Did patients notice the performance improvements reported by practices on the QOF?

**Tommy Allen, William Whittaker, Matt Sutton**

Despite the rise in use of financial incentives in healthcare, the evidence that patients appreciate such schemes is limited. Little is known about how the increases in performance reported by providers are perceived by patients and there is evidence that some aspects of quality of care are adversely affected. An absence of association between provider- and patient-reported measures of quality would suggest that practices are misreporting or that patients are insensitive and raise questions about the value of the P4P.

In the first of 3 papers forming a PhD thesis, we link data from the QOF and the English Longitudinal Study of Ageing (ELSA) for 2004 and 2008. ELSA contains several patient-reported questions on quality that overlap with practice performance measures incentivised in the QOF. This unique linkage creates a bespoke dataset rich in individual characteristics from ELSA and practice performance measures from the QOF. The resulting dataset consists of 6,238 respondents linked to 2,533 practices in 2004 and 7,054 respondents linked to 2,830 practices in 2008. 4,234 observations came from respondents interviewed in both years.

We first estimate cross-sectional associations between patient-reported quality of care and practice QOF attainments for hypertension and diabetes. To assess whether changes in practice attainment in the QOF were reflected in changes in patient reported quality of care, we then regress changes reported by patients on changes reported by practices between 2004 and 2008.

The expected association between patient and practice reporting was only apparent for foot examinations for diabetics (p<0.05). Although the cross-sectional associations were mixed, the analysis of changes in the performance indicators revealed significant correlation between practice-reported and patient-reported performance. Between 2004 and 2008, practices reported a 7% improvement in quality for hypertension while patients reported a 5% improvement. For diabetes, practices reported between 1 and 10% improvements in quality while patients report 1-2% declines in quality. A one standard deviation change in practice performance was associated with a 5% change in patient-reported performance.

Early conclusions are that the association between patient and practice reporting varies depending on the focus of the indicator. While cross-sectional associations were small, the significant correlations in changes in performance are somewhat reassuring that the P4P scheme may have had some benefit on patient reported care. Further research will look at the effects on patient-reported measures of quality not incentivized by the QOF.
Do patients who live alone have different costs and benefits in the healthcare system? Evidence from the national proms dataset in England.

Alex Turner, Silviya Nikolova, Matt Sutton

Background

Living alone, a common proxy for social exclusion and loneliness, is associated with higher rates of mortality and self-reported functional decline in the over 60s. The proportion of older people living alone has been used as a needs indicator in the national resource allocation formula for over twenty years and, more recently, it has been used as an 'instrumental variable' in the estimation of a new cost-effectiveness threshold. However, the mechanism through which living alone influences NHS spending has not been made clear in either strand of literature. The inclusion of a question on living arrangements to individuals in the national PROMs survey provides a new opportunity to examine how living alone influences treatment by the healthcare system.

Data and Methods

We use patient-level data from the 2009-10 National PROMs dataset, which contains data on health status both before and after surgery for four high-volume procedures. Using a range of econometric methods we examine whether individuals who live alone:

- Present with a longer length of symptoms?
- Experience shorter waiting times for treatment?
- Have lower health status prior to treatment?
- Receive greater levels of health improvement from treatment?
- Receive better quality treatment?
- Experience a longer LOS?
- Report more satisfaction with their treatment?
- Are more likely to report their treatment as a success?

Results

We find that living alone does not affect waiting times or duration of symptoms. Nevertheless, those who live alone are generally less healthy prior to surgery and receive lower health improvement as a result of treatment. People living alone are no less likely to view their treatment as a success but report lower satisfaction with treatment and have longer LOS. Across six measures of complications, we find those living alone differ significantly on only one measure.

Discussion

People who live alone are kept in hospital longer post-surgery, possibly because hospitals see no other support structures in place. However the healthcare system is not more responsive at the front door, with people living alone having the same duration of symptoms and waiting times and worse health prior to surgery.

