

## 2013: CHE Facts & Figures

# Research income £3.5m

ANNUAL  
REPORT  
2013

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# WELCOME

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*A world renowned  
institute that  
produces policy  
relevant research  
and innovative  
methods that  
advance the use of  
health economics  
to improve  
population health.*

I am delighted to introduce the 2013 annual report from the Centre for Health Economics (CHE), a year that marked the 30th anniversary of the Centre and the 50th anniversary of the University of York. York has become one of the top ten universities in the UK for teaching and research and is first in the UK, and seventh in the world, in the Times Higher Education world rankings of universities less than 50 years old. CHE is very proud to be part of this success. A summary of CHE's contribution to the University, especially in terms of the impact of our research on health policy and practice, can be found on the dedicated web pages that reflect on events over the last 50 years at the University (<http://www.york.ac.uk/50/impact/health-economics/>).

The questions we have addressed this year in our research have been many and varied, including: "do patients choose their GP based on quality?"; "does health and quality of life of carers vary across countries?"; "what do the public think about inequalities in the NHS?"; "what is the cost-effectiveness of preventive treatment regimes in HIV in Africa?"; "how does the performance of hospitals affect health?"; "how should costs and benefits be evaluated by NICE?" Some of our research is explored in more detail later in this report.

The vibrancy of our research environment and the enthusiasm and talent of our staff and students means that good ideas are certainly never in short supply in CHE. In 2013 we were delighted to take forward one such idea: the further development and expansion of a research theme in global health economics, through which we hope to apply our expertise to understand and seek solutions

## Over 100 new publications



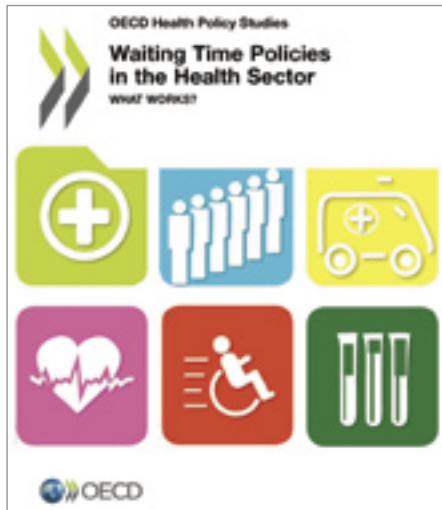
to health care problems facing low and middle income countries. Success of CHE colleagues in securing new grants from the Bill and Melinda Gates Foundation meant that CHE's existing research activities in this area were given an additional boost and we embarked on a programme of recruitment to support our new research endeavour. There are interesting and exciting times ahead for CHE in this regard, working with colleagues in the University, in other UK organisations and of course, with collaborators in low and middle income countries. I look forward to reporting on our progress in future years.

Over 340 delegates from 44 countries participated in our short courses and workshops, and over 20 visitors were based at CHE to collaborate with CHE staff and students on a range of interesting projects. Some of our visitors were former members of staff and students with whom we are pleased to maintain links and they came from the UK, many European countries and also from the USA, Chile and Japan. We welcomed seven new members of staff, and we began a new initiative by appointing two paid career development interns who will benefit from a programme of focused development and training that we hope will help launch their careers in health economics. Three of our PhD students defended successfully their PhDs and four new PhD students began their studies in topics related to the economics of the health care workforce; the performance of mental health care providers; incorporating inequality concerns in the economic evaluation of public health programmes; and incorporating issues relating to informal care in economic evaluations. This is an important and diverse set of topics that reflects the breadth of CHE's research interests.

Several of our staff and students won awards and honours and many more were involved in raising significant funds for research, completing existing projects and disseminating results all over the world to a range of audiences in academia as well as in policy and practice settings. These research activities are supported splendidly by the excellent support staff we are fortunate to have in CHE, whose commitment is key to our success. Indeed, this year John Galloway (our computing support officer) celebrated 40 years in the University, joining us in CHE in 1995; whilst Vanessa Wood (our finance and research support co-ordinator) celebrated 25 years of service at CHE. The continuing success of CHE is, in my view, due solely to the high quality of our research staff, support staff and our students, all of whom have worked tremendously hard in 2013. I am looking forward to working alongside them in order to make 2014 another fruitful year at CHE.

*Maria*

Professor Maria Goddard



A new book was published in February co-edited by **Luigi Siciliani** and **Valerie Moran** with Michael Borowitz entitled *Waiting Time Policies in the Health Sector, What Works?*



In October, **Pedro Saramago** received the prize for best podium presentation at the 13th Portuguese National Health Economics Conference in Braga, Portugal. The presented work on 'Network meta-analysis of (individual patient) time to event data alongside (aggregate) count data' was carried out together with Ling-Hsiang Chuang and **Marta Soares**.



**James Lomas and Dan Howdon** were both awarded an Aronson Teaching Prize, by the Department of Economics, University of York for their work as Teaching Fellows on Microeconomics II. It was voted 'Best Designed Module, 2nd Year' for 2011-2012, in response

to a survey of students by course representatives. In particular, they praised the innovative classroom games and level of expertise of Teaching Fellows.



## Citizens' Panel

The NHS has a new duty to consider reducing inequalities in the quantity, quality and outcomes of health care. But which NHS inequalities matter most to the general public? To help find out, in September 2013 we held a 'Citizens' Panel' meeting at the King's Manor in

York. Twenty-nine members of the public spent the day discussing the issues in small groups and filling out our survey, together with expert presentations and Q&A sessions led by the research team. The findings will feed into a three year NIHR funded project on measuring NHS

performance in tackling socioeconomic health inequality. The research team is led by **Richard Cookson** and includes **Miqdad Asaria** and **Ruth Helstrip** (CHE), **Shezad Ali** (Health Sciences and CHE), Paul Toner (Health Sciences) and Aki Tsuchiya (University of Sheffield).



Rita Faria

## COLLABORATION BETWEEN CHE AND RESEARCHERS IN COLOMBIA

Rita Faria was awarded a Santander International Connection Award for a research visit to the *Instituto de Evaluación Tecnológica en Salud* (Institute of Technological Evaluation in Health) in Bogota, Colombia, during September 2013. Here, Rita describes the visit and how she is helping colleagues in Colombia to develop methods and to promote the use of economic evaluation for informing decisions in health care.

Economic evaluation can help pinpoint the intervention that offers the most benefits from a range of possible alternatives, given their costs and the resources available. As such it has been the subject of much interest from governments around the world as a tool to help make decisions on which interventions (such as drugs, medical procedures and diagnostic tests) offer the best value for money and should be offered by a publicly-funded health care service. In this context, the Colombian government created the *Instituto de Evaluación Tecnológica en Salud* (Institute of Technological Evaluation in Health; IETS) in September 2013 to provide evidence-based recommendations on interventions that should be financed with public resources in Colombia (see <http://www.iets.org.co/> for more information on IETS).

I was invited to visit IETS to work with the director of economic evaluation, Aurelio Mejia, in the development of the Columbian economic evaluation guidelines and was appointed to the role of scientific coordinator and editor of the technical documentation supporting the guidelines. In this capacity, I have asked colleagues in the UK to write about (1) the different options to measure the benefits of interventions, (2) why and how we should discount future benefits and costs to their present value, (3) how to choose the intervention that offers the best value for money following an economic evaluation and (4) how to take account of the uncertainty in the available information. These technical documents draw on CHE's expertise and long track record in developing the methods and conducting economic evaluations to help inform decisions in the English NHS.

The guidelines for economic evaluation will help IETS to be fair, consistent and transparent in considering the costs and benefits of health interventions across a range of interventions and disease areas. Therefore, interventions that benefit a particular disease or group of patients are assessed in the same manner as interventions that benefit another. In return, IETS will gain legitimacy as an institution that produces high-quality research that is useful for the population it serves.

During the research visit, I presented a seminar in IETS and in two other institutions on the subject of economic evaluation of diagnostic tests. These presentations were useful to meet Colombian colleagues and discuss the challenges they face in conducting economic evaluations. For example, my experience in the area helped a group of researchers who were struggling with the lack of information on the benefits of a diagnostic test for muscular dystrophy.

Thanks to this research visit, I have established new relations with colleagues across the Atlantic. We plan to work together in future evaluations. In the meantime, we are working on the technical documents and will present part of this work at an international conference in 2014. A series of papers on the development of the methods guide is planned for the future. These will provide information and support for other countries planning on introducing economic evaluation to their decision-making processes in health care.

# RESEARCH PROJECTS

## IN PROGRESS AND COMPLETED IN 2013

### Economic Evaluation and Health Technology Assessment

#### TECHNOLOGY ASSESSMENTS FOR NICE

##### STAs

###### **Crizotinib for lung cancer (non-small-cell, anaplastic lymphoma kinase fusion gene, previously treated)**

Ana Duarte, Stephen Palmer

###### **Aflibercept for metastatic colorectal cancer**

Eldon Spackman, Ana Duarte, Stephen Palmer

###### **Teriflunomide for relapse-remitting multiple sclerosis**

Eldon Spackman, David Epstein, Stephen Palmer

###### **Ipilimumab for previously treated unresectable malignant melanoma**

Claire McKenna, Christina Giannopoulou, Eleftherios Sideris

#### POLICY AND SERVICE SUPPORT PROGRAMMES

##### POLICY RESEARCH UNIT IN ECONOMIC EVALUATION OF HEALTH AND CARE INTERVENTION (EEPRU) FUNDED BY THE DEPARTMENT OF HEALTH POLICY RESEARCH UNIT

###### **Review of linked routine datasets in the NHS and their potential value for the economic evaluation of interventions for cancer**

Sebastian Hinde, Claire McKenna, Mark Sculpher

###### **Economic analysis relating to the NICE cost-effectiveness threshold to support value-based pricing**

Karl Claxton, Marta Soares, Susan Griffin, Sebastian Hinde, Mark Sculpher, Eldon Spackman

###### **Developing the methods of economic evaluation for individualised care**

Manuel Espinoza, Mark Sculpher, Andrea Manca, Karl Claxton

###### **Methods of economic evaluation in social care**

Helen Weatherly, Rita Faria, Bernard van den Berg, Mark Sculpher

###### **Methods of economic evaluation when interventions have costs and/or effects outside health**

Susan Griffiths, Simon Walker, Mark Sculpher, Rita Faria, Karl Claxton, Helen Weatherly, Bernard van den Berg

#### **Developing an analytical framework relating to the value of implementation to inform decisions of the NICE Implementation Collaborative**

