5 Hospital and medical costs

Key points

- Comparing the costs of public and private hospitals has been one of the most challenging parts of this study because:
  - existing data collections are limited by inconsistent collection methods and missing information
  - differences between hospitals in the types of patients treated and services provided make like-for-like comparisons difficult.
- The Commission has sought to address these problems by drawing on various data sources and incorporating adjustments to make the data more comparable, but the resulting estimates should be considered experimental.
- The Commission's experimental cost estimates suggest that, at a national level, public and private hospitals had a broadly similar cost per casemix-adjusted separation in 2007-08. However, significant differences were found in the composition of costs:
  - medical and diagnostics costs and prostheses costs were higher in private hospitals
  - capital costs were estimated to be somewhat higher in public hospitals, but this result is particularly reliant on a range of data sources and adjustments to make the data more comparable
  - the combined cost of nursing and other salaries, allied health, operating rooms and specialist suites, critical care, hotel costs, supplies, and on-costs were on average higher for public hospitals.
- A disaggregation of the experimental cost estimates by diagnosis-related groups (DRGs) suggests that in 2007-08:
  - half of DRGs had an average cost in public hospitals that was more than 10 per cent higher than in private hospitals, and one-fifth of DRGs had an average cost in public hospitals that was at least 10 per cent lower than in private hospitals
  - almost three-fifths of surgical DRGs had an average cost in public hospitals that was at least 10 per cent higher than in private hospitals, and medical DRGs were where public hospitals performed most strongly in terms of costs.
- To some extent, the results reflect differences between sectors in types of patients treated and services provided, as there was a limit to which such differences could be controlled for without advanced statistical methods. Multivariate techniques are used in chapter 8 to take account of the many factors influencing performance.
- A foreshadowed shift to nationally-consistent activity-based funding for public hospitals is expected to lead to more robust cost data. However, there remains considerable scope to improve the quality and consistency of information on hospital and medical costs for both public and private hospitals.

The terms of reference direct the Commission to report comparative hospital and medical costs for clinically-similar procedures performed by public and private hospitals. This has been one of the most challenging parts of the study, particularly in the short time available, because:

- existing data collections are limited by inconsistent collection methods and missing information
- differences between hospitals in the types of patients treated and services provided make like-for-like comparisons difficult.

Many study participants raised doubts about whether meaningful cost comparisons were possible, given these difficulties (for example, Australian Healthcare and Hospitals Association, sub. 33; Australian Medical Association, sub. 28; Catholic Health Australia, sub. 20; NSW Department of Health, sub. 40; Royal Australasian College of Surgeons, sub. 30; SA Department of Health, sub. 4; Tasmanian Department of Health and Human Services, sub. 37).

Nevertheless, a number of participants acknowledged that the cost estimates were consistent with their expectations (for example, NSW Department of Health, sub. 41; Dr. John Deeble, sub. DR56; Catholic Health Australia, sub DR62).

It should also be noted that costs are a partial indicator of hospital performance, since they do not include information on other aspects of performance, such as quality and patient safety (Australian Medical Association, sub. 28). Nevertheless, there is a strong case for monitoring and comparing hospital costs, given that hospital services account for a large proportion of Australia's health spending, and competitive markets only have a limited role in driving efficiency improvements in the health sector. Indeed, governments already participate in a number of performance indicator frameworks that include the reporting of hospital costs, particularly for public hospitals (AIHW 2009a; DOHA 2009a; NHPC 2004; SCRGSP 2009). Unfortunately, these initiatives have yet to lead to comprehensive and nationally-consistent reporting of hospital costs.

The Commission has sought to address data limitations, and take account of the diversity and complexity of hospitals, by drawing on various data sources and, where necessary, incorporating adjustments to make the data more comparable. However, the Commission readily acknowledges that a number of significant data shortcomings have limited its ability to construct fully-comparable costs. The Commission therefore stresses that the cost estimates presented in this chapter should be treated as experimental.

The next section describes the cost indicators used in this report. This is followed by an overview of data sources and estimation methods. The resulting estimates are

then presented. The chapter concludes with a discussion of data developments that could improve the feasibility of future cost comparisons.

5.1 Cost indicators

Two commonly-used measures of hospital costs were estimated for this study:

- cost per casemix-adjusted separation — the average cost of treating a range of different diagnoses, after controlling for differences in the complexity of required treatments (casemix adjustment)
- cost per separation — the average cost of treating a group of diagnoses that are clinically similar.

Clinically-similar diagnoses were defined according to the widely-accepted system of Australian Refined Diagnosis-Related Groups (AR-DRGs).[1] This classification system provides a clinically-meaningful way of relating types of patients treated to required resources (DOHA 2004). Individual DRGs represent a class of patients with similar clinical conditions that require similar hospital services (AIHW 2009a; Department of Health and Ageing, sub. 32).

The AR-DRG system only applies to acute-care admitted-patient services, and so it was not possible to compare costs for other hospital services. Admitted-patient services accounted for 71 per cent of the costs incurred by overnight acute-care hospitals in 2007-08 (AIHW 2009a).[2]

Casemix-adjusted separations were calculated by weighting the number of separations for each DRG by its relative complexity. In line with established practice (for example, AIHW 2009a; DOHA 2009a), the relative complexity of each DRG was measured by its cost weight — the average cost of the DRG across all relevant hospitals divided by the average cost for all DRGs.

The grouping of similar outputs by DRG, and casemix adjustment when comparing costs for more than one DRG, is an important step in making cost comparisons

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1 The AR-DRG system is used by governments across Australia to measure and fund health services, with its origin dating back to the early 1990s. It is managed by the Department of Health and Ageing in consultation with state and territory health authorities, the Clinical Casemix Committee of Australia, Clinical Classification and Coding Groups, and National Centre for Classification in Health (DOHA 2004).

2 Victoria admits patients for treatments that other jurisdictions may administer as nonadmitted (outpatient) services, such as chemotherapy and dialysis, and so a disproportionate share of Victorian separations may be categorised as admitted-patient services (Victorian Department of Health, pers. comm., 30 September 2009).

more meaningful. As noted by study participants, the range and type of patients treated by a hospital (casemix) will have a major influence on its costs (Australian Nursing Federation, sub. 17; Catholic Health Australia, sub. 20; NSW Department of Health, sub. 40; SA Department of Health, sub. 4; Tasmanian Department of Health and Human Services, sub. 37).

Some participants were concerned that individual DRGs are not sufficiently homogeneous to enable like-for-like comparisons (for example, Medical Technology Association of Australia, sub. DR48; Queensland Health, sub. 27; Tasmanian Department of Health and Human Services, sub. 37; Women's and Children's Hospitals Australasia, sub. 21).

It is inevitable that any patient classification system will have some heterogeneity within individual categories, as no single patient is precisely identical to another, and so the question is whether such heterogeneity is significant and likely to prejudice any cost comparison. The Commission notes that DRGs are sometimes categorised by factors such as patient age and whether there are comorbidities, and so it appears that these factors are to some extent controlled for. In addition, the AR-DRG system has been refined over a period of more than a decade with input from national, state and territory health departments so that only patients with similar clinical conditions and resource requirements are grouped into the same DRG (DOHA 2004).

5.2 Data sources and estimation methods

The terms of reference direct the Commission to use cost data that the states and territories will provide to the Australian Government under the National Health Agreement, and private hospitals already provide to the Government. However, recent policy developments — such as a foreshadowed move to nationally-consistent activity-based funding — have yet to lead to the reporting of all costs on a comprehensive and consistent basis. The Commission therefore had to draw on various existing data sources and, where necessary, incorporate adjustments to make the data more comparable. These data sources and adjustments are summarised below, with further details provided in appendix D.

Data sources

Most of the cost data were sourced from two data collections managed by the Australian Government Department of Health and Ageing (DOHA) as part of its regulatory and oversight functions:

- National Hospital Cost Data Collection (NHCDC) — a voluntary annual survey of hospitals, with the latest published results (2007-08) based on responses from hospitals which accounted for 89 per cent of public acute separations and 72 per cent of private acute separations.
- Hospital Casemix Protocol (HCP) — a regular census of private health insurance claims in public and private hospitals, collected as part of the regulation of private health insurance. HCP data excludes both public patients and private patients who do not make a private health insurance claim (who together comprised around 90 per cent of separations in public hospitals and 20 per cent in private hospitals in 2007-08).

A key difference between the collections is that the NHCDC has data on hospital expenditure (costs), whereas the HCP has data on amounts charged to patients.

The NHCDC was used as the primary data source because it is designed for cost analysis and covers a significant share of separations in both public and private hospitals. The HCP was only used for private-patient medical and diagnostics costs, as these are not captured in the NHCDC. Other data sources — such as surveys of private hospitals by the Australian Bureau of Statistics and the National Hospital Morbidity Database — were also used where NHCDC data are incomplete.

