Do private patients have shorter waiting times for elective surgery? Evidence from New South Wales public hospitals

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Abstract

The Productivity Commission (2008) identified waiting times for elective surgery as a measure of governments' success in providing accessible health care. At the 2007 COAG meeting, the Prime Minister identified reduction of elective surgery waiting times in public hospitals as a major policy priority. To date the analysis of waiting time data has been limited to summary statistics by medical procedure, doctor specialty and state. In this paper we look behind the summary statistics and analyse the extent to which private patients are prioritised over comparable public patients in public hospitals. Our empirical evidence is based on waiting list and admission data from public hospitals in NSW for 2004-2005. We find that private patients have substantially shorter waiting times, and tend to be admitted ahead of their listing rank, especially for procedures that have low urgency levels. We also explore the benefits and costs of this preferential treatment on waiting times.

Keywords:
waiting times, elective surgery, equity, patient status

1. Introduction

The Australian healthcare system relies on public and private funding and public and private provision of health services. Public funding, primarily derived from taxation, provides subsidised health care services to all residents. Private funding is in the form of patients' direct out of pocket health expenditures or though private health insurance funds. Patients receiving free treatments at public hospitals are referred to as public or Medicare patients. Private hospital treatment can occur in either private or public hospitals and generally involves disadvantages (such as positive gap payments) and advantages unavailable to public patients (such as choice of treating doctors and higher quality accommodation). While most private patients choose to go to private hospitals for treatment, in 2006-2007 about 18% of private treatment was performed in public hospitals (Australian Institute of Health and Welfare (AIHW), 2008). These patients could be attracted by lower expenses for hospital and medical care, and for insurance plans restricted to public hospitals; however they must go on the waiting list for treatment along with public patients and so wait longer for admission compared with treatment in a private hospital.

Waiting lists are the most common means of rationing demand for non-emergency, or elective, procedures in public health care systems where prices are essentially zero. Australia, New Zealand, the United Kingdom, Canada and Scandinavian countries are among those countries that use public hospital waiting lists for elective procedures in this way. In principal, the operation of public hospital waiting lists should reflect clinical need, with patients most in need facing shorter waits. In fact, a key aspect of the five-yearly Australian Health Care Agreements between the Commonwealth and states is to regulate equity considerations in terms of access to public hospital treatments. There is anecdotal evidence, however, that non-clinical factors influence waiting list dynamics and financial incentives for providers (both public hospitals and medical practitioners) result in private patients receiving preferential treatment.

Funding for the treatment of public patients in public hospitals is constrained by fixed budgets and increasing the share of privately financed hospital activities is one of the few ways public hospitals can generate additional revenues. Thus, there are incentives for public hospitals to treat patients differently. Indeed, revenues to state governments through private patients' beds in public hospitals have been increasing steadily (Private Health Insurance Administration Council (PHIAC), 2004 and 2006); between 2003–2004 and 2005–2006, insurance benefits paid to public hospitals in NSW and ACT grew by 17% compared to those to private hospitals which grew by 10%. Similarly in Victoria, the growth in insurance benefits for public hospital beds was 38%, whilst payments for private hospitals grew by just 11%.

Doctors in public hospitals also have financial incentives to increase the throughput of private patients. Both Salaried Specialists and Visiting Medical Officers can admit private patients to public hospitals. In admitting private patients, they will derive fee-

for-service revenues in addition to their public sector salary or sessional payments for treating public patients.

Many studies use difference in waiting times to motivate their analysis of people's preference of private over public health treatment (e.g., Besley et al., 1999; Costa and Garcia, 2003; Moorin and Holman, 2006; Colombo and Tapay, 2004; Dawson et al., 2006). However, analysis most commonly focuses on a comparison of waiting times for public hospital treatment compared with treatment in private hospitals. There is very little empirical evidence concerning the treatment of private and public patients within the public system.

