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Welcome

Welcome to the latest HERU newsletter, which focuses on the Behaviour, Health and Health Systems (BHHS) programme.

The programme undertakes a programme of applied research that uses economic theory and the econometric analysis of primary and secondary data sets to study the behaviours of health professionals and organisations in the NHS and the health behaviours of the population at large.

In this edition, we describe three research projects. The results of an evaluation of Payment by Results are reported on page 2. This evaluation, funded by the Department of Health in England, showed that the policy has resulted in changes in the pattern of acute care provision reflecting the new incentives.

The third page of the newsletter focuses on our research into health behaviours. We have recently embarked on a new collaboration with the Rowett institute. This is introduced on page 3. We also report on recent research into the role of socioeconomic circumstances in the diet and obesity relationship.

For further details on HERU's work and how to contact us for more information please visit www.abdn.ac.uk/heru.

Marjon van der Pol
Reader
BHHS Programme Director

Welcome to the twenty ninth issue of HERU NEWS

This edition focuses on the Behaviour, Health and Health Systems Programme.

HERU NEWS and events are discussed on the back page.

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New MSc Economics of Health

HERU together with the Department of Economics are developing a new MSc in the Economics of Health at the University of Aberdeen starting in the 2012/13 academic year.

This MSc programme is aimed at students who wish to pursue a career as a professional health economist or who wish to undertake a PhD. Health economics is typically applied in multidisciplinary settings. This is reflected within the course providing students with health economics skills alongside generic economic and health service research skills.

This new course is an integral part of our capacity building strategy. Currently, there is no MSc in health economics within Scotland. With this new course we hope to relieve some of the shortage of health economists across academia, NHS and government.

For further information please contact Marjon van der Pol (m.vanderpol@abdn.ac.uk)



Payment by Results: an evaluation of the impact of a new way of paying hospitals in England

HERU Investigators: Shelley Farrar, Deokhee Yi & Ada Ma

Other Investigators: Martin Chalkley (University of York)

Background

In 2003/4 the Department of Health in England launched a new way of paying hospitals. Under Payment by Results (PbR) national fixed prices were introduced to pay hospitals for spells of care and in the following five years these were extended to cover much of acute hospital care. The motivation for this research is a concern to determine whether PbR policy met the objectives set for it at its inception. These objectives can be simplified as: to deliver health care making better use of the available real resources/inputs and thus to increase the quality and volume of treatments delivered within the available resources.

There is a substantial body of theoretical research that suggests that a payment system such as PbR will result in real per patient savings or reductions in resource use. The same body of literature is ambivalent as to whether there will be reductions or increases in the quality of care. There is little in the literature on the expected impact on volume of treatments as a result of the introduction of such a payment system.

Research Questions, methods and data

Drawing on both the policy expectations and the theoretical framework we specified a number of research questions in terms of the impact of PbR on six outcome variables.

- *Length of stay and proportion of daycases.* We consider whether there is evidence that PbR resulted in a reduced length of stay and increased the proportion of daycases, as both of these measures can be interpreted as measures of real resource use.
- *Hospital mortality, post-surgical mortality and emergency readmissions.* We use these variables as proxies for quality of hospital care to investigate whether there have been any adverse effects on measures of quality of care attributable to PbR.
- *Volume of treatments* is used to investigate whether there has been an increase in activity as a consequence of PbR.

We performed analyses on each of these variables both overall and across patient, provider and HRG groups. The data for our study are very extensive utilising records of hospital spells in both England (Hospital Episode Statistics) and Scotland (Scottish Morbidity Records 1). We used the phased introduction of PbR in England and the absence of any such policy in Scotland to define control groups against which the impact of PbR on the performance of the relevant treatment groups (specific providers supplying particular HRGs in particular years) can be assessed. Panel formulate a generalisation of multiple difference-in-differences specifically for this task.

Results and conclusions

We find strong evidence of reductions in length of stay and increases in the proportion of daycases as a consequence of PbR. With some minor exceptions these effects are spread across most groups of patients, providers and HRGs. The magnitude of the coefficient in the length of stay equations suggests real savings (in resources/inputs) of between 1% and 3% which can be attributed to the introduction of PbR. These reductions are for the whole period from PbR's introduction in 2003/04 to 2007/08.