Study participants noted that the NHCDC is the best available data source for the purpose of analysing costs, but also cautioned that it has major limitations (for example, Australian Health Service Alliance, sub. 1; Australian Unity, sub. 31; Catholic Health Australia, sub. 20). Some of the deficiencies of available cost data are outlined in box 5.1.

Around 11 per cent of DRGs (less than 2 per cent of separations) in the 2007-08 NHCDC sample were excluded from the analysis because they had few separations (episodes of care) in at least one sector, and/or involved less than three hospitals.

The Commission also obtained data from the Department of Veterans' Affairs (DVA) on the cost of treating a selected number of DRGs for veterans and their dependants. While DVA data are not necessarily representative of the whole population (Repatriation Commission, sub. 39), as a client of both the public and private hospital sectors across Australia, DVA's experience provides useful insights into the relative performance of the two sectors. In 2007-08, DVA-funded patients accounted for 4.1 per cent of all hospital separations (2.6 per cent of separations in public hospitals and 6.4 per cent in private hospitals) (AIHW 2009a).

It should be noted, however, that the DVA data are based on prices negotiated between DVA and the providers of hospital services, rather than the cost incurred

by hospitals in providing those services. The extent to which there is a mark up over costs could vary across jurisdictions for public hospitals and between different operators of private hospitals. DVA cost results are presented in appendix D.

Box 5.1 **Some of the deficiencies of existing cost data**

There are inconsistencies within and between the public and private sectors in the reporting of individual cost items in the National Hospital Cost Data Collection (NHCDC) because data are provided without any auditing or reconciliation controls (Department of Health and Ageing (DOHA), sub. 32). For example:

- depreciation is not reported for Victorian public hospitals
- building depreciation is not reported for public hospitals in Queensland
- there are differences in the extent to which jurisdictions and hospitals report head-office overheads.

Another weakness of the NHCDC is that the user cost of capital is not explicitly included.

There are also key differences in the way hospitals measure costs for the NHCDC:

- 'Patient-costed' sites measure costs at the patient level. This approach is used for 75 per cent of public-hospital cost data (DOHA, sub. 32).
- 'Cost-modelled' sites allocate aggregate costs across different items using pre-determined service weights, which can be more than ten years old (Catholic Health Australia, sub. 20). As a result, reported costs are probably not as accurate as those from patient-costed sites. More than 90 per cent of private hospitals in the NHCDC report cost-modelled data (DOHA 2009b).

The NHCDC data that DOHA provided to the Commission are based on an unweighted sample, and so may not be representative of all hospitals. The data do cover a high proportion of separations in both sectors, but some types of hospitals and regions — such as large metropolitan hospitals — may be over-represented relative to others. For example, the NSW Government has noted that the majority of NSW data in the NHCDC are drawn from principal referral and major teaching hospitals, which on average are more costly due to higher infrastructure costs and a more complex casemix (DOHA 2009a). The SA Department of Health (sub. 4) estimated that teaching accounted for over 5 per cent of total costs in SA metropolitan hospitals.

Items directly billed to patients — especially medical and diagnostics costs for private patients — are not collected for the NHCDC. In such cases, charges data had to be used from the HCP, which is a census of private health insurance claims covering all hospitals. The Commission requested HCP data for only the hospitals in the NHCDC sample, but received averages based on the full HCP census population. Thus, HCP and NHCDC averages for different populations had to be used.

Estimation methods

Overall costs were estimated by summing the various items that contribute to an episode of care. Cost data on these items have varying degrees of accuracy and comparability, and so the Commission distinguished between them using the six categories listed in table 5.1.

Table 5.1 **Cost components**[a]

1. General hospital	**2. Pharmacy**	**5. Capital**
Ward nursing[b]	Pharmacy[c]	Depreciation[d]
Ward supplies & other overheads		User cost of capital[e]
Allied health	**3. Emergency**	
Critical care[f]	Emergency department[g]	**6. Medical & diagnostics**
Operating rooms		*Incurred by the hospital*
Specialist procedure suites	**4. Prostheses**	Ward medical[h]
Hotel costs	Prostheses[i]	Imaging[j]
Non-clinical salaries[k]		Pathology[l]
On-costs[m]		*Billed directly to the patient*
		Medical charges[n]

[a] Individual items are NHCDC cost buckets unless otherwise indicated. Details provided in appendix D. [b] Excludes nursing salaries and wages reported in imaging, pathology, critical care, operating rooms, emergency departments, specialist procedure suites, allied health, and pharmacy. [c] Excludes pharmacy costs reported in critical care, operating rooms, specialist procedure suites, emergency departments, pathology, and imaging. [d] Sourced from the NHCDC, except for Queensland and Victorian public hospitals, which were derived from data published in SCRGSP (2009). [e] Derived from data published by the ABS (2008e) and SCRGSP (2009). [f] Critical care covers intensive-care units and coronary-care units. [g] Emergency department cost associated with patients who are subsequently admitted. [h] Excludes medical salaries and wages reported in imaging, pathology, critical care, operating rooms, emergency departments, specialist procedure suites, allied health, and pharmacy. [i] Excludes prostheses acquired directly by patients or their doctors, rather than the hospital. [j] Excludes imaging costs reported in critical care, operating rooms, emergency departments, specialist procedure suites, pharmacy, and pathology. [k] All other costs of service provision, but primarily other salaries and wages, such as for patient-care assistants. [l] Excludes pathology costs reported in critical care, operating rooms, emergency departments, specialist procedure suites, pharmacy, and imaging. [m] Includes superannuation, termination payments, lump-sum payments, fringe-benefits tax, long-service leave, workers compensation, and recruitment costs. Excludes items paid as part of a salary package, such as salaries and wages, leave, allowances, and hotel costs. [n] Sourced from the HCP. Includes both medical and diagnostics charges.

In order to compare hospital and medical costs for similar procedures performed by public and private hospital systems it is necessary to combine a number of cost components. In particular, to build a measure of the cost of an episode of care in the private sector that is comparable to the cost of an episode of care in the public system it is necessary to combine costs from different sources — private hospitals are generally not responsible for the bulk of medical or diagnostics costs incurred in a private episode of care, rather they are billed directly to the patients by the specialists involved (Australian Health Services Alliance, sub. DR53; Australian

Private Hospitals Association, sub. DR65). In this sense, this is a comparison of costs associated with the public and private hospital systems.

The footnotes to table 5.1 are based on how costs are meant to be allocated according to the NHCDC Hospital Reference Manual (DOHA 2008c). In practice, jurisdictions do not always follow the NHCDC data specifications for public hospitals, and compliance in the private sector can also be inconsistent. For example, Victorian public hospitals record costs according to the methods of the Clinical Costing Standards Association of Australia, and these are subsequently mapped to the NHCDC cost structure. One of the consequences of this is that NHCDC data for 'ward nursing' in Victorian public hospitals include other ward costs, such as consumables, lighting and cleaning, and non-ward costs for admitted patients, such as hospital-in-the-home and maternity post-domiciliary nursing care.

FBT exemptions

The terms of reference require the Commission to take account of fringe-benefits tax (FBT) exemptions when comparing costs. Public and not-for-profit private hospitals can provide 'capped' fringe benefits up to a value of $17 000 per employee without incurring FBT. In addition to the capped exemption, public and private not-for-profit hospitals are also eligible for the uncapped meal-entertainment exemption. The meal-entertainment exemption has the potential to confer large benefits to individuals employed by eligible institutions, and is likely to affect resource allocation and employee behaviour (PC 2009).

In order to match the post-tax salary package a given employee receives in a public or not-for-profit private hospital, it is therefore necessary for for-profit hospitals to incur an FBT liability that other hospitals are exempted from (Australian Health Insurance Association, sub. 18).

To facilitate like-for-like comparisons, the Commission estimated the cost that for-profit hospitals incur by not having access to the capped FBT exemption, and reduced their reported costs accordingly. Where the labour costs of for-profit private hospitals could be identified in the NHCDC, they were reduced by around 1.4 per cent. It was not possible to estimate the cost of the uncapped meal-entertainment exemption due to a lack of information about its use.

Capital costs

The Commission was also directed to take account of the capital costs of hospitals. This has two elements — depreciation and the user cost of capital (UCC).

Depreciation is the reduction in an asset's value due to usage and obsolescence. The NHCDC has DRG-level data on depreciation, except for public hospitals in Victoria and Queensland.[3] To address this data deficiency, aggregate public hospital depreciation reported by the Victorian and Queensland governments (and published by SCRGSP 2009) was apportioned across DRGs according to the pattern observed in other jurisdictions. It was not possible to apply a similar adjustment to cost estimates by region and hospital size, and so public hospital depreciation is understated for these disaggregations.

The UCC is the opportunity cost of the capital used to deliver services. That is, the return that could be generated if the funds tied up in the capital were employed in their next best use. The UCC for public hospitals was based on the methodology and asset data that jurisdictions have for some years contributed to for national reporting of public hospital costs under the auspices of the Steering Committee for the Review of Government Service Provision (SCRGSP 2009).[4] A similar method was applied to private hospitals, using asset values estimated from investment and depreciation data collected by the ABS (2008e).

