

# National Benchmarking Portal

## User Guide



# Contents

<b>Contents</b>	<b>2</b>
<b>Glossary</b>	<b>3</b>
<b>1. Introduction to IHACPA and its datasets</b>	<b>4</b>
<b>2. Data included in the NBP</b>	<b>6</b>
<b>3. Streams</b>	<b>8</b>
<b>4. Accessing the NBP</b>	<b>12</b>
<b>5. Cost per NWAU dashboards</b>	<b>13</b>
<b>6. Hospital Acquired Complications</b>	<b>26</b>
<b>7. Avoidable Hospital Readmissions</b>	<b>38</b>
<b>8. Selecting filters</b>	<b>48</b>
<b>9. Definitions</b>	<b>49</b>
<b>Useful links</b>	<b>52</b>



# Glossary

<b>ABF</b>	Activity based funding
<b>ADRG</b>	Adjacent Diagnosis Related Groups
<b>AECC</b>	Australian Emergency Care Classification
<b>AMHCC</b>	Australian Mental Health Care Classification
<b>AN-SNAP</b>	Australian National Subacute and Non-Acute Patient Classification
<b>AR-DRG</b>	Australian Refined Diagnosis Related Group
<b>The Commission</b>	The Australian Commission on Safety and Quality in Health Care
<b>IHACPA</b>	Independent Health and Aged Care Pricing Authority
<b>LHN</b>	Local hospital network
<b>MDC</b>	Major diagnostic category
<b>NB</b>	New Born
<b>NBP</b>	National Benchmarking Portal
<b>NEC</b>	National efficient cost
<b>NEP</b>	National efficient price
<b>NHCDC</b>	National Hospital Cost Data Collection
<b>NHRA</b>	National Health Reform Agreement
<b>NWAU</b>	National weighted activity unit
<b>SRG</b>	Service related groups
<b>Tier 2</b>	Tier 2 Non-Admitted Services Classification
<b>UQB</b>	Unqualified baby
<b>URG</b>	Urgency related groups



# 1. Introduction to IHACPA and its datasets

The Independent Health and Aged Care Authority (IHACPA) is an independent government agency created under Commonwealth legislation in 2011 as part of the National Health Reform Agreement (NHRA). The NHRA commits the Australian Government and all state and territory governments to improving health outcomes for Australians by providing better coordinated care in the community, while ensuring the future sustainability of Australia's health system.

IHACPA's core responsibility is to determine the national efficient price (NEP) and national efficient cost (NEC) for public hospital services, enabling the implementation of nationally consistent activity based funding (ABF), which incentivises efficiency and increases transparency in the delivery and funding of hospital services across Australia.

In order for ABF to be effective, each episode of care needs to be counted. This includes admissions, emergency department presentations and non-admitted appointments as well as a range of mental health and rehabilitation services delivered by hospitals.

To meet its commitments to provide an NEP and NEC Determination each year, IHACPA collects data from each state and territory. There are 2 sets of data that inform the Determinations:

- **National Hospital Cost Data Collection (NHCDC)** — This is an annual and voluntary collection detailing at a patient-level, the cost of providing care in public hospitals.
- **Activity data** — This is a record of all patient care undertaken in hospitals. It is submitted to IHACPA each quarter.

To ensure the robustness of data used for the NEP and NEC Determinations, this data undergoes validation, quality assurance checks and reporting.

The National Benchmarking Portal (NBP) presents linked cost and activity data and provides a granular level of comparison at various levels.



## 1.1 Purpose

Historically, the NBP has been operated through New South Wales Health, with access administered by states and territories.

The new NBP aims to provide open access to insights from important datasets collected by IHACPA, serving the interests of transparency to enhance research and policy and improve patient outcomes. The NBP operates as a benchmark tool to compare data at a hospital, local hospital network (LHN), state, stream, peer group and national level between financial years.

Similar publications available on IHACPA's website may report on a different subset of the datasets collected by IHACPA. For example, the NHCDC report published annually by IHACPA covers all cost data submitted by jurisdictions under the NHRA.

Each year IHACPA publishes a standard set of reports including:

- [IHACPA's Annual Report](#)
- [NEP](#) and [NEC Determinations](#)
- [NHCDC Report](#)
- [Pricing Framework for Australian Public Hospital Services](#)

These resources are available on [IHACPA's website](#).



## 2. Data included in the NBP

The data presented in the NBP comprises costed activity data that is in-scope for ABF.

Data elements for each stream include hospital name, peer group, LHN, classification end class and cost at the cost bucket level. Users can compare outcomes within and across these elements over multiple years.

### 2.1 Costed activity

IHACPA receives cost and activity data from jurisdictions each year.

Both cost and activity data are submitted for each episode of care, with the intention that IHACPA is able to link cost and activity data for each episode. Once this linkage has been performed, the resulting data set is referred to as 'costed data'. It is this costed data that is included in the NBP.

The following 2 sections outline further adjustments made to the data included in the NBP to allow more consistent benchmarking between hospitals, LHNs and states.

### 2.2 Unqualified baby adjustment

Unqualified babies (UQB) are those without care interventions following birth and are less than 10 days old when they are discharged. Unqualified babies with lengths of stay over 10 days incur 'qualified' days which need to be recorded for the activity data submission within the newborn (NB) care type.

IHACPA links costs associated with UQBs to the mother's episode of care for pricing purposes. Consequently, UQB activity is removed from the NB care type; the costs are then transferred from NB care to the mother's admitted care separation.



## 2.3 ‘Very long stay’ patients

A ‘very long stay’ patient is an admitted patient whose admission and discharge date are not in the same or adjacent financial years. These episodes of care are not used for pricing and are not included in the NBP for 2 reasons:

1. These records are not useful for benchmarking because they often have an undue influence on measures of central tendency; and
2. These records are quite rare, and their inclusion may present a privacy risk to the patients involved.

## 2.4 Data preparation

Costed data presented in the NBP is restricted to ABF hospitals and to episodes of care with funding sources priced by IHACPA (as outlined in Section 3.6), subject to the NHRA. The data is further refined to records with a valid end-class in each stream. This ensures only data with activity appropriately measured using national weighted activity units (NWAU) is used for benchmarking purposes.

## 2.5 Data masking

For reasons of efficiency and privacy, unit record data is not uploaded to the NBP. The NBP provides comparisons of summarised data for different settings (including years, states, LHNs, hospitals, streams, peer groups, and classifications), enabling better benchmarking against similar health services, broader access to summarised data than the currently published reports, and potential for more effective research capability and improved policy decisions.

For data privacy and statistical robustness, selections using filters or groups of filters which result in less than 30 records have been masked in the Cost per NWAU dashboards, and selections which result in less than 20 records have been masked in the Hospital Acquired Complication (HAC) and Avoidable Hospital Readmission (AHR) dashboards.



## 3. Streams

IHACPA collects and reports data across 5 streams of hospital activity: admitted acute care, admitted subacute and non-acute care, emergency department, non-admitted patient care, and admitted mental health care.

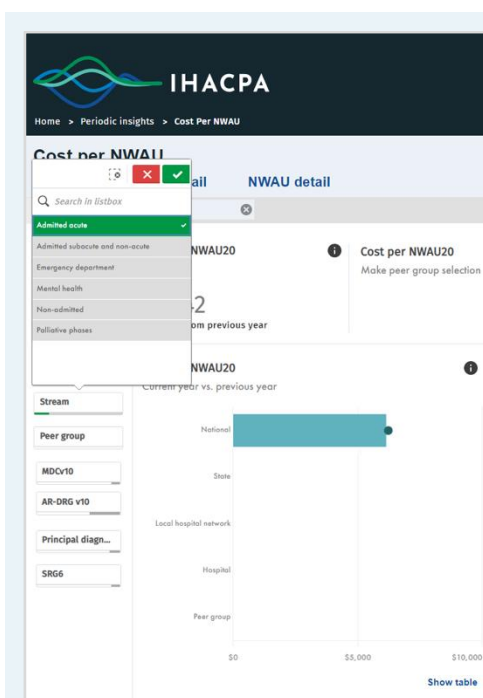
A full list of classifications by stream can be found on [IHACPA's website](#).