Rita Faria, Simon Walker, Steve Palmer, Mark Sculpher

#### **Assessing potential research activities associated with medicines optimisation**

Rita Faria, Mark Sculpher

#### **Reviewing methods challenges relating to the economic evaluation of genetic services**

Eldon Spackman, Sebastian Hinde, Mark Sculpher

#### **The carers' breaks initiative: A review of the progress made in improving support for carers**

Helen Weatherly

#### THE NATIONAL INSTITUTE FOR HEALTH RESEARCH (NIHR) RESEARCH DESIGN SERVICE FOR YORKSHIRE & THE HUMBER (RDS YH)

Gerry Richardson, Susan Griffin, Rita Faria

#### THE NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE DECISION SUPPORT UNIT (DSU)

Stephen Palmer, Claire McKenna, Marta Soares, Eldon Spackman

#### METHODOLOGICAL RESEARCH

##### **Methods for estimation of the NICE cost-effectiveness threshold**

Mark Sculpher, Karl Claxton, Nigel Rice, Eldon Spackman, Ling-Hsiang Chaung, Marta Soares, Sebastian Hinde (CHE), Nancy Devlin (Office of Health Economics), Steve Martin (Department of Economics & Related Studies, York), Peter C Smith (Imperial College)

**Funder:** Medical Research Council Methodology Research Programme

##### **Developing economic evaluation methods for decision making: the value of access to individual patient data**

Andrea Manca Fellowship

**Funder:** National Institute for Health Research Career Development Award (2010-2013)

##### **Identifying appropriate methods to incorporate concerns about health inequalities into economic evaluations of health care programmes.**

Mark Sculpher, Nigel Rice, Susan Griffin, Karl Claxton, Richard Cookson, Tony Culyer, Miqdad Asaria

**Funder:** Department of Health Policy Research Programme through the Public Health Research Consortium

**Using expected value of information methods to support decisions by the Patient-Centred Outcomes Research Institute**

Claire McKenna, Karl Claxton, Susan Griffin

**Funder:** Patient-Centred Outcomes Research Institute, USA

**Methods for Health Technology Assessment of Medical Devices: a European perspective (MedTechTA)**

Mark Sculpher, Stephen Palmer, Claire McKenna, Simon Walker

**Funder:** European Commission

**APPLIED RESEARCH**

**Compression stocking for the prevention of DVT**

Eldon Spackman, Stephen Palmer, Eleftherios Sideris

**Funder:** National Institute for Health Research

**AntiRetroviral Research for Wattoto (ARROW) = Young lives: the social contexts and economic realities of paediatric anti-retroviral therapy**

Mark Sculpher, Paul Revill, Susan Griffin, Bernard van den Berg

**Funder:** The Department for International Development

**Optimising clinical care strategies and laboratory monitoring for cost-effective roll-out of antiretroviral therapy in Africa: the lab-lite project**

Paul Revill, Mark Sculpher, Bernard van den Berg

**Funder:** The Department for International Development

**Acupuncture for chronic pain and depression in primary care**

Mark Sculpher, Andrea Manca, Helen Weatherly, Pedro Saramago, Eldon Spackman

**Funder:** National Institute for Health Research

**PREDICT (A randomised controlled trial of continuous positive airway pressure treatment in older people with obstructive sleep apnoea hypopnoea syndrome)**

Susan Griffin, Rita Faria

**Funder:** National Institute for Health Research

**Evaluating the Family Nurse Partnership Programme in England: a randomised controlled trial**

Gerry Richardson

**Funder:** DH Policy Research Programme

**ICON 7 – A randomised, two-arm, multicentre gynaecologic cancer intergroup trial of adding bevacizumab to standard chemotherapy (carboplatin and paclitaxel) in patients with epithelial ovarian cancer**

Mark Sculpher, Sebastian Hinde, David Epstein

**Funder:** Medical Research Council Clinical Trials Unit

**METRI°C (ME education, training and resources for primary care)**

Gerry Richardson

**Funder:** National Institute for Health Research

**Surgical wounds healing by secondary intention: characterising and quantifying the problem and identifying effective treatments**

Marta Soares, Karl Claxton, Pedro Saramago

**Funder:** National Institute for Health Research

**Screening for psychological and mental health differences of young people who offend**

Steve Palmer

**Funder:** National Institute for Health Research

**Breathing techniques for breathlessness in lung cancer**

Gerry Richardson

**Funder:** National Institute for Health Research, Research for Patient Benefit

**A project mapping hospital utilisation and outcomes in six European Union countries ("ECHO" – European Collaboration for Healthcare Optimization)**

Richard Cookson

**Funder:** The European Union

**FAST Forward: a randomised clinical trial testing a 1-week course of curative whole breast radiotherapy against a standard 3-week schedule in terms of local cancer control and late adverse effects in women with early breast cancer**

Susan Griffin, Mark Sculpher

**Funder:** National Institute for Health Research

**Does home oxygen therapy (HOT) in addition to standard care improve disease severity and symptoms in chronic heart failure?**

Susan Griffin, Mark Sculpher

**Funder:** National Institute for Health Research

**Wounds research for patient benefit programme**

Marta Soares, Pedro Saramago

**Funder:** National Institute for Health Research

**Improving the quality of care for angina and heart attack**

Mark Sculpher, Stephen Palmer, Miqdad Asaria, Simon Walker

**Funder:** National Institute for Health Research

**BRIGHT (Bringing Information & Guided Help Together)**

Gerry Richardson, Eldon Spackman

**Funder:** National Institute for Health Research

# RESEARCH PROJECTS

## IN PROGRESS AND COMPLETED IN 2013

### Economic Evaluation and Health Technology Assessment

#### **The randomised evaluation of the effectiveness and acceptability of computerised therapy (REEACT) Trial**

Ana Duarte, Stephen Palmer, Simon Walker

**Funder:** National Institute for Health Research

#### **Collaboration for leadership in applied health research and care (CLARHC)**

Gerry Richardson

**Funder:** National Institute for Health Research

#### **A randomised controlled trial of protease inhibitor monotherapy versus continuing combination antiretroviral therapy for HIV-1 infected patients previously established on a dual nucleoside combination regimen (PIVOT)**

Simon Walker, Mark Sculpher

**Funder:** National Institute for Health Research

#### **Transforming community health services for children and young people who are ill: a quasi-experimental evaluation**

Gerry Richardson

**Funder:** National Institute for Health Research

#### **A multi-centre randomised controlled trial of spinal cord stimulation plus usual care vs. usual care alone in the management of refractory angina: A feasibility and pilot study. The RASCAL Study**

Andrea Manca

**Funder:** National Institute for Health Research

#### **An evaluation of multifunctional magnetic resonance imaging in the diagnosis and characterisation of prostate cancer (PROMIS)**

Mark Sculpher, Rita Faria, Eldon Spackman

**Funder:** National Institute for Health Research

#### **Adjunctive rifampicin to reduce early mortality from staphylococcus aureus bacteraemia: a multi-centre, randomised, double blind, placebo controlled trial (the ARREST trial)**

Marta Soares

**Funder:** National Institute for Health Research

#### **REvascularisation of Ischaemic Ventricular Dysfunction (REVIVED): a randomised comparison of percutaneous coronary intervention (with optimal medical therapy) versus optimal medical therapy alone for heart failure secondary disease**

Mark Sculpher, Sebastian Hinde

**Funder:** National Institute for Health Research

#### **A clinical and economic evaluation of screening and diagnostic tests to identify and treat women with gestational diabetes: association between maternal risk factors, glucose levels and adverse outcomes**

Mark Sculpher, Susan Griffin, Ana Duarte

**Funder:** National Institute for Health Research

#### **Scaphoid Waist Internal Fixation for Fractures Trial (SWIFFT) Cast treatment versus surgical fixation of fractures of the Scaphoid waist in adults: a Multi-centre Randomised Controlled Trial**

Gerry Richardson, Claire McKenna

**Funder:** National Institute for Health Research

#### **REmoval of Treatment for patients in REmission in psoriatic ArThritis – Feasibility study (RETREAT)**

Laura Bojke, Claire McKenna

**Funder:** Arthritis Research UK

#### **How effective, accessible and acceptable are self-management interventions for men with long-term conditions**

Gerry Richardson

**Funder:** National Institute for Health Research

#### **Self-management support interventions to reduce health care utilisation without compromising outcomes**

Gerry Richardson

**Funder:** National Institute for Health Research

#### **Healthy & Active Parenting Programme for Early Years Study (HAPPY Study)**

Gerry Richardson

**Funder:** National Institute for Health Research

#### **Developing indicators of change in the NHS equity performance**

Richard Cookson, Miqdad Asaria, Shehzad Ali, Maria Goddard

**Funder:** National Institute for Health Research



Eldon Spackman



Sebastian Hinde



Mark Sculpher



Marta Soares



Nigel Rice



Karl Claxton

## GENERATING AN ESTIMATE OF NICE'S COST-EFFECTIVENESS THRESHOLD

Researchers at CHE, led by Professor Karl Claxton, have been developing methods to estimate the NICE cost-effectiveness threshold making use of routinely available data. The cost-effectiveness threshold is central to the use of cost-effectiveness analysis by the National Institute for Health and Care Excellence (NICE) and other decision making bodies. The threshold represents the additional cost that has to be imposed on the system to forgo one quality-adjusted life-year (QALY) of health through displacement. The absence of an empirical estimate of the threshold used by NICE has attracted criticism from a number of quarters, including the Health Select Committee.

This project aimed to address this gap by identifying suitable methods to estimate NICE's threshold and by generating threshold estimates. The study had three related objectives: firstly, to provide a conceptual framework to define the cost-effectiveness threshold and to provide the basis for its empirical estimation. Secondly, using programme budgeting data for the English NHS, to estimate the relationship between changes in overall NHS expenditure and changes in mortality. Thirdly, to translate the mortality measure of health effects into life years, and to QALYs by estimating the quality of life (QoL) associated with effects on years of life and the additional direct impact on QoL itself. The final objective was to present the best estimate of the cost-effectiveness threshold for policy purposes.

Earlier econometric analysis estimated the relationship between differences in primary care trust (PCT) spending, across programme budgeting categories (PBCs), and associated disease-specific mortality. This research has been extended in several ways including estimating the impact of marginal increases or decreases in overall NHS expenditure on spending in each of the 23 PBCs. Further stages of work link the econometric analysis to broader health effects in terms of QALYs.

The most relevant 'central' threshold is estimated to be £12,936 per QALY (2008 expenditure, 2008-10 mortality). Uncertainty analysis indicates that the probability that the threshold is less than £20,000 per QALY is 0.89 and the probability that it is less than £30,000 is 0.97. Additional 'structural' uncertainty suggests, on balance, that the central or best estimate is, if anything, likely to be an overestimate. The health effects of changes in expenditure are greater when PCTs are under more financial pressure and are more likely to be disinvesting than investing. This indicates that the central estimate of the threshold is likely to be an overestimate for all technologies which impose net costs on the NHS and the appropriate threshold to apply should be lower for technologies which have a greater impact on NHS costs.

The methods go some way to providing an empirical estimate of the scale of opportunity costs the NHS faces when considering whether the health benefits associated with new technologies are expected to offset the health that is likely to be lost elsewhere in the NHS. The study also starts to make the other NHS patients, who ultimately bear the opportunity costs of such decisions, less abstract and more 'known' in social decisions. This work has implications for the Government's proposals to move to a system of value-based pricing for new prescription pharmaceuticals.

