



## HEALTH REFORM EVALUATION PROGRAMME REPORT SUMMARY

### Effects of Health Reform on Health Care Inequalities

The English National Health Service (NHS) offers publicly funded hospital care free at the point of delivery to all citizens, and owns the vast majority of hospital capacity in England. Major reforms to NHS hospital care in England were introduced during the 2000s, alongside substantial growth in spending. The reforms combined target-driven performance management of public hospitals with fixed price competition from 2005, driven by increased patient choice and entry of independent sector providers into the “quasi-market” for publicly funded patients.

The reforms were introduced by a Labour administration led by Prime Minister Tony Blair and his Chancellor Gordon Brown, who subsequently became Prime Minister from 2007-10. The central objective of these “Blair/Brown” hospital reforms was to improve efficiency, and in particular to reduce hospital waiting times. However, critics raised concerns that the choice and competition elements of reform might undermine socio-economic equity. These concerns were rejected by proponents of reform, who claimed that growth in NHS spending combined with increased patient choice of hospital would enhance equity for poorer patients.

One of the main concerns raised by the critics of reform was that increased competition might undermine the “pro-social motivation” of NHS

#### Key message for policymakers

*Despite being limited to data on the volume rather than the quality and outcomes of hospital care, it is tempting to draw the following policy conclusion from the findings of this project on the Blair/Brown reforms of the 2000s along with previous work on the NHS “internal market” of the 1990s:*

Provided that the NHS provides universal and comprehensive care free at the point of delivery, policy makers can safely embark on major programmes of efficiency-oriented reform without undermining socio-economic equity in health care.

The important caveat is that future reforms may differ from past reforms and so may have different equity effects. The equity effects of future reforms will therefore need to be carefully monitored, by re-using and refining the methodological tools developed in this project – and extending them to examine inequalities in the quality and outcomes of health care received.

managers and clinicians to treat patients on the basis of need, irrespective of financial considerations. The concern was that this could potentially result in publicly owned NHS hospitals selecting in favour of socio-economically advantaged patients who are relatively healthy and easy to treat (known in economics as “creaming”), and seeking to avoid socio-economically disadvantaged patients who are

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The Health Reform Evaluation Programme (HREP) is funded by the Department of Health Policy Research Programmes and involves researchers from a range of British universities and research centres. The Programme aims to provide independent scientific evaluation of NHS Modernisation and Reform that seeks to transform their effective implementation and subsequent development, and to ensure transparency and public accountability.

This summary forms part of the first wave of research developed to address the Department of Health’s (DH) 2005 framework - called the Next Steps Reforms to provide a coherent and mutually supporting set of reforms that together would lead to better care, better patient experiences, and better value for money.

relatively unhealthy and difficult to treat (known in economics as “dumping”).

The study was structured in three stages:

*Study 1: equity trends.* There was no substantial change in socio-economic equity in the utilisation of hospital care in the English NHS from 2001/2 to 2008/9. If anything, equity may have improved slightly as non-emergency inpatient admissions rose slightly faster in low income small areas than elsewhere.

*Study 2: competition effects.* Increased competition in the NHS between 2003/4 and 2008/9 did not undermine socio-economic equity in hospital care and if anything may have very slightly increased utilisation of non-emergency inpatient care in low income small areas.

*Study 3: selection incentives.* The Blair/Brown hospital reforms did not give NHS hospitals strong new incentives to select against hip replacement patients from low income small areas.

A wide variety of large datasets were assembled and analysed, which covered the adult population of England and all adult patients using hospital care in the English NHS, assembled from Hospital Episode Statistics and other administrative data sources. Two main types of dataset were used, the first was small area level datasets (mean population 1,500) to analyse equity trends and effects and the second was a patient and hospital level dataset to analyse selection incentives. The findings of the study and methods used to conduct this investigation are summarised below.

## Methods

*Study 1: equity trends.* To measure socio-economic equity in hospital utilisation, we examine how small area variations in hospital utilisation are associated with small area deprivation after allowing for population size, age-sex structure and disease prevalence. Our methodological innovation is to focus on *changes* in equity rather than *levels* of equity. Conclusions about levels of equity rely on partial and contestable measures of need among small area populations. Conclusions about changes in equity are more robust, because they rely only on the

reasonable assumption of parallel trends in unobserved need between more and less deprived areas.

*Study 2: competition effects.* To identify competition effects we exploit year-by-year changes in local hospital market structure as the pro-competition reforms were phased in. We compute hospital level indices of market structure based on patient flows from GP practices are then attribute these to small areas using distance-weighted averages. We then estimate panel data models of utilisation with small area fixed effects, allowing for time varying need and independent sector supply variables. We identify competition effects on socio-economic equity as change over time, as pro-competition reform was introduced, in the association between dispersion and utilisation in deprived areas.

*Study 3: selection incentives.* To measure potential selection incentives, we examine patient level length of stay differentials by deprivation, co-morbidity and age, allowing for hospital effects. Length of stay differentials are an important potential incentive for public hospitals facing waiting time and cost pressures.