As detailed in appendix D, the capital cost estimates are particularly reliant on a range of data sources and adjustments to make the data comparable. They could underestimate capital costs in the public sector if asset data exclude public-private partnership arrangements and contracting out of public-patient services to private operators. It appears that assets are reported inconsistently between jurisdictions. Capital costs could be underestimated in the private sector to the extent available asset data exclude leased hospitals.

Administration and corporate overheads

In recent years, concerns have been expressed about a rapid increase in hospital administrative staff relative to numbers of beds and treated patients (for example, Sammut 2009). It is difficult to fully quantify the extent of this issue, but available data do suggest that there has been some growth in administrative staff. Between 2001 and 2006, the number of medical administrators and nursing directors employed across all areas of the health system grew by 69 per cent, compared to 23 per cent for all health workers (AIHW 2008c). Data presented in chapter 7 indicate that hospital administration and clerical workers per bed increased by

[3] Queensland public hospital data include non-building depreciation, but does not cover depreciation relating to buildings (DOHA 2009a).

[4] The public-hospital asset data used were at a jurisdiction level. The Commission requested hospital-level asset data from each jurisdiction. Such data was not provided by all jurisdictions, and so it was not possible to use hospital-level data and maintain a consistent approach.

8 per cent in public hospitals and 19 per cent in private hospitals between 2002-03 and 2007-08. As a further comparison, the number of available or licensed hospital beds in Australia grew by 3 per cent, and the number of separations grew by 19 per cent, between 2000-01 and 2005-06 (AIHW 2006, 2009a).

It is not currently possible to separately identify the wages and salaries of administrative staff in the NHCDC data, because administrative staff are often included in the costs of their relevant work area, such as operating rooms, pathology, and emergency departments. There may also be inconsistencies between jurisdictions in how the cost of hospital administrative staff are allocated.

Furthermore, there are inconsistencies in the extent to which administrative and head-office overheads are included in the NHCDC (section 5.5). For example, costs associated with financial, payroll and human resource management services are not included in public hospital costs in Queensland (DOHA 2009a). The Commission understands that head-office costs are similarly excluded in public hospital costs from New South Wales, Victoria, South Australia, Western Australia and the ACT. In contrast, Tasmania includes a number of head office and administration costs, but has reduced the extent to which they are included over recent NHCDC collections in order to be more consistent with other jurisdictions (DOHA 2009a). The Commission also understands that insurance costs for public hospitals are often treated differently across jurisdictions — while all jurisdictions include costs associated with workers' compensation insurance, it is unclear whether other costs such as medical indemnity, public liability and building and contents insurance costs are accounted for in the NHCDC.

The extent to which hospital administration and head-office costs are included in private hospital data is unclear. While it is expected that NHCDC cost data should include shared costs where a hospital is part of a larger group, whether this extends to head-office costs is not clear, beyond the exclusion of executive costs (DOHA 2009a).

Pharmaceuticals

Accurate estimation of pharmaceutical costs incurred in public and private hospitals is hampered both by incomplete coverage of pharmaceutical expenditure and the attribution of pharmaceutical cost data to other sources. Ideally, pharmaceutical data would provide a complete picture of the cost of all pharmaceuticals routinely provided by hospitals in areas such as wards and operating theatres, the more expensive highly-specialised drugs prescribed for treatments such as chemotherapy, and other medicines obtained through prescriptions for individual hospital patients. NSW Department of Health (sub. DR64) noted that all public-patient

pharmaceuticals are covered in the NHCDC. The Commission understands that this includes expensive highly-specialised drugs, where applicable.

However, the cost of medicines used to treat private hospital patients is not fully captured in either the NHCDC or HCP (Dr. John Deeble, sub. DR56), and it is unclear whether or not high-cost drugs used by patients in private hospitals would be included in the NHCDC. Data published by the AIHW (2009d) suggest that private hospitals have either substantially lower pharmaceutical costs, or up to 40 per cent of the pharmaceutical costs for patients in private hospitals are met by external arrangements, such as the (publicly-funded) Pharmaceutical Benefits Scheme.

Public hospital pharmaceutical costs are reported differently across jurisdictions. The NHCDC cost bucket for 'pharmacy' is meant to include the costs of purchase, production, distribution, supply and storage of drug products and clinical pharmacy services, including salaries and wages in the pharmacy cost centre (DOHA 2008c). Pharmacy costs reported in critical care, operating rooms, emergency departments, pathology, imaging, and specialist procedure suites are not reported separately as pharmacy costs. The Commission understands that Victoria is an exception in this respect, and includes all pharmacy costs under the pharmacy cost bucket.

It is not currently possible to separately identify the total cost of pharmaceuticals from the NHCDC data, given the allocation of pharmaceutical costs to other cost areas and variations in jurisdictional approaches. However, the Commission has obtained estimates of the amount of pharmaceutical costs included in other cost buckets, for public hospitals. For those jurisdictions that allocate costs across various different buckets, around 24 per cent of total pharmacy costs were included in operating rooms and critical care costs in 2007-08 (appendix D).

FINDING 5.1

Existing datasets on hospital and medical costs are limited by inconsistent collection methods and missing information. The Commission has sought to address these limitations by drawing on various data sources and incorporating adjustments to make the data more comparable where possible, as well as noting data deficiencies where they exist. The resulting estimates of hospital and medical costs should be considered experimental.

5.3 Cost per casemix-adjusted separation

National and jurisdiction-level estimates

The Commission's experimental cost estimates suggest that, at a national level, public and private hospitals had a broadly similar cost per casemix-adjusted separation in 2007-08 (table 5.2). There do, however, appear to be differences between jurisdictions. In New South Wales and Victoria, private hospitals were estimated to have a higher cost per casemix-adjusted separation than public hospitals. In other jurisdictions, private hospitals were estimated to have a lower cost per casemix-adjusted separation than public hospitals, with the gap particularly large in Western Australia. To some extent, these differences between jurisdictions may be attributable to inconsistencies in how each jurisdiction measures and reports costs for the NHCDC.

There were significant differences between public and private hospitals in the composition of costs. For general hospital costs, public hospitals were estimated to be more costly than private hospitals ($2552 versus $1953 at the national level). This was also the case with the experimental estimates of capital costs ($426 versus $230). Conversely, average prostheses costs were estimated to be much lower in public hospitals ($131 versus $542). Average medical and diagnostics costs were also lower in public hospitals ($798 versus $1346). A similar pattern in the cost components was evident at the jurisdiction level.

Table 5.2 **Cost per casemix-adjusted separation by jurisdiction and sector, 2007-08**[a]

Dollars

	NSW		*Vic*		*Qld*		*SA*	
Cost component	*Public*	*Private*	*Public*	*Private*	*Public*	*Private*	*Public*	*Private*
General hospital[b]	2 511	1 944	2 106	2 004	2 683	1 948	2 800	1 803
Pharmacy	164	42	235	87	174	45	146	53
Emergency	205	16	251	50	211	40	135	61
Medical & diagnostics[c]	733	1 497	900	1 226	794	1 404	621	1 214
Prostheses	137	620	108	527	121	491	140	495
Capital[d]	439	210	359	240	560	223	381	158
Total[e]	4 189	4 330	3 960	4 133	4 543	4 151	4 223	3 783

	WA		*Tas, NT & ACT*[f]		*Australia*	
	Public	*Private*	*Public*	*Private*	*Public*	*Private*
General hospital[b]	3 094	1 845	3 243	2 236	2 552	1 953
Pharmacy	202	144	186	55	187	68
Emergency	147	11	238	21	208	34
Medical & diagnostics[c]	1 048	1 275	725	1 391	798	1 346
Prostheses	155	555	141	540	131	542
Capital[d]	359	281	447	345	426	230
Total[e]	5 006	4 111	4 980	4 586	4 302	4 172