The final report from the study has been published as a CHE Research Report at [http://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP81\\_methods\\_estimation\\_NICE\\_costeffectiveness\\_threshold\\_%28Nov2013%29.pdf](http://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP81_methods_estimation_NICE_costeffectiveness_threshold_%28Nov2013%29.pdf).

# RESEARCH PROJECTS

## IN PROGRESS AND COMPLETED IN 2013

### Health Policy

#### MENTAL HEALTH

##### **Do higher primary care practice performance scores predict lower rates of emergency admissions for persons with serious mental illness? An analysis of secondary panel data**

Rowena Jacobs, Maria Goddard, Hugh Gravelle, Nils Gutacker, Anne Mason (CHE), Simon Gilbody, Rachel Richardson (Department of Health Sciences, York), Tony Kendrick (Hull York Medical School), June Wainwright (Durham)

**Funder:** National Institute for Health Research

##### **Developing the mental health funding formula for allocations in general practices**

Hugh Gravelle (CHE), Matt Sutton (Manchester)

**Funder:** National Institute for Health Research

##### **Influence of flexible working conditions on psychological health**

Rowena Jacobs, Cinzia di Novi

**Funder:** Alan Williams Fellowship

##### **The quality of life of female informal caregivers**

Rowena Jacobs, Cinzia di Novi

**Funder:** Alan Williams Fellowship

##### **Mental health: variations in length of stay**

Rowena Jacobs, Valerie Moran, Anne Mason

##### **Efficiency and performance of mental health systems**

Rowena Jacobs, Valerie Moran

**Funder:** Organisation for Economic Co-operation and Development

##### **Examining the impact of public service organisations on quality of life**

Adriana Castelli, Maria Goddard, Rowena Jacobs

**Funder:** Economic and Social Research Council

##### **Equity in admissions for serious mental illness**

Jon White, Nils Gutacker, Anne Mason, Rowena Jacobs

#### PAYMENT BY RESULTS

##### **EU Interquality: the relationship between hospital funding and quality**

Andrew Street (CHE), John Hutton, Lu Han (Department of Health Sciences, York), Steve Martin (Department of Economics & Related Studies, York)

**Funder:** 7th EU Framework Programme

##### **Stochastic queuing model of optimal provider payment mechanisms**

Hugh Gravelle; Fred Schroyen (Bergen)

**Funder:** University of York

##### **Payment mechanisms with patient selection**

Hugh Gravelle; Luigi Siciliani, Andrea Manca

**Funder:** University of York

#### PROMS (PATIENT-REPORTED OUTCOME MEASURES)

##### **Comparing PROMs and costs across European countries**

Nils Gutacker (CHE), Matthias Vogl (University of Munich)

##### **Addressing missing data in patient-reported outcome measures (PROMs): implications for the use of PROMs for comparing provider performance**

Nils Gutacker, Chris Bojke, Andrew Street (CHE), Manuel Gomes (LSHTM)

**Funder:** Medical Research Council and Department of Health

##### **Do PROMs influence choice of hospital?**

Hugh Gravelle, Nils Gutacker, Giuseppe Moscelli, Luigi Siciliani

**Funder:** Department of Health

#### PERFORMANCE AND EFFICIENCY ANALYSIS

##### **ECHO: European Collaboration for Healthcare Optimization**

Nils Gutacker, Richard Cookson (CHE), Karen Bloor (Department of Health Sciences, York)

**Funder:** 7th EU Framework Programme

##### **The efficiency of Australian dental practice**

Nils Gutacker (CHE), Tony Harris (Melbourne), Bruce Hollingsworth (Lancaster)

##### **Hospital competition and quality: a spatial-econometrics approach**

Hugh Gravelle, Rita Santos, Luigi Siciliani

**Funder:** Department of Health

## **CQUIN: evaluation of P4P for hospital quality**

Hugh Gravelle (CHE), Mario Pezzini, Eleonara Fischera, Matt Sutton (University of Manchester)

**Funder:** Department of Health and National Institute for Health Research

## **PRODUCTIVITY OF HEALTH CARE**

### **Measuring the productivity of the NHS**

Chris Bojke, Adriana Castelli, Andrew Street, Katja Grasic

**Funder:** Department of Health

### **Hospital productivity**

Adriana Castelli, Andrew Street, Rossella Verzulli, Padraig Ward

**Funder:** Department of Health

### **Productivity of the Italian health care system – advisory support to Tor Vergata (Italy)**

Chris Bojke, Adriana Castelli, Andrew Street, Katja Grasic in conjunction with Vincenzo Atella, Federico Belotti and Andrea Piano Mortari

**Funder:** Italian Ministry of Health

## **PRIMARY CARE**

### **The impact of 'Choose and Book' on outpatient appointment non-attendances**

Mark Dusheiko, Hugh Gravelle

**Funder:** Medical Research Council

### **Does quality affect patient choice of general practice?**

Rita Santos, Giuseppe Moscelli, Hugh Gravelle (CHE), Carol Propper (Imperial College London)

**Funder:** Department of Health

### **Multimorbidity and patient resource use**

Hugh Gravelle (CHE), Samuel Brilleman, Sarah Purdy, Chris Salisbury, Frank Windmeijer, Sandra Hollinghurst (University of Bristol)

**Funder:** National Institute for Health Research

### **Walk-in Centres and use of Ambulatory Emergency Departments for minor conditions**

Hugh Gravelle, Rita Santos, Karin Dalum

### **Competition, price and quality: Australian GPs**

Hugh Gravelle; Melbourne Institute

**Funder:** Australian Research Council

## **SOCIAL AND HEALTH CARE**

### **Examining variations in costs in the hip fracture care pathway**

Adriana Castelli, Silvio Daidone, Rowena Jacobs, Panos Kasteridis, Andrew Street

**Funder:** Department of Health

### **Long-term care provision, hospital length of stay and discharge destination for hip fracture and stroke patients**

James Gaughan, Hugh Gravelle, Luigi Siciliani, Rita Santos

**Funder:** Department of Health

### **Understanding financial mechanisms for integrating funds for health and social care**

Anne Mason, Maria Goddard, Helen Weatherly

**Funder:** Department of Health

### **The inter-relationship between formal and informal health and social care**

Bernard van den Berg, Irene Sanchez

**Funder:** Department of Health

### **Higher quality primary care for people with dementia: the effects on hospital admissions**

Anne Mason, Panos Kasteridis, Rowena Jacobs, Maria Goddard

**Funder:** Department of Health

### **Hospital competition and quality**

Hugh Gravelle, Luigi Siciliani, Giuseppe Moscelli, Rita Santos

**Funder:** Department of Health

### **Year of care funding model for long-term conditions**

Andrew Street, Anne Mason, Panos Kasteridis (CHE), Jose-Luis Fernandez (LSE)

**Funder:** Department of Health

### **Testing the bed-blocking hypothesis: delayed hospital discharges and the supply of nursing and care homes**

James Gaughan, Hugh Gravelle, Luigi Siciliani

**Funder:** Department of Health

# RESEARCH PROJECTS

## IN PROGRESS AND COMPLETED IN 2013

### OTHER PROJECTS

#### Topical treatments for chronic plaque psoriasis: systematic review update

Anne Mason (CHE), James Mason, Helen Hancock (Durham),

Mike Cork (Sheffield), Gordon Dooley (Metaxis)

**Funder:** the Psoriasis Association

#### Factors affecting the relative effectiveness of medicines in the EU

Anne Mason, in collaboration with The Office of Health Economics

**Funder:** Pfizer

#### Emergency hospital admissions in Scotland

Mark Dusheiko, Marjon van der Pol (Aberdeen)

**Funder:** Chief Scientist Office, Scottish Government

#### Developing indicators of change in NHS equity performance

Richard Cookson, Miqdad Asaria, Shezad Ali, Mark Dusheiko, Rita Santos, Maria Goddard

**Funder:** National Institute for Health Research

#### Collaborative care in South Somerset (the Symphony Project)

Andrew Street, Panos Kasteridis

**Funder:** The Symphony Project Board, Somerset

#### Exploring spatial associations of the provision of unpaid care at small area level in England

Adriana Castelli, Charles Hawes, Rowena Jacobs, Rita Santos

#### The economics of NHS Foundation Trusts

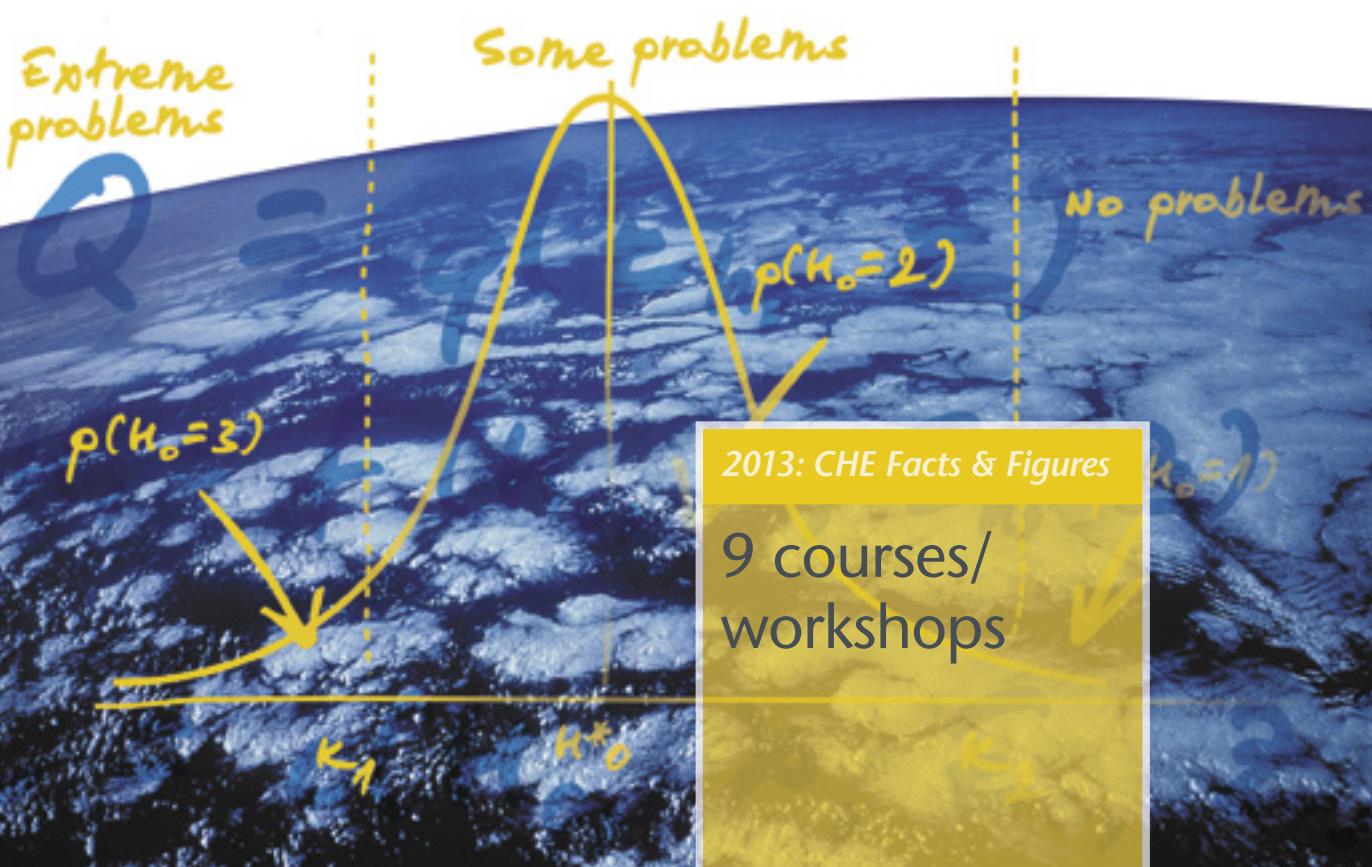
Maria Goddard, Rowena Jacobs

**Funder:** Nuffield Foundation (Small Grants Scheme); University of York research priming fund

#### Avoidable mortality and quality

Chris Bojke, Adriana Castelli (CHE); Olena Nizalova (University of Kent)

**Funder:** Department of Health





Andrew Street

## NHS PRODUCTIVITY CONTINUES TO RISE

Researchers at CHE, led by Professor Andrew Street, have been involved in measuring the productivity of the NHS for many years, making considerable methodological improvements to the way in which inputs and outputs in health care are measured.

