

# National Health Performance Authority

# **Hospital Performance:**

Costs of acute admitted patients in public hospitals in 2011–12

Technical Supplement



#### **National Health Performance Authority**

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www.nhpa.gov.au

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# Summary

This Technical Supplement summarises methods used to calculate descriptive measures presented in *Hospital Performance: Costs of acute admitted patients in public hospitals in 2011–12.* Due to the complexity of the methods used, this supplement is targeted at individuals with technical expertise in health informatics.

The report compares hospitals based on the costs of acute admitted patients. Admissions (sameday and overnight) are weighted to account for the complexity of a patient's condition(s) and procedure(s) using the Australian Refined-Diagnosis Related Group (AR-DRG) classification system and adjusted for individual patient characteristics.

The aim of this work is to assess the relative efficiency of public hospitals through the use of comparable costs. The report also includes data showing the variation in the cost of 16 selected conditions and procedures that featured in the Authority's earlier report *Hospital Performance:* Length of stay in public hospitals in 2011–12. The report has not accounted for the quality of care received by patients or their health outcomes.

The following measures are described in this Technical Supplement:

- Cost per National Weighted Activity Unit (NWAU), including total NWAU
- Comparable Cost of Care, including total units of activity
- Cost per admission.

The report includes two headline measures. Cost per NWAU is calculated using methods established and made publicly available by the Independent Hospital Pricing Authority (IHPA). The second measure which was developed by the Authority, Comparable Cost of Care, is calculated using methods described on pages 8–11.

The following approaches were used to derive Comparable Cost of Care:

- A nationally consistent approach to including and excluding costs to support comparability
- Standardisation of those costs to account for differences between hospitals in the types of patients admitted
- The allocation of public hospitals to peer groups to support comparisons across similar types of hospitals.

Results for more than 80 major and large Australian public hospitals are also available on www.myhospitals.gov.au

## Data sources

The Authority worked with IHPA on the development of the report. Data outputs used for the report were prepared by IHPA using specifications that were developed between the two agencies, using data from the National Hospital Cost Data Collection (NHCDC) and the Admitted Patient Care National Minimum Data Set (APC NMDS).

## National Hospital Cost Data Collection

The NHCDC is a voluntary collection of public hospital costs, collected by financial year. It was established in 1996–97.

In 2011–12, 429 public hospitals submitted data to the NHCDC. These hospitals represent approximately 80% of the cost of Australian public hospitals.<sup>1</sup> Of the 429 public hospitals, 124 were major and large hospitals.

Hospitals allocated their costs for 2011–12 to individual patient records according to the Australian Hospital Patient Costing Standards (AHPCS), version 2.0.1

For more information about the NHCDC see the National Hospital Cost Data Collection Australian Public Hospitals Report 2011–12.1

# Admitted Patient Care National Minimum Data Set

The APC NMDS 2011–12 has been used to count the number of same-day, multi-day and overnight separations to hospitals. Each separation for the purposes of this report represents an admission to hospital.

Admissions are then grouped according to the complexity of conditions and procedures, and individual patient characteristics, using the AR-DRG v7.0 for Cost per NWAU and v6.0x for Comparable Cost of Care.

For the purposes of calculating Comparable Cost of Care, emergency department (ED) cost data were matched with the individual admitted patient unit record by the Independent Hospital Pricing Authority (IHPA) using a record identifier field provided by state and territory governments.

For more information about the APC NMDS see the Australian Institute of Health and Welfare's (AIHW) specification at: http://meteor.aihw.gov.au/content/index.phtml/itemld/426861

## Hospitals included in the report

To ensure robust comparable results and protect the privacy of patients, hospitals were reported if the following criteria were met:

- A major or large metropolitan or major regional non-specialist public hospital where data were available in the NHCDC for at least two fiscal years
- The presence of an ED
- More than 90% of patient unit records from the APC NMDS were matched to cost data.

Results were suppressed for a hospital in cases where anomalies were identified following triangulation analysis of cost data between different data sets. This affected only one hospital.