### 3.1 Admitted acute

Admitted acute care activity data is reported once a separation has occurred.

The Australian Refined Diagnosis Related Groups (AR-DRG) classification is used to classify admitted acute episodes.

The AR-DRG classification is continually refined by IHACPA to ensure that it retains clinical currency. The AR-DRG version agrees with that used for funding each year's public hospital activity.



#### Tool tip

Selecting a stream in the NBP displays that stream's corresponding classification filters. For example, selecting the 'admitted acute' stream will display the latest acute classification filters, as well as the major diagnostic category (MDC), service related groups (SRG) and principal diagnosis for comparison.



## 3.2 Admitted subacute and non-acute

Like the admitted acute stream, admitted subacute and non-acute care activity data is reported once a separation has occurred.

The classification system used for this type of care in Australia is the Australian National Subacute and Non-Acute Patient (AN-SNAP) classification. AN-SNAP is a casemix classification made up of 4 subacute care types – rehabilitation, palliative care, geriatric evaluation and management, and psychogeriatric care – and one non-acute care type.

Palliative care data is collected at an episode and phase level. A palliative care phase identifies a clinically meaningful period in a patient's condition and is determined by a holistic clinical assessment which considers the needs of the patient and their family and carers.

An episode of admitted patient palliative care may comprise a single phase or multiple phases, depending on changes in the patient's condition. Phases are not sequential, and a patient may move back and forth between phases within the one episode of admitted palliative care.

Data for the entire episode is presented via the admitted subacute and non-acute stream, whereas data for individual phases (where data is available at the phase level) is presented via the palliative care phases stream.

## 3.3 Emergency department

Emergency department activity is reported once the patient has physically departed the emergency department, or the emergency department stay has been completed.

Before 2021–22, the emergency stream used urgency related group (URGs) to classify patient presentations. Since 2021–22, the classification system has been updated to the Australian Emergency Care Classification (AECC).

## 3.4 Non-admitted

Non-admitted patient care activity is reported once the service event has been completed.

The Tier 2 Non-Admitted Services classification is used to classify non-admitted service events.



## 3.5 Admitted mental health

Admitted mental health (AMH) care activity comprises admitted activity with the care type mental health care. Like admitted acute, subacute and non-acute activity, it is reported when a separation has occurred.

The AMH data is collected at an episode and phase level. The episode of care is defined as the period between the commencement and completion of care, characterised by the mental health care type. Whereas, a mental health phase of care describes the prospective primary goal of treatment, within an episode of care, in terms of the 4 recognised phases of mental health care (acute, functional gain, intensive extended and consolidating gain).

An episode of care may have multiple mental health phases of care. The consumer's mental health care needs may change as they move between different phases of an episode, which may change the goal of care and need for resources.

Since 2022–23, the Australian Mental Health Care Classification (AMHCC) system is used to price admitted mental health phases. While, admitted mental health episodes continue to use the same classification and NWAU calculation methodologies as those used in the admitted acute stream.

Data for the entire episode is presented via the admitted mental health stream, whereas data for individual phases (where data is available at the phase level) is presented via the admitted mental health phases stream.

### Tool tip

Within the portal, values might be greyed out based on their dependency to the currently selected filters:

- A light grey colour indicates values that have not been selected.
- A dark grey colour indicates a contradictory selection; when these values are selected, the current selections are cleared from the filters bar.

## 3.6 In-scope funding sources

Costed activity data with funding sources which are within IHACPA's remit under the NHRA are included in the NBP. For the admitted streams, in-scope funding sources are:

- Health service budget (not covered elsewhere)
- Health service budget (due to eligibility for Reciprocal Health Care Agreement)
- Other hospital or public authority (contracted care)
- Private health insurance and
- Self-funded.



For the non-admitted stream, in-scope funding sources are:

- Health service budget (not covered elsewhere)
- Health service budget (due to eligibility for Reciprocal Health Care Agreement)
- Other hospital or public authority (contracted care).

In the emergency department stream, records which are neither funded by the Department of Veterans' Affairs nor through insurance compensation claims are those which are included in the NBP.



## 4. Accessing the NBP

The NBP can be accessed via [IHACPA's website](https://benchmarking.ihacpa.gov.au). The URL is: <https://benchmarking.ihacpa.gov.au>.

To view the NBP dashboards, select Periodic insights. Currently, there are 3 areas of focus on the NBP:

- Cost per national weighted activity unit (NWAU)
- Hospital Acquired Complications
- Avoidable Hospital Readmissions

Each area of focus has 3 dashboards containing indicators and graphs comparing data for the year selected to the previous year. The sections below explore dashboards from each of the 3 areas of focus.

### National Benchmarking Portal

The National Benchmarking Portal (NBP) is a secure website-based application that provides access to compare insights from the cost and activity data from public hospitals across the country. The NBP improves hospital managers' ability to compare differences in cost, activity and efficiency at similar hospitals using the national weighted activity unit (NWAU). Using data collected in the National Hospital Cost Data Collection, the NBP allows users to compare cost and activity data at jurisdiction, local hospital network and hospital level, as well as cost at the cost bucket and classification level, simplifying performance benchmarking and highlighting clinical variation.

Years included in the NBP: 2017-18 to **2022-23**.

Periodic insights →

#### Periodic insights



**Cost per national weighted activity unit (NWAU)** →

The average cost used to deliver health service activity expressed as a common unit.



**Hospital Acquired Complications** →

A complication experienced by a patient during their stay at the hospital and for which clinical risk mitigation strategies may reduce, but not necessarily eliminate the risk of that complication occurring.



**Avoidable Hospital Readmissions** →

When a patient who has been discharged from hospital (the index admission) is readmitted within a condition-specific time frame. The readmission episode is clinically related to the index admission and the reason for readmission was potentially avoidable through clinical management and/or appropriate discharge planning.

Currently the dashboards represent 6 financial years of data: 2017–18 to **2022–23**. New financial year data is added to dashboards every year.



## 5. Cost per NWAU dashboards

There are 3 Cost per NWAU dashboards:

- Overview
- Cost detail
- NWAU detail

In all 3 dashboards, data can be filtered by:

- Year
- State
- Local hospital network
- Hospital
- Stream and classification
- Peer group

Before exploring the Cost per NWAU dashboards, it is important to understand some common terms like NWAU and total cost.

### What is an NWAU?

An NWAU is a measure of health service activity expressed as a common unit, against which the NEP is paid. It provides a way of comparing and valuing different types of public hospital services within each of the streams (emergency department presentations, admitted episodes and non-admitted service events), which are each weighted for clinical complexity.

### What is total costs?

'Total costs' refers to the sum of the direct and indirect expenses incurred to deliver patient care. Direct expenses are expenses incurred in the delivery of a patient care product and/or service allocated to a patient using evidence of resource utilisation. Indirect expenses refer to expenses that are allocated using a method to apportion the expense.



## 5.1 Overview dashboard

The overview dashboard of the NBP presents cost per NWAU information using 6 indicators and 2 graphs, which each show the total cost of delivery divided by the total native NWAU. Below is a list of the native NWAU version for each year.

Financial year	Native NWAU
2017–18	NWAU17
2018–19	NWAU18
2019–20	NWAU19
2020–21	NWAU20
2021–22	NWAU21
2022–23	NWAU22

### 5.1.1 Cost per NWAU indicators

‘Cost per NWAU’ refers to the average cost of delivery of health service activity, expressed as a common unit.

The cost per NWAU indicators are:

- National: National figure for the current year (and stream if selected)
- Peer group: Selected or underlying peer group for the current selections
- Current selections: All other selections

For example, selecting a hospital and stream from the filters for any year will display the national figure, peer group (of the hospital) and the cost per NWAU for that hospital, for the selected stream.

#### Tool tip

Each dashboard has a filters bar, with the default selection being the current financial year. As users apply their selections, each new value is displayed in this bar. These are the filters applied to the indicators and visualisations for the current selections.

