

# Costs of acute admitted patients in public hospitals from 2011–12 to 2013–14

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This report shows the variation in the average cost of delivering similar services to similar patients in major metropolitan public hospitals for 2013–14 and, for the first time, changes in average costs for individual hospitals from 2011–12 to 2013–14.

In 2013–14, some public hospitals spent nearly twice as much as others to provide similar services to similar groups of acute admitted patients. The average cost of care ranged from \$3,100 at one hospital to \$6,100 at another (Figure 1). The four major metropolitan public hospitals with the lowest average cost of care in 2013–14, and the four hospitals with the highest average cost of care in 2013–14, can be seen in Table 2.

The report also found that across all three financial years, the expenditure covered in this report for delivering acute care increased for major metropolitan public hospitals. However, this increase was accompanied by an increase in hospital activity relating to acute admitted patients. This means that the average cost of care for major metropolitan public hospitals remained relatively unchanged over these years. These cost figures have not been adjusted for inflation, meaning that as a group these hospitals have achieved improvements in efficiency (Table 1 and Figure 1).

In 2013–14, 16 major metropolitan public hospitals were found to have maintained or decreased their average cost of care since 2011–12. Notably, some of these were among those hospitals with the lowest average cost of care nationally in 2011–12 (Figure 1).



The cost of providing care to similar acute patients can be almost

**2X** as high depending on the hospital



The costs incurred by public hospitals to deliver a notional 'average' service to acute admitted patients, ranged from:

**\$3,100 to \$6,100**

**Table 1: Cost per National Weighted Activity Unit (NWAU) and percentage change for acute admitted patients, major metropolitan public hospitals, 2011–12 to 2013–14**

Peer average measures	2011–12	2012–13	2013–14	Percentage change
Peer average expenditure per hospital	\$214,775,000	\$222,300,900	\$228,444,200	+6%
Peer average NWAU per hospital	48,987	50,917	51,668	+5%
Peer average Cost per NWAU	\$4,380	\$4,370	\$4,420	+1%

See page 5 for notes and sources.

References can be found in the Technical Supplement at [www.myhospitals.gov.au/publications](http://www.myhospitals.gov.au/publications)

Visit [www.myhospitals.gov.au](http://www.myhospitals.gov.au) for more detailed results

# Introduction

In 2013–14, the running costs of public hospitals (\$44 billion) represented the largest proportion of the \$154.6 billion that was spent on health by all governments, insurers and patients.<sup>1,2</sup> Across Australia, data are available and comparable across time for 41 major metropolitan public hospitals, with limited information available for a further six. These 47 hospitals account for nearly \$10 billion of the \$24.8 billion providing care to acute admitted patients.<sup>3</sup>

This report shows the amounts of money each of those 47 hospitals spent in 2013–14 to provide a notional ‘average’ hospital service to their acute admitted patients. These results were calculated by comparing a hospital’s running costs to a measure of output, using something called a National Weighted Activity Unit (NWAU). More detail about this measure and what it means is in the box opposite.

A hospital’s Cost per NWAU can help us to understand how efficiently a hospital is delivering an ‘average’ hospital service relative to other hospitals or relative to itself over time. Generally speaking, a low or falling Cost per NWAU indicates relatively high or improving efficiency, and a high or rising Cost per NWAU indicates low or worsening efficiency. For the purposes of this report the average cost of a given output is considered a measure of efficiency.

However, Cost per NWAU takes no account of other aspects of the quality or effectiveness of that ‘average’ hospital service besides efficiency, and changes in efficiency may or may not affect the quality or effectiveness of the care provided. This means that Cost per NWAU results are best considered in light of other indicators of the quality or effectiveness of hospital services.

Results for Cost per NWAU may be affected by service volume as well as expenditure. In other words, a hospital’s Cost per NWAU will fall (suggesting an improvement in efficiency) if it spends the same amount of money but provides an increased number of

services. Alternatively, a hospital’s Cost per NWAU will increase (suggesting worsening efficiency) if it spends a similar amount of money but provides fewer services.

Every day, decisions are made in a hospital, or within governments, that influence the efficiency of a hospital, for example, the number and types of tests, treatments, devices, procedures, the number of days a patient stays in hospital, whether a patient is admitted and the staffing levels required. These decisions affect the cost of delivering services.

Accordingly, this report aims to equip decision makers with comparable performance information to support their work in delivering patient care without placing unreasonable resource demands on health care providers or funders.