The longer length of stay could be the source of dissatisfaction for patients. A lack of rehabilitation services in the community could explain the lower health improvements. It is possible that the post-operative PROMs reveal more about care services in the community than those in the hospital.
Incorporating multi-morbidity into clinical guidelines: a health economics perspective

Alexander Thompson, Thomas Wilkinson, Matthew Sutton, Bruce Guthrie, Katherine Payne

Clinical guidelines are systematic documents which aim to summarise the current evidence-base to provide guidance. In England, The National Institute for Health and Clinical Excellence (NICE) has pioneered the development of guidelines for health care professionals on what constitutes best-practice. These systematic summaries of the current evidence-base are intended to help reduce unwanted variations in practice and improve patient care.

A recognised weakness of current clinical guidelines is that they are single disease focused and do not explicitly take into account patients who suffer from ‘multi-morbidity’ – those with more than one chronic disease. Evidence from a recent large, cross-sectional study in Scotland suggests that multi-morbidity is the norm for patients with a chronic condition with over half of all those with a chronic disease having multi-morbidity. As a significant number of chronic disease sufferers are multi-morbid, a mismatch is occurring between the disease-centred recommendations contained within guidelines and the optimal care required by patients.

This paper has two goals both of which will ultimately inform part of a PhD. The first is to summarise the type of health economics evidence used in three disease areas which are covered by clinical guidelines produced by NICE and which appear together frequently: type II diabetes, heart failure and depression. This includes a description of the form and quality of the health economics evidence presented to the expert panels who make recommendations for NICE. This summary will describe how health economics is currently used to produce clinical guidelines for NICE in a single-disease paradigm and whether any notion of co-morbidity or multi-morbidity is currently considered.

The second goal is to discuss how the current methods of inputting health economics into guidelines, including cost-effectiveness modelling and prioritisation, needs to change to incorporate multi-morbidity and to assess the feasibility of different potential approaches.
Targets for maximum waiting times and patient prioritization: evidence from England

Silviya Nikolova, Arthur Sinko, Matt Sutton

Background

Since 2000 the Department of Health (DH) introduced progressively increasing maximum waiting times targets in the English NHS. Health providers responded to these by reducing the waiting times for patients who used to wait substantially longer and increasing the waiting times for patients who used to wait slightly less (Propper, Sutton, Whitnall, and Windmeijer (PSWW), 2010). However, there is little understanding why we observe this equalising of average waiting times across patient groups.

Study Question

This study aims to evaluate and explain how the implementation of maximum waiting time reforms affected patient prioritisation for planned treatment over the 2000-2008 period, and also the effect of the subsequent relaxing of these targets in 2010.

Methods


Results

Results for three disease chapters (cardiovascular, digestive, and nervous system diseases) are reported in detail. On an aggregate level, our findings support the results established in PSWW. Our analysis detects changes in prioritisation between different groups of patients which is a new result for the English NHS. In particular, children and teenagers with cardiovascular and nervous disease problems and large number of co-morbidities waited relatively longer in 2011 compared to 1998. For the category of patients with digestive diseases, children who are less than six years old and have large number of co-morbidities waited relatively longer.

Conclusions

To understand these results we adopt a conceptual framework developed for queuing and scheduling. It suggests that hospitals were able to meet the waiting times targets by moving away from prioritising of patients to treatment on a “First Come, First Serve” basis. Such a change in the rule for scheduling for treatment along with increase in capacity can explain the observed equalisation of average waiting times across patient groups and the increase in number of treated patients. Financial pressure in recent years brought increases in waiting times for almost all disease chapters and patient categories. It is our hope that the implied change in priorities reflects medical need.
Can financial incentives to doctors change patients’ lifestyle behaviours? Evidence from the introduction of the Quality and Outcomes Framework

Eleonora Fichera, Ewan Gray, Matt Sutton

Background/Aims

This paper examines the roles of State intervention and self-investments in health in the prevention of coronary heart disease. From the State point of view, interventions such as the provision of medical care to reduce CHD may be viewed as fixing market failures. From the individual perspective, health behaviours, including smoking, alcohol consumption and obesity, represent inputs in a health production function as described by the health capital model. Changing health behaviours will involve forgoing present utility to improve future life expectancy. A key question is therefore how individual and State investments in health relate to each other. State investments may cause a change towards healthier behaviours if they raise the marginal benefit of a self-investment. Alternatively, by lowering the costs of unhealthy behaviours, State interventions may lead to a change towards more unhealthy behaviour. State crowding out of individual investments that protect against an uncertain adverse health event is an example of ex-ante moral hazard and reduces any benefit of State intervention.

