Health Economics Research Centre

HERC news

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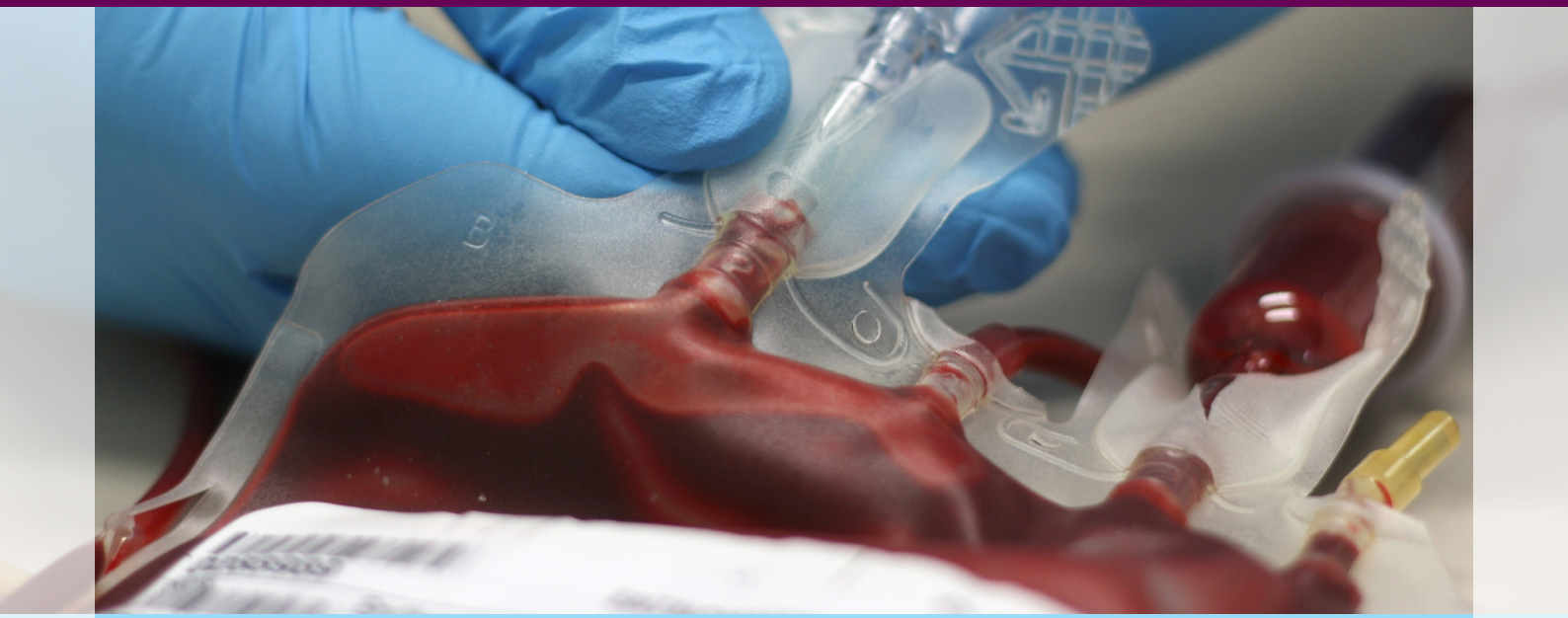


Blood transfusion: expanding the evidence base

Project team: Helen Campbell, Sarah Wordsworth, Elizabeth Stokes, Danielle Bargo

Red cell transfusions are one of the most common interventions in hospital practice and there is now an increasing, but still incomplete, body of randomised trial evidence to inform practice. As blood is a scarce and costly resource, associated with both benefits and harms (e.g. infections) for patients, assessing the cost-effectiveness of alternative transfusion policies is also paramount.

