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Private or public hospital ownership: Does it really matter?

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ABSTRACT

Incentives to improve hospital performance under prospective payments may come at a cost. First, there may be a strong incentive for hospitals to choose only low-severity patients. Second, hospitals may have an incentive to reduce the quality of care. I analyze the role of hospital ownership on patient selection and quality of care by comparing private nonprofit and public hospitals. The analysis is performed by using unique hospital admission data for cardiovascular procedures in Norway, covering the period from 1999 to 2006. Matching techniques are applied to control for patient heterogeneity. The econometric analyses are based on binary probit and ordinary least squares regression models. The results indicate that private nonprofit hospitals have specialized in certain procedures. These hospitals are also more likely to admit low-severity patients for some procedures. The association between quality of care and hospital ownership is mixed since private nonprofit hospitals both offer shorter waiting time and shorter length of stay.

1. Introduction

Incentives have been introduced in the health care systems of many countries to reduce costs and/or to increase supply. The system of prospective payments provides incentives for hospitals whereby a predetermined rate is paid depending upon the patient's diagnosis regardless of the intensity of care or hospitalization time, a practice known as Diagnosis-related Groups (DRG) pricing. However, incentives for cost efficiency or productivity may have unintended effects. First, if some types of DRGs or patients are more profitable than others, given the administratively determined compensation rates, there may be a strong incentive for hospitals to specialize in the most profitable treatments. It is well documented that private hospitals often specialize in more profitable DRGs (Barroa et al., 2006; Duggan, 2000; Greenwald et al., 2006) and/or choose low-severity patients, whose treatment costs are below the compensation rates (Barroa et al., 2006; Duggan, 2000; Newhouse, 1989; Street et al., 2010). This is known as cream skimming. Second, hospitals may have an incentive to cut on quality of care by providing fewer services so that the resource use is minimized, also known as skimping. Examples of this include providing fewer diagnostics tests and premature discharges (Guterman and Dobson, 1986; Guterman et al., 1988; Newhouse and Byrne, 1988).

It is well known that type of ownership and financing system are important factors in explaining how hospitals operate, which services they offer and to whom these services are available. Generally, private hospitals tend to provide fewer services, specialize in certain treatments and provide care for low-cost patients (Devers et al., 2003; Duggan, 2000; Horwitz, 2005a).

Issues regarding private hospitals' tendency to specialization, selection and quality of care seem also to raise concerns in Norway, a country with mostly public hospitals, along with some private hospitals, most of which mainly provide services within cardiovascular procedures. Notably, cardiac patients are one of the largest patient groups in Norway, accounting for about 15% of all admissions. Private hospitals' role in this regard is notable; nonprofit and for-profit hospitals stand for 18% and 1% of all elective admissions respectively. It is claimed that the largest private nonprofit hospital mainly provides elective treatment, and selects profitable, low-severity patients and thereby leaves high-severity patients to the public hospitals (Busund et al., 2009; Brox, 2009). Also, early discharges from private hospitals resulting in emergency admissions to public hospitals seem to be an issue (Brox, 2009).

This study investigates the extent of specialization by private hospitals and whether patient selection and inadequate care are a valid concern. Given that the largest private hospital is owned by a patient organization and is nonprofit, it is not quite clear why there is an incentive to select patients or skimp on quality of care. If this is the case, what is the quantitative significance of these practices? Furthermore, are there any other differences in quality of care between private nonprofit and public hospitals?

This is the first research in Norway to study the variation in hospital performance by ownership type. This study also adds to the existing literature on the impact of hospital ownership type, where the research is inconclusive, in several ways; by providing further evidence for a country with unique institutional setting where private nonprofit

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hospitals have a large market share, and by relying on unique national hospital admission data for all cardiac patients for an eight-year period accounting for around 845,000 admissions over an 8-year period. The findings from this study might not only be relevant from a Norwegian health care perspective but also for other countries with a similar payment system and hospital ownership structure.

The analyses rely on descriptive statistics and regression models. To control for patient heterogeneity, patients at private were matched with patients at public hospitals. Additional information for the study was provided through personal communications with representatives from both public and nonprofit hospitals.

The results indicate that some of the concerns raised above might indeed be true. Private hospitals tend to specialize in the most profitable DRGs. Overall, these hospitals are more likely to admit lower-severity patients. A more detailed inspection, however, reveals that this is not necessarily the case for all DRGs. Indeed, for three out of the top 10 DRGs, private hospitals are *more* likely to admit patients with higher severity of illness. Concerning the quality of care (defined as waiting times and length of stay), the results indicate that also for identical patients, private hospitals, in general, have higher quality of care in terms of lower waiting times, but shorter length of stay time than public hospitals, and these effects are quantitatively large. However, for the highest-volume DRG (angioplasty), private hospitals have, in fact, longer length of stay.

The remainder of the paper is organized as follows. Section 2 provides an overview of the related literature. Section 3 describes the institutional setting and provision of cardiovascular health care services in Norway. Section 4 presents the research questions. Section 5 describes data and methods. The econometric approach and results are presented in sections 6 and 7 respectively. Section 8 provides a discussion of the main results and concludes.