## About the data

Data used to calculate the measures in this report were sourced from the National Hospital Cost Data Collection (NHCDC) and the Admitted Patient Care National Minimum Data Set (APC NMDS) and the Hospital Casemix Protocol (HCP) data collection. These collections receive data from the states and territories, and private health insurers; all of whom rely on data recorded by individual hospitals.

The Authority determined that, to support the national fair comparison of the efficiency of Australia’s largest public hospitals, the report would use a subset of total costs. The report focuses on the costs of providing acute admitted care, which represents about 70% of the running costs of a hospital.<sup>3</sup>

The Authority also determined that nominal costs (costs unadjusted for inflation) would be used in the analysis. Hospitals are highlighted where growth in the nominal cost of care was less than the inflation rate. This below-inflation increase in the average cost of care is presented as an improvement in efficiency.

# How average cost of care is measured

## What is an NWAU?

The National Weighted Activity Unit (NWAU) was developed by the Independent Hospital Pricing Authority to set the pricing of public hospital services. The NWAU allows different hospital activities to be expressed in terms of a common unit of activity.

An 'average' public hospital service is worth one NWAU. More intensive and expensive activities are worth multiple NWAUs, and simpler and less expensive activities are worth fractions of an NWAU. For example, a typical case of cellulitis is assigned 0.8 NWAUs, as this condition requires fewer hospital resources than (say) a typical hip replacement, which is assigned 4.2 NWAUs.

Because of this weighting, the NWAU accounts for the differences in the complexity of patients' conditions or procedures, and a selection of individual patient characteristics.

For more detailed information on the comparable costs and adjustments see the Technical Supplement at [www.myhospitals.gov.au/publications](http://www.myhospitals.gov.au/publications)

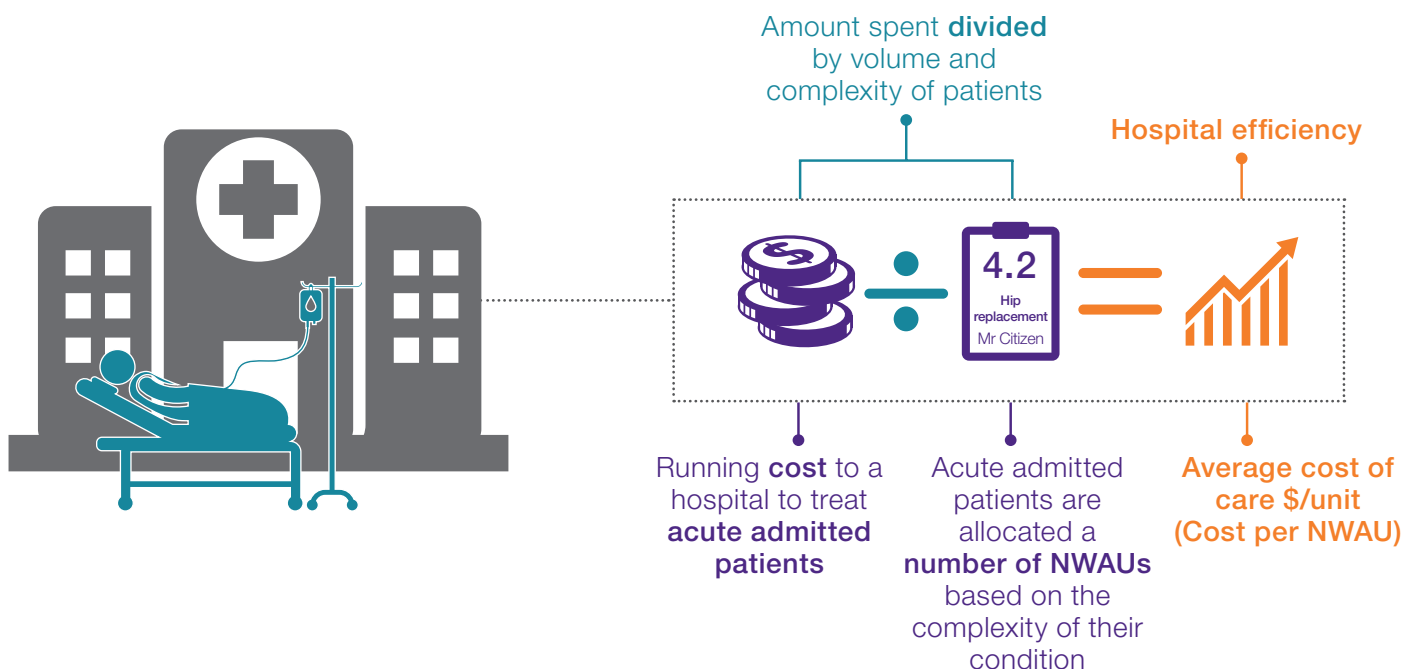
## What is Cost per NWAU?