Latest figures show that the productivity of the NHS in England increased by 2.1% between 2010/11-2011/12. This follows growth of 3.2% between 2009/10-2010/11, and is the first time since the late 1990s that there have been two successive years of positive productivity growth in the NHS.

There have been significant increases in NHS activity over the past 14 years. Changes in the number and type of people treated in hospital and improvements in the quality of their care translate into a 68% increase in hospital output since 1998/99. There has also been a 130% increase in outpatient attendances, 24% growth in primary care consultations and 126% increase in prescribing. Prior to 2004/5, community care activity was not reported in a form that allowed it to be included in productivity calculations, but activity increased by 13% since 2004/5.

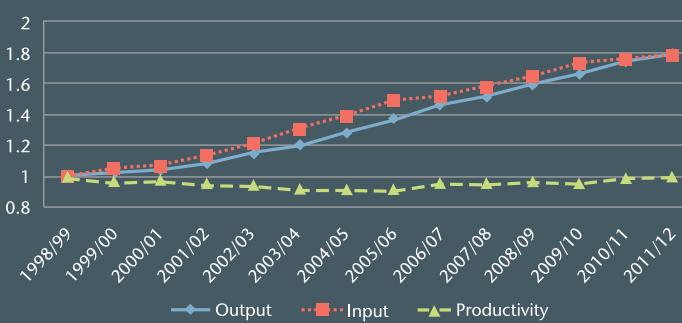
The quality of care has improved. Even though the average age of people admitted to hospital has increased progressively over time, post discharge survival rates improved from 99.29% in 1998/9 to 99.78% in 2011/12 for electives and from 94.72% to 96.12% for non-elective patients. Waiting times for an elective admission

have varied over time, remaining fairly stable between 1998/9 and 2003/4, falling progressively to reach their lowest level in 2008/9, since when they have increased. Outpatient waiting times exhibit a similar pattern.

Increased NHS output has come about in response to pronounced increases in NHS expenditure since the late 1990s. This has funded both increased wages and more staff and resources devoted to the health system. Wages rose in real terms by 76% between 1998/9 and 2011/12 while there was a 24% increase in the number of NHS staff. There has been increased use of agency staff over time, but there have been periods of retrenchment, notably between 2003/4 and 2006/7 when the hospital sector was struggling to reduce deficits. The use of non-staff resources, such as equipment and supplies, has increased by virtually the same proportion year-on-year. Capital utilisation increased up to 2007/8, after which utilisation has slowed. Output growth and input growth track each closely but not exactly. Between 1998/9 and 2003/4, productivity growth was negative, with the average growth in inputs exceeding growth in outputs. Between 2004/5 and 2009/10, year-on-year productivity growth fluctuated from negative to positive, with output growth lagging slightly behind input growth. Productivity growth has been positive since 2009/10: while annual output growth has been lower than in previous years, input growth has been lower still. Over the full period between 1998/9 and 2011/12, NHS output increased by 79% while inputs increased by 78%.

Despite consecutive periods of productivity growth, the NHS cannot afford complacency. The national picture disguises considerable variation in productivity across the country. Looking forward, contracting and payment systems need to be redesigned such that providers and commissioners face incentives to ensure that the most cost-effective treatments are provided in the most appropriate settings. This will help reduce variations across the country and will be key to securing future productivity gains.

*Input, output and productivity growth indices*



# RESEARCH PROJECTS

## IN PROGRESS AND COMPLETED IN 2013

### Health, Econometrics and Data Group (HEDG)

#### INEQUALITY OF OPPORTUNITY

##### **Equalising opportunity in health through educational policies**

Andrew Jones, Pedro Rosa Dias, John Roemer  
**Funder:** Economic and Social Research Council

##### **Long-term health returns to quality of schooling: the role of self-selection and heterogeneity**

Anirban Basu, Pedro Rosa Dias, Andrew Jones  
**Funder:** Economic and Social Research Council

##### **Empirical definition of social types in the analysis of inequality of opportunity: a latent class approach**

Pedro Rosa Dias, Paolo Li Donni, Juan Gabriel Rodriguez  
**Funder:** Economic and Social Research Council

##### **Cross-country comparison of health inequality where the health measure is ordinal: does the approach to measurement matter?**

Nigel Rice, Pedro Rosa Dias, Silvana Robone  
**Funder:** Economic and Social Research Council

#### THE PERFORMANCE OF HEALTH SYSTEMS AND ORGANIZATIONS

##### **Non-parametric versus parametric approaches to cross-country comparative analysis**

Andrew Jones, Nigel Rice, Silvana Robone  
**Funder:** Economic and Social Research Council

##### **Applying beta-type size distributions to health care cost regressions**

Andrew Jones, James Lomas, Nigel Rice  
**Funder:** Economic and Social Research Council

##### **Comparison of estimators for health care cost regression: a quasi-experimental approach**

Andrew Jones, James Lomas, Nigel Rice  
**Funder:** Economic and Social Research Council

#### THE EVALUATION OF PUBLIC HEALTH INTERVENTIONS THROUGH ECONOMETRIC METHODS AND MICROSIMULATION

##### **A model of the impact of smoking bans on smoking with evidence from bans in England and Scotland**

Andrew Jones, Audrey Laporte, Nigel Rice, Eugenio Zucchelli  
**Funder:** Economic and Social Research Council

##### **A dynamic structural model of lifetime smoking consumption, health and addiction**

Andrew Jones, Audrey Laporte, Nigel Rice, Eugenio Zucchelli  
**Funder:** Economic and Social Research Council

##### **Parental income and smoking participation in adolescents: implications of misclassification error in empirical studies of adolescent smoking participation**

Ijeoma Edoka  
**Funder:** Economic and Social Research Council

##### **Decomposing differences in cotinine distribution between children and adolescents from high and low socioeconomic backgrounds**

Ijeoma Edoka  
**Funder:** Economic and Social Research Council

##### **Time and chance happen to them all? Duration modelling versus lifetime incidence of cancer**

Daniel Howdon  
**Funder:** Economic and Social Research Council

##### **An empirical model of smoking, cancer and mortality: new evidence on the social gradient in cancer**

Daniel Howdon, Andrew Jones  
**Funder:** Economic and Social Research Council

#### OTHER PROJECTS

##### **Comparison of distributional estimators for cost regressions**

Andrew Jones, James Lomas, Nigel Rice  
**Funder:** Economic and Social Research Council

##### **Time-to-death and health care expenditures**

Dan Howdon, Nigel Rice  
**Funder:** Department of Health

##### **Mis-reporting, adaptation and anchoring: the implications for self assessed health**

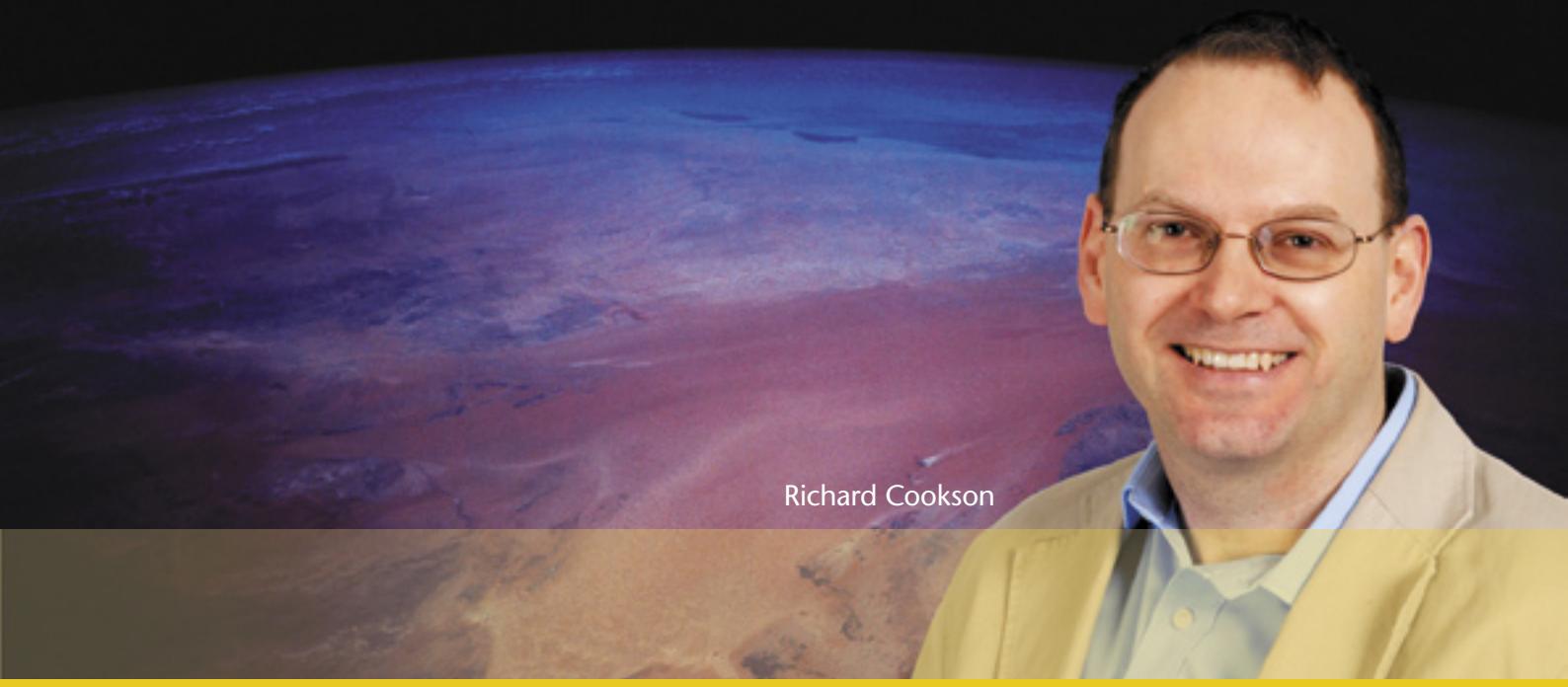
Paula Lorgelly, Bruce Hollingsworth, Mark Harris, William Greene, John Wildman, Nigel Rice  
**Funder:** Australian Research Council Discovery Grant

##### **Information and value based commissioning**

Martin Chalkley, Maria Jose Aragon  
**Funder:** National Institute for Health Research

##### **Understanding comparative growth in emergency admissions in Scotland and England, 2001/2-11/12**

Martin Chalkley, Maria Jose Aragon  
**Funder:** Department of Health



Richard Cookson

## HEALTH EQUITY IMPACTS – A RESEARCH AGENDA

**Dr Richard Cookson recently won a five-year NIHR Senior Research Fellowship to run from 2014-18. Here, he explains how he wants to use this opportunity to help shift health inequality research away from documenting problems and towards evaluating solutions.**

Researchers have made progress measuring social inequalities in health, and understanding their causes. But health care and public health decision makers still do not know how to reduce health inequalities, because they lack evidence on the health equity impacts of their actions. During my five year fellowship period I plan to conduct a sustained programme of research to help decision makers find cost-effective ways of reducing health inequalities.