This study aims to test the ex-ante moral hazard hypothesis. The introduction of the Quality Outcomes Framework (QoF) in 2004 offers a natural experiment that can test this hypothesis. The QoF incentivised providers to provide a greater intensity of medical care to those at risk of CHD, specifically by ensuring prescription of lipid-lowering drugs.

Data

Individual level data from the Health Survey for England from 1997 to 2009 provide a panel of cross-sections containing information on demographic characteristics, height, weight, smoking, alcohol consumption, health conditions and medications.

Methods

The jump in prescription of lipid-lowering drugs caused by the implementation of the policy is exploited as a source of exogenous variation in treatment. In order to estimate the local average treatment effect on health behaviours (smoking, alcohol consumption and BMI) at the introduction of the QoF policy, we adopt a regression discontinuity design. A fuzzy RD (FRD) design is chosen because the prescription of lipid-lowering drugs does not jump from 0 to 1 at the cut-off point (1st April 2004). Both parametric and non-parametric methods are used to estimate the FRD design.

Findings

Preliminary results suggest that the introduction of the QoF did cause a significant ‘jump’ in the probability of being prescribed a lipid-lowering drug. However, we find no evidence of a change in health behaviours as a result of this increased intensity of medical treatment. We conclude that this policy does not induce economically significant ex-ante moral hazard.
The Determinants of Self-Care

Hannah Forbes, Gerry Richardson, Anne Rogers, Matt Sutton

Background
More input from the individual into the management of their health has the potential to reduce demand on the formal care system and improve health outcomes. A variety of interventions have been developed to encourage such 'self-care', particularly for populations with long-term conditions. However, the equity consequences of such initiatives are unknown as there is little evidence on the determinants of self-care.

Aims
To estimate the social and economic determinants of time spent on self-care and compare these to those for other forms of self-investments in health and formal care.

Data and Methods
Regression analyses of eight self-care and formal care measures from a dedicated survey of 300 patients on the CHD or diabetes disease registers of 19 general practices in predominantly deprived areas of Manchester. Different estimators are used for different measures, including interval regression, grouped logit and count data models. Missing data on the key predictors (equivalised household income, labour market status and social networks) are imputed using chained equations. Practice differences in levels of self-care and formal care are compared for evidence of substitution.

Preliminary Results
Higher income is associated with more time spent on self-care and less use of formal health care (such as visits to the general practitioner). Patients who are in paid work are found to spend more time on informal care (such as self-care, exercise, and healthy eating) compared to patients who do not work. Individuals registered with practices at which patients have fewer consultations spend more time on self-care.

Implications
The determinants of self-care behaviour differ to those of formal care. Results suggest that patients substitute self-investment in health for formal health care when the access cost is high. We conclude by suggesting implications for future self-management interventions.
The effect of provider incentives on socioeconomic inequalities in health: Consequences of the UK Quality and Outcomes Framework

David Trueman, William Whittaker, Matt Sutton

Background

The Quality and Outcomes Framework (QOF) was introduced across the UK in 2004. This financial incentive scheme aimed to improve quality of primary care services for a range of chronic conditions. Though previous literature has found increases in quality following the introduction of the QOF, the impact of the QOF on social inequalities in health has received limited attention. An effect on socioeconomic health inequalities may be expected, since over half of the socioeconomic inequalities in life expectancy result from disease areas targeted by the QOF.

Aims

To identify whether the QOF helped to narrow socioeconomic health inequalities.