Two hospitals (one major and one large) were excluded as they were identified as not having an emergency department, and therefore did not submit data to the National Non-Admitted Patient Emergency Department Care Database (NAPEDCD).

The result of these inclusion and exclusion criteria is that the report includes data for more than 80 major and large public hospitals for 2011–12.

Data outputs used in this report were supplied to the Authority by IHPA on 18 and 28 October 2014.

## Measures

The report presents data on two headline measures of the relative efficiency of Australia's largest public hospitals focusing on acute admitted patients:

- Cost per National Weighted Activity Unit (NWAU), including total NWAU
- Comparable Cost of Care, including total units of activity.

The report also presents information for 16 selected conditions and procedures using cost per admission and length of stay measures.

#### What is an admission?

The APC NMDS records information about a patient's admission in hospital, termed 'episode of admitted patient care'.

An 'episode of care' is defined as 'the period of admitted patient care between a formal or statistical admission, and a formal or statistical separation, characterised by only one care type'.<sup>2</sup> For example, it defines the period between the patient's arrival and when the patient is discharged or moved to a ward for subacute care, such as rehabilitation.

The 'episode of care' records information about the patient's characteristics, including their age and sex, information about the care they received in hospital such as diagnosis and any procedures they underwent during their admission, and when they arrived and left hospital.

Each 'episode of care' is allocated to an AR-DRG group, allowing us to understand the mix and complexity of patients across a hospital. This provides the basis for deriving how many units of activity were performed at a hospital during the financial year, a measure that represents the number of admissions, adjusted for the complexity of patients who were admitted to the

hospital and their individual patient characteristics which lead to higher costs.

For the purposes of this report and the MyHospitals website, an 'episode of admitted patient care' is referred to as an 'admission', which is synonymous with a 'separation'. A weighted separation is referred to as a 'unit of activity'.

## What is Cost per NWAU?

Cost per NWAU, developed by the Independent Hospital Pricing Authority (IHPA), measures the cost of patients whose treatment was eligible for funding under the National Health Reform Agreement against a common unit of activity termed NWAU. The NWAU is a point of relative pricing that the Commonwealth uses to determine its contribution to public hospitals through Activity Based Funding (ABF).

Each NWAU is weighted for clinical complexity, and individual patient characteristics that lead to higher costs. Where a patient meets the criteria, an adjustment is applied to the price weight for Cost per NWAU in recognition of the additional costs incurred in delivering public hospital services to these patients. Examples of patients who are eligible for adjustments include psychiatric patients, remote and regional patients, and those who are recorded as being of Aboriginal and Torres Strait Islander origin.

The 'average' hospital service is funded by one NWAU. More intensive and expensive activities are funded by multiples of NWAUs, and simpler and less expensive activities are funded by fractions of an NWAU.

There are four funding streams:

- Emergency department (ED)
- Acute admitted
- Subacute
- Non-admitted.

This report compares the Cost per NWAU for acute admitted patients; it does not include ED costs associated with each patient's admission.

The Cost per NWAU measure excludes patients whose services are not eligible for Commonwealth funding under ABF, such as patients funded by the Department of Veterans' Affairs (DVA), private sources (self-funded, privately insured) or motor vehicle accident insurance.

The Authority used this measure to compare 84 major and large public hospitals against their peers, based on the size and location of the hospital. In particular, Cost per NWAU was calculated for:

- 46 major metropolitan hospitals
- 13 large metropolitan hospitals
- 25 major regional hospitals.

For more information on Cost per NWAU see the National Efficient Price Determination 2014–15.3

## What is Comparable Cost of Care?

Comparable Cost of Care is a national measure developed by the Authority to compare the relative efficiency of Australia's largest public hospitals, and to report against the COAGagreed indicator 'Cost per weighted separation and total case weighted separations'.

In developing the measure, the Authority has built on the substantial work undertaken by IHPA in its development of the NWAU.