Furthermore, existing public reports (e.g., Australian Institute of Health and Welfare, 2008) and international comparisons (e.g., Siciliani and Hurst, 2003), which are referred to by these studies are based on aggregate analyses and summary statistics. Aggregate figures however obscure variations in the experiences of patients that are central to understanding the waiting list dynamics and the choice between public and private treatment. The aim of this study is to fill this gap in the literature by conducting disaggregated analysis based on patient status. Further, we analyse the entire distribution of patients on the waiting lists, providing far richer information than commonly presented point estimates, such as the sample mean or median.

In this paper, we analyse the extent to which private patients are prioritised over public patients who share the same clinical needs. We explore the empirical distribution of waiting times by patient status and use an ordinal approach based on two patient ranks: (i) their entry rank (when they are listed for a planned procedure) and (ii) their exit rank (when they are admitted to hospital). Our empirical evidence is based on waiting list and admission data from public hospitals in NSW for the period 2004-2005. The data are derived from inpatient and matched waiting list data from public hospitals in NSW consisting of patients on the waiting list who completed their hospital stay during the period 2004-2005. We focus on Medicare-eligible acute patients whose admission status was either public (non-charge) or private; other categories such as Veteran's Affairs, Defence Forces and Worker's Compensation are excluded. In total, there are 234,483 admissions, 87% of which are for public patients.

We define clinically similar patients as either those assigned the same recommended maximum time to admission (termed urgency) or the same planned hospital procedure. To control for supply side factors affecting access, we undertake separate analyses for 3 categories of hospitals. Both within urgency categories and planned procedures and for different categories of hospitals, we show that the empirical distribution of public patients' waiting times are always below the corresponding distribution for private patients, indicating higher proportions of public patients were delayed in their admissions. We obtain consistent findings based on ranks: private patients tend to be admitted ahead their listing rank. Using a counterfactual exercise, we calculate the extent to which prioritisation of private patients affects both their waiting times and those of comparable public patients.

2. Urgency, procedures and hospitals

To produce meaningful public-private patient comparisons, we must be comparing clinically similar patients. We define clinical needs of a patient using two indicators: assigned urgency and planned procedures. Urgency status indicates the maximum time that the patient should wait before admission to hospital. It is determined by the specialist responsible for placing the patient on the waiting list. In most jurisdictions in Australia there are three urgency categories: 30 days, 90 days and 365 days. The 30 days urgency status is for 'a condition that has the potential to deteriorate quickly to the point that it may become an emergency'. The 90 days urgency status is for conditions that are 'not likely to deteriorate quickly or become an emergency'. Lastly, the 365 days urgency is for conditions that 'do not have the potential to become an emergency'. This system appears to be the most endorsed rule by both patients and medical practitioners internationally (Oudhoff et al., 2007). NSW public hospitals however also use 7 days urgency classification. We treat patients in each urgency category as clinically comparable in terms of the desired waiting time.

For planned procedures, we select four common treatments: cataract extraction, knee replacement, removal of skin lesion and colonoscopy. Furthermore, these procedures are unique to a given specialty within a hospital; e.g., cataract in ophthalmology, and removal of skin lesion in general or plastic. We assume that patients waiting for the same procedure are to this extent comparable.

To control for supply side factors which may impact on waiting times we undertake our analyses separately for three types of hospital. Following the AIHW, hospitals can be categorised to 3 broad groups: (i) group A hospitals, consisting of principal referral hospitals (A1) and specialist women and children hospitals (A2); (ii) group B hospitals, consisting of large major cities hospitals (B1) and large regional and remote hospitals (B2); and (iii) group C hospitals, consisting of medium major cities and regional hospitals (C1, C2). The other type of hospitals that treat acute patients is small acute hospitals (D1). As there are only few patients in our data who were admitted at this type of hospital, we pool them together with patients in the group C hospitals. All of group A and B hospitals are located in major cities or inner regions of NSW while some group C/D hospitals are located in outer regions of NSW (Australian Institute of Health and Welfare, 2008).