#### Cost per NWAU

[Overview](#) [Cost detail](#) [NWAU detail](#)



The growth figures in each of these indicators display the change in cost per NWAU, using the current year's native NWAU in the previous year.

For example, to calculate the growth in cost per NWAU for 2019–20, NWAU19 is applied to both the current year (2019–20) and previous year (2018–2019).

### 5.1.2 Total records indicator

'Total records' refers to the number of costed records for the current selections. The default value for this statistic is the total number of records for the financial year selected.

### 5.1.3 Cost per record indicator

'Cost per record' refers to the total cost for the financial year divided by the total records.

This section displays values for:

- Current selections
- National average
- Relevant peer group

This indicator compares the current and previous year's numbers and represents the direction of movement relative to the previous year. Note that the 'Cost per record' is not adjusted for the complexity or casemix of the underlying population and therefore should be interpreted with caution.

Users can select 'Explore cost detail' or navigate to the 'Cost detail' tab for detailed exploratory dashboards.

### 5.1.4 NWAU per record indicator

'NWAU per record' refers to the total native NWAU for the year selected divided by the total records. This section displays values for:

- Current selections
- National average
- Relevant peer group

This indicator compares the current and previous year's numbers and represents the direction of movement relative to the previous year.

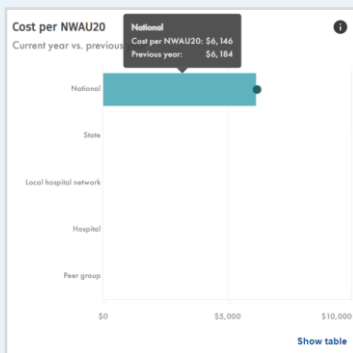
Users can select 'Explore NWAU detail' or navigate to the 'NWAU detail' tab for detailed exploratory dashboards.



## 5.1.5 Cost per NWAU graphs

Horizontal and vertical bar graphs are used to visually present the indicators.

- The horizontal bar graph compares the current and previous year's cost per NWAU, represented by bars and dots respectively. Values are presented at a national (default), state, LHN, hospital and peer group level. All figures are based on current selections.
- The vertical bar graph compares the cost per NWAU for each state (default), LHN, hospital and stream, with the national indicator (represented by the horizontal line). There is an option to toggle between tabs, with the 'Stream' tab showing each stream as a vertical bar, and the national average and peer group average represented by horizontal lines.

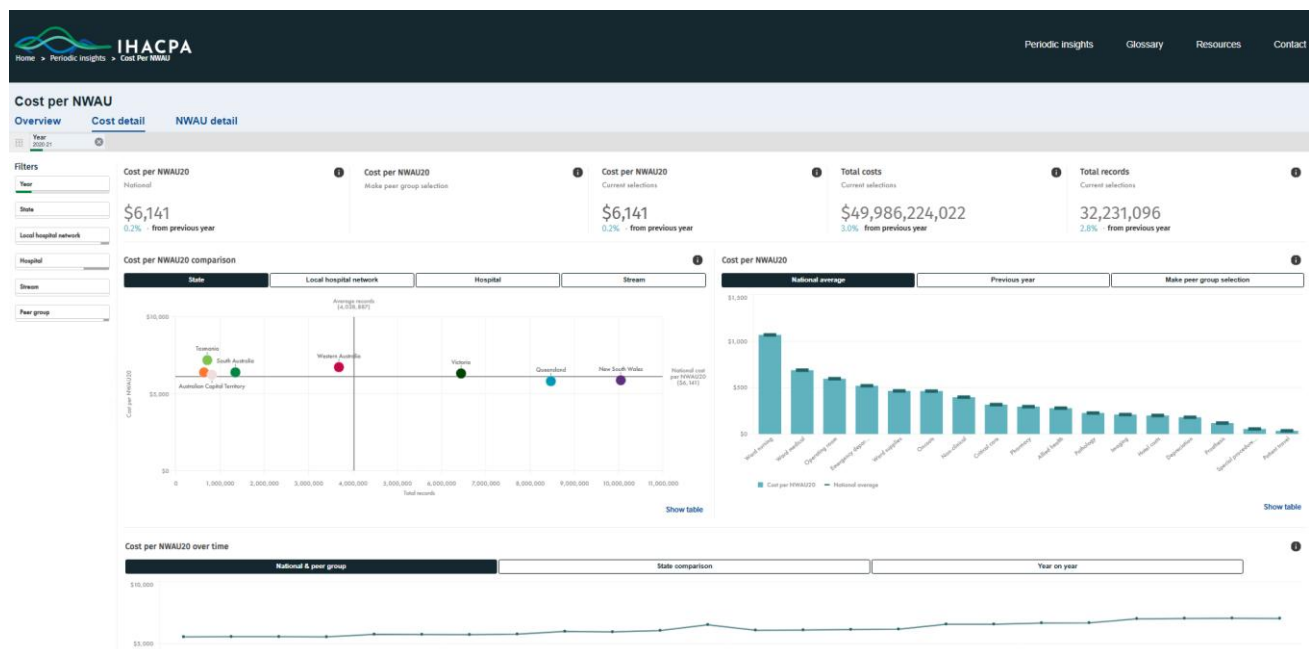


### Tool tip

All graphs have hover-over functionality so that users can learn more about each data point.



## 5.2 Cost detail dashboard



The Cost detail dashboard presents cost per NWAU information through 5 indicators, as seen on the overview tab and 3 detailed graphs focusing on the end-class, cost bucket and quarter of separation (time graph).

### 5.2.1 Cost per NWAU indicators

The cost per NWAU indicators, similar to the overview tab, represent the cost of delivering each activity unit. There are 3 cost per record indicators:

- National: National figure for the current year (and stream if selected)
- Peer group: Selected or underlying peer group for the current selections
- Current selections: All other selections

### 5.2.2 Total costs

'Total costs' refers to the sum of direct and indirect costs used to deliver patient care for all records in a selection. The default value for this statistic is the total costs for the current financial year.

### 5.2.3 Total records

'Total records' refers to the number of costed records for the current selections. The default value for this statistic is the total number of records for the current financial year.

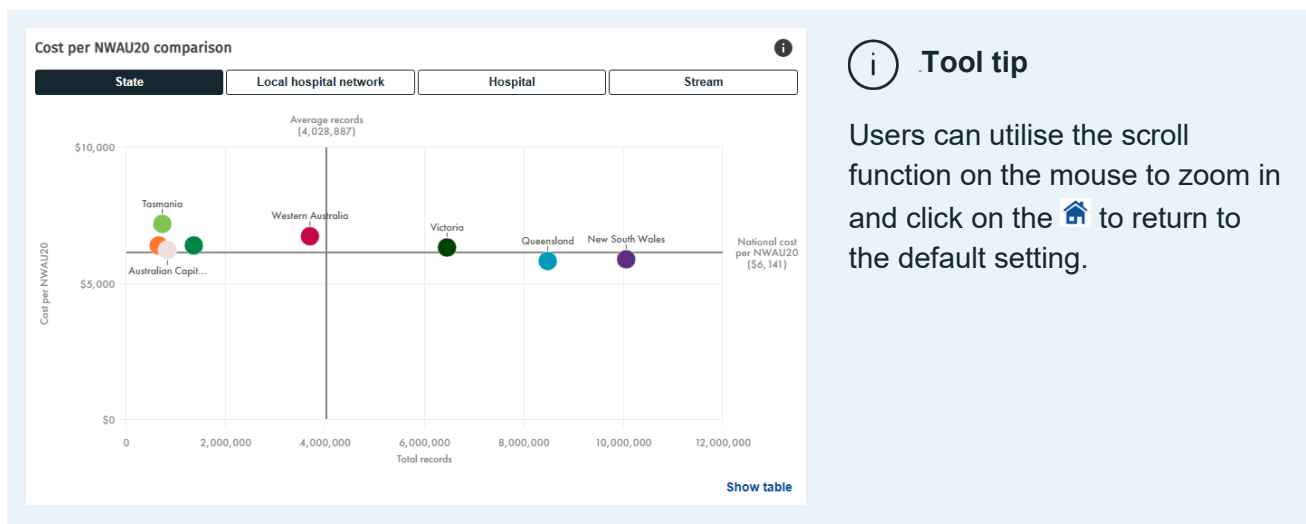


### 5.2.4 Cost per NWAU comparison

This scatter plot shows the average cost of delivering one activity unit by state (default), LHN, hospital, stream, and the chosen stream's classification. A tab for classification will be available once a stream is selected. The graph is presented using cost per NWAU on the vertical axis and total records for that selection on the horizontal axis.

