



Centre For Health Economics

# Health Economics News

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## Welcome to the CHE Newsletter

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## inside this issue...

2 Exploring the assessment and appraisal of regenerative medicines

2 Does health care expenditure really buy mortality reductions?

2 Health Technology Assessment - an international focus

3 Supporting resource allocation in Malawi

3 Latest news

4 Publications



## Why have health care expenditures risen so dramatically over time?

*Health care expenditure as a proportion of GDP has risen dramatically over time placing an ever-increasing burden on government revenues. It is imperative to understand the underlying drivers of this increase both to aid better forecasting of future expenditure needs and, if necessary, to temper those drivers. Focusing on NHS admitted patient care, the following two articles explore such issues by: (i) analysing trends in expenditure over time, and (ii) considering expenditure due to ageing and in proximity to death.*

Expenditure on the NHS has risen substantially since its foundation in 1948. By 2012 it constituted 7.9% of total economic output in the UK with almost 25% spent on hospital inpatient care. Nigel Rice, Maria Aragon and Martin Chalkley have examined growth in this spending over a 15 year period to 2012/13 in order to understand what has driven this increase.

The key findings are: (i) an increase in the number and type of treatments with more patients being treated in hospital now than in the past; (ii) some, but not much, of the growth in expenditure reflects higher treatment costs; (iii) expenditure is substantially higher for individuals with multiple diseases, and the NHS is identifying and treating more of these conditions; (iv) hospital treatment and expenditure are substantially higher just before somebody dies. This holds irrespective of age at death, and has increased over time.

These results indicate that higher expenditure on hospital inpatient care has not been driven by increases in costs. Rather it is mainly determined by the diseases affecting the population, the population's age, and greater provision and intensity of treatments. Further details [www.york.ac.uk/che/publications](http://www.york.ac.uk/che/publications)

Nigel Rice and Daniel Howdon have carried out research on health care expenditures, age, proximity to death and morbidity. Most people agree that demographic pressures of an ageing population are associated with an increasing demand for health services. This has fuelled the concern that, as the share of the population at older ages rises, the economic burden of providing health care will become increasingly unworkable. Some researchers, however, have argued that while health care expenditures do increase with age, this is due largely to individuals approaching death rather than their ageing *per se*. Combined with the idea that individuals are ageing more healthily than in the past, and increasingly experience ill-health concentrated at the very end of their lives, this suggests a more nuanced approach to forecasting expenditure is necessary.

Using English hospital administrative data to incorporate individual-level morbidity together with age and proximity-to-death in models of health care expenditure, they find that proximity-to-death better explains expenditures than age, and importantly, that proximity-to-death itself proxies for individual-level morbidity: the explanatory power of proximity-to-death is severely muted once morbidity measures are incorporated. Their results strengthen the need to include detailed measures of morbidity in models of health care expenditures, and also call for a better understanding of changes to profiles of morbidity to adequately forecast future health care expenditure needs. Further details [www.york.ac.uk/che/publications](http://www.york.ac.uk/che/publications)

## Exploring the assessment and appraisal of regenerative medicines

Project team: Stephen Palmer, Seb Hinde (CHE), Nerys Woolacott, Mark Corbett, Robert Hodgson, Julie Jones-Diette, Kath Wright (CRD, University of York)

Regenerative medicines seek to restore or establish normal function through the harnessing of the body's own biology. While not a new area of research, with the first bone marrow transplants being conducted in the 1950s, recent developments in cellular modification have led to hopes of a new generation of treatment able to offer potential cures in previously irreversible diseases.

However, concerns have been raised that existing pathways linking development to market access are poorly suited to such novel therapies. While regulatory pathways are evolving to facilitate early approval, the assessment of the long term costs and benefits of such therapies may be more challenging than for conventional treatments.

Our research aimed to test the application of NICE appraisal methodology to regenerative medicines, identifying challenges and areas where changes to methods or additional research may be needed. Additionally, it also informed a NICE "mock technology appraisal" of CAR T-cell therapy for treating acute lymphoblastic leukaemia.

Our research highlighted the challenges associated with regenerative medicines more broadly, focussing on the need for a robust quantification of the level of uncertainty in the cost-effective estimates and the potential value of managed entry schemes to ensure risks are appropriately shared between the NHS and the manufacturers.

Further details: [www](#)

## Does health care expenditure really buy mortality reductions - what does cross-country analysis tell us?

Project team: Ryota Nakamura, James Lomas, Karl Claxton, Marc Suhrcke (CHE), Farasat Bokhari (University of East Anglia), Rodrigo Moreno Serra (University of Sheffield)

Much research has previously examined the impact of public health expenditure on mortality, using a global cross-section or panel of country-level data. However, while a number of studies do confirm the highly intuitive relationship, effect magnitudes do differ considerably, and several studies have found statistically insignificant effects.

Our research re-examined the literature, starting from the approaches used in two seminal papers in this field that have undertaken distinct methodological efforts at distilling the causal nature of the relationship. Using exactly the same data and econometric specifications as the published studies, we successfully replicate their findings. However, results turn out to depart – sometimes considerably – from the original findings and often become insignificant, once we use the latest available data, apply more 'streamlined' econometric specifications, perform statistical data imputation and undertake extensive robustness checks.

While the findings should not be taken to imply that there is no true mortality-reducing impact of public health care expenditures, the results do suggest that choice of methods matters when drawing policy conclusions from analysis of this type of data. Further methodological work, for instance in terms of applying other estimation strategies, will help in the effort to derive more robust estimates of the impact of public health care funding on mortality. Further details [www](#)

## Health technology assessment - an international focus

Japan has recently introduced health technology assessment as part of a pilot project to change the reimbursement process of new drugs and the different stakeholders are working out how to implement the new process.