HERC's portfolio of research into blood transfusion is expanding rapidly with a number of studies funded by the NIHR. The UK arm of the Age of Blood Evaluation Study, run by Professor Timothy Walsh at the Royal Infirmary of Edinburgh, is a trial comparing fresher versus standard issue red blood cells in critically ill patients. Transfusing fresher blood may be more effective and cost-effective than standard issue blood (stored for 18-21 days on average) which is thought to have reduced oxygen carrying capabilities and increased pro-inflammatory properties, leading to adverse clinical outcomes for patients.

A programme of work focusing on trauma-induced coagulopathy is being carried out in collaboration with Professor Karim Brohi at the Royal London Hospital and Dr Simon Stanworth at NHS Blood and Transplant/ John Radcliffe Hospital in Oxford. The research aims to estimate the costs associated with massive transfusion in trauma patients and model the cost-effectiveness of a new bedside test for more rapid identification of patients with blood clotting abnormalities.

A third study (TITRe2) is being conducted in collaboration with Professors Gavin Murphy in Leicester and Barney Reeves at the University of Bristol, and is evaluating the effectiveness and cost-effectiveness of restrictive versus liberal transfusion triggers for cardiac surgery patients. It is hypothesised that giving less blood may reduce adverse implications for patients and NHS costs.

Together these studies and others (Coptic and TRIGGER) which make up our blood transfusion research portfolio, offer an exciting opportunity to generate evidence to help inform cost-effective blood transfusion in routine clinical practice.

For more information: HERC

Modelling diabetes

The UKPDS Outcomes Model, Version 2: now published

Project team: Alastair Gray, José Leal, Boby Mihaylova, Maria Alva

The number of people globally with diabetes is now over 360 million and rapidly rising, making this a leading health problem of the 21st century. Type 2 diabetes, the most common type, can cause severe health problems, including heart disease, amputation and loss of sight. Major clinical trials have shown that diet, exercise and drugs can greatly reduce these risks.

One landmark trial was the United Kingdom Prospective Diabetes Study (UKPDS), which in 1997 showed conclusively the benefits of good blood glucose and blood pressure control, and helped change medical practice around the world. HERC has a long involvement in the UKPDS. Early on, we demonstrated that good control of risk factors is very cost-effective. More recently, we have used the wealth of information on the 5102 patients in the study to build a diabetes simulation model, which allows us to predict the risk of future diabetic complications. The UKPDS Outcomes Model has now been widely used around the world for a number of years, to extrapolate trial results, or help plan future demand for health services. Recently we have published papers showing that the model reasonably predicts event rates in an Italian diabetic population, and also reasonably predicts future events in a follow-up study of patients in the original trial.

Now, working closely with colleagues in Oxford, Sydney and Melbourne, we have published Version 2 of the Outcomes Model. This incorporates much additional data on events and risk factors, and we hope it will also be widely used by other researchers and agencies. In time we will also release an updated approved software version. The UKPDS will never be repeated, but in this way information from the study can continue to help improve cost-effective diabetes care around the world.

For more information: HERC

> “The UKPDS Outcomes Model has now been widely used around the world.”

Response mapping methods in the literature… and in Stata!

Project team: Oliver Rivero-Arias, Helen Dakin, Alastair Gray

QALYs have become the preferred outcome measure in economic evaluation. The utilities required to calculate QALYs are often collected using questionnaires such as the EuroQol EQ-5D. However information on the EQ-5D is not always directly available and we need algorithms that translate available information into EQ-5D data. The methodology that creates these algorithms is known as “mapping”.