There is lacking priori on how different patients are treated in different hospitals. In term of number of beds, the group A hospitals have more beds than group B and C hospitals. However, it is not clear if this would translate to better waiting list outcome for public patients. In a related study based on the British NHS, Siciliani et al. (2009) suggest that waiting times may be longer in bigger hospitals. Their study examines the relationship between hospital costs, which is positively related to number of beds, and waiting times and find that, if any, the relationship between waiting times and hospital costs is a positive one. On the other hand, Martin and Smith (2003) find a strong positive supply-side response to long waiting times. If bigger hospitals have more

resources, then their result would be consistent with the bigger hospitals having better management of patients.

3. Methodology

In the first approach, we first follow the convention and derive differences in the sample mean and median waiting times of public and private patients sharing the same observed clinical needs. However, to be more informative than these point estimates, we also plot the empirical distributions of waiting times for each type of patient.

Let $\{W_1, W_2, ...W_n\}$ be the observed of waiting times of n patients with either public or private status who were admitted in a given year (i.e., have completed waiting). In a sub-sample of patients with the same clinical needs, we compute the empirical cumulative distribution function:

$$(1) \qquad \hat{F}_{kj}(w) = \frac{1}{n_{kj}} \sum_{i=1}^{n_{kj}} 1_{[W_i < w]} \ ,$$

where n_{kj} is the sample size of patient type k (k = public, private) with clinical need type j; $\hat{F}_{kj}$ ranges from 0 to 1. Observations with equal waiting times are given the same probability.

From (1), we can also infer they incidence of waiting times beyond a certain threshold in each j:

$$(2) \qquad \gamma_j = 1 - \hat{F}_{kj}(\tau) = 1 - \frac{1}{n_{kj}} \sum_{i=1}^{n_{kj\tau}} 1_{[W_i < \tau]} \qquad (k = \text{public, private})$$

where τ is a threshold value of interest, and $n_{kj\tau}$ is the sample size up to that threshold point. A natural threshold would be the recommended admission time given by urgency category, such as 30 days in urgency category of 30 days, in which case, (2) would indicate the proportion of overdue cases. However, (2) is generic, and is not restricted to this interpretation (e.g., τ could be 180 days in 90 days urgency category and so indicate the proportion of patients waiting more than double the recommended time).

The second approach is inspired by a common technique in the public finance literature for analysing horizontal equity issues (e.g., King, 1983; Lairson et al., 1995). As in the first approach, it is based on ordered statistics, but not according to the length of waiting times. Instead, the method is based on the position (rank) of patients as they enter and exit the waiting list. The focus of this approach is equity as it defines a "desirable outcome", which is admission of clinically comparable patients to hospital treatment in the same order that they were listed for treatment. Reordering of patients between the entry rank and exit rank suggests horizontal inequity: that is, non-clinical factors are influencing the admission rank.

More specifically, all patients with the same clinical needs, regardless of their patient status, are ordered by their listing date, and their orders in the sample give their entry ranks. If on any one day, multiple patients are listed, then each of them is assigned the same rank. To illustrate, suppose there are five patients entering the waiting list, and the second and third person both enter on the second day. The rank of these patients in order would be {1, 2, 2, 4, 5}. The largest rank therefore is equal to the sample size. In a similar manner, an exit rank is created using the admission date on which a patient is removed from the list. In a graphical representation, the ideal scenario of admission according to entry rank would trace out a 45-degree line. That is, a patient's exit rank is in accordance to his/her entry rank. With the entry ranks plotted on the vertical axis and the exit ranks plotted on the horizontal axis, observations below the 45-degree line (negative deviations) would indicate the type of patients who tend to receive preferential treatments and are admitted ahead of their listing ranks. Conversely, observations that are above the 45-degree line represent those patients who are admitted behind their ranks.

As a counterfactual exercise, we finally determine the extent to which public patients' waiting times are reduced and private patients' waiting times increased, were there no preferential treatment to private patients and all patient were admitted to hospital according to their listing rank. For each urgency case and selected procedure, we compute:

$$(3) \qquad \theta_{kj} = \frac{1}{n_{kj}} \sum_{i=1}^{n_{kj}} \left(W_i - \frac{1}{n_e} \sum_{r=1}^{R} W_r^e \right) = \frac{1}{n_{kj}} \sum_{i=1}^{n_{kj}} \left(W_i - \overline{W}_i^e \right)$$

where θ_{kj} is the sample mean difference between the actual and counterfactual waiting times for clinical need j and patient type k; W_i and n_{kj} are as previously defined; n_e is the number of patients with entry rank *e*; and W_r^e is the waiting time of the patient with exit rank *e* were they also to be admitted to hospital with the same rank. To summarise, the counterfactual compares each patient's actual waiting time with the waiting time they would have experienced if their exit rank matched their listing rank.

