

Staff news

Mike Drummond received a DSc Honoris Causa from City University in London on 31 January. In presenting Prof Drummond for the degree, the Dean of the School of Social Sciences, Prof Antony Woodiwiss, noted that his research in the economic evaluation of health care treatments and programmes informed difficult decisions between comfort and suffering and indeed life and death. He noted that Prof Drummond also participated in these difficult decisions through his work with the National Institute for Health and Clinical Excellence.

Mike Drummond (centre) is pictured here with Prof Antony Woodiwiss (left) and Prof Malcolm Gillies (right), Vice Chancellor of City University London.



Award winning publication

The publication "Cost-Effectiveness Analysis Using Data from Multinational Trials: The Use of Bivariate Hierarchical Modeling". by Andrea Manca, Paul C. Lambert, Mark Sculpher and Nigel Rice has won the ISPOR Research Excellence Award for Methodology Excellence 2008. The Award was established in 1997 to recognize outstanding research in the field of pharmacoeconomics and outcomes research methodology. More details here: <http://mdm.sagepub.com/cqi/content/refs/27/4/471>

Welcome to the third edition of the Centre for Health Economics electronic newsletter. The objective of the newsletter is to keep policy makers, researchers and practitioners informed about recent developments at the Centre, including completed research and forthcoming events. For further information please visit our website www.york.ac.uk/inst/che

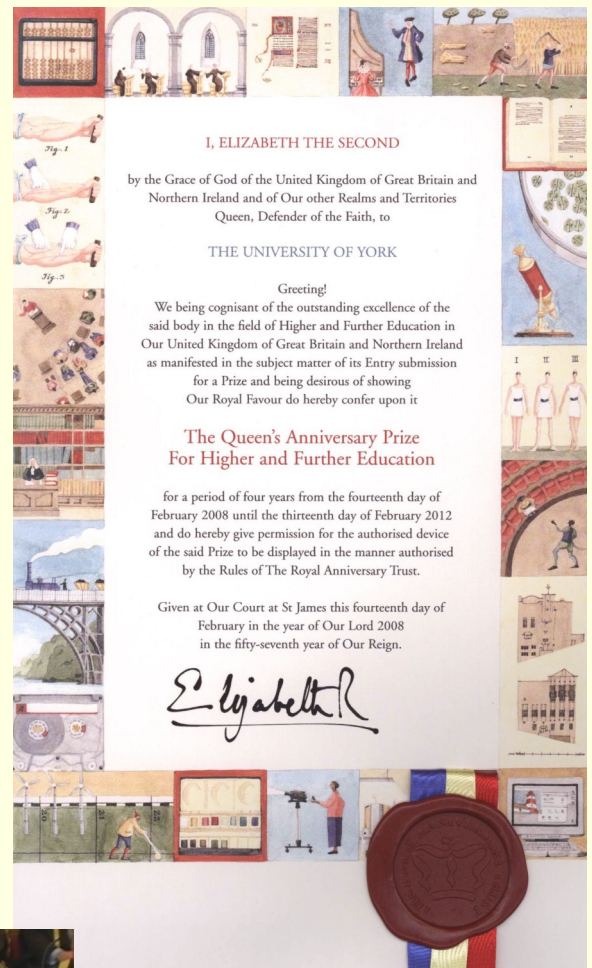
Health economics research wins Royal accolade for York

In a ceremony at Buckingham Palace on 14 February, the University of York was awarded one of the twenty Queen's Anniversary Prizes for Higher and Further Education for research carried out in the Centre for Health Economics.

Accepting the award from Her Majesty the Queen were Professor Brian Cantor, Vice Chancellor, and Professor Peter C Smith, Director of the Centre.

The award is a great tribute to all those who have worked in health economics at York, past and present.

In a press release, the Vice Chancellor says: "For a quarter of a century, the Centre has been at the forefront of applied research, teaching and policy applications of health economics. Its distinguished reputation both nationally and internationally is fully merited, and it has made an



extraordinary contribution to the delivery of healthcare and the consequent health and wellbeing of people throughout the UK and the world. In doing so, it has contributed enormously to the University's prestige and influence in the UK and the world."