## Outcome measures

*Study 1: equity trends.* To measure socio-economic equity trends, we examine year-by-year change in need adjusted utilisation rates by deprivation group for two summary indicators of hospital utilisation (all outpatient visits and all elective inpatient admissions) and four procedure-specific indicators (hip replacement, senile cataract, gastroscopy and coronary revascularisation). These four procedures cover a broad spectrum of hospital care – including high and low cost care, day case and residential care, secondary and tertiary care, diagnostic and therapeutic care – across four different clinical specialities, and to include two forms of care (hip replacement and cataract surgery) that were a particular focus of the reforms.

*Study 2: competition effects.* To identify competition effects, we focus on all non-emergency inpatient admissions as a summary indicator of hospital utilisation.

*Study 3: selection incentives.* To measure selection incentives, we avoid case mix confounding by focusing on a single procedure: hip replacement. Hip replacement is a good test case because it is a common procedure with substantial length of stay and considerable clinical uncertainty about appropriate use. If health reforms generate substantial and widespread incentives for public hospitals to select against socio-economically disadvantaged patients, then one would expect to find such incentives in relation to hip replacement.

## Results

*Study 1: equity trends.* In all years, small area deprivation was associated with higher need adjusted rates of outpatient visits, non-emergency inpatient admission, senile cataract surgery, gastroscopy and coronary revascularisation but lower need adjusted rates of hip replacement. There were no systematic changes in these associations for any of the four specific inpatient procedures or for outpatient visits. However, elective inpatient admissions grew slightly faster between 2001 and 2008 in deprived areas compared with less deprived areas.

*Study 2: competition effects.* We find a negative association between market dispersion and elective admissions in deprived areas. The effect of pro-competition reform was to reduce this negative association slightly, thereby slightly increasing utilisation in deprived areas.

*Study 3: selection incentives.* After adjusting for patient characteristic and hospital effects, we find that patients from the most deprived tenth of areas stayed just 6% longer than others in 2001/2, falling to 2% by 2007/8. By comparison, patients aged 85 or over stayed 57% longer than others in 2001/2, rising to 71% by 2007/8, and patients with seven or more diagnoses stayed 58% longer than others in 2001/2, rising to 73% by 2007/8.

## Conclusions

*Study 1: equity trends.* There was no substantial change in socio-economic equity in hospital care in the English NHS from 2001/2 to 2008/9. If

anything, equity may have improved slightly as elective inpatient admissions rose slightly faster in low income small areas than elsewhere.

*Study 2: competition effects.* Increased competition in the NHS between 2003/4 and 2008/9 did not undermine socio-economic equity in hospital care and if anything may have very slightly increased utilisation of elective inpatient care in low income small areas.

*Study 3: selection incentives.* The Blair/Brown hospital reforms did not give NHS hospitals strong new incentives to select against hip replacement patients from low income small areas.

As a whole, this study's two main findings are that:

1. Socio-economic equity in the use of hospital care did not change much between 2001/2 and 2008/9, and if anything may have improved slightly as inpatient admissions rose slightly higher in deprived areas during the period, and
2. The introduction of fixed price hospital competition from 2005 did not undermine socio-economic equity in the use of hospital care, and if anything may have very slightly improved socio-economic inequity by contributing to the slightly faster growth in inpatient admissions in deprived areas.

A third finding, related to our investigation as to potential hospital selection incentives being one possible mechanism through which health reform and competition might be expected to influence socio-economic equity in health care was that:

3. The Blair/Brown reforms did not introduce any large new incentives for hospitals to select against socio-economically disadvantaged hip replacement patients, though there may have been incentives to select against very elderly and very sick patients likely to have relatively long lengths of stay.

This third finding may partly help to explain our two main findings, to the extent that our findings about length of stay differentials for hip replacement patients are generalisable to other

hospital services and other aspects of cost. If potential incentives for NHS hospitals to avoid treating socio-economically disadvantaged patients are generally small, then it is perhaps not surprising the health reform and competition had little effect on socio-economic patterns of hospital utilisation.

Our two main findings suggest that socio-economic disparities in health care utilisation in the English NHS are relatively impervious to changes in the supply side brought about by health care reforms and changes in health care expenditure. This reinforces similar findings from studies of health care equity in the 1990s, during a period of pro-competition health reform

coupled with much slower expenditure growth (Cookson et al. 2007, Cookson et al. 2010). Those studies found little change in socio-economic inequality in coronary revascularisation, a slight reduction over time in socio-economic inequality in hip replacement, and no effect of pro-competition reform on either hip replacement or coronary revascularisation. The evidence therefore points to little or no change in socio-economic equity in hospital care over the past two decades. This suggests that socio-economic disparities in hospital utilisation may be caused by underlying socio-economic disparities in need and care-seeking behaviour, which do not change rapidly over time.