

**HOSPITAL TRUSTS PRODUCTIVITY IN THE ENGLISH NHS: UNCOVERING POSSIBLE DRIVERS  
OF PRODUCTIVITY VARIATIONS**

*by Maria Jose Aragon Aragon, Adriana Castelli and James Gaughan*

In 2009, the NHS Chief Executive warned that there was a potential shortfall of £20 billion in funding for the NHS. To address that shortfall, priority was given to increasing efficiency and preventing waste. Our study looks at how NHS hospital trusts perform in terms of how many health services they produce given the resources (doctors, nurses, medicines and premises) they use – a measure that economists call *productivity*. If there is variation in productivity between hospitals, it might be possible to use resources in a better way and achieve savings.

Measuring the productivity of hospitals is complicated because they produce a great number of different services. To capture this we account for differences in how services are defined. We also include a range of care settings, including Inpatient, A&E and Community Care, in our measure of output.

Similarly a wide range of inputs are used to provide these services. These inputs include staff, equipment, and capital resources.

We consider two main measures of productivity. These are the output produced per member of staff (Labour Productivity) and the output produced per unit of all inputs (Total Factor Productivity).

There are many reasons for productivity to vary from one hospital to another. We therefore analyse variation in productivity with Ordinary Least Squares regressions. This allows us to consider factors which might impact on productivity and identify those that are most important. For instance, hospitals might be less productive if they have to care for more elderly people or people close to the end of their life. Hospitals might be more productive if they treat more people in day-case facilities or treat them more quickly. Productivity may also be related to the characteristics of the hospital itself, such as how large it is, or whether it has freedom to make spending decisions.

We find productivity varies substantially from one hospital to another and that this variation persists over time. Larger hospitals are less productive. Foundation Trusts, (which have greater freedom from central government in their spending decisions), are associated with lower Total Factor Productivity. This may be because these hospitals invest more heavily in capital resources that are costly but may improve productivity in future. Treating more inpatients in their last year of life is associated with higher Labour Productivity. This is

surprising because we had expected that the treatment of these patients with more complex conditions would require additional resources.

The persistence of productivity differences over time cannot be fully explained by differences in the services they produce or the kinds of patients they treat. This suggests some scope to improve the performance of hospitals with low productivity is present.

**Full report available at:**

[http://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP117\\_hospital\\_trusts\\_productivity\\_English\\_NHS.pdf](http://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP117_hospital_trusts_productivity_English_NHS.pdf)

**Contact James Gaughan:** [james.gaughan@york.ac.uk](mailto:james.gaughan@york.ac.uk)

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