Methods & Data

Using data on 10,474 individuals from the British Household Panel Survey (2000-2008), we estimate interval regression models for self assessed health (SAH). To estimate the health effect of the QOF, we compare changes in SAH between the pre-QOF and post-QOF years for individuals with conditions covered by the QOF to those with other chronic conditions not covered by the QOF. This is extended to a triple-difference approach, by comparing these effects of the QOF between manual and non-manual socioeconomic groups. Inverse propensity score weighting is applied to increase the comparability of the groups. The cut-points in the interval regression model are specified using the distribution of utility values for the SF-36 (collected only in 2004) and are allowed to vary by age and gender. As self assessed health has been found to be persistent and subject to significant unobserved heterogeneity, we adopt a dynamic random-effects specification.

Results

In accordance with the previous literature, we find self assessed health to be persistent, and significantly correlated with individual heterogeneity. We find income, age, gender, socioeconomic class, and marital status to have the effects previously found in the literature.

The estimated effect of the QOF on health-related quality of life was 0.006 (s.e.=0.002) for individuals of non-manual social class and smaller and statistically insignificant (0.002, s.e.=0.002) for individuals of manual social class. The significant, positive triple-difference estimate for non-manuals compared to manuals suggest a widening of socioeconomic health inequalities.

Implications

Though targeted at conditions that are disproportionately experienced by manual social classes, the introduction of provider incentives in the UK does not appear to have narrowed inequalities in health.
Including adverse drug events in economic evaluations of anti-tumour necrosis factor-α drugs for adult rheumatoid arthritis: a systematic review of economic models

Eleanor M. Heather, Katherine Payne, Mark Harrison, Deborah P. Symmons

Background

Anti-tumour necrosis factor-α drugs (anti-TNFs) have revolutionised the treatment of rheumatoid arthritis (RA). Although anti-TNFs are more effective than standard non-biological DMARDs (nbDMARDs), they are substantially more expensive. Consequently, a number of economic evaluations (EEs) using decision analytic models (DAMs) have been conducted to establish their relative cost-effectiveness. Anti-TNFs are also associated with an increased risk of Adverse Drug Events (ADEs) compared to nbDMARDs. ADEs will likely illicit a significant impact on both the costs and consequences of anti-TNFs, through hospitalisations and treatment withdrawals.

Objective

To identify if, and critically appraise how, ADEs have been incorporated into DAMs used for the EE of anti-TNFs for adult patients with RA.

Methods

A systematic literature review was performed. Electronic databases (Ovid Medline; Ovid Embase; Web of Science; NHS Economic Evaluations Database; January 1990 to October 2012) and reference lists of relevant studies were searched. Additionally, the National Institute for Health and Clinical Excellence Technology Appraisals were searched to identify DAMs used to inform UK decision making. Included studies were required to have used a DAM to evaluate a biological DMARD (including anti-TNFs) for adult patients with RA. Full EEs incorporating the direct costs and/or consequences of ADEs were critically appraised. Data extracted included: assumptions made; model type; methods used. Extracted data were synthesised using a tabular and narrative format.

Results

Nine studies satisfied all inclusion criteria: eight considered the incidence and costs of ADEs; one also explicitly estimated the potential consequences for patient utility. The studies varied substantially in terms of the assumptions and methodologies employed. Furthermore there was a lack of detail specifically reporting on how ADEs were included.

Conclusions

Model-based EEs of anti-TNFs for adult patients with RA have not routinely or systematically considered the costs or consequences of ADEs. Biased estimates of the relative cost-effectiveness of anti-TNFs may result, which could affect the validity of the associated results for informed decision-making. To improve current practice, it is recommended that: (i) greater efforts be made to provide high quality long-term safety data on the use of anti-TNFs; (ii) empirical research be undertaken to identify and quantify the impact of, and possible methods for, including ADEs in DAMs to inform future good practice guidelines for economic modelling; (iii) guidelines and reference cases be updated which explicitly identify ADEs as an important treatment outcome and, as greater data becomes available, address how ADEs might be incorporated into DAMs.