Rita Faria from CHE visited Japan, funded by the Great Britain Sasakawa Foundation, in order to pursue three objectives: first, to showcase the UK methods for health technology assessment and evaluation of cost-effectiveness; second, to discuss the challenges in applying these methods in the Japanese context and to propose ways of addressing them; and third, to develop new research collaborations with Japanese colleagues and organisations.

During this visit, Rita met a number of researchers, analysts and policy-makers based in Japan. She presented her work at the annual meeting of the Health Technology Assessment international, at the Canon Institute for Global Studies (CGIS), at a Health Economics Study Group, and to a research group in Keio University. Discussions are ongoing about a possible collaboration in dementia research. More details on the visit and the presentations are available here. [www](#)



## Supporting resource allocation in Malawi

Paul Revill and Alex Rollinger

In June, CHE researchers took part in a three day workshop in Lilongwe, Malawi, to discuss the role of health economics and modelling in supporting resource allocation decisions in Malawi. The event was co-organised by CHE, the HIV Modelling Consortium, and the Malawian Ministry of Health, and was attended by a range of international modellers, within-country analysts, researchers, and representatives from donor partners and the Malawian Government, including Hon. Dr. Peter Kumpalume (Minister for Health) and Dr. Charles Mwansambo (Secretary for Health).

New research was presented and key issues were discussed, including: Malawi's recent health sector reforms and the role of the revised Essential Healthcare Package (EHP); disease modelling and policy formulation, the impact of donor funding conditions on the wider health sector; practical constraints, such as local capacity, to be addressed alongside direct measures to improve allocative efficiency; and the role of analysts in supporting decision-makers in understanding available evidence and making informed decisions.

The event was chaired by Paul Revill and organised by Alex Rollinger, and included a number of presentations from CHE staff. Jessica Ochalek and Karl Claxton presented their work to date on a review of Malawi's previous EHP and the design of a framework tool for use in the development of the revised EHP for 2016 – 2021, and discussed the value of considering opportunity costs in future budgetary decisions. Miqdad Asaria presented on the equity considerations for the revised EHP, and Mark Sculpher discussed how the revised EHP may be successfully institutionalised.

The workshop was supported thanks to funding received from the University of York External Engagement Award and Impact Acceleration Account.



### Latest news

**Mike Drummond** was an invited speaker at the 3rd International Conference on Nutrition & Growth held in Vienna in March. In May, Mike participated in two Issues Panels at the Annual Meeting of ISPOR in Washington DC. The panels were entitled 'How do culture, values and institutional context shape the methods and use of economic evaluation?' and 'Payers use of independent reports in decision making - will there be an ICER effect?'

Andrew Jones (DERS, University of York), **James Lomas** and **Nigel Rice** have been awarded the inaugural Willard G. Manning Memorial Award for the Best Research in Health Econometrics by the American Society of Health Economists.

At the end of May, **Gerry Richardson** visited the Universities of Uppsala and Linköping in Sweden and gave invited seminars entitled 'Cost-effectiveness of interventions in parents and young children' and 'The family nurse partnership in the UK'.

During April, **Marc Suhrcke**, **Ryota Nakamura**, **Andrew Mirelman** and **Alex Rollinger** visited Chilean collaborators to discuss their current project on the sugar-sweetened beverages tax introduced into Chile in 2014. They conducted a number of meetings with the Chilean Ministries of Health and Finance. Marc presented at the project launch event at the University of Chile which was attended by a number of senior academics and members of the press, and Ryota and Andrew delivered two half day workshops with students at the University of Chile.

In May, **Mark Sculpher** gave a talk entitled 'CEA should be the primary decision making criterion in decisions about health technology and services' at the Invited 'rounds' at the University of Toronto. Also during May, Mark was in Washington D.C. and gave an invited talk at the Centre for Global Development entitled 'Enduring challenges in specifying economic analysis to support resource allocation decisions' and a further talk entitled 'Cost-effectiveness thresholds: should we be generating more empirical evidence and, if so, how?' at the Issues Panel at ISPOR.

**Helen Weatherly** was invited by Suzete Costa, Director of the Centre for Health Evaluation and Research from the Portuguese National Association of Pharmacies (ANF), to be the key note speaker to open the Scientific Symposium of the 12th Pharmacies Congress 14-16 April in Lisbon. She gave a presentation on the economic value of public health interventions.

### New funding

NIHR SSCR: Vision rehabilitation services: Investigating the impacts of two service models

**Helen Weatherly** (led by Parvaneh Rabiee, SPRU, University of York)

Funder: NIHR SSCR

Sept 2015 to Feb 2018

Evaluating the role of fiscal policy in improving diets and preventing chronic disease in Chile

**Marc Suhrcke**

Funder: MRC

Feb 2016 to Dec 2018

University of Tokyo research visit

**Rita Faria**

Funder: Great Britain Sasakawa

Foundation

May 2016

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The latest Annual Report from the Centre for Health Economics is now available.

### Latest CHE research papers

CHERP 127 Medical spending and hospital inpatient care in England: an analysis over time

CHERP 128 Assessing the impact of health care expenditures on mortality using cross-country data.

CHERP 129 Socioeconomic inequalities in health care in England.

CHERP130 Optimal hospital payment rules under rationing by random waiting.

CHERP 131 The impact of taxation and signposting on diet: an online field study with breakfast cereals and soft drinks.

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