The NWAU used for this graph is the native NWAU for the year.

A mean (or average) line is displayed on each axis of the graph, allowing users to compare selected inputs with the average cost per NWAU and average records, for the current selections.



### 5.2.5 Cost per NWAU

The bar graph shown in Section 5.2 compares the average cost per NWAU across all cost buckets (sum of direct and indirect). This graph contains 3 toggling options:

- National average (default): Compares the average cost per NWAU for the selected filters (bar graph) against the national average for cost per NWAU (line bars on top)
- Previous year: Compares the average cost per NWAU for the selected filters (bar graph) against the previous year's average cost per NWAU (line bars on top) using the native NWAU of the current year.
- Peer group: Compares the average cost per NWAU for the selected filters (bar graph) against the average for cost per NWAU for the selected or underlying peer group (line bars on top)

### 5.2.6 Cost per NWAU over time

This line graph compares the national cost per NWAU, using the native NWAU for the current year selection at quarterly intervals. This graph contains 3 toggling options:

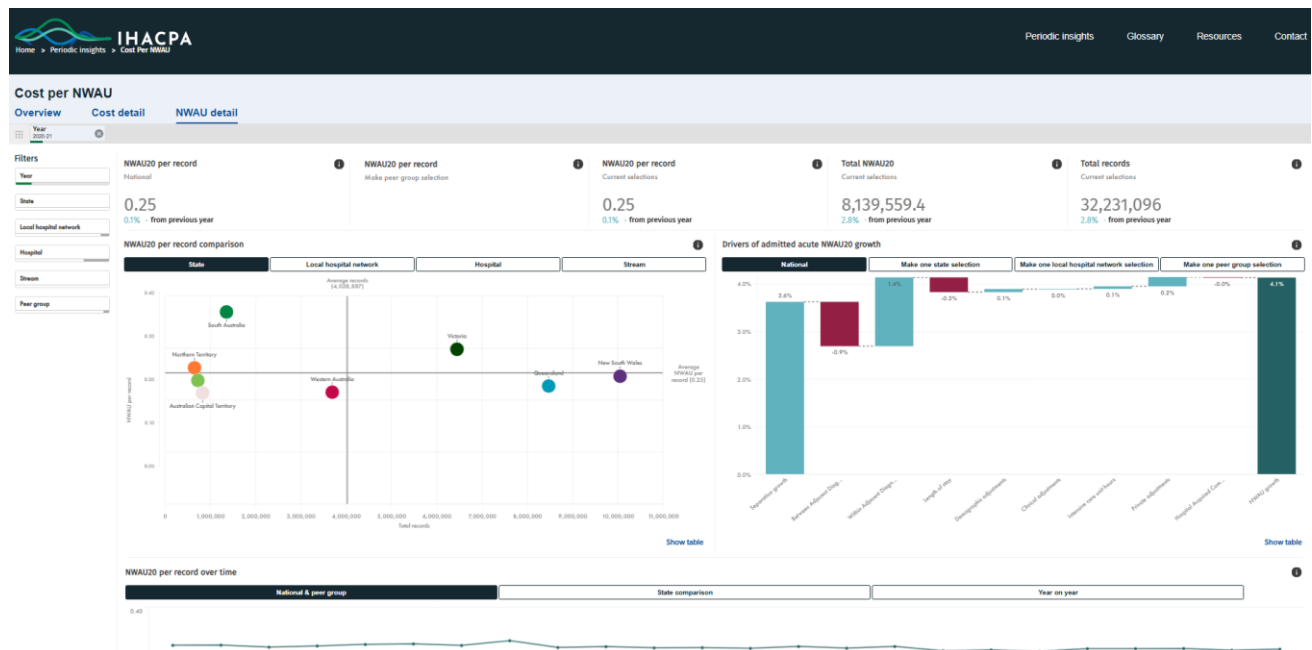


- National & peer group (default): Compares the average cost per NWAU for the selected filters against the average cost per NWAU for the selected or underlying peer group, and the national average for cost per NWAU
- State comparison: Compares the average cost per NWAU by state
- Year on year: Compares the average cost per NWAU by year.



## 5.3 NWAU detail dashboard

The 'NWAU detail' dashboard delves into the hospital activity underlying the cost per NWAU statistic.



### 5.3.1 NWAU per record indicators

'NWAU per record' refers to the sum of all activity, measured in NWAU, divided by the total number of records.

Within the NBP, there are 5 indicators for NWAU per record. The headline figures show the total native NWAU for the year divided by the total number of records.

The growth figures in these indicators display the change in NWAU per record for the same selections from the previous year.

NWAU per record indicators:

- National: National figure for the current year (and stream if selected)
- Peer group: Selected or underlying peer group for the current selections
- Current selections: All other selections

### 5.3.2 Total NWAU

The sum of all activity expressed in terms of a common unit native to the selected year. The default value for this statistic is the total NWAU for the current financial year selected.

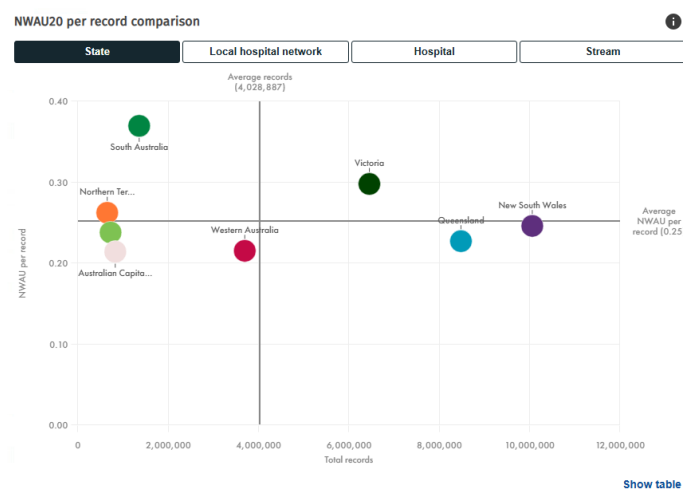


### 5.3.3 Total records

'Total records' refers to the number of costed records for the current selections. The default value for this statistic is the total number for all records for the current financial year.

### 5.3.4 NWAU per record comparison

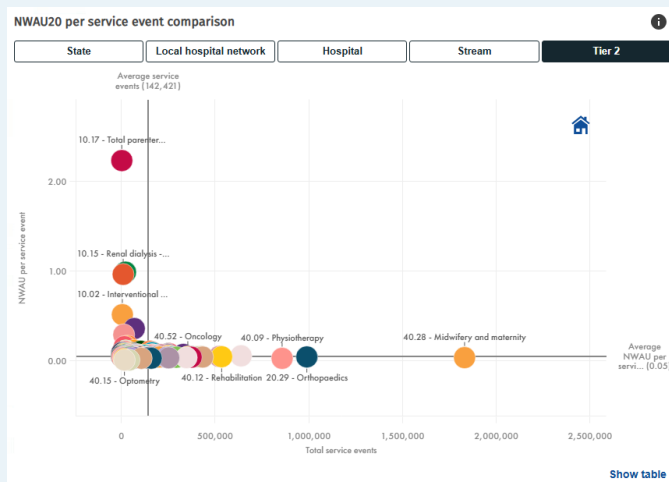
This scatter plot compares the total number of records (horizontal axis) with the NWAU per record (vertical axis) by state (default), LHN, hospital and stream, against the average records (vertical line) and average NWAU per record (horizontal line) for the current selections.