Measuring health outcomes – putting theory into practice

Paul Kind



For the past 35 years or so, health economists have sought methods with which to measure the benefits of health care. Over this time we have seen the introduction of a number of standardised generic instruments designed to measure health status. When used successively, for example pre- and post-treatment, such health status data allows us to identify both the *direction* of change and its *magnitude*. It provides us with essential information that tells us

whether, after treatment, patients are better (or worse) than they were before and if so, then by how much. Such data has many potential applications, including its use as the adjustment factor when computing QALYs (Quality-Adjusted Life Years). The usefulness of these outcomes data is not confined to health economics. Standardised measures of health status such as SF-36, HUI and EQ-5D provide important information that supplements the clinicians' knowledge of the patient and records a global assessment that goes beyond clinical parameters. For example, the effect of antihypertensive treatment might be monitored by measuring a patient's blood pressure but by including a generic measure of health status, additional information can be collected about multiple aspects of a patient's health-related quality of life including mental, physical and social functioning.

EQ-5D is perhaps the most widely used generic index of health status. Developed by the EuroQoL Group in 1987 and now in more than 120 languages worldwide, EQ-5D defines health status in terms of five dimensions – mobility, self care, usual activities, pain/discomfort and anxiety/depression. A simple two-part questionnaire is used to record the self-reported level of problem on each of these five dimensions together with an assessment of overall health status on a visual analogue scale. The first part of the questionnaire can be scored using social preference weights derived in a national survey from a representative sample of the UK population (EQ-5D_{index}). The second part provides a value on a scale from worst to best imaginable health (EQ-5D_{vas}). Taken together, these two indexes provide powerful information that can be used by many stakeholders within the health system. By using EQ-5D at a single point in time it is possible to monitor the average health status of populations and population subgroups. EQ-5D has been included in several waves of the Health Survey for England providing normative reference values for self-reported health status in the general population. These data can be tracked over time to assess changes in health status at the national and regional level. The relationship between EQ-5D and other contextual variables such as education, income and housing

can inform the development of policies that cross the health divide. For individual patients, the systematic use of EQ-5D generates a record of their own health status over time and the way it responds to episodes of illness or healthcare interventions. Its generic properties mean that EQ-5D data can be aggregated across patient groups in different therapeutic areas, creating a standardised measure of benefit that can be used as an aid in resource allocation at all levels. EQ-5D generates information that is highly portable – that literally has the capacity to link the bedside with the Cabinet.

As of April 2009 EQ-5D will have a formal role within the English NHS. The new Standard NHS Contract for Acute Services includes a requirement to measure pre-operative health status in patients undergoing hip or knee surgery, groin hernia repair and varicose vein procedures and to repeat this measurement post-operatively.¹ This is undoubtedly the single most important step in recognising the importance of outcome measurement in the 60 year history of the NHS. It is nothing short of a landmark event. Department of Health guidance circulated in December 2007 indicates potential uses for these outcomes data in helping guide GPs and patients in making treatment choices, supporting clinicians and managers in benchmarking performance and supporting commissioners in assessing the quality of care delivered by providers.

The future for EQ-5D looks promising elsewhere too. Draft guidance published by NICE for consultation last year² indicates a requirement to report outcomes for reference case analysis using it. This bold initiative represents a strengthening of the requirements for submitting evidence in the evaluation of health technologies. Although controversial in its detail, the move is welcome and supports the capacity of NICE to more fairly compare cost-effectiveness of interventions across different therapeutic areas.

We have come a long way in the two decades since EQ-5D was first formulated, but there is now a realistic opportunity to address the shortfall in information that has hitherto restricted the measurement of outcomes in the NHS to the selective use of mortality data. Make no mistake – if the potential of these developments is nurtured then 2008 will mark a new direction in the management and delivery of healthcare, with consequences for us all.

References

1. Guidance on the Routine Collection of Patient Reported Outcome Measures (PROMs)
2. Guide to the Methods of Technology Appraisal, Draft TA methods guide update, November 2007. NICE

New funding

Helen Weatherly "Moving Care Closer to Home – Evaluation of the Cost" sponsored by the Department of Health via University of Manchester.

Steve Palmer "Prospective 5 years follow-up of UK patients with borderline personality disorder" sponsored by University of Glasgow via the Scottish Executive Health Department.

Gerry Richardson, Mark Sculpher "Health Economics in HYMS" in collaboration with Hull York Medical School.

Steve Palmer, Mark Sculpher "Evaluation of National Infarct Angioplasty Projects Pilots" sponsored by the Department of Health via University of Sheffield.

Mark Sculpher "TOPICAL - A randomised, placebo-controlled trial of TarcevaR in patients with advanced non-small cell lung cancer (NSCLC) unsuitable for chemotherapy" sponsored by Cancer Research UK via University College London.

