

## HEALTH POLICY DEVELOPMENTS

Departmental Public Body, giving it a stronger foundation for the future.

**Discussion**

NICE has been established as an organisation devoted to providing robust guidance for resource allocation of health care and will continue to provide clinical and public health guidance. NICE has been evolving to meet the needs of its service users within a changing policy climate. It is also well placed to provide guidance to social care, and is working to consider the methods most appropriate for this. NICE is expected to have a greater role in the new NHS in the years to come with it receiving cross-party support in parliament and continues to be committed to supporting health and care in England and Wales.

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# Which type of hospital ownership has the best performance?

## Evidence and implications from Germany

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*Summary: The German hospital market has been subject to a variety of health care reforms over the past two decades. In particular, the introduction of diagnosis-related groups (DRGs) has aimed to increase the performance of hospitals. This article reports on recent studies comparing the performance of public, private non-profit and private for-profit hospitals in Germany. The results of our analysis show that public hospitals have higher efficiency, while private hospitals provide superior quality of care compared to their public counterparts. Finally, we draw conclusions and policy implications taking other hospital and market characteristics into account.*

*Key words: Germany, hospitals, for profit, performance, quality*

**Introduction**

Because of increasing cost pressure, the hospital sector in Germany has been subject to a variety of health care reforms aimed at stabilising expenditures at sustainable levels over the past two decades. In 1993, the full-cost reimbursement system was replaced by global budgets, both of which had been made up of per-diem charges. In 2003/04, a new system of reimbursement based on diagnosis-related groups (DRGs) was introduced. Since then all 1,800 German hospitals that provide inpatient acute care receive DRG payments from statutory health insurance funds and private health insurance companies. In addition, the introduction of DRGs was preceded by the implementation of an external quality assurance programme (as opposed to the internal system of individual hospitals). This included a number of mandatory measures, including a nationwide benchmarking exercise based on 206 quality indicators. These two ele-

ments represent the most significant reforms in the German hospital sector since the system of dual financing was introduced in 1972, which made the state responsible for capital costs, while running costs were paid by sickness funds or private patients. The chief motivation behind this fundamental overhaul of the old reimbursement system was to set financial incentives that would increase the performance of German hospitals.<sup>1,2,3</sup>

Germany traditionally has had a multi-ownership structure in the hospitals market which is also legally stipulated. German hospitals can have public (usually owned by counties or municipalities), private for-profit, or private non-profit (usually owned by religious communities) ownership status. Due to substantial over-capacities and the rapid changes currently taking place in the regulatory and competitive environment, the German hospital sector is now facing an extensive process of

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consolidation and reorganisation. In this context, hospitals are considering mergers, acquisitions and cooperative agreements as ways to improve competitiveness. Between 1995 and 2008, a substantial number of local and regional governments in Germany sold their hospitals to private for-profit and private non-profit owners. The total number of private for-profit hospitals increased by 44%, which represented a rise in market share from 6% to 18% measured in terms of hospital beds.<sup>4</sup> During the same period, the share of private non-profit hospitals remained relatively constant. Although there are several possible reasons for this development, the main driver has been the need to increase hospital performance.

### How to measure hospital performance

There are different concepts used to measure the performance of organisations. Measures often used in other industries, such as return on investment or other profitability measures, are not regarded as appropriate to compare the performance of public and non-profit providers. Therefore, measures such as cost per case, revenue and efficiency are used in the hospital context. In particular, efficiency is a measure that has been frequently used in the hospital context over the last decade. Efficiency or, more explicitly, technical efficiency is a measure of how well an organisation produces output from a given level of input.

Finally, quality of care is often used as a performance measure for organisations in the medical context. In fact, most studies on hospital performance, particularly from the United States, use quality of care. Indicators used as proxies for quality of care range from rather rough but robust measures such as in-hospital mortality to very detailed measures such as the rate of post-surgical infections that may be focused on specific conditions. The latter approach has the disadvantage that not every hospital treats the same conditions and that these indicators may be subject to manipulation. Thus, in-hospital mortality rates or, if available, post-hospital mortality or readmission rates are commonly used as measures for quality of care to compare large numbers of hospitals, for example, all the hospitals in one country.

### Evidence from other countries

In contrast to the assumed behaviour outlined in theory, and often assumed by policy makers, there is no evidence that private ownership is associated with higher

efficiency compared to other ownership types. In four of eleven international studies comparing all three different types of ownership in terms of efficiency, public hospitals were found to be less efficient than their counterparts, while six studies showed that publicly owned hospitals were more efficient than private for-profit and non-profit hospitals. One study found no significant efficiency differences associated with ownership. Shen *et al.* 2007<sup>5</sup> and Hollingsworth 2008<sup>6</sup> provide good reviews of these studies. However, none of these studies has considered parameters for quality of care in addition to efficiency, although the relationship between ownership, efficiency and quality of care is of considerable practical and policy importance.

One reason for this might be the paucity of validated measures of quality of care. The absence of quality measures requires the implicit assumption that there are no systematic variations in quality of care among public, private non-profit and private for-profit hospitals, or that variations in quality do not systematically affect efficiency. The large empirical literature on ownership unfortunately does not provide evidence on the impact of ownership on quality of care. However, studies examining the relationship between efficiency and quality of care have provided evidence of an inevitable trade-off between these two measures.<sup>7</sup>

### Findings from Germany

In the past, there was a lack of detailed data on the German hospital sector, which meant that the quality and the quantity of the information used to assess efficiency was very limited (for example, aggregate state-level data). Thus, evidence on the efficiency of German hospitals was very limited. Just recently, data on all hospitals in Germany became available for research purposes, enabling new perspectives on the 'black box' of hospital efficiency and quality of care.