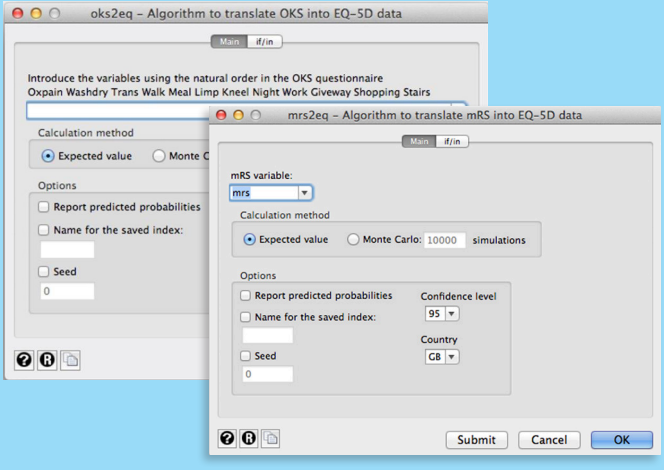
HERC has a long-standing interest in the development of a specific mapping method: ‘response mapping’. Response mapping translates responses on disease-specific or generic questionnaires into EQ-5D data by estimating participants’ EQ-5D responses rather than utility values and is increasingly being used by researchers. In a recent literature review, we found that whilst only three studies had used response mapping before 2009, the technique has now been used in at least 21 studies. We presented the results of this literature review in a HERC-organised session at the iHEA conference in Sydney in July 2013.

> “Response mapping translates responses on disease-specific or generic questionnaires into EQ-5D data by estimating participants’ EQ-5D responses rather than utility values and is increasingly being used by researchers.”

As part of our commitment to further investigate and improve the response mapping approach, we are very excited to announce that we have developed Stata commands that implement several of our developed algorithms using a user-friendly interface. Two of these commands (mrs2eq, predicting EQ-5D from the Modified Rankin Scale and oks2eq, predicting EQ-5D from the Oxford Knee Score) have been accepted for publication in the Stata Journal and will be available to download directly through Stata later this year. In addition, a beta version of another command (mapping from versions 1 and 2 of the SF-12 to EQ-5D) is also now available from the authors upon request.

Our future research agenda includes the development of algorithms to map from two disease-specific instruments, Parkinson’s Disease Questionnaire (PDQ-39) and Oxford Hip Score (OHS) to the EQ-5D.

For more information: HERC



Capabilities measurement

Project team: Paul Anand, Alastair Gray, Laurence Roope, Judit Simon

The capabilities approach was first developed by Nobel Laureate Amartya Sen and emphasises both what people are able to do and the fact that quality of life is multi-dimensional – ideas that are particularly relevant in the context of health. A team of researchers at HERC and a consortium of universities are engaged in applying the capabilities approach to various different settings (www.herc.ox.ac.uk/research/capabilities). In two of the papers arising from the project, members of the team have recently demonstrated how the approach might be used in mental health outcome research and child development.

Capabilities measurement for individuals with mental health disorders

HERC researchers and a team led by Professor Tom Burns, Department of Psychiatry, developed a capabilities measurement instrument, the OXCAP-MH, for use in mental health outcome research. This was then applied in the Oxford Community Treatment order Evaluation Trial (OCTET) study to measure the capability profiles of over 300 mental health service users experiencing involuntary hospitalisation. The study showed 'Daily activities', 'Influencing local decisions', 'Enjoying recreation', 'Planning one's life' and 'Discrimination' as being the capability domains most affected by mental health. Female service users and those with a primary clinical diagnosis of schizophrenia or longer illness duration reported significantly lower capability scores.

For more information: HERC

Capabilities measurement in very young children

Using German Household Survey data on the activities and abilities of over 800 children aged 2-3 years, researchers at HERC and the Open University found that child happiness is positively related to engagement in more interactive activities, such as reading or telling stories, going shopping and doing arts and crafts. Such activities also boost the development of children's capabilities; artistic activities having a significant impact on the development of movement skills, and reading or telling stories and singing children's songs on both talking ability and social skills. In contrast, there was no discernible benefit from more passive activities, such as looking at picture books or watching television. The findings of the study have attracted a lot of media attention.

For more information: HERC

Spotlight on RACHAEL MORTON

In 2013 I was awarded a four year Sidney Sax - Public Health Overseas Fellowship through the Australian National Health and Medical Research Council (NH&MRC) to investigate *The impact of socio-economic status on the management and progression of chronic kidney disease*. As part of this fellowship, and from June 2013, I will be spending two years based within HERC, and working under the supervision of Dr Boby Mihaylova, Prof Colin Baigent and Prof Alastair Gray.