## *i* Tool tip

The last tab of this scatter plot displays the classification once a stream has been selected. For example, selecting the non-admitted stream displays the Tier 2 scatter plot for the current selections.



A mean or average line is displayed on each axis of the graph, allowing users to compare selected inputs with the average NWU per record and average records.

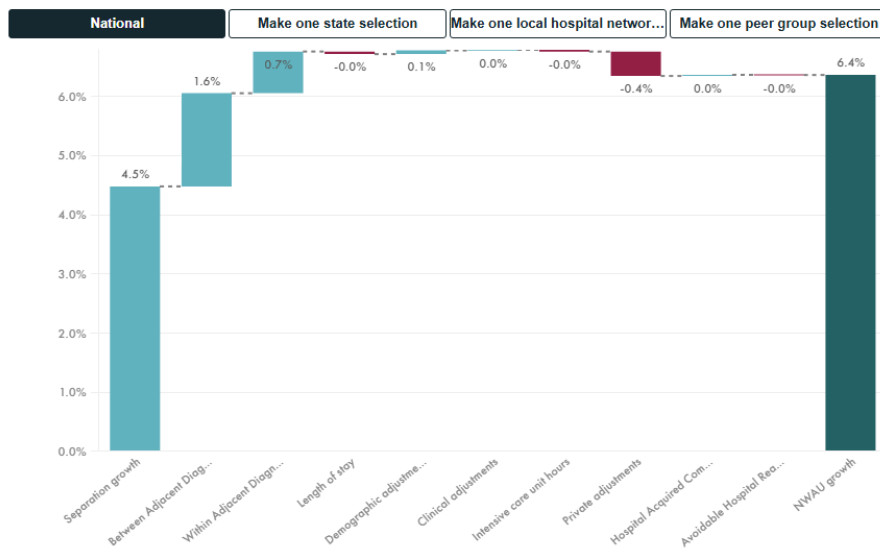
## 5.3.5 Drivers of admitted acute NWU growth

The waterfall graph presents a decomposition of the drivers that contribute to admitted acute NWU growth between years. These drivers include: the underlying growth in records; changes between ADRGs; changes within ADRGs; changes in length of stay; and changes to patient profiles for which other NWU adjustments apply. These adjustments are detailed in Table 1.

There are 4 buttons above the Drivers of admitted acute NWU chart, for 'National', 'State', 'Local hospital network' and 'Peer group'. The selected button determines how 'Separation Growth' and 'Between ADRG changes' are measured. If the 'National' button is selected, then the expected NWU growth due to separation change is fixed at the national rate of separation growth.



Drivers of admitted acute NWAU22 growth



If the user filters to certain states then they may also select the 'State' button, and 'Separation Growth' and 'Between ADRG changes' are measured according to separation growth in the state which the user has selected. Similarly, if the user filters to a LHN or peer group then 'Separation Growth' and 'Between ADRG changes' are measured at the selected LHN or peer group level.

If the user filters their data to the admitted acute stream then the final NWAU growth figure will match the total NWAU growth indicator at the top of the dashboard.



Table 1 provides the descriptions for each component of drivers of acute NWAU growth.

**Table 1: Description of each component of the Drivers of Acute NWAU growth chart**

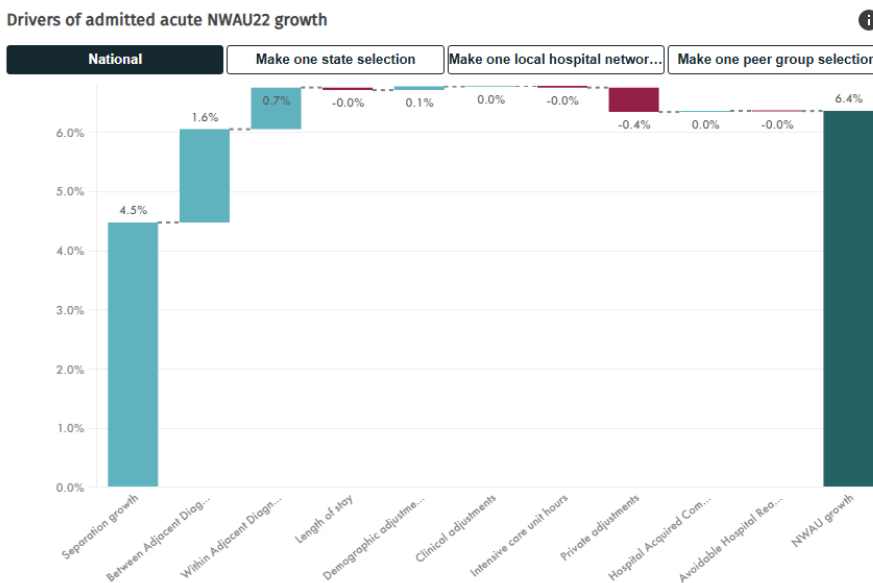
Title in NBP	Description
Separation Growth	The growth in separations between the selected year and the previous year.
Between ADRG changes	The impact of changes between adjacent DRGs on NWAU growth. For example, if the service profile of a hospital changed from delivering services in ADRGs with relatively low weights in 2018–19, to services in ADRGs with relatively high weights in 2019–20, this would have a positive impact on NWAU growth.
Within ADRG changes	The impact of changes within ADRGs on NWAU growth. For example, if a hospital continued to deliver services in the same ADRGs, but the service profile changed from lower complexity (for example “B” or “C” complexity DRGs) in 2018–19 to higher complexity (for example “A” complexity DRGs) in 2019–20, this would have a positive impact on NWAU growth.
Length of Stay	Impact of changes in the length of stay profile on the growth in NWAU.
Demographic adjustments	Impact of changes in the volume of Indigenous patients and patients residing in and/or being treated in remote locations on the growth in NWAU.
Clinical adjustments	Impact of changes in the volume of patients receiving additional radiotherapy, dialysis or psychiatric care on the growth in NWAU.
Intensive Care Unit hours	Impact of the shift in ICU hours on the growth in NWAU.
Private patient adjustment	Impact of changes in the volume of private patients on the growth in NWAU.
Hospital Acquired Complications adjustment	Impact of changes in the volume and distribution of HACs on the growth in NWAU.
Avoidable Hospital Readmissions adjustment <sup>1</sup>	Impact of changes in the volume and distribution of AHRs on the growth in NWAU.
NWAU growth	The growth in NWAU between the selected year and the previous year.

<sup>1</sup> The Avoidable Hospital Readmissions adjustment is only applicable from NWAU21 onward.



Further details and calculations are provided in the NBP technical specifications available on [IHACPA's website](#).

The bars are colour-coded to distinguish between increases (green), decreases (red) and total impact (dark green). All bars represent percentages of total NWAU growth, as indicated by the vertical axis.



### 5.3.6 NWAU per record over time

This line graph compares the national NWAU per record, using the native NWAU for the current year selection; for example, NWAU19 for the financial year 2019–20, at quarterly intervals. This graph contains 3 toggling options:

- National & peer group (default): Compares the average NWAU per record for the selected filters against the average NWAU per record for the selected or underlying peer group, and the national average NWAU per record
- State comparison: Compares the average NWAU per record by state
- Year on year: Compares the average NWAU per record by year.



# 6. Hospital Acquired Complications

There are 3 HAC dashboards presented on the NBP:

- HAC trends
- HAC activity
- NWAU adjustments

In all 3 dashboards data can be filtered by:

- Year
- Quarter
- State
- Local hospital network
- Hospital
- Peer group
- Complication group
- Age group

Before exploring the HAC dashboards, it is important to understand some common terms like HACs, HAC rate and complication group.

## What is a HAC?

A HAC is a complication experienced by a patient during their stay at the hospital and for which clinical risk mitigation strategies may reduce, but not necessarily eliminate, the risk of that complication occurring. The national list of 16 HACs (defined as complication groups and listed below) was developed by a Joint Working Party of the Australian Commission on Safety and Quality in Health Care (The Commission) and IHACPA.