The measure considers:

- The costs incurred by a hospital, for acute admitted patients irrespective of whether patients' treatment was eligible for funding under the National Health Reform Agreement, for example patients funded by the DVA or private sources
- The costs where the accounting practices are similar across hospitals, taking into account the costs from arrival at the hospital until the patient is discharged, transferred to another hospital, transferred to subacute care (for example palliative care, rehabilitation) or dies
- The casemix of admitted patients. In addition adjustments were made for the complexity of patients and individual patient characteristics that lead to higher costs (see Units of activity)
- The costs associated with the journey of all acute patients from the time of arrival at the hospital until departure. For patients who entered the hospital through the ED, the costs incurred during the ED have been added to the costs incurred during the patient's admission.

The Authority has considered the cost of care in emergency departments for acute admitted patients, as its previous report *Hospital Performance: Time patients spent in emergency departments in 2011–12* found significant variation between hospitals in the length of time admitted patients stayed in EDs prior to their admission.<sup>4</sup>

The measure does not consider the quality of services delivered, patient outcomes, the costs of capital, or where costs are not comparable due to variation in either accounting or operational practices between hospitals.

The Authority has used Comparable Cost of Care to compare 82 major and large public hospitals with their peers, based on the size and location of the hospital.

This information is provided for:

- 47 major metropolitan hospitals
- 12 large metropolitan hospitals
- 23 major regional hospitals.

### What is cost per admission?

Cost per admission is a measure developed by the Authority that uses the same costs as Comparable Cost of Care, capturing the costs of a patient's journey from arrival at the hospital until the patient is either discharged or admitted to a non-acute care ward. The report provides the average cost per admission for Australia's major metropolitan and major regional public hospitals for 16 selected conditions or procedures.

The average cost per admission for a condition or procedure for a peer group is calculated by tallying the total comparable cost for all hospitals within the peer groups that are included in the report (i.e. had a Comparable Cost of Care result calculated), divided by the total number of separations for those hospitals.

The range of the average cost per admission for a peer group was calculated by deriving the average cost per admission for a condition or procedure at each hospital in the major peer groups, and taking the lowest and highest hospital's average cost per admission.

The average cost per condition or procedure in major metropolitan and major regional hospitals, by length of stay, is derived by calculating the average cost of treating a patient who stayed for a specific number of days. The maximum value of length of stay in days depicted on the average cost per admission by length of stay graphs, has been derived to represent up to 90% of all separations for that condition or procedure.

# Why has length of stay been included?

Research has shown that length of stay is an important driver of hospital costs. <sup>5</sup> The Authority's analyses indicate that the relationship between length of stay and costs is more closely related for medical conditions as compared to surgical procedures, for those conditions included in the report.

Accordingly, the report provides information on the cost of admissions for patients who stayed varying lengths of time as acute admitted patients for 16 common conditions and procedures.

The conditions and procedures selected replicate those reported in the Authority's report *Hospital Performance: Length of stay in public hospitals in 2011–12.* These conditions and procedures were chosen based on AR-DRG Version 6.0x using the following criteria:

- Relevance to the clinical community
- Number of hospitals able to report without suppression for small number of admissions
- Balance in the number of surgical compared to medical DRGs
- Distribution of length of stay
- Percentage of admissions for acute care
- Percentage of transfers to other hospitals
- Percentage of care type changes.

Further details on the AR-DRG v6.0x codes for the 16 selected procedures and conditions, and length of stay methodology can be found in *Hospital Performance: Length of stay in public hospitals in* 2011–12, Technical Supplement.<sup>5</sup>

# Rationale for using AR-DRG version 6.0x

In 2011–12, the data prepared by hospitals and submitted to the NHCDC by state and territory governments used AR-DRG v6.0x.

While AR-DRG v7.0 is a more recent version and considered the best reflection of clinical practice, analysis of the specific AR-DRGs (conditions and procedures) highlighted a material change (approximately a 10% difference) in the allocation of separations between AR-DRGs using AR-DRG v7.0 and v6.0x.

The three AR-DRGs included in this report that are affected are heart failure with and without complications or comorbidities (F62A, F62B) and vaginal delivery without complications or comorbidities (O60B). For AR-DRG v6.0x vaginal deliveries (O60B), only 22% of separations were in common with AR-DRG v7.0.