Given $\overline{W}_r^e$, we can also compute the analog to (1) the empirical distribution for each patient type, showing the outcome where all patients were admitted according to their ranks:

$$(4) \qquad \hat{F}_{kj}(\overline{w}) = \frac{1}{n_{kj}} \sum_{i=1}^{n_{kj}} 1_{[\overline{W}_i^e < \overline{w}]} \qquad (k = \text{public, private}).$$

4. Results

Table 1 presents mean and median waiting times for patients at different hospitals by patient status. These are the standard statistics reported on waiting times, although they have not been previously disaggregated by patient status. Mean waiting times are always much larger than the corresponding medians, reflecting substantial positive

skewness in waiting times. Nevertheless, by any measure, except for the 7 days urgency case, public patients wait considerably longer than private patients for all urgency categories and procedures and in all types of hospitals. For example, in the 90 day urgency category, public patients wait about twice as long as private patients and in the 365 day urgency category the average waiting time can be about three times as long as for private patients.

Similarly for the selected procedures, public patients' waiting times are longer than those of private patients. Public patients waiting for skin operation and colonoscopy wait on average over 2 weeks longer than their private patient counterparts. Differences in patients' waiting times are even more pronounced for those waiting for cataract extraction or knee replacement. The median wait for private cataract patients in group A and C hospitals is 41 and 31 days, respectively, whilst the corresponding median wait for public cataract patients is 221 and 198 days. Public patients have to wait more than 300 days for a knee replacement in group A and B hospitals, which is more than twice as long that required of private patients.

If private patients represented systematically more complex case, this could explain some of these differences. However, an investigation of patient characteristics indicates that this is unlikely to be the case. The age distribution of public patients lies to the right of that of private patients and they also have more diagnosed conditions. Both suggest that it is public patients that are likely to present more complex cases.

[Insert Table 1: Mean and median waiting times]

Figure 1 plots the empirical distribution of waiting times for public and private patients according to urgency levels and by hospital category. As some patients' waiting times are extremely long, we top-code these values; the maximum values for urgency levels 7, 30, 90 and 365 days are 60, 100, 200 and 500 days respectively. The rows correspond to hospital group, A, B and finally C.

[Insert Figure 1: Cumulative patient distribution by urgency assignment]

The empirical distribution for public patients is always below that of private patients. Within any urgency case, a gap between the distributions of public and private patients can be interpreted as evidence of non-clinical prioritisation to private patients. As urgency declines, the patient gaps widen. This pattern shows that the greatest extent of patient discrimination is experienced by public patients who were assigned a less urgent category. The shapes of the patient distributions are similar across hospital groups for urgency levels 7 and 30 days, but are quite different for urgency levels of 90 and 365 days. In group A and B hospitals, nearly 20% of public patients with assigned urgency of 90 days are still on the waiting list after 200 days and 10% of public patients with assigned urgency of 365 days have been listed for more than 500 days. Almost no corresponding private patients undergo a similar experience. Indeed, three quarters of private patients with urgency status of 365 days were admitted

within 3 months. Meanwhile, the occurrence of long delays is less in group C hospitals. There, less than 5% of public patients with assigned urgency of 90 days remain on the waiting list for 200 days or longer and almost all public patients with assigned urgency of 365 days are admitted within 500 days.