My programme has three inter-linked research streams focusing on three important gaps in the evidence base. Decision makers lack evidence on, A: How well are organisations performing in reducing health inequalities? B: What are the health equity impacts of specific interventions? And C: In a resource constrained environment, what are the equity-efficiency trade-offs between reducing health inequality and improving total population health?

Stream A will develop new equity metrics for monitoring NHS performance in tackling health inequality. I'll produce 'equity movies' showing how inequalities change over time, and 'equity dashboards' to help NHS organisations monitor equity performance in their own areas. By linking large datasets, I'll also build a data platform for Stream B.

Stream B will use quasi experimental methods to evaluate the health equity impacts of strategically selected interventions. I'll start by evaluating one NHS intervention designed to reduce health inequality (e.g. health inequality support for primary care of CHD and diabetes) and one designed to improve overall health but with a risk of increasing health inequality due to social gradients in uptake (e.g. the NHS bowel cancer screening programme).

Stream C will develop new methods of economic evaluation that analyse equity-efficiency trade-offs by modelling the social distribution of costs and benefits. I'll first develop methods for distributional cost-effectiveness analysis of health care interventions, and then extend this to distributional cost-benefit analysis of wider social policy interventions with costs and benefits falling outside the health sector. The methods will be illustrated through applications to bowel cancer screening and pre-school education.

I will also develop international collaborations with a view to analysing health equity impacts in other high income countries and exploiting opportunities for cross-national quasi experiments. I'll then develop my programme beyond the fellowship period by harnessing powerful new sources of 'big data', by evaluating the health equity impacts of other health and public services, by collaborating with people analysing health equity impacts in low and middle income countries, and by developing training resources to help analysts use these methods to inform health care and public health decisions in the UK and across the world.

CHE offers a wide-ranging programme of workshops and courses in methodological and applied topics for members of the health economics field, including health economists, health care professionals and students. In 2013, 341 people from 44 different countries took part in our courses.

Details of 2014 courses are available at:  
<http://www.york.ac.uk/che/courses/short/>

## **YORK EXPERT WORKSHOPS IN THE SOCIO ECONOMIC EVALUATION OF MEDICINES**

To inform and promote understanding in key areas of quality of life assessment and health economic evaluation and to learn how to:

- decide whether a particular evaluation is necessary
- choose a particular methodology
- identify the data required and appropriate instruments for data collection
- undertake appropriate analysis
- communicate the results effectively

There are three York Expert Workshops:

### **■ QUALITY OF LIFE:**

A three-day workshop providing a detailed introduction to the theory and practice of quality of life measurement with particular emphasis on its use in economic evaluation.

### **■ FOUNDATIONS OF ECONOMIC EVALUATION IN HEALTH CARE:**

This five-day workshop comprehensively covers all key issues in the methodology and practice of economic evaluation.

### **■ ADVANCED METHODS FOR COST-EFFECTIVENESS ANALYSIS:**

A five-day workshop dealing with advanced methods in cost-effectiveness analysis for pharmaceuticals and other health care technologies.



*Foundations York Expert Workshops 2013*



*Advanced York Expert Workshops 2013*



*Quality of Life York Expert Workshops 2013*

## DECISION ANALYTIC MODELLING FOR ECONOMIC EVALUATION

### FOUNDATIONS COURSE:

New for 2013, this two-day course provides an introduction to the principles and practice of decision modelling in economic evaluation.

### ADVANCED COURSE:

This three-day course covers the principles and practice of advanced modelling – topics including adding the dependent transition probabilities in Markov models using survival analysis and probabilistic analysis.

These two courses are run jointly between CHE, University of York and the University of Glasgow, for people currently undertaking health economic evaluations within sectors, including academia, the pharmaceutical/medical device industry and consultancy.

## REGRESSION METHODS FOR HEALTH ECONOMIC EVALUATION

This three-day course is intended for people currently undertaking health economic evaluations within the pharmaceutical and medical device industries, consultancy, academia or the health service who wish to learn how to use regression methods to analyse individual patient-level cost, effect and cost-effectiveness data.

## APPLIED HEALTH ECONOMICS: APPLIED RESEARCH METHODS FOR THE ANALYSIS OF HEALTH AND HEALTH CARE

This is a three-day course focusing on the use of applied quantitative methods for the analysis of health and health care data. The course is run by the Health, Econometrics and Data Group; a collaboration between the Centre for Health Economics and the Department of Economics and Related Studies at the University of York.

## ANALYSING PATIENT-LEVEL DATA USING HOSPITAL EPISODE STATISTICS (HES)

This course includes instruction on how to understand, manage and manipulate the data, construct and analyse key variables such as waiting times or length of stay and link inpatient and outpatient HES records together and to other datasets. Delegates analyse individual patient records defined as Finished Consultant Episodes, Provider Spells and Continuous Inpatient Spells, monitor emergency readmissions and aggregate data by Healthcare Resource Group, hospitals, and groups of general practices. Evaluation of Patient Reported Outcome Measures (PROMs) and the use of data for benchmarking and policy evaluation are also covered.

## HEALTH ECONOMICS BY DISTANCE LEARNING

- 1 Postgraduate Certificate in Health Economics for Health Care Professionals
- 2 Postgraduate Diploma in Health Economics for Health Care Professionals
- 3 MSc in Economic Evaluation for Health Technology Assessment

We offer three programmes with the aim of providing students with the skills and confidence to apply the principles of health economics within the workplace. Each programme takes a minimum of a year to complete. All applicants must complete the Postgraduate Certificate in the first instance. Both the Postgraduate Certificate and the Postgraduate Diploma in Health Economics for Health Care Professionals should be completed before progressing to the Postgraduate MSc in Economic Evaluation for Health Technology Assessment and progression is dependent on performance.

The programmes, which began in 2000, are a collaboration between the Department of Economics and Related Studies, the Centre for Health Economics and the York Health Economics Consortium.

For further details see [http://www.york.ac.uk/economics/postgrad/distance\\_learning/](http://www.york.ac.uk/economics/postgrad/distance_learning/) or email [carie.taylor@york.ac.uk](mailto:carie.taylor@york.ac.uk)

2013: CHE Facts & Figures

341 delegates attended from 44 countries

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## Others

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**Street A.** An overview of competition in UK health care. In: *Competition in UK health care: reflections on an expert workshop*. Eds. Charlesworth A, Kelly E. Institute for Fiscal Studies and Nuffield Trust research report, December 2013.

## CHE Research Papers

81 Methods for the estimation of the NICE cost effectiveness threshold – **Karl Claxton**, Steve Martin, **Marta Soares**, **Nigel Rice**, **Eldon Spackman**, **Sebastian Hinde**, Nancy Devlin, Peter C Smith and **Mark Sculpher**.

82 Does a hospital's quality depend on the quality of other hospitals? A spatial econometrics approach to investigating hospital quality competition – **Hugh Gravelle**, **Rita Santos** and **Luigi Siciliani**.

83 Expected health benefits of additional evidence: Principles, methods and applications – **Karl Claxton**, **Susan Griffin**, Hendrik Koffijberg and **Claire McKenna**.

84 The quality of life of female informal caregivers: From Scandinavia to the Mediterranean Sea – Cinzia Di Novi, **Rowena Jacobs** and Matteo Micheli

85 Choice of contracts for quality in health care: Evidence from the British NHS – Eleonora Fichera, **Hugh Gravelle**, Mario Pezzino and Matt Sutton

86 Long term care provision, hospital length of stay and discharge destination for hip fracture and stroke patients – **James Gaughan**, **Hugh Gravelle**, **Rita Santos** and **Luigi Siciliani**.

87 NHS productivity from 2004/5 to 2010/11 – **Chris Bojke**, **Adriana Castelli**, **Katja Grasic**, **Andrew Street** and Padraig Ward.

88 Does quality affect patients' choice of doctor? Evidence from the UK – **Rita Santos**, **Hugh Gravelle** and Carol Propper

89 Competition, prices, and quality in the market for physician consultations – **Hugh Gravelle**, Anthony Scott, Peter Sivey and Jongsay Yong