To increase the value of information provided to clinicians and system managers, and to remain consistent with information published by the Authority in *Hospital Performance: Length of stay in public hospitals in 2011–12*, AR-DRG v6.0x was used to derive Comparable Cost of Care, rather than AR-DRG v7.0.

Hospital overall results using AR-DRG v6.0x and v7.0 are highly correlated (R<sup>2</sup> value: 0.999).

# Differences between the main measures

A summary of the main similarities and differences between Cost per NWAU and Comparable Cost of Care can be found in **Table 1**, page 7.

The Authority undertook a comparison of Comparable Cost of Care and Cost per NWAU across A1.1, A1.2, B1 and B2 hospitals, the outcome of the analysis was a high correlation between the measures (R<sup>2</sup> value: 0.94) (Figure 1, page 6).

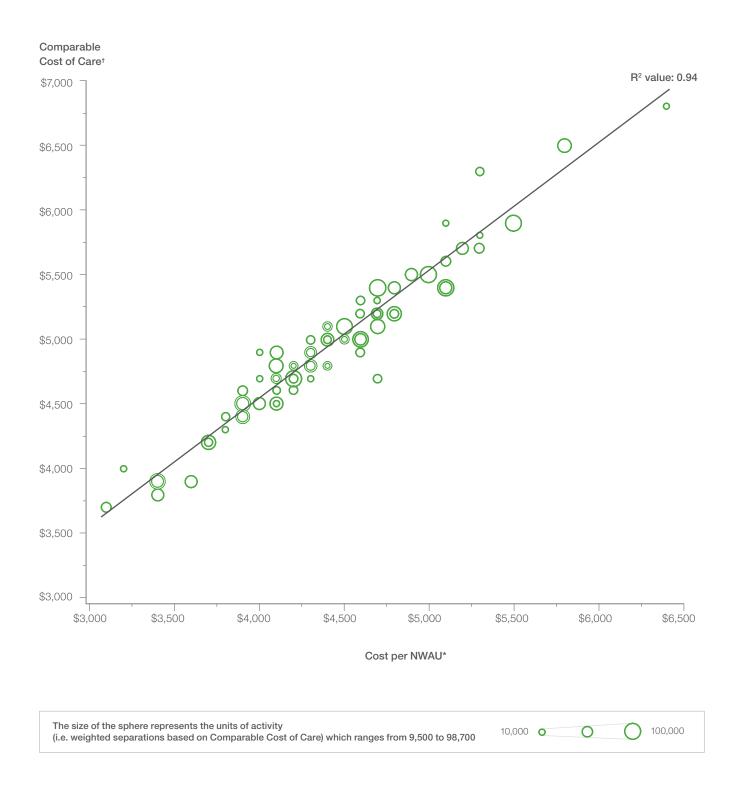
At a hospital level, the most noticeable difference between the two measures is the inclusion of ED costs associated with an admission in the Comparable Cost of Care measure.

For some hospitals, the second most noticeable difference between Comparable Cost of Care and Cost per NWAU is the inclusion of DVA and compensable patients in the Comparable Cost of Care measure. The inclusion of these patients resulted in a material change to the results for some hospitals. This can be attributed to the proportion of DVA and compensable patients that are admitted, and the difference between the average cost of DVA and compensable patients, compared to the average cost of other acute admitted patients.

Results for hospitals included in the report did not significantly change between the measures Comparable Cost of Care and Cost per NWAU, when private patient revenues were not excluded from Cost per NWAU. However, it is still appropriate for the Comparable Cost of Care measure to include all private patient costs and not discount the activity.

The results show there are hospitals that have lower and higher costs per weighted separation using both methods.

Figure 1: Distribution of the relative efficiency of *major metropolitan*, *large metropolitan* and *major regional* public hospitals using Comparable Cost of Care and Cost per NWAU, 2011–12



<sup>\*</sup> The NWAU has been calculated using the National Efficient Price Determination 2014–15.