In each urgency category, a reference line indicates the cumulative plot at the threshold period; the intersection with the two plots indicates the incidence of overdue cases. Group A and B hospitals have much higher level of overdue cases than group C hospitals, especially for the less urgent categories. The shares of overdue public patients with assigned urgency of 90 days (30-40%) in these hospitals are more than double that of private patients (10-15%). Even more dramatic is the difference in the shares of overdue public patients with urgency of 365 days: the proportion of public patients overdue over 8 times that of private patients in group B hospitals. In group C hospitals, while there are also patient gaps, the extent of these gaps are comparatively modest. We report the proportion of overdue cases in Table 2.

[Insert Table 2: Sample proportion of overdue admissions]

The finding that public patients' waiting times at group C hospitals are generally shorter than those at the bigger hospitals leading to narrower patient gaps is quite interesting. One may speculate that this has to do with distinct public-private patient mix and demand at regional areas. Alternatively, smaller hospitals may be more efficient than larger ones; the relationship between waiting times and scope economies need not be linear (Siciliani et al., 2009).

Figure 2 plots the empirical distribution of waiting times for the selected procedures. For these cases, the reference lines are drawn according to the majority of urgency assignments for the given procedure: for the skin condition, most patients are assigned 30 days urgency, for colonoscopy most patients are assigned 90 days urgency, and for cataract and knee replacement, most patients are assigned 365 days urgency. The intersection between the reference line and the cumulative plot indicates the proportion of patients who remain on the waiting lists for more than the most commonly recommended time for the procedure. The overdue incidence for these patients according to their own urgency level is reported in Table 2.

[Insert Figure 2: Cumulative patient distribution for selected procedures]

The patient gaps for cataract extraction and knee replacement are extreme. In group A and B hospitals, over 40% of public patients waiting for a knee replacement remain on the waiting list for more than a year and some 20-25% have been on the list for more than 500 days (around 50-60% are overdue according to own urgency class). In contrast, with a few exceptions, all private patients are admitted within a year. In group C hospitals, the share of public patients experiencing such a long wait is somewhat smaller than those found above in group A and B hospitals. Group C hospitals however appear to admit public cataract patients with somewhat shorter

waits than group A hospitals: over 80% of public patients within 12 months compared with 70% for group A hospitals. The small number of cataract and knee replacement patients in group B hospitals is due to most of these operations being performed in group A hospitals or specialised units, which are classified as group C. For the other two procedures, removal of skin lesion and colonoscopy, which tend to have higher urgency assignments, patient gaps exist but are more modest.

The role of patient status is also clear in the rank-based analyses. Figure 3 present allocations of patients in different urgency class based on ranks. The rows again correspond to hospital group, A, B and finally C. Grey circles mark the positions of public patients, and black triangles mark the positions of private patients.

[Insert Figure 3: Ranks based on urgency assignment]

Of public and private patients who were assigned an urgency of 7 days, most observations are concentrated around the 45-degree line, indicating that admission rank is close to listing rank. This is perhaps consistent with the high chance that these patients could develop into an emergency. There are a number of exceptional patients who were admitted substantially behind their entry ranks, the majority being public patients. As the clinical urgency lengthens, the role of patient status becomes more pronounced, with many more private patients admitted ahead of their entry rank. The lower probability that these patients would develop emergency may provide larger leverage for the health providers to prioritise based on patient status. In the case of the 30 day urgency category, private patients tend to be scattered around the 45-degree line with a higher proportion of public patients being located above the 45-degree line. In the case of the 90 day urgency category, most private patients are below the 45-degree line. Lastly, in the case of the 365 days urgency category, the concentration of private patients is even further below the 45-degree line, especially in group B hospitals, indicating exit ranks that are considerably lower than entry ranks. Some public patients were admitted ahead of their ranks as well. However, the mass of public patients fill the upper triangle of the figure, indicating that the majority of them were admitted substantially behind their entry ranks. Comparing the hospital groups, group B hospitals perform the worst in term of orderly admission of patients to hospital treatments.

Figures 4 present the rank-based results for selected procedures. The role of patient status is even more dramatic. For all four procedures, those admitted as private patients were almost always admitted considerably ahead of their entry ranks. The density of private patients' waiting time for removal of skin lesion and colonoscopy however lies somewhat closer to the 45-degree line, than that observed in the case for cataract extraction and knee replacement. This pattern supports the view that procedures that attract private patients are procedures that have very long public patient waiting times (Wiley, 2001a). As for public patients, they again fill the area above the 45-degree line showing admission behind entry rank.