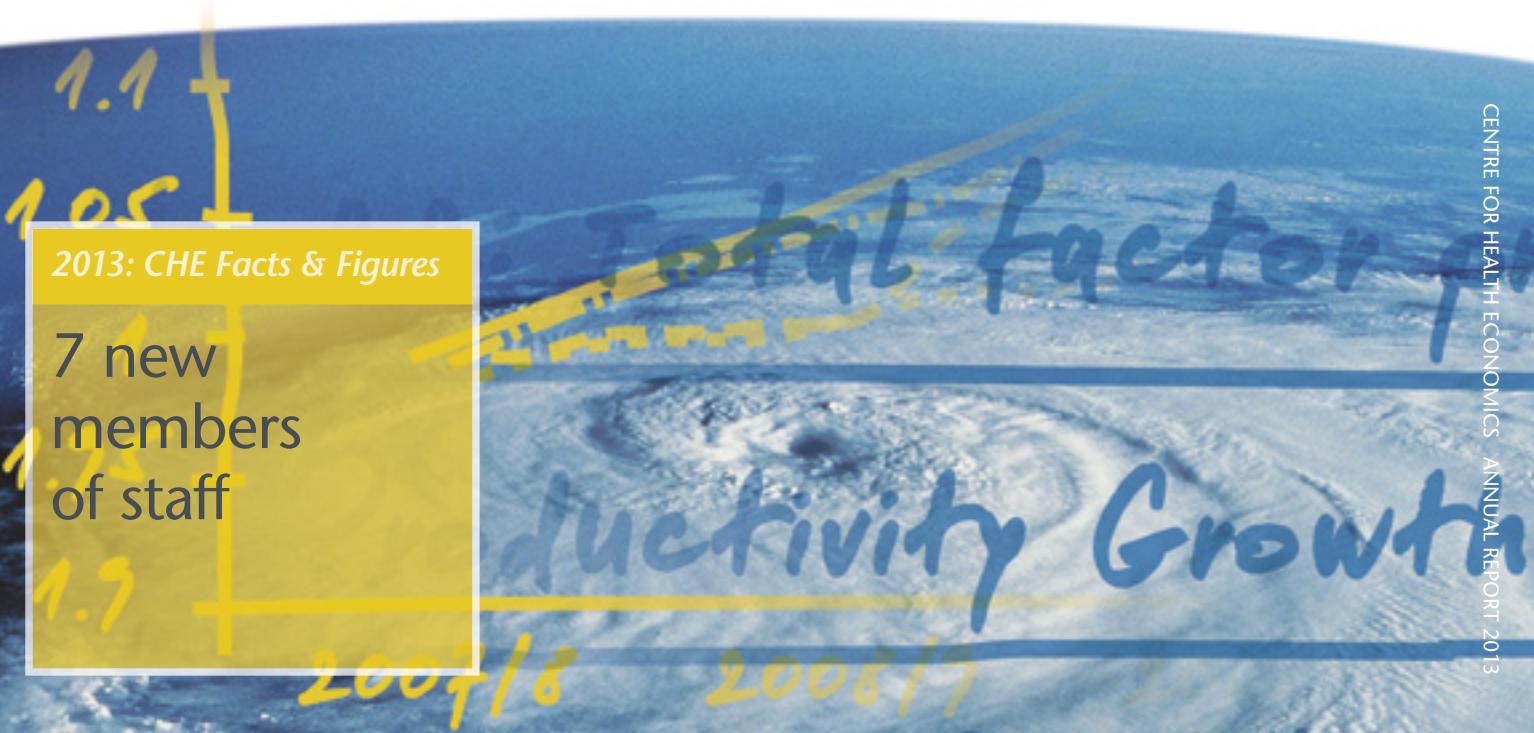
90 Attributing a monetary value to patients' time: A contingent valuation approach – **Bernard van den Berg**, Amiram Gafni and France Portrait

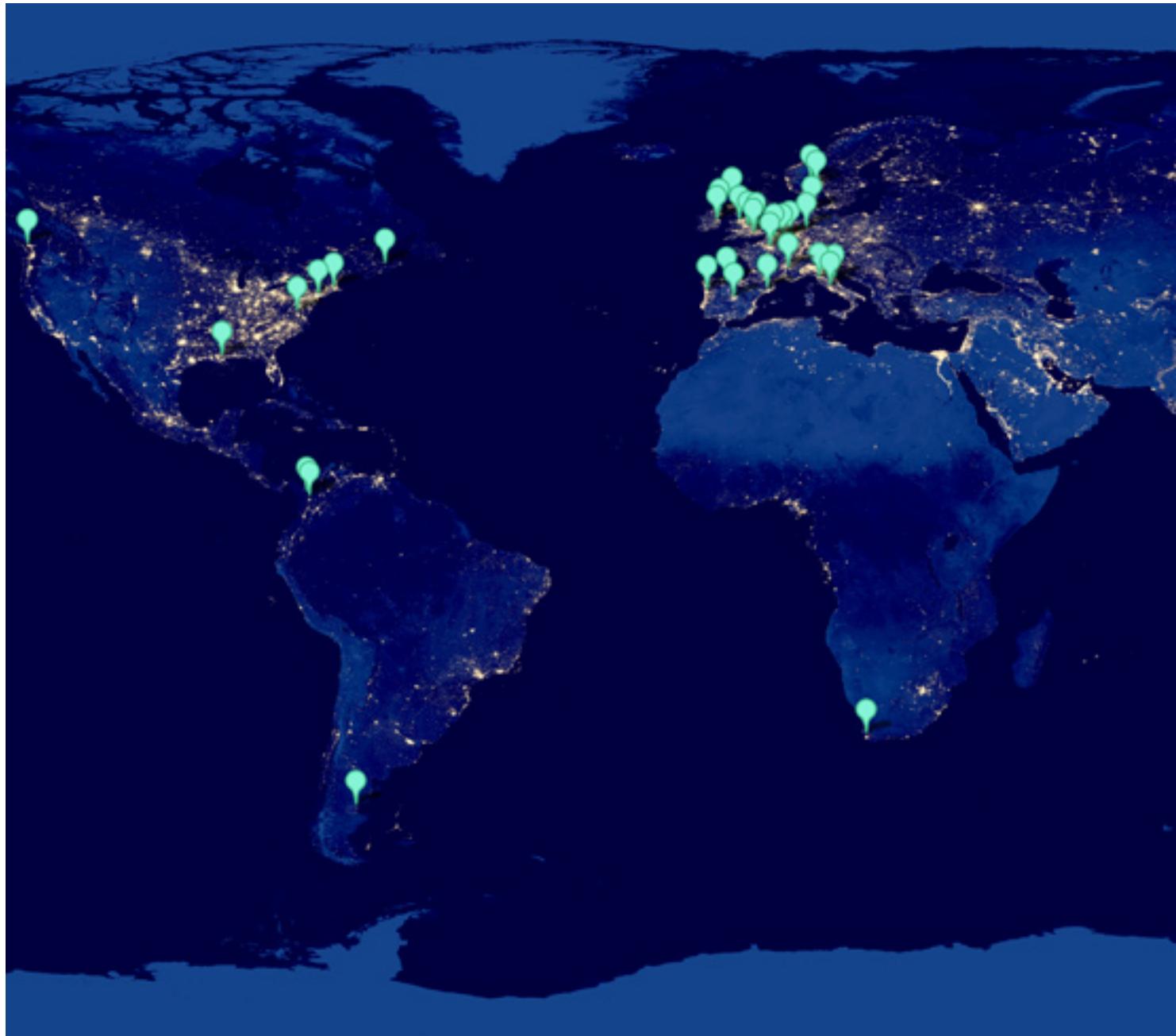
91 Distributional cost-effectiveness of health care programmes – **Miqdad Asaria**, **Susan Griffin**, **Richard Cookson**, Sophie Whyte and Paul Tappenden

92 Distributional cost-effectiveness analysis: a tutorial – **Miqdad Asaria**, **Susan Griffin** and **Richard Cookson**

93 The influence of cost-effectiveness and other factors on NICE decisions – Helen Dakin, Nancy Devlin, Yan Feng, **Nigel Rice**, Phill O'Neill, David Parkin

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**Bojke C.** Health economics: what's in it for me? *The Royal College of General Practitioners Conference, Harrogate, UK.* October 2013.

**Castelli A, Daidone S, Jacobs R, Kasteridis P, Street A.** Examining variations in provider costs in the hip fracture care pathway. *Health Economists' Study Group, Exeter, UK.* January 2013.

**Chalkley M.** Does it pay to irradiate? The impact of financial incentives on dental x-rays. *COHERE, University of Southern Denmark, Denmark.* November 2013.

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**Cookson R.** Using administrative data in health economics – an illustrative study of hospital competition and inequality. *The Public Economics UK Conference, UK, Warwick University, UK.* June 2013.

**Cookson R.** Distributional cost-effectiveness analysis. *Priority in Practice 10th Anniversary Workshop, Centre for Philosophy, Justice and Health, University College London, UK.* September 2013.

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**Cookson R.** Distributional principles – what values to elicit and how to elicit them. *International Workshop on Health Equity: What People Think*, Nova Scotia, Canada. October 2013.

Doran T, **Jacobs R.** Realities of linking data for health services research. *Data Linkage Stakeholder Forum*, HSCIC, Leeds, UK. November 2013.

**Drummond M.** Consolidated Health Economic Evaluation Reporting Standards (CHEERS) Statement. *ISPOR 18th Annual International Meeting*, New Orleans, USA. May 2013.

**Drummond M.** Adapting economic evaluation to meet changing policy needs: the case of NICE in the UK. *International Health Economics Association (iHEA), 9th World Congress, Sydney, Australia*. July 2013.

**Drummond M.** The growth of value-based pricing in Europe: opportunities for price discrimination. *International Health Economics Association (iHEA), 9th World Congress, Sydney, Australia*. July 2013.

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**Drummond M.** Health technology assessment in the adoption, diffusion and disinvestment of technologies in the UK. *34th National Congress of the Society of Italian Hospital Pharmacists, Turin, Italy*. October 2013.

**Faria R.** Diagnostics in cost-effectiveness analysis: the evaluation of the EOS 2D/3D imaging system. *Instituto de Evaluación Tecnológica en Salud (Institute of Technological Evaluation in Health; IETS), Bogota, Colombia*. September 2013.

**Faria R.** Practical issues in health technology appraisal. *Instituto de Evaluación Tecnológica en Salud (Institute of Technological Evaluation in Health; IETS), Bogota, Colombia*. September 2013.

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**Faria R.** Introduction to cost effectiveness analysis and its application to social care. *ENRICH (Enabling Research in Care Homes) Launch Event, York, UK*. October 2013.

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Gomes M, **Street A.** Patient reported outcomes, costs, missing data and hospital performance. *PROMS Summit, London, UK*. November 2013.

Gomes M, **Street A.** PROMs: impact of non-response and missing data. *Patient Reported Outcome Measures (PROMs) research conference, King's Fund, London, UK*. December 2013.

# PRESENTATIONS 2013

**Gravelle H.** Accessibility of walk in centres and use of accident and emergency departments. *Institute for Economic and Social Research, University of Melbourne, Australia*. February 2013.

**Gravelle H.** Hospital competition and quality. *Department of Health, Quarry House, Leeds, UK*. February 2013.

**Gravelle H.** Does quality affect patients' choice of doctor? Evidence from the UK. *Competition and Market Mechanisms in Health Care, Nuffield Trust, London, UK*. September 2013.

**Gutacker N.** Analysing PROMs data for the purpose of informing patient choice. *University of Manchester, School of Medicine, Manchester, UK*. February 2013.

**Gutacker N.** Variation in length of stay and in-patient mortality for AMI patients in five European countries. *Spanish Health Economics Association conference, Santander, Spain*. June 2013.

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**Hinde S.** The cost-effectiveness of early awareness in lung cancer campaigns. *2013 NAEDI Research Conference. Cancer Research UK, Cambridge Research Institute, Cambridge UK*. April 2013.

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**Jacobs R.** Payment by Results (PbR) for mental health services. *The Andrew Sims Centre, Leeds, UK*. January 2013.

**Jacobs R.** Is higher primary care quality associated with lower hospital admissions for people with serious mental illness? *11th Workshop on Costs and Assessment in Psychiatry, Venice, Italy*. March 2013.

**Jacobs R.** Is higher primary care quality associated with lower hospital admissions for people with serious mental illness? *CHE Seminar series, University of York, UK*. March 2013.

**Jacobs R.** The impact of crisis resolution and home treatment teams on psychiatric admission rates in England. *The North Essex Partnership NHS Foundation Trust, UK*. April 2013.

