



Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Cream skimming and hospital transfers in a mixed public-private system

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ARTICLE INFO

Article history:

Available online 19 March 2015

Keywords:

Australia
Hospital transfers
Cream skimming
Hospital utilisation
Mixed public-private system

ABSTRACT

The increasing prominence of the private sector in health care provision has generated considerable interest in understanding its implications on quality and cost. This paper investigates the phenomenon of cream skimming in a mixed public-private hospital setting using the novel approach of analysing hospital transfers.

We analyse hospital administrative data of patients with ischemic heart disease from the state of Victoria, Australia. The data set contains approximately 1.77 million admission episodes in 309 hospitals, of which 132 are public hospitals, and 177 private hospitals. We ask if patients transferred between public and private hospitals differ systematically in the severity and complexity of their medical conditions; and if so, whether utilisation also differs.

We find that patients with higher disease severity are more likely to be transferred from private to public hospitals whereas the opposite is true for patients transferred to private hospitals. We also find that patients transferred from private to public hospitals stayed longer and cost more than private-to-private transfer patients, after controlling for patients' observed health conditions and personal characteristics. Overall, the evidence is suggestive of the presence of cream skimming in the Victorian hospital system, although we cannot conclusively rule out other mechanisms that might influence hospital transfers.

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1. Introduction

The role of the private sector in the financing and provision of health care has received much attention in recent years, not least because of the rapid increase in health care costs and constraints on public budgets in many countries. The increasing prominence of the private sector has generated considerable interest in understanding its implications on health care quality and cost; see Barros and Siciliani (2012) for a recent review. A large international literature has investigated whether public and private hospitals differ in their behaviour. Studies in the United States for instance have sought to determine if there are differences in mortality and adverse events (e.g., complications, medical errors) among public, private non-profit and for-profit hospitals (Shen et al., 2007; Eggleston et al., 2008). Recent European studies have also

examined if public and private hospitals differ in their efficiency (Barbetta et al., 2007; Herr, 2008; Marini et al., 2008).

In this paper we study an interesting aspect of the public and private interface in health care: the presence of “cream skimming” behaviour in the mixed public and private hospital system of Australia. Cream skimming involves the selection of patients with lower expected cost of treatment by hospitals and health care providers, which stand to gain financially by focussing on patients with less severe medical conditions. A number of reasons have been proposed on why providers may engage in cream skimming. Hospitals remunerated through activity-based funding, and hence receive a fixed price for a given diagnosis-related group (DRG), have the incentive to treat patients with lower than average costs within the DRG (Ellis, 1998). This behaviour has been referred to as patient selection or “vertical” cream skimming, and is distinguished from “horizontal” cream skimming. The latter exists in the form of treatment selection whereby hospitals and doctors choose to specialise in the provision of certain medical treatments that are deemed profitable (Levaggi and Montefiori, 2003). Public hospitals in many countries, however, are often constrained by their role as

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the provider of subsidised care. In Australia, for example, public hospitals accept all patients; they are not allowed to turn away patients. Thus there is limited scope for public hospitals to engage in cream skimming.

Providers may also cream skim to achieve higher productive efficiency by focussing on easy to treat patients. Given a fixed capacity, hospitals will be able to treat more patients with less severe conditions and attain higher profits (Friesner and Rosenman, 2009). In health systems where private hospitals coexist with tax-funded public hospitals, cream skimming arises not just because of their different roles but also of differences in how workers in the public and private sectors are remunerated (González, 2005). Public hospital jobs are often salaried appointments and dual practising doctors can supplement their income with private practice which is often remunerated through fee-for-service, and usually more lucrative. The difference in remuneration, combined with long waiting times in the public system, create a situation where dual practice doctors have the incentive to divert easy to treat patients from public waiting lists to their private practice (Barros and Olivella, 2005; see also Biglaiser and Ma, 2007).

The empirical evidence of cream skimming is relatively thin. Duggan (2000), for example, exploits a policy change in Californian hospitals where the reimbursement of poor patients became more generous, and finds evidence that private non-profit and for-profit hospitals cream skim profitable patients, leaving unprofitable patients to public hospitals. In a UK study, Street et al. (2010) investigate whether patients treated in English public hospitals differ in complexity compared to those in treatment centres and find that patients in the former setting are more likely to be from deprived areas, have more diagnoses, and received significantly more medical procedures. Using Italian hospital data, Berta et al. (2010) quantify the extent of treatment selection by developing a cream skim index, and find that private hospitals cream skim at a much higher intensity than public or non-profit hospitals.