[Insert Figure 4: Ranks for the selected procedures]

Before proceeding to the counterfactual analysis, we test the sensitivity of our approach to sample imbalance as private patients are only a minority (13%) in public hospitals. We select randomly as many public patients as there are private patients in a given sub-sample to ensure that our results are not merely an artefact of this sample imbalance. Redoing all analyses based on these balanced sub-samples, we find that our substantive findings are robust to this concern.[1]

The results for the counterfactual exercise are reported in Table 3. We find that, were patients admitted according to their entry rank, public patients' waiting times would be slightly shorter (with time saving of less than a week), whilst private patients would be waiting for considerably longer periods.[2] These small time savings predicted for public patients, at least based on mean estimates, are noteworthy, as even an orderly admission does not bring their mean waiting times to suit the clinical urgency of 30 and 90 days. When admitted according to their ranks, public patients with assigned urgency of 30 days wait on average 38-40 days, while those with assigned urgency of 90 days wait more than 105 days on average in group A and B hospitals.

[Insert Table 3: Predicted effect of orderly admission according to ranks]

Figure 5 show the empirical distributions for less urgent cases (90 days and 365 days), cataract and knee replacements in the counterfactual scenario. The redistribution (original) outcomes are indicated by the thinner (thicker) markers.

[Insert Figure 5: Cumulative patient redistribution]

We can see that orderly admission shifts the private patients' curve downwards, closing the patient gaps. In all types of hospitals, the largest impact of redistribution appears to be observed among patients with urgency level of 90 days. Admission according to entry rank can reduce overdue incidences of public patients by almost 20 percentage points in group A hospitals. To achieve this, 80% of private patients would be waiting some 20-30 days longer, but they would still be treated within the recommended period of 90 days. Half of public patients would also have longer waiting times, but the additional wait is smaller than that required of most private

[1] The only cases where sample imbalance matters (i.e., the differences in two sample mean are significant at 5% significant level) are in group A hospitals for: mean wait for 7 days urgency, mean wait for removal of skin lesion, proportion of overdue for 365 days patients and proportions of overdue for knee replacement patients. In these cases, the balanced sample means and overdue proportions are larger than the full sample counterparts, widening the gap between public and private patients' waiting times. Detailed results of these robustness checks are available on request.

[2] The high demand by public patients relative to private patients is part of the reason why public patients do not benefit substantially in terms of waiting time reduction even if they get admitted according to their rank. Unlike the balanced sample scenario, public patients face most competition from other public patients.

patients. In the 365 days case, the redistribution affects 70-90% of private patients, depending on the type of hospital, and a smaller proportion of public patients experience longer waits in order to improve the waiting times for the remaining public patients. However, the overdue incidence is improved only by a small margin.

For cataract and knee replacement patients, we also find that the orderly admissions have very little impact in reducing the waiting times of public patients. In the case of cataract extraction, in group A and C hospitals, the redistribution will affect at least 90% of private patients, who would be waiting considerably longer, possibly twice the length of their actual wait. This, combined with some 30% of public patients who are admitted faster than the average waiting time for their ranks, would make the remaining 70% of public patients wait just slightly less. For a knee replacements, there are so many public patients with extremely long waiting times, that the redistribution is unable to improve the overly long delays in admission.

5. Discussion

Using the experience of public hospitals in NSW, we show large discrepancies in the waiting time experiences of private and public patients who share the same clinical needs; private patients are prioritised in admission and have substantially shorter waiting times. While the evidence we present in this paper is based on NSW hospitals, we believe that the results apply nationwide. In fact, on the basis of summary statistics, the performance of NSW public hospitals in terms of median waiting times and overly long delay cases are the best nationwide (Department of Health and Ageing, 2009). If so, our findings provide a lower benchmark.

