgery (35.1% versus 33.0%). There were, however, more deaths in the ‘restrictive’ group (4.2% versus 2.6%). The study therefore concluded that patients having heart surgery do not benefit if doctors wait until they become substantially anaemic before giving a transfusion.

Our economic evaluation captures detailed information on patient-level resource use and health outcomes, estimating the cost-effectiveness of a ‘restrictive’ compared to a ‘liberal’ transfusion threshold, and the costs of these two approaches were also published in this paper. We found that while there was a clear difference in the costs associated with red cell transfusion (favouring the ‘restrictive’ group), mean healthcare costs up to 3 months after surgery were similar in the ‘restrictive’ and ‘liberal’ groups (£10,636 and £10,814 respectively). The full economic evaluation is currently being written up for publication in a peer-reviewed journal, and the results will also be published in a forthcoming HTA report.

For more information: [HERC](#)
Is multi-criteria decision analysis the best way to support reimbursement decisions for complex health interventions and orphan drugs?

Project lead: Apostolos Tsiachristas

Cost-effectiveness analysis is increasingly seen as a legitimate way to support reimbursement decision making for innovative health care interventions. However, some of the outcome measures that are commonly used in cost-effectiveness analyses – such as the QALY – may not capture all of the benefits of some interventions. These interventions fall into two areas. The first includes complex multifaceted interventions such as integrated care programs, where improvements in the organisation and delivery of health care as well as changes in patient and provider behaviour are desirable and relevant to decision-making. The second area concerns orphan drugs where, amongst other factors, budget impact, severity, rarity and chronicity of disease influence reimbursement decision making.

One potential solution to this problem is the more widespread use of multi-criteria decision analysis (MCDA), a technique which may improve consistency in priority setting and reimbursement decisions for both integrated care programs and orphan drugs. MCDA can support decision-making by allowing for a systematic trade-off between multiple, and sometimes conflicting criteria simultaneously in an explicit, transparent and consistent way. Usually these criteria are included in decision making intuitively, or in a hidden or non-transparent way that may jeopardize the accountability of decision makers. Although interest in MCDA approaches is growing, the number of practical applications for evaluating complex health interventions and orphan drugs is limited.

Apostolos Tsiachristas, who joined HERC this year, has been working on the methodological and practical challenges of using MCDA in both of these areas. These include how to incorporate stochastic performance scores and criteria weights, how to deal with double counting due to overlapping criteria and better understanding which MCDA technique is most suitable to evaluate complex health interventions and which stakeholders should be involved. He is currently involved in the application of MCDA to evaluate integrated care programs in the UK (Oxford-CLAHRC project) and the Netherlands (SELFIE EU-project). Results from both of these studies will appear in future editions of our newsletter.

For more information:
Recently Funded

Acceptability and cost-effectiveness of adding genetics to bowel cancer screening. This is a six-month project funded by Cancer Research UK (KFLA011) in collaboration with Paul Heaton, Health Services Research Unit. The main aims of this project are to evaluate population perceptions and preferences for introducing a genetic test (using a saliva kit) to augment the current screening programme, and to provide some initial estimates of the likely cost-effectiveness of implementing such a test. Health Economics lead: Sarah Wordsworth.

Presentations by members of HERC

Personalised Medicine and Resource Allocation (PMRA) conference
St. Anne’s College, Oxford (organised by the Centre for Personalised Medicine/HERC), March 2015
James Buchanan and Jilles Fermont
Methodological issues surrounding the health economic evaluation of genomic technologies and a case study of these issues in the research setting

Annual Conference of the German Association for Demography
Berlin, March 2015
Peter Patz
Effects of sports and exercise in different stages of life on appendicular lean mass and strength in the old - Data from the Berlin Aging Study II

CSAE Conference 2015: Economic Development in Africa
St. Catherine’s College, Oxford, March 2015
Laurence Roope
Inequality and Growth: a simple structural relationship

International Conference on Integrated Care
Edinburgh, March 2015
Apostolos Tsachristas
Identifying and explaining the variability in development and implementation costs of disease management programs in the Netherlands

WCIO-IDF-ESCEO (World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases)
Fiara Milano Congressi (MiCo), Italy, March 2015
José Leal
Impact of hip fracture on hospital care costs: a population based study

Leeds University, Academic Health Economics Unit
March 2015
Rachael Morton
The impact of educational attainment level on health outcomes for people with moderate-to-severe chronic kidney disease

Renal Bipartite Meeting
Royal Free Hospital, London, March 2015
Rachael Morton
Considerations of Nephrologists when Suggesting Dialysis in Elderly patients with Renal Failure

NIHR Health Protection Research Unit (HPRU) in Gastrointestinal Infections Annual Scientific Meeting
University of Liverpool in London, March 2015
Mara Violato
The Economics of Gastrointestinal Infections

NIHR Health Economics Symposium
St. Catherine’s College, Oxford, April 2015
Alastair Gray
Building on existing health economics activity in the Oxford Biomedical Research Centre (BRC)

HERC Seminars Convenor: Jilles Fermont

HERC runs a series of seminars with invited speakers from the health economics community who talk on a wide range of applied and methodological topics.

During Hilary Term 2015, Dr. Joel Smith, Health Economist, Centre for Population Health Sciences, University of Edinburgh Medical School visited HERC to give a talk on: Bayesian methods (model averaging and belief networks) when mapping from the Modified Rankin Scale to the EQ-5D and Benjamin Parker from the University of Warwick presented: Management of low-grade dysplasia in ulcerative colitis in the UK National Health Service: the cost-effectiveness of immediate surgery versus ongoing surveillance.

On 26 May 2015, as part of the Richard Doll Lecture series, Professor Karl Claxton, University of York delivered a lecture entitled: Which health technologies, at what price and for whom: estimating the cost-effectiveness threshold for NICE and the NHS.

Details of forthcoming talks can be found on the HERC website.

To be added to our mailing list for future seminars, email us at herc@dph.ox.ac.uk

Recent Publications


www.herc.ox.ac.uk

Health Economics Research Centre
Nuffield Department of Population Health, University of Oxford
Old Road Campus, Headington, Oxford OX3 7LF UK
tel: +44 (0) 1865 289272/3
e-mail: herc@dph.ox.ac.uk
To receive this newsletter quarterly email herc@dph.ox.ac.uk