

CHE Research Summary 9

Estimating the health effects of changes in health care expenditure

Written by [Karl Claxton](#)

Research Team: Karl Claxton, [Sebastian Hinde](#), [James Lomas](#), [Francesco Longo](#), Stephen Martin, [Nigel Rice](#), [Andrea Salas Ortiz](#), [Mark Sculpher](#), [Peter C Smith](#), [Marta Soares](#) (University of York); [Nancy Devlin](#) (University of Melbourne) and [Eldon Spackman](#) (University of Calgary)



Over almost 10 years, our research has estimated the health effects of changes in health care expenditure. This reflects the “marginal productivity” of NHS expenditure. It also indicates the “health opportunity costs” of any extra resources required to fund new health technologies and how the cost-effectiveness of interventions and policies can be judged. It is central to a range of resource allocation decisions. The key insight is that the cost per Quality Adjusted Life Year (QALY) gained of changes in NHS expenditure is likely to be less than [£15,000 per QALY](#), which is substantially lower than the norms currently used by healthcare regulators to judge the cost-effectiveness of new health technologies.

Using national data by geographical area, we have estimated the relationship between changes in expenditure and mortality outcomes by disease area, employing robust methods to account for the fact that the relationship may also run in the opposite direction - with health outcomes also affecting healthcare spending. We have [identified](#) where (by disease area) and what types of health outcomes (mortality and quality of life effects) are likely to be gained (lost) as a consequence of increases (decreases) in NHS expenditure and for whom (by age and gender).

We have analysed [subsequent waves](#) of expenditure and outcome data, the effect of [larger changes](#) in expenditure and we have explored an [alternative analytical approach](#) based on particular elements of funding allocations made to [local areas](#). We have also examined the link between mortality outcomes and measures of [quality of life](#).

Our analysis of more recent waves of expenditure data suggested that NHS expenditure has greater health effects in areas with [higher mortality](#) and that expenditure on [primary care](#) is likely to have greater health effects than other categories of NHS expenditure. Similar results are found when changes in NHS expenditure were considered alongside [public health](#) expenditure and [adult social care](#) expenditure.

Funding was provided by NIHR Policy Research Programme: Policy Research Unit in Economic Methods of Evaluation in Health and Social Care Interventions, PR-PRU-1217-20401 and the National Institute for Health Research-Medical Research Council Methodology Research Programme, G0901498.

July 2023