Financial incentives to health providers appear to have had an immense influence on timely access to health treatments by private patients, even in public hospital settings. Fixed public hospital budgets increase the attractiveness of privately financed activities. Likewise, numerous studies have shown that doctors, just like any other economic agents, respond to financial incentives (Conrad et al., 2002; Lungen et al., 2007; Dusheiko et al., 2006).

In our analysis, we assumed that clinical factors alone determined the assignment of urgency category by the doctor placing the patient on the waiting list. However, doctors may also increase the throughput of private patients by the urgency which is assigned. To investigate this, in Table 4 we compare urgency assignment by patient status. We find that urgency differs systematically: larger shares of public (private) patients were assigned with less (more) urgent categories. The proportions of private patients assigned with urgency of 30 days or less are always significantly greater than the corresponding figures for public patients. In contrast, the proportions of private patients assigned with urgency of 90 days or greater are always smaller than the corresponding figures for public patients. This distinction is found even within a sample of patients with the same planned procedure. More than 80% of public cataract patients are assigned urgency of 365 days, compared with less than 40% of

private cataract patients. These results, and those found above, are consistent with financial incentives being the main mechanism generating differences in the treatment of public and private patients.

[Insert Table 4: Urgency assignment]

6. Conclusion

The scope to prioritise private patients is potentially constrained by the regulatory setting. Prior to 1998, one of the guiding principles contained in the Australian Health Care Agreements between the Commonwealth and the states specified that "access to public hospitals be on the basis of clinical need". This was changed in subsequent agreements to "access to such services *by public patients* [emphasised added], free of charge, is to be on the basis of clinical need and within a clinically appropriate period" (Department of Health and Ageing, 2009). The change of wording introduced a difference in the principle guiding access to public hospital services for private and public patients. Specifically, it removed the Commonwealth's oversight of equity of access by public and private patient status and expanded providers' opportunities to respond to financial incentives by giving preferential treatment to private patients.

Constrained budgets in NSW public hospitals have led to many problems, including closure of wards and operating theatres, bed shortages, unreliable supply of equipment and consumables, shortages of staff, low staff morale, errors in prescribing and administering medicines, poor infection control and preventable deaths (Garling, 2008). Allowing priority to private patients in times of severe budget constraints may further exacerbate shortcomings in the care of public patients in public hospitals. Overly long delays of medical treatment in turn can have negative consequences on the patients, both physically and mentally (Hikhuysen et al., 2005; Anderson et al., 2007; Ostendorf et al., 2004).

We find substantial prioritisation of private patients in public hospitals in NSW in 2004-05 and this preferential treatment to private patients can explain some of the overly long delays in treatments of public patients. However, we also find that public patients would experience long waiting times even in the absence of prioritisation. If major health reform is to be successful, it should address the funding arrangements which place severe constraints on funding for the treatment of public patients in public hospitals and the current financial incentives which generate preferential treatment to private patients even in public hospitals.

References

Anderson, R.T., Camacho, F.T., Balkrishnan, R. (2007), 'Willing To Wait? The Influence of Patient Time on Satisfaction with Primary Care', *Health Service Research*, **7**, 31.

Australian Institute of Health and Welfare (2008), *Elective Surgery in Australia: New Measures of Access*. Cat. No. HSE 57. Canberra: Australian Institute of Health and Welfare.

Australian Institute of Health and Welfare (2008) *Australian hospital statistics 2006–07*, Cat. No. HSE 55. Canberra: Australian Institute of Health and Welfare

Besley, T., Hall, J., Preston, I. (1999), 'The Demand for Private Health Insurance: Do Waiting Lists Matter?', *Journal of Public Economics*, **72**, 155-181.

Colombo, F., Tapay, N. (2004), 'Private Health Insurance in Ireland: A Case Study'. OECD Health Working Paper No.10.

Conrad, D.A., Sales, A., Liang, S.Y., et al. (2002), 'The impact of financial incentives on physician productivity in medical groups', *Health Service Research*, **37, 8**85-906.

Costa J., Garcia J. (2003), 'Demand for Private Health Insurance: How Important is the Quality Gap?' *Health Economics*, **12,** 587-599.