Cost per NWAU is the cost of a notional 'average' public hospital service that was provided to acute admitted patients whose treatment was eligible for Activity Based Funding. It allows an assessment of hospital efficiency.

To ensure the national comparability of public hospitals the Cost per NWAU:

- Includes a subset of comparable running costs, costs which were accounted for similarly across states and territories. For example, it excludes property, plant and equipment costs
- Counts similar services to similar acute patients by using the NWAU. The NWAU represents both the volume and complexity of acute admitted patients; accounting for sicker patients, or patients requiring more complex care.

Cost per NWAU is calculated by dividing the total comparable running costs by the total NWAU for acute admitted patients to calculate the average cost of care to a hospital. This provides a measure of a hospital's efficiency.



# Key findings

## Cost per NWAU, 2013–14

In 2013–14, some major metropolitan public hospitals were found to cost almost twice as much as similar hospitals in the average cost of care, as measured by Cost per NWAU.

Across major metropolitan public hospitals, the average Cost per NWAU was \$4,420. The averages at individual major metropolitan public hospitals ranged from \$3,100 at one hospital to \$6,100 at another hospital (97% higher) (**Figure 1**).

In 2013–14, the lowest 10% and highest 10% of major metropolitan public hospitals are presented below.

**Table 2: Major metropolitan public hospitals with the highest and lowest average cost of care in 2013–14**

### Highest 10%

The Canberra Hospital (ACT)	\$6,100
Calvary Public Hospital (ACT)	\$5,800
Sir Charles Gairdner Hospital (WA)	\$5,600
Fremantle Hospital (WA)	\$5,500

### Lowest 10%

Dandenong Campus (Vic)	\$3,400
Western Hospital [Footscray] (Vic)	\$3,300
Casey Hospital (Vic)	\$3,200
Frankston Hospital (Vic)	\$3,100

Results for Cost per NWAU in 47 Australian **major metropolitan public hospitals** can be found in **Figure 2, page 7**.



Informing patients, supporting clinicians, driving improvement

The Authority has also updated the MyHospitals website [www.myhospitals.gov.au](http://www.myhospitals.gov.au) with data for more than 100 public hospitals.

In 2013–14, across **large metropolitan public hospitals**, the average Cost per NWAU was \$4,590. The averages at individual **large metropolitan public hospitals** ranged from \$3,600 at one hospital to \$5,800 at another hospital (61% higher):

### Highest 10%

Armadale-Kelmscott Memorial Hospital (WA)	\$5,800
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### Lowest 10%

Werribee Mercy Hospital (Vic)	\$3,600
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In 2013–14, across **major regional public hospitals**, the average Cost per NWAU was \$4,470. The averages at individual **major regional public hospitals** ranged from \$3,400 at one hospital to \$5,400 at another hospital (59% higher).

### Highest 10%

Mackay Base Hospital (Qld)	\$5,400
Royal Darwin Hospital (NT)	\$5,300

### Lowest 10%

Goulburn Valley Health [Shepparton] (Vic)	\$3,900
Port Macquarie Hospital (NSW)	\$3,900
Latrobe Regional Hospital [Traralgon] (Vic)	\$3,400

In 2013–14, across **large regional public hospitals**, the average Cost per NWAU was \$4,630. The averages at individual **large regional public hospitals** ranged from \$3,200 at one hospital to \$5,900 at another hospital (84% higher).