## What is a HAC rate?

HAC rate refers to episodes with one or more HACs per 10,000 episodes that satisfy the HAC eligibility criteria. The eligibility criteria exclude certain categories of high-volume activity such as same-day haemodialysis.

### Formula:

*HAC Rate = Number of episodes with HAC / 10,000 episodes eligible for HAC.*



## What is a complication group?

A complication group is any one of the 16 categories as listed below:

Complication group	Diagnosis
<b>HAC 1. Pressure injury</b>	<ul style="list-style-type: none"> <li>– Stage III ulcer</li> <li>– Stage IV ulcer</li> <li>– Unspecified decubitus ulcer and pressure area</li> <li>– Unstageable pressure injury</li> <li>– Suspected deep tissue injury</li> </ul>
<b>HAC 2. Fall resulting in fracture or intracranial injury</b>	<ul style="list-style-type: none"> <li>– Intracranial injury</li> <li>– Fractured neck of femur</li> <li>– Other fractures</li> </ul>
<b>HAC 3. Healthcare-associated infection</b>	<ul style="list-style-type: none"> <li>– Urinary tract infection</li> <li>– Surgical site infection</li> <li>– Pneumonia</li> <li>– Blood stream infection</li> <li>– Infections or inflammatory complications associated with peripheral/central venous catheters</li> <li>– Multi-resistant organism</li> <li>– Infection associated with prosthetics/implantable devices</li> <li>– Gastrointestinal infections</li> <li>– Other high impact infections</li> </ul>
<b>HAC 4. Surgical complications requiring unplanned return to theatre</b>	<ul style="list-style-type: none"> <li>– Post-operative haemorrhage/haematoma requiring transfusion and/or return to theatre</li> <li>– Surgical wound dehiscence</li> <li>– Anastomotic leak</li> <li>– Vascular graft failure</li> <li>– Other surgical complications requiring unplanned return to theatre</li> </ul>
<b>HAC 5. Unplanned intensive care unit admission<sup>2</sup></b>	<ul style="list-style-type: none"> <li>– Unplanned admission to intensive care unit</li> </ul>
<b>HAC 6. Respiratory complications</b>	<ul style="list-style-type: none"> <li>– Respiratory failure including acute respiratory distress syndrome requiring ventilation</li> <li>– Aspiration pneumonia</li> <li>– Pulmonary oedema</li> </ul>
<b>HAC 7. Venous thromboembolism</b>	<ul style="list-style-type: none"> <li>– Pulmonary embolism</li> <li>– Deep vein thrombosis</li> </ul>

<sup>2</sup> HAC 5. Unplanned intensive care unit admission is not represented on the NBP because flagging these requires data not presently collected in the National Minimum Data Set (NMDS).



Complication group	Diagnosis
<b>HAC 8. Renal failure</b>	<ul style="list-style-type: none"> <li>– Renal failure requiring haemodialysis or continuous veno-venous haemodialysis</li> </ul>
<b>HAC 9. Gastrointestinal bleeding</b>	<ul style="list-style-type: none"> <li>– Gastrointestinal bleeding</li> </ul>
<b>HAC 10. Medication complications</b>	<ul style="list-style-type: none"> <li>– Drug related respiratory complications/depression</li> <li>– Haemorrhagic disorder due to circulating anticoagulants</li> <li>– Movement disorders due to psychotropic medication</li> <li>– Serious alteration to conscious state due to psychotropic medication</li> </ul>
<b>HAC 11. Delirium</b>	<ul style="list-style-type: none"> <li>– Delirium</li> </ul>
<b>HAC 12. Incontinence</b>	<ul style="list-style-type: none"> <li>– Urinary incontinence</li> <li>– Faecal incontinence</li> </ul>
<b>HAC 13. Endocrine complications</b>	<ul style="list-style-type: none"> <li>– Malnutrition</li> <li>– Hypoglycaemia</li> </ul>
<b>HAC 14. Cardiac complications</b>	<ul style="list-style-type: none"> <li>– Heart failure and pulmonary oedema</li> <li>– Arrhythmias</li> <li>– Cardiac arrest</li> <li>– Acute coronary syndrome including unstable angina, STEMI and NSTEMI</li> <li>– Infective endocarditis</li> </ul>
<b>HAC 15. Third and fourth degree perineal laceration during delivery</b>	<ul style="list-style-type: none"> <li>– Third and fourth degree perineal laceration during delivery</li> </ul>
<b>HAC 16. Neonatal birth trauma<sup>3</sup></b>	<ul style="list-style-type: none"> <li>– Neonatal birth trauma</li> <li>– Hypoxic ischaemic encephalopathy</li> </ul>

<sup>3</sup> HAC 16. Neonatal birth trauma is not presented on the NBP due to low volume available in the data.



## 6.1 HAC trends dashboard

This dashboard presents HAC trends over a financial year, comparing these trends to those among episodes with no HACs and episodes from the previous financial year. This dashboard compares average length of stay, rate of long stay outliers, Charlson score and HAC activity for all HAC categories.

### 6.1.1 HAC trends indicators

The HAC trends dashboard looks at the following indicators:

- Number of HACs: Total number of HACs encountered by all episodes for a given selection. This may include one or more HACs undergone by a patient during a single episode of care.
- HAC rate: Number of episodes with HACs for every 10,000 episodes eligible for HACs.
- Number of episodes with HACs: Episodes recording at least one HAC.

Users may select a combination of hospitals, peer groups, complication groups, and/or age groups from the filters to display indicators for the desired selection. The growth figures in each of these indicators display the change since previous years for the same filters.

### 6.1.2 Average length of stay

This graph compares the average length of stay for HAC episodes to that of episodes without a HAC over each quarter of the selected financial year.

#### Tool tip

If a combination of filters results in number of episodes with HACs less than 20, all indicators and graphs are masked to maintain data privacy and security. However, if the combination of filters results in number of episodes with HACs greater than **the minimum threshold**, but any values in graphs relating to the selected year is lower than 20, only the graphs containing these values will be masked.

### 6.1.3 Rate of long stay outliers per 10,000 episodes

As part of IHACPA's function in pricing each episode of admitted acute patient care, IHACPA calculates upper and lower bounds for what should be considered an inlier or 'standard' length of stay, within each AR-DRG. The methodology used to do so is detailed in the technical specifications for each year's NEP Determination. Episodes of care which record more admitted days than the inlier upper bound is referred to as a 'long stay outlier'.



This graph compares the rate of long stay outliers between records with and without HACs over each quarter of the selected financial year. The rate of long stay outliers for episodes with HAC is the number of long stay outliers for every 10,000 episodes with HAC. Similarly, the rate of long stay outliers for non-HAC episodes is the number of long stay outliers for every 10,000 episodes without a HAC.

#### Formulae:

*Rate of long stay outliers for HAC = Number of long stay outliers with HAC / 10,000 episodes with HAC*

*Rate of long stay outliers for Non-HAC = Number of long stay outliers without HAC / 10,000 episodes without HAC*

### 6.1.4 Charlson score

The Charlson Comorbidity Index (CCI) is used to predict the one-year morbidity for a patient with a range of specific comorbidities. IHACPA uses a modification of the index used to predict in-hospital mortality<sup>4</sup>. It is calculated on the basis of 17 health conditions, and the scores for each condition are as per the table below:

Health Condition	Score
Acute myocardial infarction	1
Congestive heart failure	1
Peripheral vascular disease	1
Cerebral vascular accident	1
Dementia	1
Pulmonary disease	1
Connective tissue disorder	1
Peptic ulcer	1
Liver disease	1
Diabetes	1
Diabetes complications	2
Paraplegia	2
Renal disease	2
Cancer	2
Metastatic cancer	3
Severe liver disease	3
HIV	6

Once the CCI is calculated a Charlson score is assigned based on the following scores:

- Mild: 0-2
- Moderate: 3-4
- Severe: 5-16

<sup>4</sup> Sundarajan, V. et al, *New ICD-10 version of the Charlson Comorbidity Index predicted in-hospital mortality*, Journal of Clinical Epidemiology 57 (2004) 1288-1294.