Our measures of quality of health care are consistent with those used elsewhere but are necessarily somewhat crude. It is thus not possible to confidently assert whether there have been quality changes as a result of PbR, but we do not find any evidence of deterioration in the measures of quality investigated that can be attributed to PbR. There is some limited evidence that small improvements in some of the indicators may be attributable to PbR and again with some minor exceptions these findings hold across most groups of patients, providers and HRGs.

We find that there are increases of between 3% and 9% in the numbers of spells, coincident with, and persisting following the introduction of PbR. We are less confident that these can be viewed as being caused by PbR because our underlying theoretical framework does not suggest that this is necessarily the effect of PbR and also the data are less detailed. Nevertheless there is support here too for the view that PbR has met its objectives and again with some minor exceptions these findings hold across most groups of patients, providers and HRGs.

For further information contact Shelley Farrar (s.farrar@abdn.ac.uk)

Analysing food choice behaviour and mechanisms of change

HERU is embarking on collaborative research with the Rowett Institute for Nutrition and Health (<http://www.abdn.ac.uk/rowett/>) funded by the Scottish Government Rural and Environment Science and Analytical Services programme. The research addresses the improved understanding of the factors that affect food choice, both in purchasing patterns and consumption in all sectors of society, including deprived and vulnerable groups. The specific objectives of the project are:

- to provide a framework for analysing consumer and producer behaviour
- to understand how choice behaviour relates to individual and social characteristics
- to quantify the value placed by consumers on different attributes of food and drink produced in Scotland
- to test different approaches to behaviour change

In the simplest of economic models, multiple agents (consumers and producers) interact such that demand and supply are matched at a given price. In reality, markets are more complicated; consumer behaviour may cause producers to change their activities and producers may seek to influence consumer choice. Transactions may not be direct but take place through intermediaries, such as retailers. The first stage of the project will review the relevant literature, map out theoretical approaches and empirical examples, and develop models of the interactions between agents that are relevant to the issues facing the Scottish food and drink industry. In particular, techniques from behavioural economics, popularised as ‘nudging’, will be explored. Alternative models will explore impacts under different market conditions, such as: where producers/retailers are followers of consumer demand; where producers/retailers are influencers of consumer demand; and where social objectives are integrated into the market. We will explore the likely lags between changes in consumer behaviour and market and other outcomes, in a logic modelling framework for evaluating possible interventions (Macdiarmid et al., 2010). The development of the market framework will be complemented by econometric analysis of secondary data relating to choices of consumers. This will identify how current behaviour varies between different groups of consumers based on their socio-demographic characteristics.

For further information contact Anne Ludbrook (a.ludbrook@abdn.ac.uk)

Diet, risk of obesity and socioeconomic circumstances in the UK

HERU Investigators: Dami Olajide & Anne Ludbrook

When individuals make health related lifestyle choices such as food consumption, they simultaneously determine their health outcome such as obesity. However, food based policies aimed at addressing the risk of obesity require an understanding of the mediating role of socioeconomic circumstances of people on the diet - obesity relationship. Such an understanding is central to education on healthy eating and disease prevention.

In this study, we examine the demographic and socioeconomic factors of the individual that may jointly determine food consumption and the risk of obesity (measured by Body Mass Index). We analyse the National Dietary and Nutrition Survey (2000/01) of adults aged 19-64 years living in private households in the UK, using a health production framework.

The results indicate that individuals can change their diet behaviour towards healthier options when their socioeconomic circumstances improve, but they may do so differently, particularly with respect to income and education. The economic impact of income appears to be different from its value as a marker of social position, which is also captured by other variables such as education. The first effect which income has is on spending power, for which the standard economic response would be to have more of everything but also we would see substitution effects away from ‘inferior’ goods. Whilst cereal products may be seen as ‘cheap and filling’ of which less is consumed as income rises but the health effect is picked up by increasing consumption with education. An understanding of these different healthy eating contexts is essential for the development of effective targeted food based policies aimed at reducing the risk of obesity.