### Highest 10%

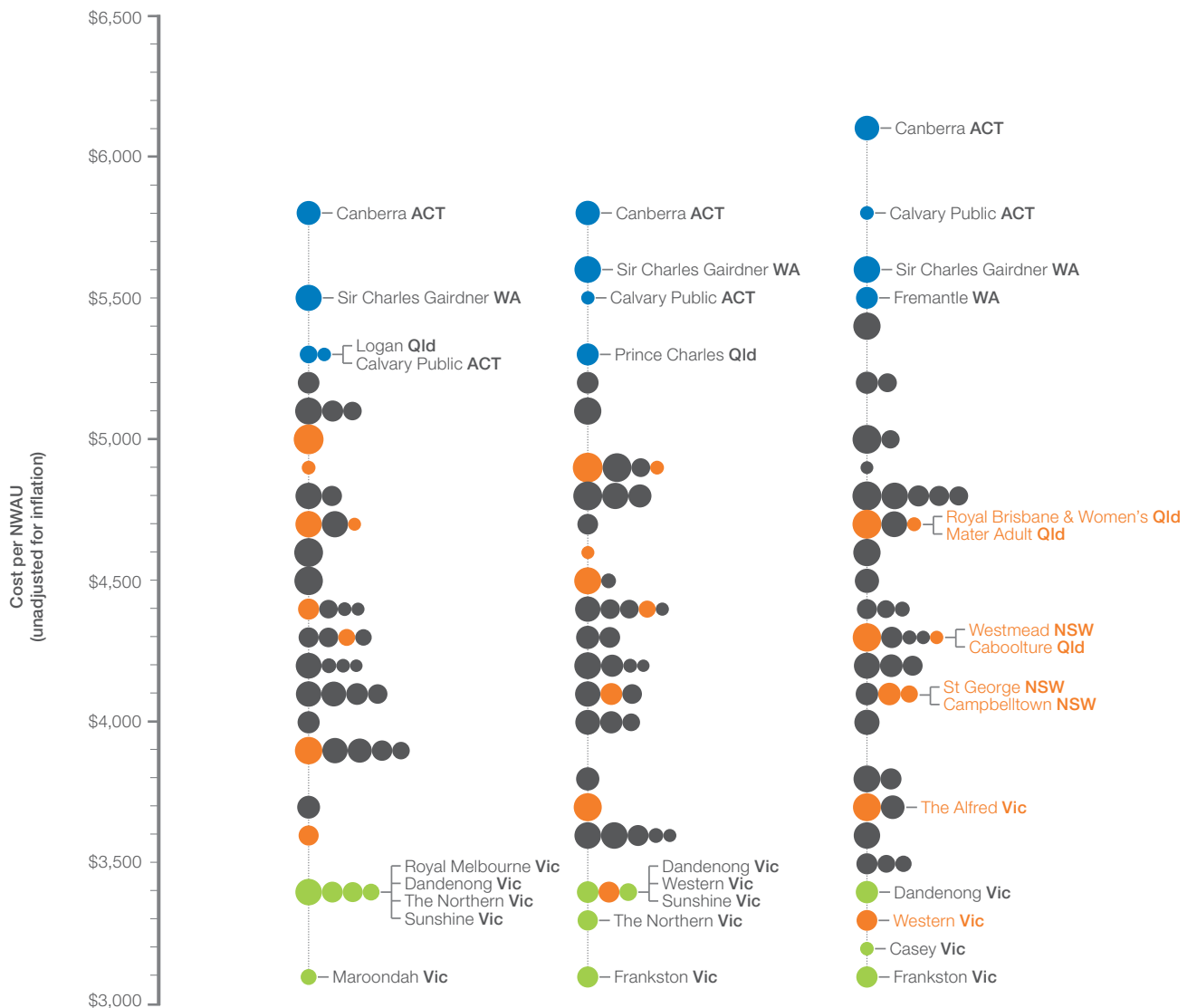
Bathurst Hospital (NSW)	\$5,900
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### Lowest 10%

Wimmera Base Hospital (Vic)	\$3,200
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**Figure 1: Cost per National Weighted Activity Unit (NWAU) for acute admitted patients, major metropolitan public hospitals, 2011–12 to 2013–14**

	2011–12	2012–13	2013–14
Peer average expenditure per hospital	\$214,775,000	\$222,300,900	\$228,444,200
Peer average NWAU per hospital	48,987	50,917	51,668
Peer average Cost per NWAU	\$4,380	\$4,370	\$4,420



Each circle represents a hospital and the size represents the units of activity for each hospital. 10,000 100,000

- Highest 10% of peer group hospitals nationally
- Lowest 10% of peer group hospitals nationally
- Hospitals that decreased Cost per NWAU by at least 5% from 2011–12 to 2013–14
- Other hospitals

**Note:** References can be found in the Technical Supplement and definitions of terms in the Glossary at [www.myhospitals.gov.au](http://www.myhospitals.gov.au)  
**Sources:** National Health Performance Authority analysis of results calculated using the National Hospital Cost Data Collection, the Admitted Patient Care National Minimum Data Set and the Hospital Casemix Protocol Data Collection. Data supplied 18 and 28 October 2014 (2011–12 data) and 27 November 2015 (2012–13 and 2013–14 data).