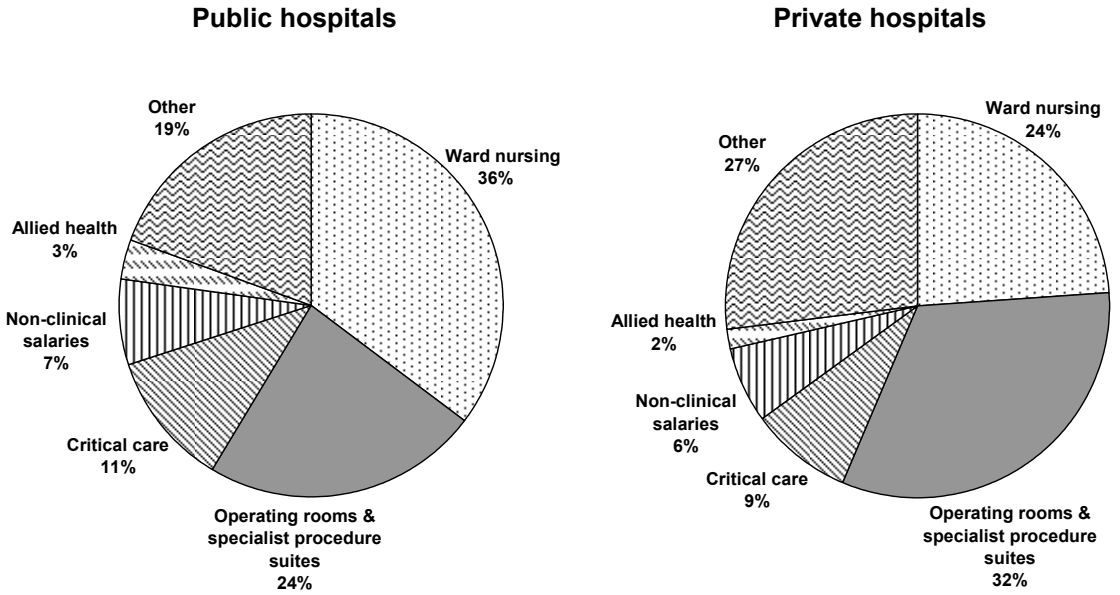
[a] Costs are casemix adjusted using DRG-level cost weights for public and private hospitals combined. [b] NHCDC cost buckets for ward nursing, non-clinical salaries, allied health, critical care, operating rooms, ward supplies and other overheads, on-costs, hotel costs, and specialist procedure suites. [c] Combination of data from the NHCDC (ward medical, imaging and pathology) and HCP (medical charges, which in the HCP includes diagnostics). [d] Depreciation and the user cost of capital. [e] Totals may not equal sum of components due to rounding. [f] Data for Tasmania, the Northern Territory and the ACT are aggregated to protect the confidentiality of the small number of hospitals in each of these jurisdictions.

Source: Productivity Commission estimates.

General hospital costs

The relative significance of individual items within the general hospital category differed between the public and private sectors (figure 5.1). To some degree, this could reflect differences in how costs are allocated between different items, rather than genuine variation in the composition of costs. The extent of this issue is unknown. As noted later, some medical costs for public hospitals are captured in this general hospital category, rather than the medical cost bucket.

Figure 5.1 **Composition of general hospital costs by sector, 2007-08[a]**



a Care should be taken in interpreting this figure due to differences between jurisdictions in how public hospital costs are reported. The differences may cause public-hospital nursing costs to be overstated, and supplies and on-costs to be understated. Costs were casemix adjusted using a 'general hospital' cost weight for this figure. 'Other' comprises NHCDC cost buckets for ward supplies and other overheads, hotel costs and on-costs.

Source: Productivity Commission estimates.

Nevertheless, general hospital costs in aggregate differed significantly between the sectors. It was estimated that, in 2007-08, the general hospital cost per casemix-adjusted separation was about 30 per cent higher in public hospitals compared to private hospitals. Based on the reported data, it appears that this was largely due to greater expenditure on ward nursing per separation in public hospitals. There was also a sizeable difference in the average cost of critical care. Critical care covers intensive-care and coronary-care units, and so the estimated difference in average costs might reflect the fact that most of these units are in public hospitals.

Medical and diagnostics

Medical and diagnostics costs are incurred differently in the public and private hospital systems. In the public sector, such costs generally relate to the wages and salaries of doctors and specialists, whereas in the private sector they largely (though not exclusively) consist of fees charged to patients by doctors and are not under the control of the hospital in which treatment is performed (Australian Health Service Alliance, sub. DR53; Australian Private Hospitals Association, sub. DR65).

Medical and diagnostics costs were estimated to make up a greater proportion of the total cost associated with the treatment of patients in private hospitals than they do in public hospitals (32 per cent compared to 19 per cent), with the difference estimated to be $548 at the national level. At a jurisdictional level, the gap between public and private medical and diagnostics costs was estimated to range from as little as $227 in Western Australia to $764 in New South Wales (table 5.2).

However, the estimated differences between public and private hospitals in medical and diagnostics costs should be interpreted with care. Around one-third of public-patient medical costs in the NHCDC are embedded in the general hospital and emergency categories (estimated to be around $268 per separation nationally, as detailed in appendix D). Hence, the experimental estimates overstate the cost advantage that public hospitals have in medical and diagnostics, and the cost disadvantage that public hospitals have in general hospital and emergency departments.

Catholic Health Australia (sub. DR62) noted that the estimated medical and diagnostics costs for public hospitals in New South Wales presented in the Discussion Draft for this study was inconsistent with Catholic Health Australia's experience and unexpectedly low. Catholic Health Australia referred to an interjurisdictional comparison of payments made to Visiting Medical Officers and salaried and sessional staff (AIHW 2009a). It is worth noting that medical and diagnostics costs associated with 'ungroupable' HCP separations have been included in the Commission's estimates since the publication of the Discussion Draft, and this has increased the estimated medical and diagnostics costs for public hospitals in New South Wales (appendix D).

It should also be noted that the Commission's experimental estimates for medical and diagnostics costs are broadly consistent with comments from other study participants, who observed that:

- doctors in private practice tend to charge higher fees to private patients to compensate for the lower earnings they receive from treating public patients in public hospitals (often described as cross subsidisation) (Australian Health Service Alliance, sub. 1; Australian Medical Association, sub. 28)
- there may be less incentive to limit medical costs in the private sector (Prof. Richard Harper, sub. 6).

Prostheses

As with medical and diagnostics costs, prostheses costs are actively managed and borne by public hospitals, while private hospitals are limited in their ability to control them:

> [M]ost prostheses are actually purchased by the hospital and supplied to the patient by the hospital — although the choice of prosthetic devices is made by the treating doctors. (Catholic Health Australia, sub. DR62, p. 6)

At a national level, the cost of prostheses per casemix-adjusted separation was much greater for procedures performed in private hospitals than in public hospitals. A similar disparity was evident in all jurisdictions, but was greatest in New South Wales and Victoria. The relatively high estimated cost of prostheses in private hospitals is consistent with the views of participants (for example, Australian Health Services Alliance, sub. 1). However, comments by CHA suggest that the estimated disparity between sectors may be at least partly attributable to data deficiencies:

> … the arrangements for the management and purchasing of prostheses in both sectors are quite different and should be excluded from this particular study. In particular, whilst the private sector has detailed prostheses billing data (a requirement for reimbursement), this does not apply in the public sector where prostheses tracking is less detailed and usually modelled using weights rather than actual utilisation. To put this into perspective, prostheses can be over 20 per cent of costs in some hospitals, depending on the casemix. (sub. 20, p. 9)

Nevertheless, the Commission considered it important to include prostheses costs in this study, given that they can account for a large share of costs for some types of treatment. In addition, the Commission has reported prostheses costs separately from other items so that readers can see how they affect total cost per casemix-adjusted separation.

Differences in prostheses costs should be considered carefully as they reflect not only differential pricing of prostheses between the public and private sectors, but also the effect of bulk-purchasing arrangements in the public sector, and a wider range of often higher-priced products being available in the private sector (Australian Private Hospitals Association, sub DR65; Catholic Health Australia, sub. DR62; Medical Technology Association of Australia, sub. DR48).

At an aggregate level, participants suggested that the Commission's method for estimating prostheses costs may overstate the relative difference between public and private sectors, due to there being proportionally fewer cases with significant prostheses costs in the public sector (for example, Australian Health Services Alliance, sub. DR54). This means that there are a large number of separations over which the total prostheses expenditure is spread.

In order to provide an indication of prostheses costs for procedures where they are commonly used, the Australian Health Service Alliance (sub. DR53) suggested that the prostheses cost per casemix-adjusted separation be calculated using only DRGs with an average prostheses cost over $30 per separation. Using this approach, the Commission estimated that the prostheses cost per casemix-adjusted separation — using this constrained segment of separations and DRGs — was $790 and $1514 in public and private hospitals respectively in 2007-08.[5]

Capital costs

The Commission's experimental estimates suggest that capital costs account for a notable proportion of total costs in both sectors, and so should be included in any cost comparison. This is consistent with broader data published by the Australian Institute of Health and Welfare (AIHW 2009c), which show that capital expenditure on health facilities and investments accounted for 5.4 per cent of Australia's total health spending in 2007-08.

At a national level, the Commission's experimental estimates suggest that capital cost per casemix-adjusted separation in public hospitals was over 80 per cent higher than in private hospitals. This is largely due to a significant difference between sectors in the estimated UCC. The Commission's experimental estimates suggest that, in 2007-08, the UCC per casemix-adjusted separation was around $280 in public hospitals, compared to around $100 in the private sector.

The Commission acknowledges that this result is particularly reliant on a range of data sources and adjustments to make the data comparable, with the experimental UCC estimates for both private and public hospital thought to be at the lower range of the spectrum. This is particularly apparent with the private sector UCC estimates, which rely on asset values estimated using a perpetual inventory model (appendix D).