**Kronenberg C.** The dynamics of mental health in the British Household Panel Survey. *Health Economics Study Group Meeting, Warwick, UK*. June 2013.

**Kronenberg C.** Kippersluis H, Rohde K. What drives the association between health and portfolio choice? *International Pension Workshop by NETSPAR, Frankfurt, Germany*. June 2013.

**Kronenberg C.** Does peer comparison matter for mental health? *Erasmus School of Economics Seminar, Rotterdam, the Netherlands*. September 2013.

**Mahon R, Manca A, Palmer S.** Extrapolation in cost-effectiveness analysis: An overview and two motivating examples. *Methods for Extrapolation from Clinical Trials Data to Inform Economic Evaluation, Oxford, UK*. January 2013.

**Manca A.** Impact on health policy: a health economist's view. *MRC Population Cohort Strategy Workshop, London, UK*. March 2013.

**Manca A.** Maximising the value of access to individual patient level data. *Department of Health Sciences, University of York, UK*. June 2013.

**Manca A.** Health economic evaluation and person-centred healthcare – where to? *2nd Annual Health Economics and Personalized Medicine Symposium, Luxembourg*. October 2013.

**Manca A.** Integrating reimbursement needs into the design of drug development programs: Key aspects of methodology important for HTA and reimbursement. *ISPOR 16th Annual European Conference, Dublin, Ireland*. November 2013.

**Mason A, Jacobs R, Gutacker N, Goddard M, Gravelle H,** Kendrick T, Gilbody S, Richardson R, Wainwright J. Is higher primary care quality associated with lower hospital admissions for people with severe mental illness? *Primary Care Mental Health Conference, University of Manchester, UK*. March 2013.

**McKenna C.** The allocation problem: healthcare resources. *Department of Mathematics, University of York, UK*. January 2013.

**McKenna C.** Value of information for CRASH. *Medical Research Council (MRC) Network of Hubs for Trials Methodology Research Annual Meeting, Oxford, UK*. February 2013.

**McKenna C.** Using Bayesian statistics to determine whether further research is needed. *Department for Health Evidence of Radboud University Medical Centre, Nijmegen the Netherlands, Amsterdam, the Netherlands*. May 2013.

**McKenna C.** Decision making: an introduction to decision-analytic methods. *Centre of Infection and Immunity, Queen's University Belfast, UK*. August 2013.

**McKenna C.** The role of evidence synthesis and value of information analysis for research prioritisation, commissioning and clinical trial design. *ISPOR 16th Annual European Conference, Dublin, Ireland*. November 2013.

**McKenna C.** Decision making in the UK. *Conservatoire national des arts et métiers, Paris, France*. December 2013.

**Moscelli G.** Hospital quality and competition with fixed prices. *Tor Vergata University, Rome, Italy*. October 2013.

**Revill P.** Economic evaluation of health care interventions in developing countries. *Department for International Development (DFID), UK*. February 2013.

**Revill P.** Within-trial cost-effectiveness analysis of clinically-driven vs laboratory and clinical monitoring for 1206 African children on ART: The AntiRetroviral Research for Watoto Trial. *20<sup>th</sup> Conference on Retroviruses and Opportunistic Infections (CROI), Atlanta, USA*. March 2013.

**Revill P.** Economic evaluation of health care interventions in developing countries. *Global Fund for AIDS, TB and Malaria (GFATM), Geneva, Switzerland*. March 2013.

**Revill P.** Economic evaluation of health care interventions in developing countries: current approaches and future directions. *Department for Infectious Disease Epidemiology (DIDE), Imperial College, London, UK*. April 2013.

**Revill P.** Modelling to support decision making. *Bill and Melinda Gates Foundation, Seattle, USA*. June 2013.

**Richardson G.** Cost-effectiveness of the family nurse partnership. *University of Leeds, Leeds, UK*. November 2013

**Saramago P.** Network meta-analysis of (individual patient) time to event data alongside (aggregate) count data. *13<sup>th</sup> Portuguese National Health Economics Conferences in Braga, Portugal*. October 2013.

**Saramago P, Manca A, Weatherly H, Sculpher M.** MacPherson H. Estimating the clinical and quality of life benefits of acupuncture from multiple patient level data sources: what a pain! *Society for Medical Decision Making Conference, Baltimore, USA*. October 2013.

**Saramago P, Sculpher M.** Using evidence elicited from experts in decision making. *4<sup>th</sup> Latin American ISPOR Conference, Buenos Aires, Argentina*. September 2013.

**Saramago P, Sculpher M.** Transferability of cost-effectiveness analysis: requirements to improve decision making in Latin America. *4<sup>th</sup> Latin American ISPOR Conference, Buenos Aires, Argentina*. September 2013.

**Sculpher M.** The relevance of HTA for policy in the UK. *Centre for Health Economics and Technology Assessment, University of Glasgow, UK*. March 2013.

**Sculpher M.** Methods to estimate the cost effectiveness threshold for the NHS. *Cairnes School of Business and Economics, National University of Ireland, Galway, Ireland*. March 2013.

**Sculpher M.** How much should we spend on health care and how should we spend it? *University of Adelaide, Adelaide, Australia*. April 2013.

**Sculpher M.** Can a life-extending drug be cost-effective even if offered for free? The curious economics of costs in added years of life. *Issues Panel, International Society for Pharmacoeconomics and Outcomes Research, New Orleans, USA*. May 2013.

**Sculpher M.** Setting priorities in research: does value of information analysis have a role? *Issues Panel, International Society for Pharmacoeconomics and Outcomes Research, New Orleans, USA*. May 2013.

**Sculpher M.** Presenting uncertainty (and its consequences) in cost-effectiveness to best inform policy decision. *International Society for Pharmacoeconomics and Outcomes Research, New Orleans, USA*. May 2013.

**Sculpher M.** Value-based pricing to ensure cost-effective drugs for the UK NHS: will it work? *European Association of Clinical Pharmacology and Therapeutics, Geneva, Switzerland*. August 2013.

**Sculpher M.** Pricing and reimbursement schemes: is value-based pricing a feasible policy in Latin American countries? *Issues Panel, International Society for Pharmacoeconomics and Outcomes Research, Buenos Aires, Argentina*. September 2013.

**Sculpher M.** Estimating a cost-effectiveness threshold to reflect opportunity costs: the case of NICE in the UK. *Society for Medical Decision Making, Baltimore, USA*. October 2013.

**Sculpher M.** Health economics of personalised medicine – do we need a comprehensive research programme? *Issues Panel, International Society for Pharmacoeconomics and Outcomes Research, Dublin, Ireland*. November 2013.

**Sculpher M.** Multi-criteria decision analysis: an appropriate framework for decision-making about new medical technologies? *Centre for the Economics of Mental and Physical Health (CEMPH) perspectives: 20 years of applying health economics in complex contexts, London, UK*. November 2013.

**Sculpher M.** Decision analytic modelling and its role in diagnostics. *NICE Diagnostics Advisory Committee, Manchester, UK*. December 2013.

**Sculpher M,** Claxton K. The NICE reference case: a useful template for MEEP? *Bill and Melinda Gates Foundation on Methods for Economic Evaluation, Seattle, USA (by teleconference)*, June 2013.

# PRESENTATIONS 2013

**Soares M.** Uncertainty and value of information analysis. *ISPOR 18th Annual International Meeting, New Orleans, USA.* May 2013.

**Soares M.** An illustrated framework for representing uncertainty and its consequences in health technology appraisals. *ISPOR 18th Annual International Meeting, New Orleans, USA.* May 2013.

**Soares M.** Contribution of Markov and other economic modeling methods in medical decision making. *7ème Conférence Francophone d'Épidémiologie Clinique. Paris, France.* May 2013.

**Soares M.** Value of information analysis. *MRC Hubs for Trials Methodology Research Workshop, University of Bristol, UK.* July 2013.

**Spackman E.** Should off-label agents be used as comparators in health technology assessment? *Issue Panel: ISPOR 16th Annual European Conference. Dublin, Ireland.* November 2013.

**Spackman E, Walker S.** The economic evaluation of diagnostics: challenges and methods for assessing value. *Workshop: ISPOR 16th Annual European Conference. Dublin, Ireland.* November 2013.

**Street A.** Evaluating the impact of Year of Care tariffs. *Year of Care pilot sites. London, UK.* March 2013.

**Street A.** Evaluating hospital costs and length of stay, *University of Oslo, Norway.* April 2013.

**Street A.** Reasons for variations in patient reported outcomes. *Universitat De Pompeu Fabra, Barcelona, Spain.* April 2013.

**Street A, Daidone S.** How much should be paid for specialised treatment? *Spanish Health Economics Conference, Santander, Spain.* June 2013.

**Street A.** Analysis of utilisation and costs of health and social care. *Symphony project board/Somerset Clinical Commissioning Group, UK.* June 2013.

**Street A.** Multilevel analysis of hospital efficiency, *Symposium on multi-level analyses in performance assessment, Technical University of Berlin, Germany.* September 2013.

**Street A.** Reasons for variations in patient reported outcomes. *Symposium on multi-level analyses in performance assessment, Technical University of Berlin, Germany.* September 2013.

**Street A.** An overview of competition and market mechanisms in health care. *Nuffield Trust, London, UK.* September 2013.

**Street A.** The Symphony project: data analyses to support integrated care budgets. *Workshop with health and social care providers in Somerset, Taunton, UK.* September 2013.

**Street A.** Year of care: lessons from the Symphony project. *Webex presentation to the Year of Care pilot sites.* October 2013.

**Street A.** Variations in costs and patient reported outcomes in England. *University of Southern Denmark, Denmark.* October 2013.

**Street A.** How much should be paid for specialised treatment? *Monitor, London, UK.* October 2013.

**Street A.** Establishing a fair playing field between public and private health providers. *Plenary address to the Hospital Association of South Africa (HASA) Annual Conference, Cape Town, South Africa.* October 2013.

**van den Berg B.** Subjective wellbeing and caring: Deriving the monetary value of care. *Advances in Happiness Economics, Erasmus University Rotterdam, Netherlands.* October 2013.

**van den Berg B.** The funding of the long term care system in the Netherlands. *IV Congreso Internacional Dependencia y Calidad de Vida, Barcelona Spain.* October 2013.

**Weatherly H, Saramago P, Manca A, Sculpher M.** Use of economic modelling in acupuncture. *International Society for Complementary Medicine Research (ISCMR) Workshop Health economics in Complementary and Integrative Medicine, Institute for Education, London, UK.* April 2013.