The full paper will be available in a forthcoming paper published in Nordic Journal of Health Economics.

For further information contact Dami Olajide (d.olajide@abdn.ac.uk)

Staff and Visitor News...

Two PhD students have recently joined HERU - Gerald Manthalu and Dominic Nkhoma.

Gerald will investigate "Government purchasing of health care from 'Not-for-profit' Providers: A review of service level agreements in Malawi". Gerald will be supervised by **S Farrar** and **D Yi**.

Dominic will investigate "An economic perspective of the Social determinants of health and health inequalities in Malawi" he will be supervised by **R Abul Naga** and **B Eberth**.



Gerald Manthalu

Dominic Nkhoma

We also welcomed **Lesley Innes** our new Secretary. Lesley previously worked as School Administrator at one of Aberdeen's Primary schools. Lesley will be responsible for the Postgraduate Certificate in Health Economics administration.



In August we said goodbye to our 3-month Erasmus student - Uwe Martin. Uwe worked on both literature research and secondary data and survey analysis. This work was be part of the evaluation of the Smarter Choices Smarter Places programme of research and was supervised by **S Farrar** from our BHHS programme.



Selected Presentations

Over the last few months HERU staff have given the following presentations:

Ryan, M. Discrete Choice Experiments in Health Economics: Where are we and where should we go? Invited presentation at the *Design of Experiments in HealthCare Workshop*, Isaac Newton Institute for Mathematical Sciences, Cambridge University, August 15th-19th 2011.

Vujicic, M., **Ryan, M.** and Alfano, M. The Effect of Forced Choice on Choice: an Application to Nurse Location Decisions in Liberia. *International Choice Modelling Conference*, University of Leeds, July 2011.

Brown, H. and **Pol, M. van der.** Intergenerational transfer of health: the role of time and risk preferences. *iHEA*, Toronto, July 2011.

Eberth, B., Olajide, D. and **Ludbrook, A.** Smoking related disease risk and lifestyle behaviours. *Public Health Conference*, Aviemore, November 2011.

Ludbrook, A. Evidence and lamp posts: Illumination or support in policy making. Keynote presentation, *Public Health Conference*, Aviemore, November 2011.

Gray, E. The Influence of Time Preferences on the Onset of Obesity: Evidence from a general population. *Public Health Conference*, Aviemore, November 2011.

Research Support

Below is a selection of the awards received over the past few months to support research in HERU:

In conjunction with colleagues at the University of Dundee, **Marjon van der Pol** is co-applicant on the recently awarded "INTERVAL dental Trial (Investigation of NICE Technologies for Enabling Risk-Variable-Adjusted-Length Dental Recalls Trial". This project for £2.8 million is funded by NIHR HTA and will run for 66 months.

Rodolfo Hernandez and colleagues from HSRU were recently awarded funding from NIHR, HTA for project entitled "Systematic review and economic modelling of optical tomography (OCT) for the diagnosis, monitoring and guiding of treatment for neovascular age-related macular degeneration". Funding is £200K over 14 months.

Pat Hoddinott from HSRU and colleagues including **Anne Ludbrook** were recently awarded a NIHR, HTA project entitled "BIBS: Benefits of incentives for breastfeeding and smoking cessation: A platform study for a trial". The study will run for 20 months and funding amounts to £316K.

Health Economics Postgraduate Certificate – Distance Learning

The course is designed for health professionals who want to gain a recognised qualification in health economics.

The course is accredited by the University of Aberdeen and is modular based.

- **Module 1:** Introduction to Economics and Health Economics;
- **Module 2:** Economic Evaluation: Principles and Frameworks
- **Module 3:** Economic Evaluation: Applications and Policy;
- **Module 4:** Health Care Systems and Policy

To find out more about the course visit our website or contact **Professor Mandy Ryan** (m.ryan@abdn.ac.uk), our Course Secretary (alison.horne@abdn.ac.uk) or visit <http://www.abdn.ac.uk/heru/teaching/home.php>



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