Over the past two decades, corporate involvement in the Australian hospital sector has gained prominence with the emergence of for-profit investor-owned hospitals becoming a key provider of hospital care. This is driven by a combination of pro-market policies on privatisation and contracting introduced by governments since the 1980s (Collyer and White, 2001), and the increased subsidisation of private health insurance in the late 1990s. The geographical boundaries of public and private domains of hospital care have also been blurring, with increasingly more private hospitals co-locating alongside public hospitals (Brown and Barnett, 2004). Co-location facilitates medical specialists to combine public sector work with private work (i.e., dual practice). As explained below, the intricate mix of public and private hospitals, combined with physician dual practice, make the Australian hospital system a fertile ground to study cream skimming.

We study cream skimming behaviour by hospitals using the novel approach of analysing transfers between public and private hospitals. A hospital transfer occurs if the patient is discharged from one hospital and immediately admitted into another during a single episode of care. The presence of cream skimming implies specific transfer and resource utilisation patterns along two dimensions. Firstly, patients transferred from private to public hospitals are on average sicker and costlier to treat than patients transferred in the opposite direction. Secondly, for resource utilisation among transferred patients, those transferred from private to public hospitals would on average incur higher utilisation than patients transferred from one private hospital to another private hospitals, after controlling for patients' medical needs (e.g., disease categories) and personal attributes.

This paper seeks to answer two specific questions. First, we ask if there exist systematic differences in patient severity and

complexity between private-to-public transfers and public-to-private transfers. Second, we examine the level of hospital utilisation of patients and asks if there exists systematic differences in the post-transfer utilisation pattern of two subsets of transfer patients: (i) utilisation of private-to-public transfers in comparison to that of private-to-private transfers; (ii) utilisation of public-to-private transfers in comparison to that of public-to-public transfers.

Previewing our results, we find that the probability of private-to-public transfers tends to increase with disease severity or complexity, while the opposite is true for public-to-private transfers. On post-transfers resource utilisation, private-to-public transfers have significantly higher hospital utilisation than private-to-private transfers. This pattern of utilisation does not apply to public-to-private transfers. The observed patterns of transfers and utilisation are consistent with cream skimming behaviour by private hospitals. To our knowledge, this is the first study of cream skimming via examining data on hospital transfers.

This paper is structured as follows. Section 2 describes the institutional context in Australia, including the financing, service provision, and remuneration arrangements. Section 3 describes the data, and Section 4 the methods of investigation. The results are discussed in Section 5, along with robustness and sensitivity checks. The paper concludes with a summary of our main findings in Section 6.

2. Institutional context

Australia has a mixed public and private hospital system. Public hospitals are owned and managed by state governments, and are jointly funded by both state and federal governments. The latter provides approximately half of the funding for public hospitals in the form of block grants to state governments through the National Health Care Agreements which are negotiated every five years. In the state of Victoria on which this study is based, public hospitals are primarily funded via a case-mix payment scheme based on the Australian version of diagnostic-related groups (DRGs). Under this scheme, each hospital admission episode is assigned a DRG code with an associated cost weight for the purpose of calculating the amount to be reimbursed. Given that public hospitals cannot turn away patients, this payment system forces public hospitals to strive for efficiency improvements, since inefficient operations would result in financial losses and reflect on the performance of the hospital management.

Private hospital are privately owned entities and operate mainly as for-profit and not-for-profit institutions. In 2012–13, private hospitals account for roughly 41 percent of all inpatient separations (or hospital discharges) and 65 percent of elective surgeries in Australia (Australian Institute of Health and Welfare (2014)). Private hospitals operate under a fee-for-service funding model, and derive their revenue predominantly from patients in the form of billings to private health insurance funds, and direct payments by self-funded patients. The cost of private hospital treatment is largely determined through negotiations between private hospitals and health funds; information on payment schedules are not publicly available due to commercial confidence. Anecdotally, private hospitals are increasingly paid in schemes similar to the DRG system. That is, each admission episode is categorised according to the disease class, treatment type and degree of severity or complexity. The payment for each category is by and large a function of the length of stay, with an upper limit beyond which payments will be scaled downward.

Roughly 45 per cent of the Australian population have supplementary private health insurance cover, which from 1999 onwards, has been heavily subsidised by the government. Doctors in private practice and private hospitals are free to charge patients according

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