Sources: National Health Performance Authority analysis of results calculated using the National Hospital Cost Data Collection 2011–12 and Admitted Patient Care National Minimum Dataset 2011–12.

<sup>†</sup> The line of best fit has been calculated using all hospital results where Cost per NWAU and Comparable Cost of Care are available. Results for hospitals with less than eight hospitals in a peer group for both measures are not shown on the graph.

Table 1: Differences between the measures of Cost per NWAU and Comparable Cost of Care



#### Cost per NWAU

Cost per National Weighted Activity Unit (NWAU) is a measure of the average cost of a unit of activity provided to acute admitted patients in a public hospital.



#### Comparable Cost of Care

Comparable Cost of Care is a measure that focuses on the comparable costs of acute admitted patients and includes the costs of emergency department patients who are subsequently admitted to allow for an assessment of the relative efficiency of public hospitals.

	Cost per NWAU	Comparable Cost of Care
Comparable costs		
Allied health; Imaging; Pharmacy; Pathology	✓	✓
Critical care	✓	✓
Hotel goods and services*	✓	✓
Non-clinical and on-costs	✓	✓
Operating room	✓	✓
Prostheses	$\checkmark$	✓
Specialised procedure suite	✓	✓
Ward medical, nursing and supplies	✓	✓
ED costs	×	✓
Blood costs	×	×
Teaching, training & research (direct)	×	×
Depreciation	×	×
Excluded costs*	×	×
Payroll tax	×	×
Medications subsidised by Commonwealth programmes (e.g. PBS)	×	×
Property, plant and equipment	×	×
Patients included		
Public patients	✓	✓
Private patients <sup>†</sup>	$\checkmark$	✓
Admitted in 2011–12 and discharged in 2011–12	✓	✓
Compensable patients	×	✓
Department of Veterans' Affairs	×	✓
Adjustments for legitimate cost variations		
Specialist paediatric; Specialist psychiatric age; Indigenous; Remoteness area; Intensive care unit; Radiotherapy	<b>√</b>	<b>√</b>

<sup>\*</sup> As defined by the Australian Hospital Patient Costing Standards (AHPCS), version 2.0.

NWAUs are discounted to account for private patient revenues.

# Comparisons of hospitals

When deciding on the specifications of an indicator, the Authority investigates and implements approaches to optimise fair comparisons of hospitals across Australia. The Authority implements as many of these approaches as can be supported by the depth and quality of data available. For this report, the Authority consulted with the Independent Hospital Pricing Authority (IHPA) and report-specific advisory committees.

The following five approaches were used by the Authority to calculate Comparable Cost of Care and support fair comparisons between hospitals:

- 1. Comparable costs: this process involved a review of the national consistency of cost information and the materiality of any differences between states and territories. Where appropriate, some costs are excluded to support comparability. In other instances, some costs are included because it is not possible to exclude them. In these instances the materiality of this approach was assessed
- 2. Units of activity: this process is necessary to standardise costs by accounting for the differences between the complexity of patients admitted at a hospital and the patient's individual characteristics which lead to higher costs, relative to the patient's length of stay
- Rounding results: the Authority has rounded Cost per NWAU and Comparable Cost of Care in a way that acknowledges any remaining uncertainty in estimates

- 4. **Suppression of results:** where cost data from a hospital were not fully available or comparable, the Authority determined rules that informed decisions to suppress information based on a lack of comparability
- 5. **Peer groups:** this process involves grouping hospitals so that they can be compared to their peers.

### Comparable Cost of Care

#### Emergency department costs

The Authority has previously reported variation in the length of time a patient stays in an emergency department (ED).<sup>4</sup> For the purposes of completeness and comparability, this measure included the ED presentation costs of acute admitted patients for each hospital.

This allowed fair comparison of the costs associated with the journey of acute admitted patients from the point of entering the ED, until the point of discharge. The ED presentation costs were matched with the individual admitted patient unit record by IHPA using the state record identifier field provided by state and territory governments.

#### **Blood costs**

Blood costs are treated differently within and across jurisdictions. Consequently, these costs have been excluded from the measure Comparable Cost of Care.