NSW Department of Health (sub. 41; sub. DR64) and Dr. John Deeble (sub. DR56) favoured a different approach in which profits were used to measure the UCC for private hospitals. Such an approach is likely to be misleading because many private hospitals are run on a not-for-profit basis. A further problem is that it would confuse profits recorded for accounting purposes with the economic concept of the UCC (appendix D). Nevertheless, despite using a different methodology, both NSW

[5] Using the Commission's DRG-level cost estimates for the Discussion Draft, the Australian Health Service Alliance (sub. DR53) estimated the prostheses costs per casemix-adjusted separation for public and private hospitals to be $782 and $1512 respectively. These figures are slightly different to those presented above due to revision of the cost estimates since the Discussion Draft.

Department of Health and Dr. Deeble appear to have reached a similar conclusion to that found by the Commission. NSW Department of Health (sub. 41) estimated that the average amount of capital used per bed in public hospitals is much higher than in private hospitals ($388 000 versus $244 000 per bed). Dr. Deeble (sub. DR56) agreed that capital costs would be significantly higher in public hospitals compared to private hospitals.

The Commission's results are also consistent with comments from other study participants:

> A presentation given by the Queensland Department of Health in 2008 … on the development of the new Queensland Children's Hospital indicates that the cost per bed for the 360 public hospital beds is in the order of $3.055 million per bed or $14 763 per square metre. This compares with current costs from the acute private hospital sector in Queensland of around $5000 per square metre for high-cost areas such as operating theatres and $3500 per square metre for areas such as patient wards/rooms and administrative offices. The differential is in the order of 250–300 per cent. (Australian Private Hospitals Association, sub. 25, p. 8)
>
> Whilst it is always difficult to directly compare construction costs in the healthcare environment, the UCH [UnitingCare Health] experience over the last two years has shown that construction costs per bed (excluding equipment and professional fees) is around $450 000. (UnitingCare Health, sub. 15, p. 2)

The Commission undertook a sensitivity analysis to test the robustness of its conclusion on the relative size of capital costs in the public and private sectors. This showed that capital costs were higher in public hospitals than private hospitals under a range of plausible assumptions (appendix D).

Costs by region and hospital size

The previously noted pattern in the cost components was also evident by region and hospital size (tables 5.3 and 5.4). That is, general hospital and capital costs were lower in the private sector, whereas prostheses, and medical and diagnostics costs were lower in the public sector.

Based on the estimates, it appears that total cost per casemix-adjusted separation was essentially the same for public and private hospitals in major cities. Total cost was also estimated to be similar across sectors in inner regional areas, and for very large and large hospitals. However, private hospitals were estimated to have lower costs than public hospitals when located in outer regional areas, and when of medium to very small size.

Table 5.3 **Cost per casemix-adjusted separation by region and sector, 2007-08**[a]

Dollars

	Major cities		*Inner regional*		*Outer regional*	
Cost component	*Public*	*Private*	*Public*	*Private*	*Public*	*Private*
General hospital[b]	2 552	1 948	2 373	2 013	2 802	1 718
Pharmacy	192	71	181	49	155	33
Emergency	215	37	202	14	142	–
Medical & diagnostics[c]	792	1 360	866	1 246	813	1 406
Prostheses	136	557	123	468	104	308
Capital[d]	362	229	227	193	254	143
Total[e]	4 249	4 204	3 972	3 983	4 270	3 609

	Remote[f]		Very remote[f]	
	Public	*Private*	*Public*	*Private*
General hospital[b]	3 712	..	4 947	..
Pharmacy	124	..	209	..
Emergency	316	..	292	..
Medical & diagnostics[c]	707	..	776	..
Prostheses	11	..	1	..
Capital[d]	343	..	381	..
Total[e]	5 212	..	6 607	..

[a] Regions are based on ABS *Australian Standard Geographical Classification (ASGC)*, Cat. no. 1216.0. Costs are casemix adjusted using DRG-level cost weights for public and private hospitals combined. [b] NHCDC cost buckets for ward nursing, non-clinical salaries, allied health, critical care, operating rooms, ward supplies and other overheads, on-costs, hotel costs, and specialist procedure suites. [c] Combination of data from the NHCDC (ward medical, imaging and pathology) and HCP (medical charges, which in the HCP includes diagnostics). [d] Depreciation and the user cost of capital. [e] Totals may not equal sum of components due to rounding. [f] There are no private hospitals in remote and very remote regions. .. Not applicable. – Nil or rounded to zero.

Source: Productivity Commission estimates.

Table 5.4 **Cost per casemix-adjusted separation by hospital size and sector, 2007-08[a]**

Dollars

	Very large		*Large*		*Medium*	
Cost component	*Public*	*Private*	*Public*	*Private*	*Public*	*Private*
General hospital[b]	2 591	2 007	2 408	1 922	2 361	1 836
Pharmacy	203	82	165	48	127	45
Emergency	209	48	241	21	183	5
Medical & diagnostics[c]	816	1 393	762	1 324	840	1 310
Prostheses	139	614	110	500	124	405
Capital[d]	358	222	373	267	402	227
Total[e]	4 317	4 365	4 060	4 082	4 037	3 827

	Small		*Very small*	
	Public	*Private*	*Public*	*Private*
General hospital[b]	2 629	1 774	3 150	1 929
Pharmacy	105	42	102	87
Emergency	115	–	56	–
Medical & diagnostics[c]	769	1 346	711	629
Prostheses	102	299	22	16
Capital[d]	436	212	465	224
Total[e]	4 157	3 673	4 507	2 885

[a] Hospital size defined by annual casemix-adjusted separations as follows: very large (more than 20 001), large (10 001 to 20 001), medium (5001 to 10 000), small (2001 to 5000), and very small (up to 2000). Casemix adjustment for the purpose of allocating hospitals to a size group was undertaken by DOHA using separate cost weights for public and private hospitals. The casemix adjustment used by the Productivity Commission to calculate costs was based on DRG-level cost weights for public and private hospitals combined. [b] NHCDC cost buckets for ward nursing, non-clinical salaries, allied health, critical care, operating rooms, ward supplies and other overheads, on-costs, hotel costs, and specialist procedure suites. [c] Combination of data from the NHCDC (ward medical, imaging and pathology) and HCP (medical charges, which in the HCP includes diagnostics). [d] Depreciation and the user cost of capital. [e] Totals may not equal sum of components due to rounding. – Nil or rounded to zero.

Source: Productivity Commission estimates.

Hospitals that are very small, or located in a remote or very remote region, were estimated to have relatively high costs per separation, even after casemix adjustment. This is consistent with the view that remote and small hospitals face additional costs because of their remoteness and/or inability to achieve the scale economies of larger establishments in more densely populated regions. The Tasmanian Department of Health and Human Services (sub. 37) cautioned that the scale inefficiencies of small hospitals also tend to increase the cost of larger public

hospitals, because the larger hospitals in a health network often provide administrative support for smaller hospitals.

Some participants were concerned that inclusion of the relatively costly remote and very remote hospitals in other comparisons — national, jurisdiction and hospital size — biased the results in favour of private hospitals, since all remote and very remote hospitals are in the public sector. However, this effect is likely to be relatively minor and would not change the broad conclusions in this chapter. In the 2007-08 NHCDC sample provided by DOHA, only 5.4 per cent of hospitals and 1.6 per cent of separations in the public sector were in remote and very remote regions (appendix D). For very small hospitals these proportions were larger — 15 per cent of hospitals and 21 per cent of separations for very small public hospitals were in remote or very remote regions — but remote and very remote establishments still accounted for a minority of the public-sector sample.

Excluding remote and very remote hospitals from the cost analysis would has a limited impact on the overall cost per casemix-adjusted separation. It was estimated that the cost per casemix-adjusted separation for public hospitals would decrease by around $10 at a national level, and around $1 for Queensland, $16 for South Australia, $4 for Western Australia, and $52 for Tasmania, the ACT and NT combined.[6] It is estimated that the cost per casemix-adjusted separation for small and very small public hospitals would fall by $116 (2.8 per cent) and $224 (5 per cent) respectively if remote and very remote hospitals were excluded from the analysis.

Very large hospitals were estimated to have among the highest cost per casemix-adjusted separation. This probably reflects the tendency of the largest hospitals to treat patients with the most complex clinical conditions, maintain a capability for major trauma events that is rarely used, and provide a large proportion of clinical training.

6 Excluding remote and very remote hospitals does not change reported estimates for public hospitals in New South Wales or Victoria, as the NHCDC sample had no hospitals in these jurisdictions within the remote or very remote category.