## 2013: CHE Facts & Figures

6 MSc  
summer  
placement  
students

# HONORARY FELLOWS AND VISITORS

## Professors, fellows and visitors

### HONORARY PROFESSORS

- **Roy Carr-Hill**  
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- **Nancy Devlin**  
---
- **Paul Kind**  
---
- **Peter C Smith**

### HONORARY VISITING FELLOWS

- **Marco Barbieri**  
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- **David Epstein**  
---
- **Jon Sussex**

### VISITORS TO CHE DURING 2013

- **Jan Abel Olsen**  
University of Tromso, Norway
- **Tony Ades**  
University of Bristol
- **Vincenzo Atella**  
University of Rome
- **Federico Belotti**  
University of Rome
- **Indigo Bermejo**  
UNED (Universidad Nacional de Educación a Distancia), Madrid
- **Alessandra Bianco**  
University of Turin
- **Javier Diez**  
UNED, Madrid

- **Manuel Espinoza**  
Pontificia Universidad Católica de Chile and Institute of Public Health of Chile

- **Lou Garrison**  
Office of Health Economics and University of Washington

- **Joan Gil**  
University of Barcelona

- **Manuel Gomes**  
London School of Hygiene and Tropical Medicine

- **Iris Kesternich**  
University of Munich

- **Erik Koffijberg**  
University Medical Center, Utrecht

- **Andrea Piano Mortari**  
University of Rome

- **France Portrait**  
VU University Amsterdam

- **Silvana Robone**  
University of Bologna

- **Michael Shields**  
Monash University, Australia

- **Takashi Sugimoto**  
University of Tokyo, Japan

- **Pieter van Baal**  
Erasmus University Rotterdam

- **Matthias Vogl**  
Institute of Health Economics and Health Care Management, Germany

- **Eugenio Zucchelli**  
Lancaster University

### ALAN WILLIAMS FELLOWS

The Alan Williams Fellowships scheme was first launched in 2006 as a tribute to Professor Alan Williams and to enable health economists from anywhere in the world to spend time at the Centre for Health Economics in York, UK.

In 2013, Peter Sivey, from La Trobe University, Melbourne, and Mikael Svensson, from Karlstad University were awarded Fellowships and will visit CHE in 2014. Peter Sivey's research project will be 'Estimating the relationship between emergency department waiting times and demand'. Mikael Svensson's research topic will be 'Out-of-pocket payments in health care – how does it affect health care utilization?'

### PAST FELLOWS

- **Line Kongstad**  
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- **Cinzia Di Novi**  
---
- **Rena Conti**  
---
- **Anirban Basu**  
---
- **Ismo Linnosmaa**  
---
- **Matteo Galizzi**  
---
- **Giuliana de Luca**  
---
- **Aleksandra Torbica**  
---
- **Victor Zarate**

## Research Staff

### ● Maria Goddard

Professor and Director  
of CHE

### ● Shehzad Ali

Research Fellow

### ● Maria Jose Aragon

Research Fellow

### ● Miqdad Asaria

Research Fellow

### ● Chris Bojke

Senior Research Fellow

### ● Laura Bojke

Senior Research Fellow

### ● Adriana Castelli

Research Fellow

### ● Martin Chalkley

Professor

### ● Karl Claxton

Professor

### ● Richard Cookson

Reader

### ● Michael Drummond

Professor

### ● Ana Duarte

Research Fellow

### ● Mark Dusheiko

Senior Research Fellow

### ● Rita Faria

Research Fellow

### ● James Gaughan

Research Fellow

### ● Christina Giannopoulou

Career Development Intern

### ● Katja Grasic

Research Fellow

### ● Hugh Gravelle

Professor

### ● Susan Griffin

Senior Research Fellow

### ● Nils Gutacker

Research Fellow

### ● Sebastian Hinde

Research Fellow

### ● Rowena Jacobs

Senior Research Fellow

### ● Gurleen Jhuti

Research Fellow

### ● Panos Kasteridis

Research Fellow

### ● Andrea Manca

Professor

### ● Anne Mason

Senior Research Fellow

### ● Claire McKenna

Research Fellow

### ● Giuseppe Moscelli

Research Fellow

### ● Aurora Ortiz-Nunez

Research Fellow

### ● Stephen Palmer

Professor

### ● Paul Revill

Research Fellow

### ● Nigel Rice

Professor

### ● Gerry Richardson

Senior Research Fellow

### ● Irene Sanchez

Research Fellow

### ● Rita Santos

Research Fellow

### ● Pedro Saramago Goncalves

Research Fellow

### ● Mark Sculpher

Professor

### ● Eleftherios Sideris

Career Development Intern

### ● Marta Soares

Research Fellow

### ● Eldon Spackman

Research Fellow

### ● Andrew Street

Professor

### ● Bernard van Den Berg

Reader

### ● Simon Walker

Research Fellow

### ● Padraic Ward

Research Fellow

### ● Helen Weatherly

Senior Research Fellow

### ● Eugenio Zucchelli

Research Fellow

## 2013: CHE Facts & Figures

Over 20  
visitors  
to CHE

## New Research Staff



### Shehzad Ali

*Research Fellow*

Shehzad is a health economist by research training (PhD) with further background in Public Health (MPH) and

Clinical Medicine (MBBS). Before starting his academic career in York in 2009, Shehzad worked as a health economist for an independent research organisation. Besides his research work in the UK, he also has experience of working in developing countries in the areas of economic evaluation, health insurance, public health interventions and programme management.



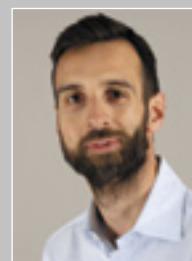
### Christina Giannopoulou

*Career Development Intern*

Christina Giannopoulou joined the Team for Economic Evaluation and Health Technology Assessment (TEEHTA) in October 2013.

She holds an Economics Degree from the University of Macedonia, Greece, and in 2012 obtained a Master's Degree in Health Economics from the Erasmus University Rotterdam, the Netherlands. Before joining TEEHTA, she worked as a Healthcare Consultant Associate in Switzerland.

(NICE). In addition to his HTA duties, Gurleen conducted research into health-related quality of life concepts associated with diagnostic technologies and contributed to the EUnetHTA JA1 project. Gurleen has a range of research interests, which include: the development and appropriate use of HTA methods for medical technologies, the application of statistical and decision-analytic methods for cost-effectiveness analysis.



### Eleftherios Sideris

*Career Development Intern*

Eleftherios joined the Team for Economic Evaluation and

Health Technology Assessment (TEEHTA) in October 2013, after completing the MSc in Health Economics at the University of York. His previous academic background is in the area of Business Administration, with a BSc and an MBA from the Athens University of Economics and Business (AUEB). Eleftherios has also worked for several years in commercial roles within the consumer and the pharmaceutical industry in Greece and Southeast Europe. Before joining the Centre for Health Economics, Eleftherios worked for Roche UK, where he developed an Alzheimer's disease cost-effectiveness model.



### Maria Jose Aragon

*Research Fellow*

Maria Jose joined CHE's Health, Econometrics and Data Group (HEDG) in August 2013,

after finishing her PhD in Economics at the University of Alicante, Spain. She has a BSc in Economics from the University of Concepcion, Chile, and a MSc in Economics from the University of Alicante, Spain.



### Gurleen Jhuti

*Research Fellow*

Gurleen joined the Team for Economic Evaluation and Health Technology Assessment (TEEHTA) in November 2013.

He holds a BSc in Pharmacology with Management and an MSc in International Pharmacoeconomics and Health Economics. Gurleen has several years of experience working in the pharmaceutical industry and health policy sector. Before joining TEEHTA, he worked at the National Institute for Health and Care Excellence

## PhD Students

- **Estela Capelas Barbosa**  
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- **Chen Chen**  
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- **Laure de Preux**  
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- **Ijeoma Edoka**  
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- **Iftekher Hossain**  
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- **Daniel Howdon**  
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- **James Koh**  
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- **Christoph Kronenberg**  
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- **James Lomas**  
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- **Ronan Mahon**  
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- **Valerie Moran**  
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- **Thomas Patton**  
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- **Yeunsook Rho**  
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- **Idaira Rodriguez Santana**  
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- **Irene Sanchez**  
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- **Laetitia Schmitt**  
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- **Victor Zarate**

## New PhD Students



### James Koh

James is a PhD student affiliated with TEEHTA. He has a BA in Philosophy from University of Kent (2008), a PGDip in Economics from University

of Manchester (2012) and an MSc in Health Economics from University of York (2013).



### Idaira Rodriguez Santana

Idaira is a PhD student under the supervision of Martin Chalkey. The focus of her doctoral

research is on the "economics and econometrics of the workforce within the healthcare sector". To date, Idaira holds a Bachelor of Economics from the University of Las Palmas de Gran Canaria, Spain and a Master of Health Economics and Policy from the Barcelona Graduate School of Economics. Additionally, Idaira has experience at the University Pompeu Fabra, Spain as an adjunct lecturer for undergraduate students in the fields of introductory economics and health economics.



### Valerie Moran

Valerie joined CHE in January 2013 as a PhD student affiliated with the Health Policy team. She is conducting research into the performance of

mental health providers in England under the supervision of Dr. Rowena Jacobs. Prior to joining CHE, Valerie held positions at the Organisation for Economic Co-Operation and Development (OECD), the World Bank and the National University of Ireland, Galway. Valerie holds BA and MA degrees in Economics from the National University of Ireland, Galway and an MSc in Health Economics from the University of York. Her research interests lie in the area of health system performance, in particular of mental health systems at both national and international levels as well as waiting times in the health sector.



### Irene Sanchez

Irene Sanchez is a PhD Student under the supervision of Bernard van den Berg. She holds an MA in Economic Theory and Econometrics from the Toulouse

School of Economics and an MSc in Economics from the Barcelona Graduate School of Economics. Irene's main interest is applied microeconomics, focussing on the impact of peer effects on health economic outcomes, informal care, and health inequality.

## Administrative and Support Staff

- **Kerry Atkinson**  
*Administrator*  
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- **Linda Baillie**  
*Administrator*  
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- **Louise Campbell**  
*Administrator*  
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- **Gill Forder**  
*Publications Administrator*  
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- **John Galloway**  
*Computer Support Officer*  
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- **Liz Grant**  
*Finance and Research Support Officer*  
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- **Ruth Helstrip**  
*Project Coordinator*  
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- **Vanessa King**  
*Administrator and Assistant to the Director*  
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- **Gillian Robinson**  
*Administrator*  
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- **Frances Sharp**  
*Publications Manager*  
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- **Trish Smith**  
*Centre Manager*  
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- **Vanessa Wood**  
*Finance and Research Support Co-ordinator*

## New Administrative and Support Staff



### **Louise Campbell**

*Administrator*

Louise joined CHE in September 2013 and is the jobshare partner of Gillian Robinson. Louise is secretary to Professors Andrew Street, Michael Drummond and Hugh Gravelle, and the Health Policy team. In addition, Louise helps to organise the Analysing Patient-level Data Workshop. Prior to joining CHE, Louise worked for the Alzheimer's Society where she organised and hosted events across the North of England to promote the work of the charity.



### **Ruth Helstrip**

*Project Coordinator*

Ruth joined CHE in February 2013 as a Project Coordinator to support a consultation exercise about fairness in the NHS. Prior to this Ruth was working as a freelance Research Assistant on a project looking at services available to children with life-limiting illnesses.

Ruth graduated from the University of Stirling with a BA (Hons) in Sociology and Social Policy in 1996 and then spent several years working as a Consultancy Support Manager for a Management Consultancy in Oxford, before returning to her home town of York in 2001.

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