#### Teaching, training and research costs

In 2011-12, there was no nationally agreed definition of teaching, training & research (TTR) costs. An independent review by PricewaterhouseCoopers (PwC) indicated some jurisdictions removed these costs before supplying data to the NHCDC.6 Accordingly, where hospitals recorded TTR direct costs, these were excluded from the measure Comparable Cost of Care. At the time of data preparation states and territories were consulted to confirm the exclusion of TTR direct costs from the acute care type. The Authority is aware that the extent to which jurisdictions excluded TTR direct costs from their data submissions varied in 2011-12. Given the quantum of these costs the Authority did not consider jurisdictional variation to materially affect the measures in the report.

#### Excluded costs

The costs classified as 'excluded costs', as defined by the Australian Hospital Patient Costing Standards v2.0, are costs which cannot be allocated to any other costing group. These are immaterial to this report and represent costs which are not consistently reported across jurisdictions.

Due to the variation in reporting practices, these costs were excluded to ensure the fair comparison of public hospitals.

### Payroll tax costs

Some hospitals reported the payment of payroll tax in their submission to the NHCDC. Due to the variation in reporting practices, these costs were excluded to ensure the fair comparison of public hospitals.

#### Medication costs

Some states and territories are not signatories to the Pharmaceutical Reform Agreement. To achieve fair comparison the report has excluded the costs of medications subsidised by the Pharmaceutical Benefits Scheme (PBS).

#### Depreciation

Depreciation is the allocation of the cost of an asset as an expense over the life of the asset or the period in which it facilitated the generation of income. Depreciation rates are different across jurisdictions and not all jurisdictions provided these costs to the NHCDC.

Due to the variation in practices, this report has excluded depreciation costs to ensure the comparability of public hospitals.

#### Private patients

The collection of private patient medical expenses is challenging in the NHCDC. Factors influencing the collection of these costs include the use of Special Purpose Accounts and Trust Funds by some hospitals.

In some instances, medical practitioners are reimbursed by these accounts/Trust Funds for the treatment of private patients, or these funds may be used for other hospital expenses. As a result of this practice, some expenses may not be recorded in the hospital's general ledger and subsequently are not provided as part of the NHCDC submission.<sup>7</sup>

The impact of costs not being included in the general ledger is that the costs submitted to the NHCDC, and subsequently used in the report, are lower than the actual expenditure.

To improve the comparability of hospitals with differing private and public patient casemix, the Comparable Cost of Care measure inflates the cost of all patients at a hospital based on revenue received by the hospital for private patients (as detailed in the Department of Health's data collection entitled Hospital Casemix Protocol):

- charges levied by a hospital
- benefits paid by private insurers
- claims made to the Medical Benefits Scheme (MBS).

This approach models private patient costs for a public hospital that are not reported in the general ledger; and therefore not reported to the NHCDC.

This approach is similar to that used by the Cost per NWAU measure. However, the Cost per NWAU measure, after inflating all patient costs, reduces the costs by the modelled private patient revenues. In addition, the NWAU is discounted for private patients. Therefore, patients admitted for a condition/procedure whose treatment is funded by private sources are allocated a lower NWAU than those patients whose treatment is eligible for funding under the National Health Reform Agreement.

#### Admitted and discharged within fiscal year

The data used for this report are limited to unit records where the patient was admitted and discharged in the 2011–12 financial year. This is based on the independent reviews of the NHCDC for 2010–11 and 2011–12 which highlighted inconsistencies between states, and therefore hospitals, in recording costs for patients discharged during this financial year who had been admitted during the previous financial year.

Some states and territories provided a variation of unit records to the NHCDC submission, for example providing all discharged patients or only discharged patients admitted in the current fiscal year. Therefore the data used has been limited to patients admitted and discharged within the 2011–12 financial year.

### Units of activity

AR-DRG v6.0x was used to group data from the APC NMDS for each individual patient unit record. The AR-DRG is based on the codes allocated to diagnosis and procedures that are recorded in the patient medical record for each episode of care.