# Key findings

## Cost per NWAU, 2011–12 to 2013–14

For the first time, this report presents the change in the average cost of care for acute admitted patients in Australia’s largest public hospitals across three years.

This report presents findings for major metropolitan public hospitals across Australia. From 2011–12 to 2013–14, on average the expenditure at hospitals to provide acute care increased by 6%. However, this was accompanied by a 5% increase in the number of activity units (NWAUs) for acute admitted patients (Table 1).

This means that the average cost of care (unadjusted for inflation) at major metropolitan public hospitals remained relatively unchanged over this period (1% growth). This growth was slower than inflation (approximately 5%<sup>4</sup>). This demonstrates that as a group, major metropolitan public hospitals have achieved improvements in efficiency (Table 1).

Across three years, from 2011–12 to 2013–14, eight major metropolitan public hospitals decreased their Cost per NWAU for acute admitted patients by at least 5%. At the same time, six major metropolitan public hospitals increased their Cost per NWAU by at least 10% (Figure 2).

A decrease in Cost per NWAU from 2011–12 to 2013–14 implies an improvement in a hospital’s efficiency. This may be due to initiatives by the hospital, such as a decrease in spending or by increasing the volume of services provided, or a combination of both (Table 3). One way a hospital may ensure more services are provided within its existing expenditure is to treat more patients by decreasing the average length of a patient’s stay in hospital.

Although improvements in data quality may lead to an apparent decrease in a hospital’s Cost per NWAU, state and territory governments have confirmed that the hospitals listed in Table 3 were not affected by changes in data recording practices.

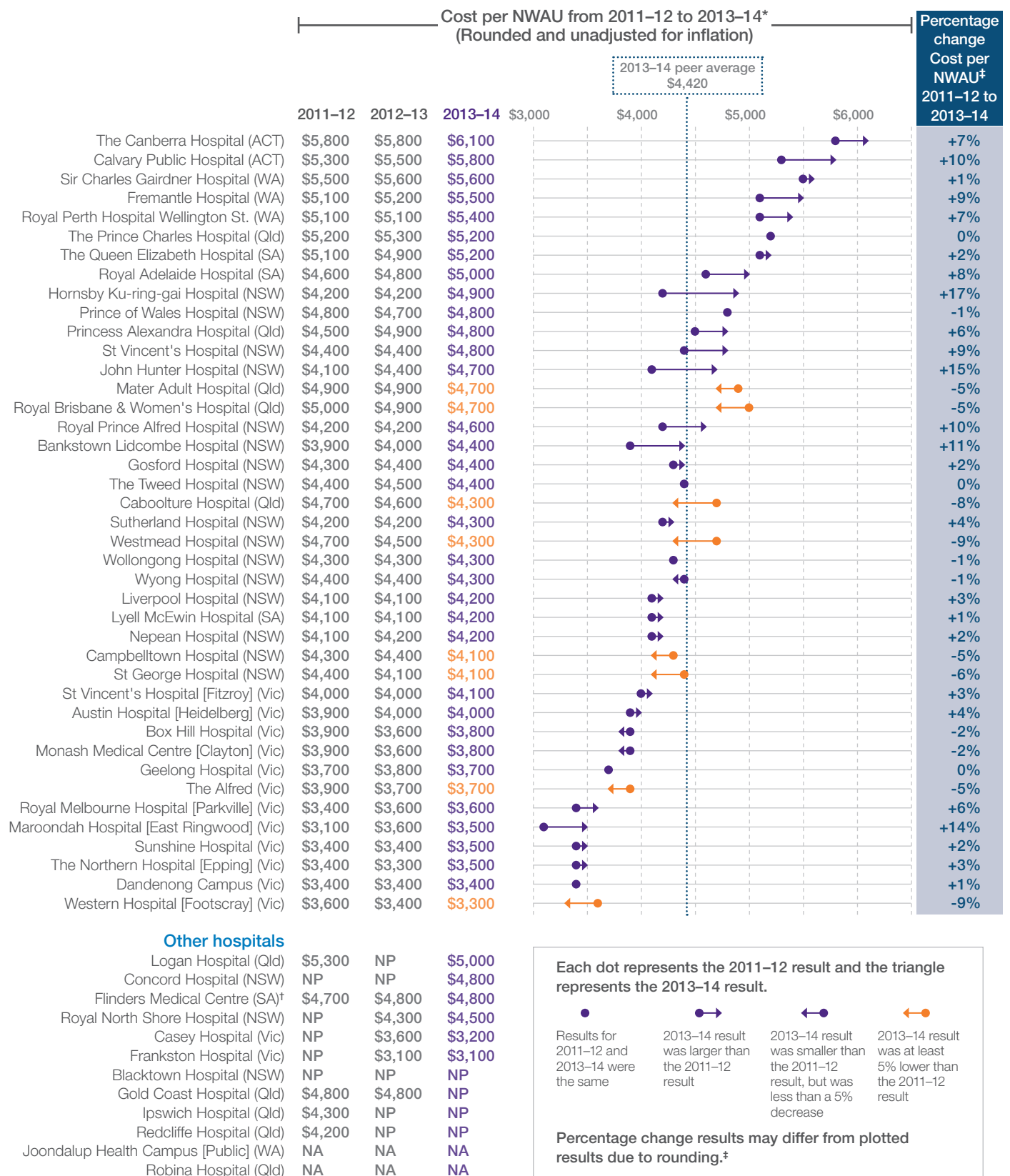
While this report presents results on the efficiency of hospitals, it **does not** consider other aspects of the quality of care such as access, appropriateness or health outcomes.