Chronic kidney disease is an important global public health problem characterised by marked differences in outcomes across age, sex, ethnicity and socio-economic factors. As part of my work within this area, I plan to investigate the impact of socio-economic status upon health outcomes (cardiovascular and renal), health care resource utilisation, adherence to cholesterol lowering medication, and participation in randomised controlled trials. Additionally I plan to identify factors influencing household income over time in chronic kidney disease patients and develop my expertise in 'equity analysis', so that I can then apply this knowledge in other chronic diseases.

During my time in the UK I hope to be able to present my work to new audiences. I have already had the opportunity to attend the 8th World Congress on Melanoma in Hamburg in July 2013, where I was involved in a number of presentations on the links between socio-economic status and melanoma outcomes, quality of life following sentinel lymph node biopsy, and methods for the economic evaluation of whole brain radiotherapy alongside randomised controlled trials.

I have moved to the UK with my partner and two children and very much look forward to developing my portfolio of work over the coming two years.

A selection of my recent presentations:

8th World Congress on Melanoma
Hamburg July 2013

Rachael Morton, Lauren Haydu, Stephen Jan, Bruce Armstrong, John Thompson
Does socio-economic status predict melanoma thickness, disease-free survival or melanoma-specific survival? A prospective single-centre cohort study in Australia

Joshua Lee, **Rachael Morton,** Lauren Haydu, John Thompson
Does socio-economic status influence clinical trial participation for patients with melanoma?

Rachael Morton, Johan Vessey, Robin Saw
Lymphedema and utility-based quality of life following sentinel node biopsy

Rachael Morton, Gerald Fogarty, Madeleine King, Angela Hong, Anna Nowak
Methods for the economic evaluation of whole brain radiotherapy alongside a randomised controlled trial

Presentations

by members of HERC

OCTET
End of Study Webinar
April 2013
HDCA Health and Disability Thematic Group
J. Simon, P. Anand, A. Gray, J. Rugkasa, K. Yeeles, T. Burns and the OCTET Team
Operationalising the capabilities approach for outcome measurement in the OCTET study: http://www.herc.ox.ac.uk/research/octet

Harvard's Global Health and Population Department's 50th Anniversary
Boston, April 2013
Winnie Yip
WATCH: Strengthening Health Systems for Effective Coverage

Oxford Regional Paediatric Registrar Training Day
John Radcliffe Hospital, Oxford, May 2013
Mara Violato
Child health inequalities in the UK: does money matter?

National Workshop 'Developing a Health Needs Assessment tool to understand and meet the needs of people in contact with Probation Services'
London, May 2013
Anees Abdul Pari
An exploratory study of health and wellbeing of offenders on probation in England

London School of Economics
London, June 2013
Sarah Wordsworth
Translating genomic technologies into the NHS: What can health economics add?

Austrian Public Health Society Annual Meeting
St Polten, Austria, June 2013
Judit Simon Opening keynote address: *Towards a new understanding of public health*

Health Economists' Study Group
University of Warwick, June 2013
Rachael Morton, Lauren Haydu, Stephen Jan, Bruce Armstrong, John Thompson
Does socio-economic status predict melanoma thickness, disease-free survival or melanoma-specific survival? A prospective single-centre cohort study in Australia

Mara Violato, Eduardo Fé, Alastair Gray
Discontinuity designs in health economics: efficiency and heterogeneity in estimations of causal effects

Claire Simons, Oliver Rivero Arias, Ly-Me Yu, **Judit Simon.** *Missing data in the health-related quality of life EQ-5D instrument – should we impute individual domains or the actual index?*

iHEA International Health Economics Association, 9th World Congress
Sydney, July 2013
Presentations by members of HERC

HERC at iHEA SYDNEY 2013

Just landed
Iryna, Liz, James, Reem, Helen in Sydney

Presentations by HERC authors: http://www.herc.ox.ac.uk/conferences-and-presentations/iheaherc2013

HERC

Staff News

We are sorry to say goodbye to two senior research staff this quarter and look forward to retaining close links with them.