Each AR-DRG is allocated a defined 'cost weight' (calculated using comparable costs), which is a relative measure of a patient's complexity, calculated as the ratio of the average cost of a given AR-DRG compared to the average cost of all AR-DRGs, for hospitals submitting data to the NHCDC 2011–12. For this report the weights have been calculated:

- Using the average in scope costs (costs included in the comparable costs)
- Using patient unit records where patients were discharged this financial year and admitted in the previous or current financial year
- Using costs where patients were admitted in the current financial year and not yet discharged
- Excluding hospitals, repotrint ED activity with no ED costs.

This report calculates weights using the AR-DRG v6.0x and adjusts this weight based on individual patient characteristics which are known to lead to higher costs.

The following adjustments were made to the weights:

- Specialist paediatric
- Specialist psychiatric
- Indigenous status
- Remoteness
- Intensive care unit (ICU), level III
- Radiotherapy.

Rounding results

To address any remaining uncertainty in relation to the accuracy of the results, each hospital's result has been rounded to the nearest \$100 for Cost per NWAU and Comparable Cost of Care.

Peer classification system

Peer groups allow hospitals to be compared to other similar hospitals. They minimise the effect caused by hospitals of differing size, service provision and rurality when comparing hospitals.

The peer group version used in this work is based on the peer classification, established by the Australian Institute of Health and Welfare, that existed in 2011–12. These peer groups categorise hospitals according to size and type.

The report focuses on comparing and contrasting information from major and large public hospitals, as these hospitals account for the vast majority of same-day and overnight admissions.

Hospitals in the major peer group are then split into metropolitan and regional groups using the Australian Standard Geographical Classification (ASGC) Remoteness Area, 2006.

The report includes major and large public hospitals (A1.1, A1.2, B1). MyHospitals includes these hospitals plus large regional public hospitals (B2).

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# About the Authority

The National Health Performance Authority has been set up as an independent agency under the *National Health Reform Act 2011*. It commenced full operations in 2012.

Under the terms of the Act, the Authority monitors and reports on the performance of Local Hospital Networks, public and private hospitals, primary health care organisations and other bodies that provide health care services.

The Authority's reports give all Australians access to timely and impartial information that allows them to compare fairly their local health care organisations against other similar organisations and against national standards.

The reports let people see, often for the first time, how their local health care organisations measure up against comparable organisations across Australia.

The Authority's activities are also guided by a document known as the Performance and Accountability Framework agreed by the Council of Australian Governments. The framework contains a set of indicators that form the basis for the Authority's performance reports.

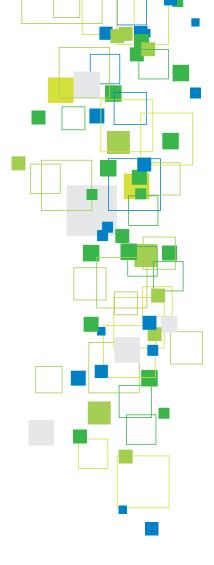
The Authority's role includes reporting on the performance of health care organisations against these indicators in order to identify both high-performing Local Hospital Networks, primary health care organisations and hospitals (so effective practices can be shared), and Local Hospital Networks and primary health care organisations that perform poorly (so that steps can be taken to address problems).

In addition to publishing regular print-style reports, the Authority releases performance information on the MyHospitals website (www.myhospitals.gov.au) and the MyHealthyCommunities website (www.myhealthycommunities.gov.au), and presents other information about its activities on www.nhpa.gov.au

The Authority consists of a Chairman, a Deputy Chairman and five other members, appointed for up to five years. Members of the Authority are:

- Ms Patricia Faulkner AO (Chairman)
- Mr John Walsh AM (Deputy Chairman)
- Dr David Filby PSM
- Professor Claire Jackson
- Professor Michael Reid
- Dr Michael Stanford
- Professor Bryant Stokes AM RFD (on leave)
- Professor Paul Torzillo AM.

The conclusions in this report are those of the Authority. No official endorsement from any Minister, department of health or health care organisation is intended or should be inferred.



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