FINDING 5.2

The Commission's experimental cost estimates suggest that, at a national level in 2007-08, public and private hospitals had broadly similar costs per casemix-adjusted separation. There were, however, significant differences in the composition of estimated costs:

- *the combined cost of nursing and other salaries, allied health, operating rooms and specialist suites, critical care, hotel costs, supplies, and on-costs were on average higher for public hospitals*
- *medical and diagnostics costs were higher for private hospitals, although there are some recognised constraints with available data not separately identifying all medical costs in public hospitals*
- *prostheses costs were higher in the private sector, but this is also likely to reflect a broader range of products being available for use in private hospitals compared to the public hospital sector*
- *capital costs were estimated to be somewhat higher for public hospitals, but the extent of this result is particularly reliant on a range of data sources and adjustments to make the data more comparable.*

These differences were also evident when the estimates were disaggregated by jurisdiction, region and hospital size.

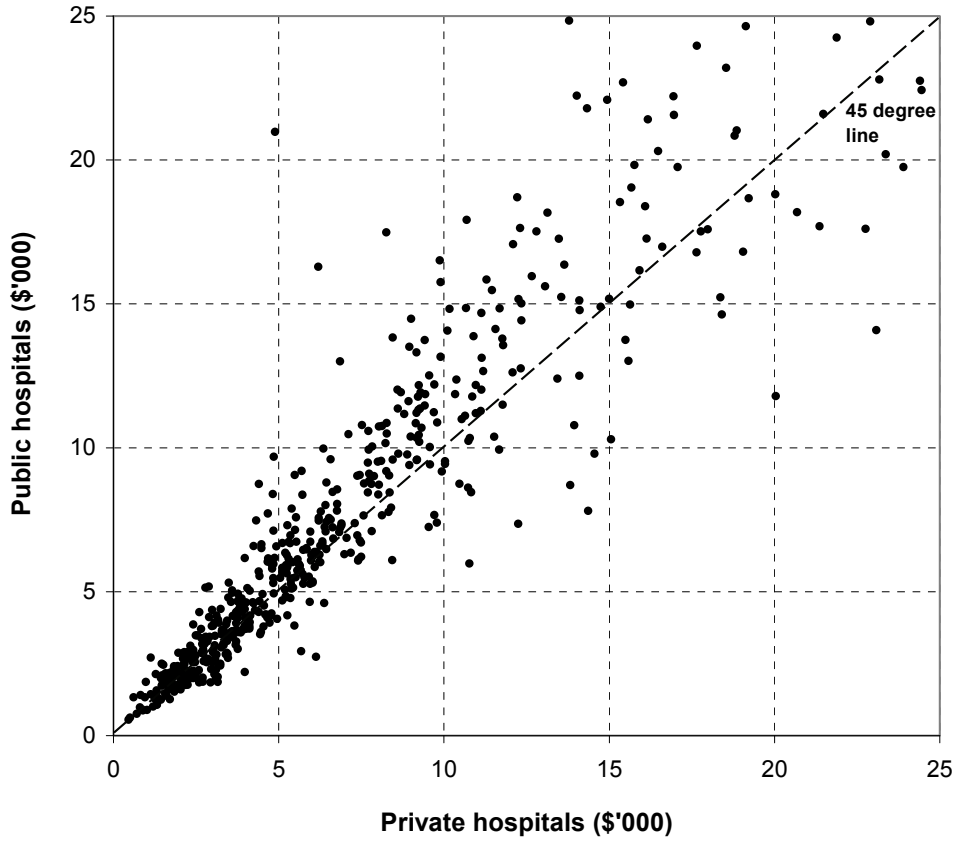
5.4 Average cost of individual DRGs

The experimental cost estimates for individual DRGs can be downloaded from the Commission's website at http://www.pc.gov.au/projects/study/hospitals. These cover 592 DRGs and are available by jurisdiction, region and hospital size.

In summary, the DRG-level cost estimates suggest that, in 2007-08, many DRGs had broadly similar costs in public and private hospitals. This is evident from clustering around the 45 degree line in figure 5.2, which compares the cost per separation for individual DRGs in the public and private sectors.

Nevertheless, it is also apparent that the cost in one sector relative to the other varies between DRGs. This variation can be examined by using a measure of relative cost — the ratio of cost per separation in public hospitals relative to that in private hospitals. If a DRG has a public-private cost ratio of one, it indicates that public and private hospitals have the same cost per separation. A ratio of less than (more than) one indicates that the cost per separation is lower (higher) in public hospitals relative to private hospitals.

Figure 5.2 **Comparison of cost per separation for individual DRGs in public and private hospitals, 2007-08[a]**



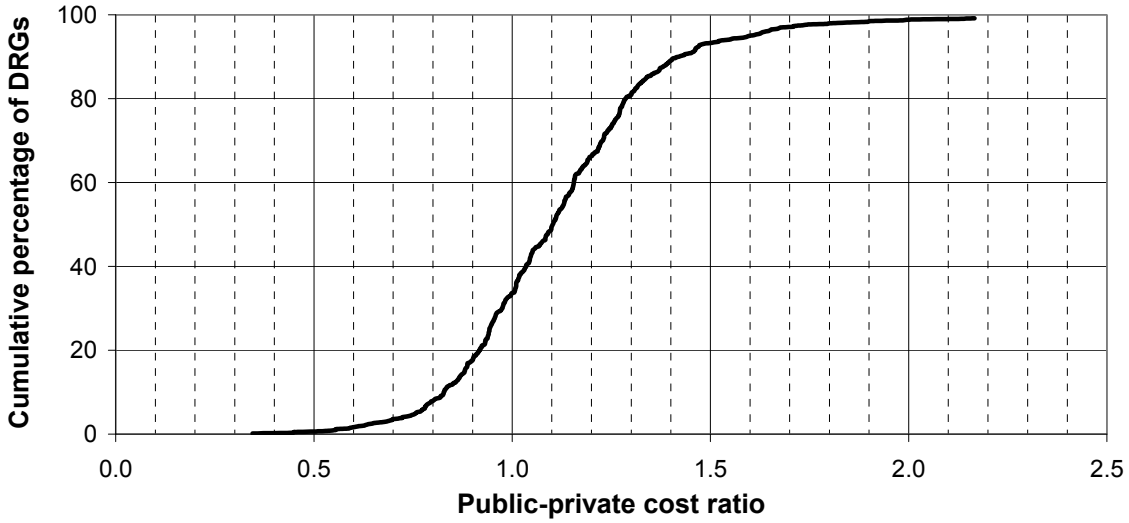
[a] A point is located above (below) the 45 degree line if the relevant DRG has a higher (lower) cost per separation in public hospitals than in private hospitals. DRGs with a cost per separation of more than $25 000 in at least one sector are not shown on the graph. These excluded DRGs accounted for less than 1.5 per cent of separations among the sampled DRGs and hospitals.

Source: Productivity Commission estimates.

In figure 5.3, DRGs are ranked from the lowest public-private cost ratio to the highest, and graphed against their cumulative share of all DRGs.

Given the experimental nature of the estimates, the Commission suggests that there is no discernable difference in cost between sectors if the estimated cost of a DRG in public hospitals is within 90 to 110 per cent of the cost in private hospitals (a public-private cost ratio in the range of 0.9 to 1.1). Around 32 per cent of the analysed DRGs were estimated to have an average cost per separation in public hospitals that was within this range. These DRGs accounted for 29 per cent of separations and 40 per cent of aggregate costs among the sampled DRGs and hospitals.

Figure 5.3 **Cumulative distribution of DRGs ranked by public-private cost ratio, 2007-08[a]**



a The public-private cost ratio measures cost per separation for a DRG in public hospitals relative to that in private hospitals. A ratio of one indicates that, for the relevant DRG, public and private hospitals have the same cost per separation. A ratio of less than (more than) one indicates that the cost per separation is lower (higher) in public hospitals. Three DRGs with a public-private cost ratio of more than 2.5 are not shown on the graph. These excluded DRGs accounted for about 0.04 per cent of separations among the sampled DRGs and hospitals.

Source: Productivity Commission estimates.

Around 18 per cent of the analysed DRGs were estimated to have an average cost per separation in public hospitals that was at least 10 per cent lower than in private hospitals (a public-private cost ratio of less than 0.9). These DRGs accounted for 22 per cent of separations and 20 per cent of aggregate costs among the sampled DRGs and hospitals.