Dawson, D., Jacobs, R., Martin, S., Smith, P. (2006), 'The Impact of Patient Choice and Waiting Time on the Demand for Health Care: Results from the London Patient Choice Project.' *Applied Economics*, **38**, 1363-1370.

Department of Health and Aging (2009), *State of Our Public Hospitals: June 2009 Report*. Available from: http://www.health.gov.au/internet/main/publishing.nsf/Content/1186FF4200B2B2E6CA2575D9000F73B8/$File/SoOPH%202009.pdf

Dusheiko, M., Gravelle, H., Jacobs, R., Smith, P. (2006), 'The Effect of Financial Incentives on Gatekeeping Doctors: Evidence From A Natural Experiment', *Journal of Health Economics*, **25**, 449-478.

Garling, P. (2008), 'Final Report of the Special Commission of Inquiry Acute Care Services in NSW Public Hospitals, State of NSW through the Special Commission of Inquiry: Acute Care Services in New South Wales Public Hospitals 2008.' Available from: http://www.lawlink.nsw.gov.au/lawlink/Special_Projects/ll_splprojects.nsf/pages/acsi_finalreport

Hilkhuysen, G.L.M., Oudhoff, J.P., Rietberg, M., et al. (2005), 'Waiting for Elective Surgery: A Qualitative Analysis and Conceptual Framework on the Consequence of Delay', *Public Health*, **119**, 290-293.

King, M. A. (1983), 'An Index of Inequality: With Applications to Horizontal Equity and Social Mobility', *Econometrica*, **51**, 99-115.

Lairson, D. R., Hindson, P., Hauquitz, A. (1995), 'Equity of Health Care in Australia', *Social Science and Medicine*, **41**, 475-482.

Lungen, M., Stollenwerk, B., Messner, P., et al. (2008), 'Waiting Times for Elective Treatments According to Insurance Status: A Randomized Empirical Study in Germany', *International Journal for Equity in Health*, **7**.

Martin, S, Smith, P. C. (2003), 'Using Panel Methods to Model Waiting Times for National Health Service surgery', *Royal Statistical Society*, **166**, 369-387.

Moorin, R.E., Holman, C.D.J. (2006), 'Does Federal Health Care Policy Influence Switching Between he Public and Private Sector in Individuals.' *Health Policy*, **79**, 284-295.

National Health and Hospitals Reform Commission (2009), *A Healthier Future for All Australians*. Available from: http://www.nhhrc.org.au/internet/nhhrc/publishing.nsf/Content/BA7D3EF4EC7A1F2BCA25755B001817EC/$File/NHHRC.pdf

Ostendorf, M., Buskens, E., van Stel, H., et al. (2004), 'Waiting for Total Hip Arthroplasty: Avoidable Loss in Quality Time and Preventable Deterioration', *Journal of Arthroplasty*, **19**, 302-309.

Oudhoff, J. P., Timmermans, D.R.M., Rietberg, M., et al. (2007), 'The Acceptability of Waiting Times for Elective General Surgery and the Appropriateness of Prioritising Patients', *Health Service Research*, **7,** 32.

Private Health Insurance Administration Council (2004), *Operations of the Registered Health Benefits Organisations Annual Report 2003-04*. PHIAC, Canberra.

Private Health Insurance Administration Council (2006), *Operations of the Registered Health Benefits Organisations Annual Report 2005-06*. PHIAC, Canberra.

Productivity Commission. (2008). *Report on Government Services, Volume* 2 *Health, Community Services and Housing.* AGPS, Canberra.

Siciliani, L., Hurst, J. (2003), 'Explaining Waiting Times Variations for Elective Surgery Across OECD Countries', OECD Health Working Papers, No. 7.

Siciliani, L., Stanciole, A., Jacobs, R. (2009), 'Do Waiting Times Reduce Hospital Costs?', *Journal of Health Economics*, **article in press**.

Wiley, M. (2001a), 'Reform and Renewal of the Irish health care System: Policy and Practice'. Available from: http://www.esri.ie/UserFiles/publications/20070209094613/JACB2001_Wiley_Reform%20.pdf