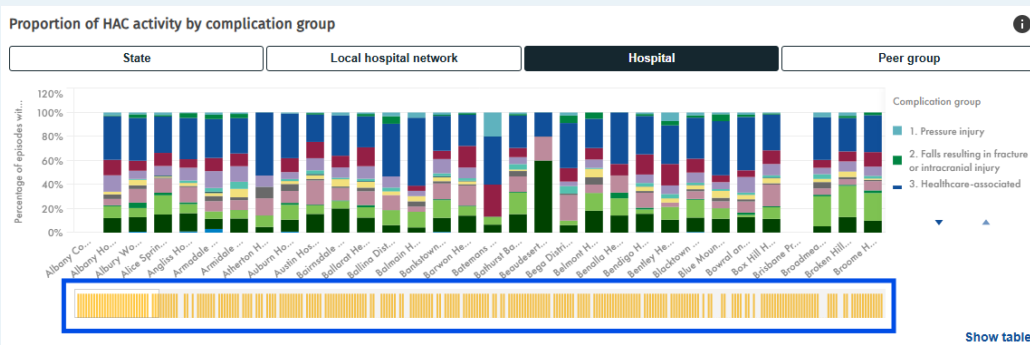
Patients with a high Charlson score may be more likely to acquire a HAC than people with a low Charlson score, and the NBP exhibits this comparison.

### 6.1.5 Proportion of HAC activity by complication group

This graph presents proportions of HACs in each HAC category, for all complication groups, by state. Users can toggle between tabs to view percentages of HACs in each category by LHN, hospital and peer group.

#### Tool tip

Use the 'magnified rectangular box' as shown below to scroll left or right to view different LHNs/hospitals or alternatively select desired LHNs/hospitals from the filters.





## 6.2 HAC activity

This dashboard compares HAC rate to expected HAC rate for the user's chosen financial year to the previous financial year using different indicators and graphs.

### 6.2.1 How is expected HAC rate calculated?

The probability of a HAC occurring is determined using a logistic regression model using risk factors set out by our Clinical Advisory Committee. A logistic regression model assigns a score to each risk factor and an "intercept" figure for when there are no risk factors. The sum of these scores is used to calculate a value between zero and one representing the probability of a HAC taking place. The higher the figure the more likely a HAC has taken place.

The model is calibrated so that the total number of HACs counted in the NBP is equal to the total number of expected HACs. The risk model does not take into account all possible risks and pressures undergone throughout a patient's episode of care, so the expected rate should be not interpreted as an assessment of the quality of a hospital's care. However, it can be used as a guide to highlight instances in which a group of hospitals treat a very complex cohort of patients, which may lead to an elevated number of HACs.

### 6.2.2 HAC activity indicators

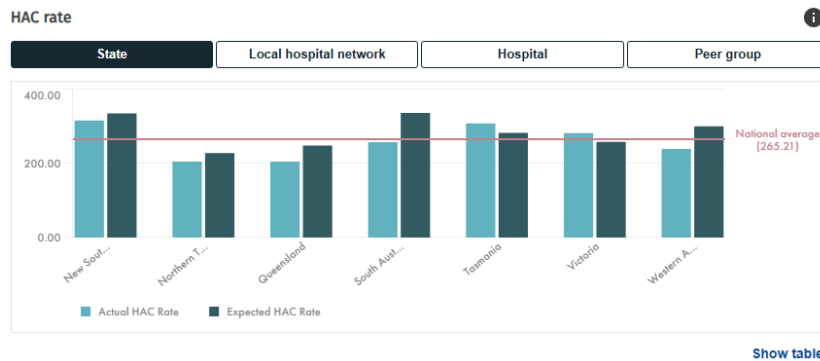
The HAC activity dashboard contains details on the following indicators:

- HAC rate: Number of episodes with HACs for every 10,000 episodes eligible for HACs.
- Expected HAC rate: An estimate of the number of HACs per 10,000 episodes eligible for HACs, based on the casemix of the episodes among the user's selection.
- Number of HACs: Total number of HACs encountered by all episodes for a given selection. This may include one or more HACs encountered by each episode.
- Expected number of HACs: An estimate of the total number of HACs, based on the casemix of the episodes among the user's selection.
- Number of episodes with HACs: Total episodes experiencing at least one HAC.



### 6.2.3 HAC rate

This graph compares actual HAC rate to expected HAC rate, by state, to the national HAC rate. Users can toggle between the 'Local hospital network', 'Hospital' or 'Peer group' tabs.



### 6.2.4 Episodes with HACs over time

This graph compares the distribution of episodes with HAC by quarter for all financial years. Users have the option to switch to the 'Against expected' tab to view the graph as a bar chart comparing actual and expected number of episodes with HAC for the selected financial year by quarter.



### 6.2.5 HAC prevalence by complexity group

This graph measures HAC rate by low, moderate and high complexity groups as compared to the previous year. The complexity group is determined in the same manner as the 'Expected HAC rate', by assigning a likelihood that the patient undergoes a HAC based on their demographic information and the circumstances of their admission, for example whether their admission was deemed urgent or elective.



## 6.2.6 Number of HACs by complication group

This bar graph compares the number of HACs to the expected number of HACs for each complication group. Users may select any complication group to see a comparison of the instances of different diagnoses which arise within each HAC category. These diagnoses are referred to as 'subgroups'. Each complication group and subgroup has been defined in the complication group table.





## 6.3 NWAU adjustments

When a HAC is identified, a proportion of the episode's NWAU is deducted based on the HAC category and the complexity group, as described in Section 6.2.5. This dashboard compares the amount of NWAU deducted in the user's chosen year to the same figure for the previous year.

NWAU deductions for HACs did not form part of the NEP Determination in NEP17, so NWAU deductions in 2017–18 data are measured using NWAU18, as this was the first year in which deductions were imposed for HACs. The NWAU deduction should be understood as an estimate of the additional activity undertaken by the hospital system as a result of HACs, rather than a measure of hospital performance.

A detailed explanation of the process can be found on IHACPA's website: [IHACPA Hospital Acquired Complications Fact Sheet](#).

### 6.3.1 NWAU adjustment indicators

The NWAU adjustment dashboard looks at the following indicators:

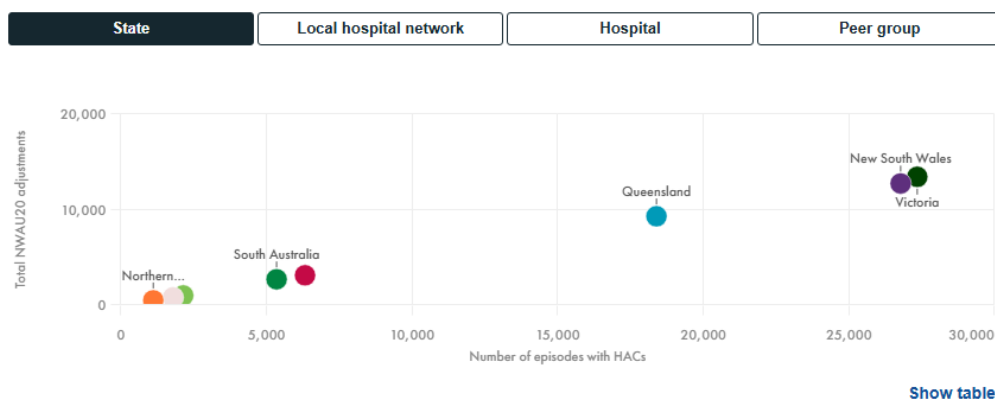
- **Total NWAU adjustments:** The total NWAU adjustments due to HACs. This is calculated based on HAC category and complexity group. It also presents the growth compared to previous year. Growth figures are calculated using a common NWAU version to measure both years under comparison.
- **Percentage of HAC adjustments to total NWAU:** The HAC deduction as a percentage of the total NWAU accrued among the records meeting the user's selection criteria.
- **Number of HACs:** The number of HACs identified among all episodes satisfying the user's selection. This may include one or more HACs identified in a single episode.
- **Number of episodes with HACs:** Total count of episodes encountering at least one HAC.