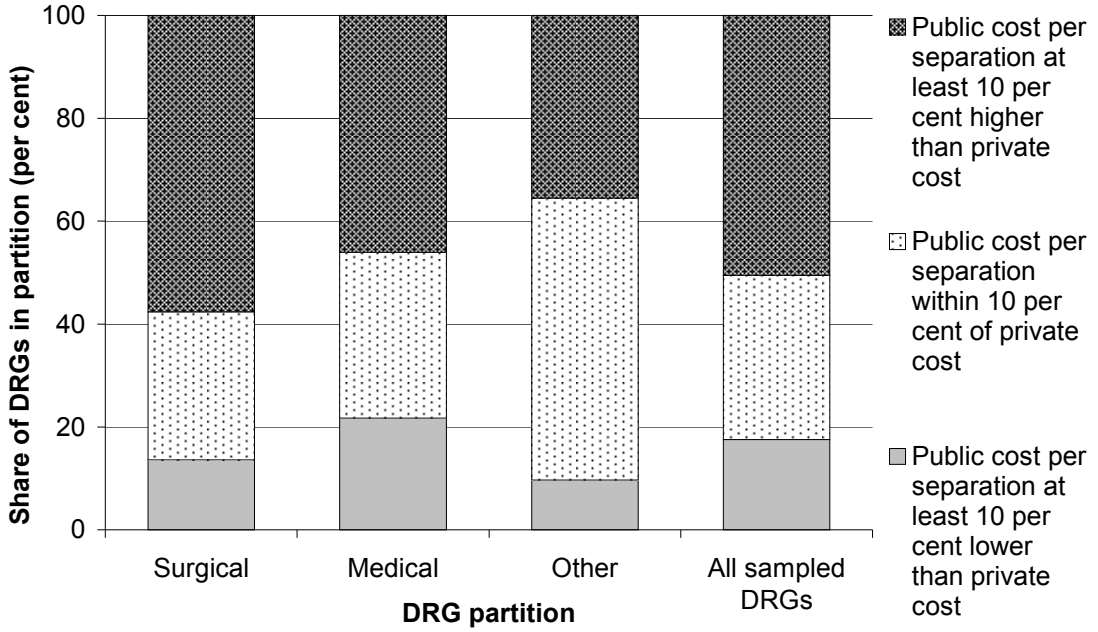
Around 50 per cent of the analysed DRGs were estimated to have an average cost per separation in public hospitals that was more than 10 per cent higher than in private hospitals. These DRGs accounted for 48 per cent of separations and 40 per cent of aggregate costs among the sampled DRGs and hospitals.

DRG partitions and Major Diagnostic Categories

Under the DRG classification system, individual DRGs can be grouped into the 'partitions' of surgical, medical or other. The experimental estimates suggest that almost three-fifths of surgical DRGs had a cost per separation in public hospitals that was at least 10 per cent higher than in private hospitals (figure 5.4). Medical DRGs were where public hospitals performed most strongly in terms of cost relative to the private sector, with 22 per cent of medical DRGs having a cost per separation

in public hospitals that was at least 10 per cent lower than in private hospitals. Nearly one third of medical separations occur in these DRGs.

Figure 5.4 **DRG partitions by public cost relative to private cost, 2007-08[a]**



a Separations are assigned to the surgical, medical or other partitions on the basis of whether the separation involves a procedure, and whether that procedure requires an operating room. A procedure is a clinical intervention that carries a procedural or anaesthetic risk, and/or requires specialised training, facilities or equipment. A separation is classified as surgical if it involves at least one operating-room procedure; medical if there is no procedure; and other if it involves a procedure performed outside of an operating room, such as dental extractions and colonoscopies.

Source: Productivity Commission estimates.

Around 55 per cent of the DRGs classified as 'other' were found to have no clear cost difference (a cost per separation in public hospitals between 90 and 110 per cent of the cost in private hospitals).[7] The strong performance of private hospitals in surgical and other DRGs could reflect their tendency to specialise in relatively routine procedures, whereas public hospitals have to provide a broader range of services and manage the potentially disruptive effects of emergency admissions (Queensland Health, sub. 27; SA Department of Health, sub. 4; Tasmanian Department of Health and Human Services, sub. 37).[8]

7 A separation is classified as 'other' if it involves a procedure performed outside of an operating room, such as dental extractions and colonoscopies.

8 Chapters 2 and 3 of this report discuss emergency departments in public and private hospitals respectively.

The DRG classification system also enables DRGs to be grouped into over 20 different Major Diagnostic Categories (MDCs). The Commission's experimental estimates suggest that, in 2007-08, cost per separation in public hospitals was:

- over 10 per cent *higher* than in private hospitals for almost half the MDC groups
- between 90 and 110 per cent of that in private hospitals for half the MDC groups
- over 10 per cent *lower* than in private hospitals for only one MDC (diseases and disorders of the circulatory system).[9]

FINDING 5.3

A disaggregation of the Commission's experimental cost estimates by diagnosis-related groups (DRGs) suggests that in 2007-08:

- *nearly one-fifth of DRGs had an average cost in public hospitals that was at least 10 per cent lower than in private hospitals, and about half of DRGs had an average cost in public hospitals that was more than 10 per cent higher than in private hospitals*
- *almost three-fifths of surgical DRGs had a cost per separation in public hospitals that was at least 10 per cent higher than in private hospitals, and medical DRGs were where public hospitals performed most strongly in terms of cost relative to the private sector.*

Casemix complexity

A number of participants asserted that, where public hospitals have a higher cost per casemix-adjusted separation than private hospitals, this is because public hospitals have a more complex casemix (for example, Queensland Health, sub 27; Tasmanian Department of Human Services, sub. 37).

To investigate this issue, the Commission examined the relative importance (in terms of separations) of individual DRGs in each sector, and their associated cost weight. As noted above, a cost weight measures a DRG's average cost across all hospitals, relative to the average cost for all DRGs across all hospitals. Cost weights are commonly used as an indicator of the relative complexity of a DRG, and to calculate an overall casemix-adjusted cost per separation.

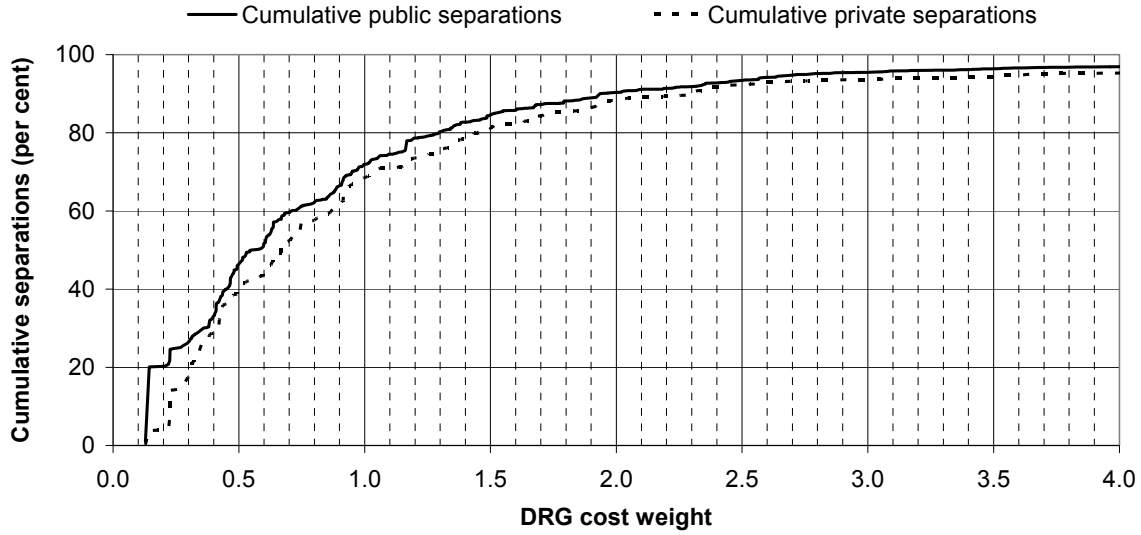
The Commission estimate that the average cost weight for DRGs in public hospitals was 0.96 in 2007-08, suggesting that the overall casemix of public hospitals is

9 Cost per casemix-adjusted separation was estimated for each MDC by dividing the total cost over all separations in that MDC by the total number of cost-weighted separations in that MDC.

slightly less complex than that of private hospitals.[10] The average cost weight for DRGs in private hospitals was estimated to be 1.09.

In figure 5.5, DRGs are ranked from the lowest cost weight to the highest in each sector, and graphed against their cumulative share of separations. It can be seen that, in 2007-08, public hospitals had a greater share of their workload in DRGs with a relatively low cost weight. Around 25 per cent of separations in public hospitals had a cost weight of less than 0.25, in comparison to 14 per cent in private hospitals.

Figure 5.5 **Cumulative distribution of separations in each sector ranked by DRG cost weight, 2007-08[a]**



a DRG cost weight is the average cost for each DRG relative to the average cost for all DRGs. DRGs with a cost weight of more than four are not shown on the graph. There are 86 DRGs not shown, which accounted for 3.1 per cent of public separations and 4.7 per cent of private separations in the NHCDC sample.

Source: Productivity Commission estimates.

Differences in average cost weights are largely driven by the different number of separations in low-cost and high-volume DRGs, such as renal dialysis and chemotherapy, that are experienced in the public and private sectors. When the renal dialysis and chemotherapy DRGs are excluded from the calculations, the average cost weights converge to equal 1.00 in both the public and private sectors.

10 This was calculated as a weighted average, where the weights were the number of separations for each DRG.

5.5 Improving future cost comparisons

As noted previously, the cost estimates in this report should be considered experimental, since they are based on datasets with inconsistent collection methods and missing information. In addition, there was a limit to which differences between the public and private sectors — such as types of patients treated and services provided — could be controlled for without using advanced statistical methods. Multivariate techniques are used in chapter 8 to take account of the many factors influencing hospital performance.