2. Related literature

There is an extensive empirical literature on the impact of prospective payments especially in the US context, demonstrating a positive effect on cost efficiency (e.g. Russell and Manning, 1989; McClellan, 1997). Hospitals' attempts to keep costs below the reimbursements rates have also been associated with early discharges (Guterman and Dobson, 1986; Guterman et al., 1988; Kahn et al., 1990; Newhouse and Byrne, 1988), unplanned readmissions (Bueno et al., 2010; Jones, 1986; Pérès et al., 2002), and increased mortality (Gerety et al., 1989; Hwang et al., 2007; Leibson et al., 1990; Newhouse and Byrne, 1988).

Hospital ownership is considered to be an important factor in explaining the variation in hospital performance under prospective payments. Public hospitals are owned by a government entity and typically are not profit maximizers. Private hospitals, both for-profit and nonprofit, may gain profit. However, nonprofits are barred from distributing any profits to persons who control the organization, implying that the earnings must be retained and used by the organization (Hansmann, 1996). Nevertheless, nonprofits are able to diminish such disadvantages through alternative financial arrangements for their staff (Greenwald et al., 2006). Public hospitals provide a large variety of health care services, while private hospitals tend to provide fewer services, specialize in certain types of treatments or provide care for less expensive patients (Devers et al., 2003; Horwitz, 2005a). Private for-profit hospitals are found to be more likely to offer profitable surgery treatments than nonprofits, which in turn are more likely to do so than public hospitals (Horwitz, 2005a). Newhouse (1989) provides evidence of cream skimming and dumping (turning away a patient) among private hospitals by showing that prospective payments increased the number of unprofitable patients treated in public hospitals. Duggan (2000) finds that in response to financial incentives introduced to increase admission of low-income patients, both private for-profit and nonprofit hospitals cream skimmed the most profitable low-income patients from public hospitals.

The evidence on quality of care with respect to hospital ownership is inconclusive. While some studies indicate lower quality of care at private hospitals, others find no difference in quality by ownership type (Duggan, 2000; Shah et al., 2007). One study finds higher mortality rates in for-profit hospitals and public hospitals than in nonprofit hospitals (Hartz et al., 1989), while other studies find no difference in mortality rates by ownership type (Sloan et al., 2001, 2003).

3. Institutional setting and provision of health care by hospital type

The provision of specialized healthcare services in Norway is the responsibility of the Regional Health Authorities (RHAs). The majority of hospitals are public, but there are also private nonprofit and for-profit hospitals. Some nonprofit hospitals are under contract with the RHAs in their respective regions, and are in practice considered as part of the public health care system, and will be treated as such in this study. These hospitals are very closely connected to the public hospital organization. Despite the nonproft ownership, they are governed by almost the same regulations and constraints as public hospitals. One difference is that they have no protection from bankruptcy. The remaining private for-profit hospitals are, in fact, specialty hospitals providing cardiac care, orthopaedics, and so on. In many cases, the development of private hospitals was initiated by long waiting times at public hospitals, and considered as a supplement to the public health care system. This applies to cardiac diseases, where two private nonprofit hospitals have had a dominating role; one with 15% market share until 2004 (merged with a public hospital in 2005) and the other one with over 80% market share among private hospitals.

The RHAs purchase health care services from private hospitals (cardiovascular procedures, orthopaedics, day surgeries, etc.). The payment for these services may involve a bidding contest, negotiations on price or full DRG-payments depending upon the type of specialty provided. It is not in the scope of this study to provide a description of the different types of payment agreements for each speciality, except for the cardiovascular procedures. The following provides such description based on my correspondences with RHA-staff members in charge of purchasing cardiac services and the managerial department of a private nonprofit hospital. The purchasing agreement specifies a financial frame on a yearly basis. For the period of this study (1999–2006), the contracts specified a financial frame as defined by the total number of DRG-weights, with full reimbursement corresponding to current DRG-prices at that time. The contracts did not specify the number of patients or procedures, type of DRGs or services to be provided. The exception was rehabilitation stays, where some RHAs set a cap on the number of rehabilitation treatments, as stated in the contract for year 2006 (Feiringklinikken, 2007). During the recent years, the RHAs have also set a cap on the number of surgical procedures (Feiringklinikken, 2010). A reason for the new strategy is the excess capacity at public hospitals during the past years.

3.1. Provision of health care services at private and public hospitals

Private hospitals stand for one fifth of all elective cardiovascular procedures and only about one percent of emergency services. The following figures illustrate the average waiting times and length of stay for all elective admissions from 1999 to 2006. As evident from Fig. 1, waiting times at public hospitals have decreased by 37 days (36%), but increased by 5 days (13%) at private hospitals. In general, there is also a gradual reduction in length of stay over time for all hospitals (Fig. 2). However, this reduction is larger for private hospitals (1.9 days, i.e. 41%) compared with public hospitals (1.4 days, i.e. 28%).