"BOX-IT - A randomised, placebo-controlled trial evaluating the addition of a COX-2 inhibitor to standard treatment of transitional cell carcinoma of the bladder" sponsored by Cancer Research UK via Institute of Cancer Research.

Susan Griffin 5-year RCUK Fellowship in Health Economics & Public Health.

MRC funded PhD studentship

CHE is offering a (3+1 years) MRC funded Capacity-building studentship to undertake an MSc and a PhD to start in the 2008/9 academic year. The project will focus on methodological issues relating to the analysis of individual and aggregate patient level cost effectiveness data to inform resources allocation decisions in healthcare.

Further details of the studentship are here: <http://www.york.ac.uk/inst/che/training/medresstudentship.htm>.

Deadline for applications: Wednesday 23 April 2008.

Background: A recent report highlighted the need to consider the cost-effectiveness of public health interventions.¹ Methods for assessing the cost-effectiveness of health care interventions have existed for several years and tend to focus on evaluating efficiency (i.e. maximizing health gain) in narrowly defined 'clinical' interventions, such as drugs or medical procedures. The evaluation of public health interventions raises additional methodological challenges. Particular features include a tendency to generate very broad costs and benefits directed at populations or communities rather than specific individuals, and a concern for equity (i.e. the distribution of health gain).

Methods: Existing reviews of the literature were considered in order to specify the main methodological challenges of applying standard methods of economic evaluation to public health interventions. A methodology review of empirical studies was undertaken to assess whether they provided any useful insights in addressing these. Economic evaluations of 11 health areas were reviewed.² Studies were identified using the NHS Economic Evaluation Database (NHS EED, www.crd.york.ac.uk/crdweb). Relevant studies were used, together with any appropriate theoretical literature, to formulate suggestions for how the methodological challenges might be addressed.

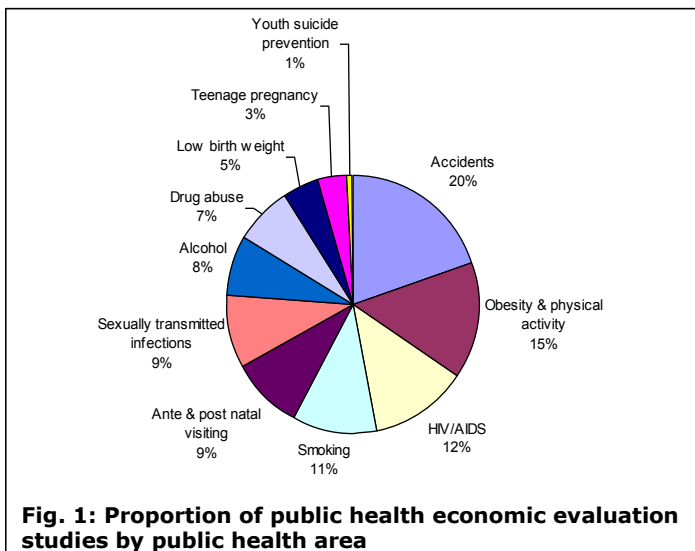


Fig. 1: Proportion of public health economic evaluation studies by public health area

Results: Four main methodological challenges were identified: (1) attributing outcomes to interventions to obtain unbiased estimates of effect; (2) measuring and valuing outcomes to ascertain how much better the quality of life is in one health state compared to another; (3) incorporating equity considerations; and (4) identifying inter-sectoral costs and consequences to assess their impact on the health care sector and impacts on other sectors of the economy, and using these in decision making.

NHS EED abstracts for 154 relevant empirical studies were identified. The review showed that economic evaluation has been applied in a wide range of public health areas (see Fig.1). However, it provided relatively few insights as to how to address the four methodological challenges. Very few studies considered costs and consequences outside the healthcare sector and the measures of outcome were normally confined to various measures of health gain. The majority of studies did not attempt to value improvements in health, although 27% of studies valued health states, expressing the outcomes in quality-adjusted life-years (QALYs) or disability-adjusted life-years (DALYs). 37% of studies were cost-effectiveness analyses and 36% of studies were cost-consequence analyses (CCA). Equity considerations were rarely mentioned and never addressed formally.

Conclusions: Despite the lack of insights provided by existing studies, consideration of the theoretical literature and expert opinion suggests a number of ways forward.

