

State and self investments in health in an older population: feasibility of further research using GP-linkage in the English Longitudinal Study of Ageing

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Background

Over the last ten years, the UK National Health Service (NHS) has increased its expenditure on the promotion of health behaviour change and on the supply of health care interventions. An unplanned effect of greater State investment might be either to ‘crowd-out’ the investments that individuals make themselves in the form of healthier lifestyles or alternatively to encourage greater self-investment by increasing the associated health gains from such efforts. Analysis by two of the applicants (Fichera and Sutton, 2011) suggests that the latter “complementarity” effect dominates, with individuals prescribed lipid-lowering drugs being substantially (20-28% points) more likely to quit smoking regardless of whether they received smoking cessation advice.

As individuals age, they enter more regular contact with the health care system. As populations age, modification of lifestyles offers the potential for larger health gains. The level of intervention for the older population appears to respond most sensitively as societies change the level of State expenditure on health (Gerdtham et al, 2005). Thus, the issue of how State and self- investments in health interact is most important for the older population at a time when the population is ageing and, simultaneously, State expenditure is undergoing substantial adjustment.

We propose to use seedcorn funding to assess the feasibility of further research on this generic and important issue using individual level data from the English Longitudinal Study of Ageing linked to variations in intervention levels across general practices. It is not known whether the substantial complementarity found by Fichera and Sutton (2011) is sustained over time, reproduced in longitudinal data or generalisable to older populations and the types of interventions most common for older individuals. Over the course of this project we will look at these issues, assess the extent to which the ELSA data will provide a basis for ongoing research in the area, and develop an initial set of findings and proposal for further research, to the extent that the feasibility study allows.

We propose a new collaboration between economics, health economics and psychology to explore these issues. Banks is a PI of ELSA and has used the ELSA data extensively to study health outcomes and socioeconomic factors in the older population. Sutton and Fichera are health economists who have worked on the core research topic but not with ELSA nor on older populations. Bower is a psychologist who will bring specific expertise on self-management, multimorbidity among ageing populations, and personalised medicine.

Project Plan

We propose to use a link between ELSA and practice achievements defined under the Quality and Outcomes Framework to investigate the opportunities for further research on how health care and health behaviours interact using practice variations as measures of exposure to State health investment.

Unlike the Health Survey for England (HSE) dataset used in Fichera and Sutton (2011), ELSA is a longitudinal survey of older people. It contains more detailed information than the HSE on socio-economic characteristics (i.e. income, employment and education), time preferences, geographical location and health. The health component of ELSA also contains information on quality of health care, longstanding illnesses and chronic diseases. Health behaviours include: tobacco and alcohol consumption; summary measures of fruit and vegetable consumption; physical activity. A life history survey is also available containing retrospective information on sample members on various aspects of health, employment and geographical mobility.

We will use individual-level data from all five currently available waves of ELSA data covering the period 2002-2010, linked to respondent’s general practice achievements on the QOF in 2004 and 2008 and annual levels of prescribing of specific drugs between 2004 and 2008. These data will be used to assess the feasibility of a programme of research examining whether State investment crowds-out self-investment according to variations in general practice levels of intervention and individual characteristics, with individuals clustered within practices and followed up longitudinally. Specifically,

we will examine the potential for using this linked dataset in a number of ways:

- Scrutinising the available lifestyle measures on smoking, alcohol consumption, diet and physical activity for salience and consistency over time.
- Documenting the amount of variation in intervention levels between general practices in order to gauge whether this is sufficient to identify variations in State investments
- Measuring the changes in levels of intervention generated by national policies such as the National Service Frameworks for Older People and Coronary Heart Disease and the Quality and Outcomes Framework to assess whether these are feasible ‘exogenous shocks’ to exploit
- Reviewing the measures of time and risk preferences collected in 2010 ELSA to see whether these will serve as suitable proxies for drivers of health behaviours in the theoretical model, and the statistical power of any possible analysis using the sub-sample for whom the measures are collected.
- Examining whether there is sufficient ‘power’ for analysis exploiting newly incident cases of different health conditions and any subsequent healthcare treatments.
- Examining the permanence of any observed effects of State investment on self investment using the longitudinal trajectories of health behaviours
- Performing a test of whether the observed correlation is plausibly chronologically causal by contrasting the relationships between (i) the level of State intervention in 2002 and lifestyles in subsequent waves and (ii) the level of State intervention in 2010 and lifestyles in previous waves
- Assessing whether the data are sufficiently powerful to identify if the effects vary across individuals. Although the econometrics literature in health has been focused on average treatment effects, the average gain to those who actually select into the treatment is much more useful for health care policies [Vanness and Mullahy, 2006]. In this context, essential treatment heterogeneity is important in the analysis of health behaviours when selection into the treatment may be based on unobserved gains. Local instrumental variables can be used to recover the marginal treatment effects [see for example, Basu et al., 2007; Heckman et al., 2006; Heckman and Vytlacil, 2001].

References

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