The remainder of this chapter outlines foreshadowed improvements to the collection and reporting of cost data, and considers what other improvements could be made to improve the feasibility of future comparisons of public and private hospitals.

Foreshadowed improvements to data collections

In late 2008, the Council of Australian Governments (COAG) made the National Partnership Agreement on Hospital and Health Workforce Reform, in which jurisdictions agreed to introduce a nationally-consistent approach to activity-based funding (ABF) for public hospitals. (COAG 2008e). This will involve development of a nationally-consistent costing and funding model for all care types and all non-clinical hospital services, including teaching and research. The costing model is to be built on the NHCDC.

The Australian Government committed $154 million from 2008-09 to 2012-13 to fund the ABF initiative, with $133 million of this to be allocated to the states and territories. It was agreed that the Australian Government would provide national leadership and coordination for the development of classification systems and costing models.

Specific performance targets were outlined for the development of ABF infrastructure in the COAG partnership agreement:

- By 30 June 2011, 100 per cent of admitted-patient episodes are to be classified and costed using a nationally-consistent model.
- By 30 June 2015, 100 per cent of emergency-department services, sub-acute, outpatient services and hospital-auspiced community health services are to be classified and costed using a nationally-consistent model.
- If agreed by COAG, by 30 June 2016, 100 per cent of admitted-patient episodes, emergency department, sub-acute outpatient services and hospital-auspiced

community health services are to be funded through a nationally-consistent ABF model.

These developments would go a long way towards addressing the problems that the Commission has encountered with existing cost data for public hospitals. It would, however, be desirable for all private hospitals to report cost data using the same methodology as public hospitals. It is notable therefore that the COAG partnership agreement gives the Australian Government responsibility, in collaboration with states and territories, to engage with the private sector to improve the comparability of performance between the public and private sectors. DOHA (sub. 32) noted that steps have already been undertaken in this regard.

However, at this stage it appears that participation in the NHCDC will remain voluntary for private hospitals. It is unlikely that this will ensure that the quality and comparability of private hospital data improves. Catholic Health Australia, representing a large proportion of private hospitals, noted that it:

> … supports compulsory participation of the private sector in contributing to the cost data collections and for data input into these collections to be made consistent across all jurisdictions and between the public and private sectors. (sub. DR62, p. 2)

The Australian Health Service Alliance (sub. 1) suggested that consideration be given to making it mandatory for all hospitals, or at least all hospitals other than the very small ones, to provide data to the NHCDC.

Participants suggest that there may be scope to rationalise and improve consistency with other reporting requirements — including to the HCP as part of the regulation of private health insurance — so that there is not a major additional reporting burden on private hospitals from being required to participate in the NHCDC (Australian Private Hospitals Association, sub. 25; Catholic Health Australia, sub. DR62; DOHA, sub. 32). DOHA noted:

> … anecdotal evidence suggests that some private facilities may contribute to as many as nine different collections with different formats and requirements, and those that have facilities in different jurisdictions may have up to eight different reporting regimes to comply with for very similar information. (sub. 32, p. 28)

Similarly, the Australian Private Hospitals Association (sub. 25, p. 6) called for a rationalisation of the 'existing plethora of regulation and reporting requirements imposed on private hospitals'.

Catholic Health Australia (sub. 20; sub. DR62) advocated the establishment of an Office of Hospital Cost Data within DOHA to oversee a nationally-consistent data collection for both public and private hospitals. It also recommended that, with the implementation of ABF for public hospitals, Commonwealth funding to the states

should be made contingent on them providing data that are consistent and high quality. In addition, an independent data audit agency was proposed to ensure the quality of submitted data.

Capital costs

The Commission's experimental estimates for capital costs are particularly reliant on a range of data sources and adjustments to make the data comparable. While the precise value of capital costs remains open to debate, the Commission considers that this item is likely to account for a notable share of total costs and so should be included in data collections.

The shift to a nationally-consistent data collection for ABF purposes may partially address problems with the reporting of depreciation, as this item is already covered by the NHCDC, but it is unclear what will be done to measure the UCC. This will require consistent approaches to measuring asset values, which is currently not the case, particularly for public hospitals. For private hospitals, the total value of assets is not currently available, and so the Commission had to estimate it from investment and depreciation data collected by the ABS (2008e). Thus, there is a strong case for including asset values, reported on a consistent basis, for both public and private hospitals in the NHCDC. This would need to include assets subject to public-private partnership arrangements, contracting out of public-patient services to the private sector, and the use of leased assets.

Items billed directly to patients

It is unclear how the move to a nationally-consistent data collection for ABF purposes would address problems with identifying medical and diagnostics costs for private patients. The Commission has had to rely on HCP data for these items, but public hospitals often fail to assign private-patient costs to DRGs when coding HCP data. To address this problem, it was necessary to apportion unassigned medical costs across DRGs by using separation data for private patients in public hospitals and private hospital cost weights (appendix D).

It would be desirable for all costs associated with an episode of care — including those directly billed to patients, such as medical, diagnostic and pharmaceutical costs — to be captured in the new national cost collection.

Prostheses

The Commission's experimental estimates suggest that the cost of prostheses in public hospitals is considerably lower than in private hospitals. As noted previously, this is consistent with the expectations of study participants, but there may also be problems with how prostheses costs are currently reported. The NHCDC data obtained by the Commission seem to have noticeably different prostheses costs across separations within a particular DRG and sector. The Commission understands that changes are being considered for the next round of the NHCDC to address some of the problems with the reporting of prostheses costs.

Hospital administration costs and head-office overheads

As noted previously, concerns have been expressed in recent years about a rapid increase in hospital administrative staff relative to numbers of beds and treated patients. As noted above, it was not possible to separately identify the wages and salaries of administrative staff in the NHCDC data, because administrative staff are often included in the costs of their relevant work area, such as operating rooms, pathology, and emergency departments. There are also inconsistencies between jurisdictions in how the costs of administrative staff are allocated. There are opportunities for improvements in data to respond to these identified deficiencies.

Study participants noted that head-office overheads — such as for centralised procurement of supplies and provision of information-technology services — should also be included in cost comparisons as they are part of the cost of supplying hospital services (for example, Australian Health Insurance Association, sub. 18; Australian Medical Association, sub. 28; Australian Private Hospitals Association, sub. 25). There are currently inconsistencies between jurisdictions/hospitals in the extent to which head-office overheads are reported in the NHCDC, and this is not clearly documented. The Commission understands that the Technical Reference Group for the NHCDC — comprising representatives from the jurisdictions and private hospital groups — has been considering an approach to collect head-office overheads consistently in future cost data collections.

FBT exemption

As noted above, the Commission has attempted to achieve like-for-like comparisons by removing the FBT liability that for-profit private hospitals incur due to not having access to the FBT exemption available to public and not-for-profit hospitals. This involved adjusting the NHCDC cost data for ward medical, ward nursing, and non-clinical salaries. It is possible that this adjustment only partially accounts for

the additional FBT burden faced by for-profit hospitals, since some labour costs are incorporated into other NHCDC cost buckets. Ideally, the adjustment would be applied to the NHCDC cost bucket for on-costs, as this is where FBT is supposed to be included by reporting hospitals (DOHA, sub. 32). However, the Commission did not have access to data on the proportion of on-costs that were FBT payments.

Pharmaceuticals

As noted above, the cost of medicines used to treat hospital patients is not fully captured by the NHCDC. Ideally, the data would include the cost of medicines routinely provided by hospitals in areas such as wards and operating theatres, the more expensive highly-specialised drugs prescribed for treatments such as chemotherapy, and other medicines obtained through prescriptions for individual hospital patients (including those currently subsidised under the Pharmaceutical Benefits Scheme and provided through community pharmacies).

FINDING 5.4

A foreshadowed shift to nationally-consistent activity-based funding for public hospitals is expected to eventually lead to more robust cost data for the public sector. However, there remains considerable scope to improve the quality and consistency of hospital and medical cost data in Australia. In particular, there is a need for:

- *private hospitals to report cost data using the same methodology as public hospitals, and to continue to have a high level of participation in the National Hospital Cost Data Collection, so that the data are reliable and can be disaggregated by sector, region, and size and type of facility*
- *items directly billed to private patients — such as some medical, diagnostics and medicines — to be linked with cost data reported by hospitals so that all costs associated with an episode of care are captured in a single collection*
- *reliable data on capital costs, hospital administration costs, head-office overheads, and the cost of medicines prescribed to hospital patients*
- *quantification of the additional FBT liability that for-profit hospitals incur by not having the FBT exemption that is available to other hospitals.*

This may require a strengthening of data-related provisions in the National Healthcare Agreement for public hospitals, and data-reporting requirements for private hospitals. If this is the case, governments need to be conscious of the regulatory burden on reporting hospitals and, where possible, seek to limit it by avoiding duplication and inconsistency in reporting arrangements, and by utilising cost-effective electronic reporting of data.