**Table 3: Major metropolitan public hospitals that improved efficiency by decreasing the average cost of care by at least 5%, 2011–12 to 2013–14**

Major metropolitan public hospitals	Reduced spending	Increased number of activity units (NWAUs)	Reduced spending & increased no. of activity units (NWAUs)
Caboolture Hospital (Qld)			●
Campbelltown Hospital (NSW)			●
Mater Adult Hospital (Qld)			●
Royal Brisbane & Women’s Hospital (Qld)	●		
St George Hospital (NSW)		●	
The Alfred (Vic)			●
Western Hospital [Footscray] (Vic)			●
Westmead Hospital (NSW)		●	

**Sources:** National Health Performance Authority analysis of results calculated using the National Hospital Cost Data Collection, the Admitted Patient Care National Minimum Data Set and the Hospital Casemix Protocol Data Collection. Data supplied 18 and 28 October 2014 (2011–12 data) and 27 November 2015 (2012–13 and 2013–14 data).

**Figure 2: Cost per National Weighted Activity Unit (NWAU)\* for acute admitted patients, major metropolitan public hospitals, 2011–12 to 2013–14, sorted by Cost per NWAU in 2013–14**



\* Further information on Cost per NWAU and change over time can be found in the Technical Supplement at [www.myhospitals.gov.au](http://www.myhospitals.gov.au)

† It is recommended that for this hospital the Cost per NWAU 2011–12 results are not compared to 2012–13 and 2013–14 (see the Technical Supplement).

‡ Percentage change 2011–12 to 2013–14 was calculated on unrounded Cost per NWAU.

NA Data not available at time of publication.


NP Data did not meet minimum reporting requirements as detailed in the Technical Supplement.

Sources: National Health Performance Authority analysis of results calculated using the National Hospital Cost Data Collection, the Admitted Patient Care National Minimum Data Set and the Hospital Casemix Protocol Data Collection. Data supplied 18 and 28 October 2014 (2011–12 data) and 27 November 2015 (2012–13 and 2013–14 data).

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All of the National Health Performance Authority's reports and data are available to download free of charge from the website.



References can be found in the Technical Supplement at [www.myhospitals.gov.au/publications](http://www.myhospitals.gov.au/publications)

## Acknowledgements

The Performance Authority established an expert group to provide advice on various aspects of this report. The group did not have a direct role in writing the report. The group members were:

- Associate Professor Brian McCaughan AM (Chairman), Cardiothoracic Surgeon
- Mr James Downie, Acting Chief Executive Officer, Independent Hospital Pricing Authority
- Dr Stephen Duckett, Director, Health Program, Grattan Institute
- Ms Christine Gunson, Consumer Representative
- Ms Jenny Hargreaves, Senior Executive, Hospitals, Resourcing and Classifications Group, Australian Institute of Health and Welfare
- Mr Robert Mackway-Jones, Chief Financial Officer, Metro South Hospital and Health Service
- Dr Andrew Mitchell, Director of Territory Wide Surgical Services, ACT Health
- Mr Lynton Norris, Chief Executive Officer, National Health Funding Body
- Associate Professor Grant Phelps, Associate Professor of Clinical Leadership, Deakin University
- Dr Michael Rasmussen, Clinical Service Director, Women's & Children's program, Mercy Health.



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Please note that there is the potential for minor revisions of this document.