Recommendations for improving the evidence on cost-effectiveness in public health

- ◆ *Attribution of outcomes:* Use natural experiments and non-experimental data to fill gaps in the evidence base if randomised controlled trials (RCTs) cannot be undertaken. Where possible, conduct RCTs. Aim to match outcomes in trials with those available in long-term observational studies. Make more use of techniques to analyse non-experimental data e.g. rigorous econometric methods and Bayesian statistical methods.
- ◆ *Measuring and valuing outcomes:* Debate the theoretical and value propositions underlying the various forms of economic evaluation. Perform a CCA prior to proceeding to a valuation of outcomes.
- ◆ *Equity:* Conduct pilot studies of health inequality impact assessment (e.g. provide information about how an intervention might change existing patterns of health inequality between different population groups, for selected public health interventions). Where the most cost-effective option is judged inequitable, calculate the opportunity cost of not selecting that option.
- ◆ *Inter-sectoral costs and consequences:* Quantify inter-sectoral impacts of interventions in a CCA. Their implications for decision making should be further considered – e.g. the need to be able to value outcomes in different sectors in a similar manner to the use of NICE's cost-effectiveness threshold. The need for budgetary transfers could be assessed. More consideration should be given to the impacts of public health interventions on the voluntary sector and private individual. An analysis should be conducted of costs and consequences by beneficiary group.

Recommendations for future research

- ◆ *Attribution of outcomes:* Synthesise all relevant data in economic evaluations (i.e. experimental and non-experimental). Conduct research into these methods.
- ◆ *Measuring and valuing outcomes:* Explore the practicalities of applying an inter-sectoral compensation test approach to evaluate benefits net of costs which fall on different sectors of the economy.³ Continue research on developing a more general measure of well-being.
- ◆ *Equity:* Undertake primary research on the effectiveness of interventions designed to tackle health inequality. Undertake further research on equity weighting, focussing on contexts relevant to public health, by explicitly valuing health inequality reduction (or other equity concerns) and by guiding the decision-maker about how much the total QALY sacrifice is worth making in order to reduce health inequality.
- ◆ *Inter-sectoral costs and consequences:* Assess the suitability of a general equilibrium approach for evaluating broad public health interventions and for identifying the full range of costs and benefits occurring across different sectors of the economy.

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Mike Drummond gave a presentation to the American Association for the Advancement of Science Annual Meeting 2008 on 15 February. This is not only the most prestigious of events in North America for science and technology, but also it is the first time Health Economics has ever been included in the programme.

In February, Professor **Mark Sculpher** gave a keynote address at a conference in Hong Kong entitled 'Use of health economics data in the health care environment of Hong Kong'. He also gave talks on cost-effectiveness and health technology assessment at three hospitals in Hong Kong.

Roy Carr-Hill visited Belgrade at the beginning of February to discuss possible involvement in designing a system of resource allocation in health care. He has been invited by the Network of Iranians for Knowledge and Innovation to visit Iran at the end of April.

In March, **Andrew Street** gave a presentation to the British Medical Association ahead of their negotiation round with the Department of Health.

Peter Smith presented a paper on "Statistical approaches towards measuring organizational efficiency" at a seminar on public service efficiency at the European Commission, and on "Experience with targets in public services" at an International Monetary Fund seminar on performance budgeting.

CHE Seminar Series

Date: Thursday 8 May
Time: 2.00pm to 3.30pm
Venue: ARRC Auditorium RC/014
Speaker: **Professor Stirling Bryan**, Professor of Health Economics, University of Birmingham.
Title: TBA

Date: Thursday 5 June
Time: 2.00pm to 3.30pm
Venue: ARRC Auditorium RC/014
Speaker: **Professor Gwyn Bevan**, Professor Management Science, London School of Economics
Title: TBA

Date: Thursday 3 July
Time: 2.00pm to 3.30pm
Venue: ARRC Auditorium RC/014
Speaker: **Professor Nancy Devlin**, Department of Economics, The City University, London
Title: TBA

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CHE has a research paper series which gives early release of research findings. The following have recently been published and are free to download

www.york.ac.uk/inst/che/publications/publicationsbyyear.htm

RP32 Further evidence on the link between health care spending and health outcomes - Stephen Martin, **Nigel Rice and Peter C Smith**

RP33 Economic analysis of cost-effectiveness of community engagement to improve health - **Roy Carr-Hill and Andrew Street**

RP34 Doctor behaviour under a pay for performance contract - **Hugh Gravelle**, Matt Sutton and Ada Ma

RP35 Fairness in primary care procurement measures of under-doctorhoodness - **Arne Hole**, **Giorgia Marini**, **Maria Goddard and Hugh Gravelle**