Jingky Lozano-Kühne

Jingky joined HERC in November 2011 and has worked tirelessly on SHARP (Study of Heart and Renal Protection). She has returned to Germany to pursue her career nearer home.

Judit Simon

Judit has been at HERC since 2002, though based in Basel for the last few years. She has now accepted a post as Professor of Health Economics at the Medical University of Vienna.

Su Lui

Su came from the Chinese University of Hong Kong to spend six weeks at HERC in May/June soaking up the theory and practice of economic evaluation.

Recent Publications

For a complete list of HERC-authored publications to date and in press, visit our website.

Dzakpasu, S**, Powell-Jackson, T**, and Campbell, OMR (2013). Impact of user fees on maternal health service utilization and related health outcomes: a systematic review. Health Policy Plan, 2013 Jan 30. [Epub ahead of print].

Gray, A and McGuire, A (2013). Professor Gavin Mooney 1943-2012 Obituary. Health Economics, 22:371-372.

Hayes, AJ, **Leal, J, Gray, AM**, Holman, RR, and **Clarke, PM** (2013). UKPDS Outcomes Model 2: a new version of a model to simulate lifetime health outcomes of patients with type 2 diabetes mellitus using data from the 30 year United Kingdom Prospective Diabetes Study: UKPDS 82. Diabetologia, 2013 Jun 22. [Epub ahead of print].

Jairath, V, Kahan, BC, Gray, A, Dore, CJ, Mora, A, Dyer, C, **Stokes, EA**, et al (2013). Restrictive vs Liberal Blood Transfusion for Acute Upper Gastrointestinal Bleeding: Rationale and Protocol for a Cluster Randomized Feasibility Trial. Transfus Med Rev, 27(3):146-53.

Pagano, E, **Gray, A**, Rosato, R, Gruden, G, Perin, PC, Merletti, F, and Bruno, G (2013). Prediction of mortality and macrovascular complications in type 2 diabetes: validation of the UKPDS Outcomes Model in the Casale Monferrato Survey, Italy. Diabetologia, 56(8):1726-34.

Thorn, JC, Coast, J, Cohen, D, Hollingworth, W, Knapp, M, Noble, SM, Ridyard, C, **Wordsworth, S**, and Hughes, D (2013). Resource-Use Measurement Based on Patient Recall: Issues and Challenges for Economic Evaluation. Appl Health Econ Health Policy, 11(3):155-61.

HERC Seminars

Convenors: Jingky Lozano-Kühne, Jacqueline Murphy

From April 2013 to July 2013 we welcomed **Cristina Hernández Quevedo,** Technical Officer, European Observatory on Health Systems and Policies (WHO), based at LSE Health, who spoke about *Inequity in long-term care services for the disabled*, **Professor Simon Eckermann**, Professor of Health Economics, Australian Health Services Research Institute, Sydney Business School, University of Wollongong, who spoke about *Including quality attributes in efficiency measures consistent with net benefit: creating incentives for evidence based medicine in practice*, and **Dr Charitini Stavropoulou**, Lecturer in Health Care Management, Department of Health Care Management and Policy, University of Surrey, who presented her study *Differences in risk perceptions among patients and doctors; a field experiment.*

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

Recently Funded

Research funding into stroke in the United Kingdom: Is disease burden associated with levels of research funding?
Principal Investigators: Ramon Luengo-Fernandez and José Leal. Funded by the Stroke Association

Introducing standardized and evidence based thresholds for hip and knee replacement surgery -the Arthroplasty Candidacy Help Engine (The ACHE tool)
Principal Investigator: Andrew Price, Nuffield Orthopaedic Centre Oxford. Funded by NIHR HTA. Health economics led by Alastair Gray and Helen Dakin

Health economic modelling for stratification of Type 2 diabetes
Principal Investigator: Alastair Gray. Funded by MRC and industry partners

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