The first two studies that were conducted since the hospital database became available<sup>8,9</sup> used the same data but with different methods to determine hospital efficiency. Both found clear evidence that public hospitals have higher efficiency than hospitals with other forms of ownership, i.e., private non-profit and private for-profit hospitals. Stated differently, public hospitals are able to use the available resources most efficiently to produce a given output. These findings are in line

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with previous studies from the United States, but may be surprising from a policy perspective. However, in order to draw policy implications we have to look deeper into this issue by considering the characteristics of the German hospital market, as well as other organisational determinants of hospital efficiency.

First, it has to be considered that efficiency is only one way of measuring performance. For-profit hospitals may have found a different way to maximise their profits (i.e., financial surplus) than hospitals with other forms of ownership. Indeed, they may seek to maximise their profits by maximising revenues instead of minimising inputs at a given output. Wörz<sup>10</sup> supports this view, having found that private for-profit hospitals (and especially hospital chains) were able to generate significantly higher revenues per case on average than hospitals with other forms of ownership. Even after the introduction of DRGs in Germany, there are still a substantial number of additional reimbursement components being paid on top of DRGs that can be negotiated at the hospital level (for example, certain expensive drugs). Indeed, these additional components account for approximately 20% of total reimbursements for non-psychiatric inpatient care.<sup>1</sup> Shen *et al.*<sup>5</sup> found comparable results for the United States hospital sector, concluding that the mission of private for-profit hospitals puts greater emphasis on earning profits (i.e., higher revenues per case due to higher prices) compared to public hospitals, which focus primarily on efficiency, i.e. cost containment.

Tiemann and Schreyögg<sup>9</sup> further suggest that public hospitals outperform their private for-profit and non-profit counterparts up to a size of approximately 1,000 beds. From 1,000 beds onwards, the private for-profit hospitals operated with greater efficiency. However, most private for-profit providers in Germany operate within a size range of 50 to 800 beds, while only a few hospitals in private-for profit ownership had more than 1,000 beds. The same study also found that private for-profit hospitals show a comparably low level of efficiency in very competitive markets, i.e., in geographical regions with many competitors. If private for-profit hospitals operate in regions with less competition, then the size of these entities approaches that of other ownership types. Here, it is important to recognise that private for-profit and non-profit hospitals operate primarily in urban and other more

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competitive areas, whereas public hospitals operate both in urban and non-competitive regions. Thus, private-for-profit hospitals have two major disadvantages which may be due to wrong strategic decisions taken in the past: (1) their hospitals are too small and (2) they operate in areas that are too competitive.

Finally, the study suggests that private for-profit hospitals provide higher quality of care, measured as risk-adjusted in-hospital mortality rates, compared to other types of ownership.<sup>9</sup> This is in contrast with the common assumption that information asymmetries exist in the hospital market and thus particularly for-profit hospitals have the incentive (i.e., profit-seeking) to increase efficiency at the expense of quality of care. However, in the German hospital sector, information asymmetry has decreased over the last decade due to a variety of health care reforms aimed at quality assurance (for example, the mandatory publication of quality reports and nationwide benchmarking exercise mentioned earlier). Thus, the strategic importance of quality of care in markets with substantial overcapacities (i.e., cut-throat competition) may have been underestimated so far. There is also evidence that private for-profit hospitals (and especially private for-profit hospital chains) operating in more competitive regions have improved their quality management and hospital outcomes in order to attract patients.<sup>3</sup>

### Policy implications

Recent studies show that public ownership in Germany is associated with significantly higher efficiency than other forms of ownership; while private for-profit ownership, in particular, is associated with lower efficiency. Although this finding is striking, it would not be appropriate to conclude that private for-profit ownership may not be an efficient form of operating hospitals.

As the development of the German DRG-system progresses, options to focus on revenue are likely to decrease and thus private for-profit hospitals will automatically increase their focus on efficiency. However, it may be an important implication for policy makers that private for-profit hospitals in Germany and in the United States, if anything, tend to focus on revenue. Therefore, DRG-systems have to set incentives to increase hospitals' focus on efficiency which finally helps to improve the allocation of health care resources. However, the observed negative

association between efficiency and quality of care (i.e., in-hospital mortality) suggests that improvements in efficiency may lead to lower outcomes (or vice versa). Consequently, it is of crucial importance to monitor outcomes when introducing payments based on DRGs.

Moreover, linking DRG-based reimbursement rates to process quality or outcomes is a promising approach to overcome the trade-off between efficiency and quality of care. While this is still relatively rare, it is possible to refine DRG systems to integrate direct incentives for improving quality.<sup>11</sup> For example, DRG-based payments can be adjusted at the hospital level by increasing/decreasing payments for all patients treated by a hospital, if that hospital provides above/below-average quality as measured through hospital-level quality indicators (cf. for example Commissioning for Quality and Innovation (CQUIN) in England).<sup>12</sup> Similarly, it is possible to increase payments to a hospital for all patients falling into one DRG if the hospital scores above average on DRG-specific quality indicators, or to adjust payments for individual patients if quality can be monitored at the individual patient level. Germany provides an example for this by including the second admission into the first DRG if the patient is readmitted within 30 days, i.e. the second stay is not reimbursed separately.<sup>2</sup>

Finally, it is striking that private for-profit hospitals in Germany have recognised the strategic importance of quality of care. This may be one effect of recently established quality assurance programmes, which have substantially increased transparency regarding the quality of care. This may suggest that the introduction of quality reports, which oblige hospitals to deliver data regarding the quality of care for defined conditions, has been an important and valuable decision. Twenty-seven of the 206 quality indicators are already available for public use.<sup>3</sup> These developments may well suggest that further quality indicators, as well as data on long-term results after hospitalisations, should be made available to the public.

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