### 6.3.2 NWAU adjustments by number of episodes with HACs

This scatter plot displays the NWAU deducted due to HAC adjustment (vertical axis) against the total number of episodes with HAC (horizontal axis) in each state. Users can toggle between tabs to view the NWAU deducted and number of episodes with HACs by LHN, hospital or peer group.

NWAU20 adjustments by number of episodes with HACs



### 6.3.3 NWAU adjustments and number of episodes with HACs over time

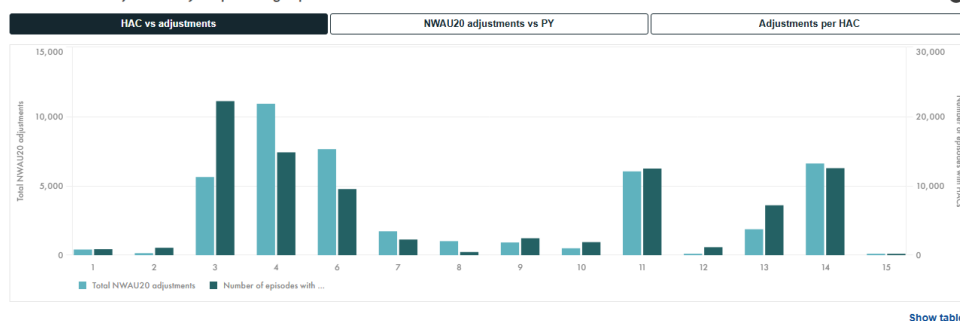
The line graph under the 'Year comparison' tab displays the total HAC adjustment by quarter. The bar graph under the 'NWAU adjustments and HACs per year' tab shows the total NWAU adjustments due to HACs and the number of episodes with HACs by quarter. The line graph under the 'Percent of total NWAU' tab displays total NWAU adjustments as a percentage of total NWAU accrued by separations episodes with and without a HAC for each quarter.



### 6.3.4 HAC and NWAU adjustments by complication group

The 'HAC vs adjustments' tab shows the number of episodes with at least one HAC and the total NWAU adjustments due to HACs within each HAC category. The 'NWAU adjustments vs PY' tab displays a year-on-year comparison of NWAU adjustments due to HACs for the chosen time period. The 'Adjustments per HAC' tab displays a year-on-year comparison of deduction per HAC for the chosen time period. The user can view these bar graphs by complication group(s).

HAC and NWAU20 adjustments by complication group


[Show table](#)

Complication group
1. Pressure injury
2. Falls resulting in fracture or intracranial injury
3. Healthcare-associated infection
4. Surgical complications requiring unplanned return to theatre
6. Respiratory complications
7. Venous thromboembolism
8. Renal failure
9. Gastrointestinal bleeding
10. Medication complications
11. Delirium
12. Incontinence
13. Endocrine complications
14. Cardiac complications
15. Third and fourth degree perineal laceration during delivery



# 7. Avoidable Hospital Readmissions

There are 3 AHR dashboards presented on the NBP:

- AHR trends
- AHR activity
- NWAU adjustments

In all 3 dashboards data can be filtered by:

- Year
- Quarter
- State
- Local hospital network
- Hospital
- Peer group
- Readmission group
- Age group

Before exploring the AHR dashboards, it is important to understand some common terms like AHRs, AHR rate and readmission group.

## What is an AHR?

An AHR occurs when a patient who has been discharged from hospital (the index admission) is admitted again within a condition-specific time interval (the readmission), and the readmission:

- is clinically related to the index admission
- has the potential to be avoided through improved clinical management and/or appropriate discharge planning in the index admission.

The national list of 12 AHRs (defined as readmission groups) was developed by the Australian Commission on Safety and Quality in Health Care (The Commission) and IHACPA.



## What is AHR rate?

AHR rate refers to episodes satisfying the definition of at least one readmission group per 10,000 episodes eligible for an AHR deduction.

Episodes are eligible to receive an AHR deduction if they meet certain criteria established by The Commission. For example, some classes of high-volume activity, such as same-day and overnight chemotherapy are not eligible to be the index episode of an AHR.

### Formula:

*AHR Rate = Number of episodes with AHR / 10,000 episodes eligible for AHR.*

## What is a readmission group?

There are 12 readmission groups, each is listed in the table below. Within each group are several diagnosis categories. The diagnosis category describes a condition present in the readmission episode which is clinically related to the care in the index episode and which resulted in an AHR being flagged.

Readmission group	Readmission diagnosis
<b>AHR 1. Pressure injury</b>	<ul style="list-style-type: none"> <li>– Stage III ulcer</li> <li>– Stage IV ulcer</li> <li>– Unspecified decubitus and pressure area</li> </ul>
<b>AHR 2. Infections</b>	<ul style="list-style-type: none"> <li>– Urinary tract infection</li> <li>– Surgical site infection</li> <li>– Pneumonia</li> <li>– Blood stream infection</li> <li>– Central line and peripheral line associated blood stream infection</li> <li>– Multi-resistant organism</li> <li>– Infections associated with devices, implants and grafts</li> <li>– Infection associated with devices, implants and grafts in genital tract or urinary system</li> <li>– Infection associated with peritoneal dialysis catheter</li> <li>– Gastrointestinal infection</li> </ul>
<b>AHR 3. Surgical complications</b>	<ul style="list-style-type: none"> <li>– Postoperative haemorrhage/ haematoma</li> <li>– Surgical wound dehiscence</li> <li>– Anastomotic leak</li> <li>– Cardiac vascular graft failure</li> <li>– Pain following surgery</li> <li>– Other surgical complications</li> </ul>



Readmission group	Readmission diagnosis
<b>AHR 4. Respiratory complications</b>	<ul style="list-style-type: none"> <li>– Respiratory failure including acute respiratory distress syndromes</li> <li>– Aspiration pneumonia</li> </ul>
<b>AHR 5. Venous thromboembolism</b>	<ul style="list-style-type: none"> <li>– Venous thromboembolism</li> </ul>
<b>AHR 6. Renal failure</b>	<ul style="list-style-type: none"> <li>– Renal failure</li> </ul>
<b>AHR 7. Gastrointestinal bleeding</b>	<ul style="list-style-type: none"> <li>– Gastrointestinal bleeding</li> </ul>
<b>AHR 8. Medication complications</b>	<ul style="list-style-type: none"> <li>– Drug related respiratory complications/depression</li> <li>– Hypoglycaemia</li> </ul>
<b>AHR 9. Delirium</b>	<ul style="list-style-type: none"> <li>– Delirium</li> </ul>
<b>AHR 10. Cardiac complications</b>	<ul style="list-style-type: none"> <li>– Heart failure and pulmonary oedema</li> <li>– Ventricular arrhythmias and cardiac arrest</li> <li>– Atrial tachycardia</li> <li>– Acute coronary syndrome including unstable angina, STEMI and NSTEMI</li> </ul>
<b>AHR 11. Constipation</b>	<ul style="list-style-type: none"> <li>– Constipation</li> </ul>
<b>AHR 12. Nausea and vomiting</b>	<ul style="list-style-type: none"> <li>– Nausea and vomiting</li> </ul>



## 7.1 AHR trends dashboard

This dashboard presents AHR trends over a financial year, comparing it to episodes with no AHRs and to the activity in the previous year. This dashboard compares average length of stay, proportion of patients aged at least 60, Charlson score and AHR activity for all AHR categories.

### 7.1.1 AHR trends indicators

The AHR trends dashboard looks at the following indicators:

- Episodes with AHRs: The number of episodes satisfying the definition of at least one readmission group.
- AHR rate: Episodes satisfying the definition of at least one readmission group per 10,000 eligible episodes.
- Total eligible episodes: The total number of episodes that meet the AHR eligibility criteria. These criteria are used to exclude certain classes of high-volume activity such as same-day or overnight haemodialysis or peritoneal dialysis.

Users may select a combination of hospitals, peer groups, readmission groups and/or age groups from the filters to display indicators for the desired selection. The growth figures in each of these indicators display the change since previous years for the same filters.

### 7.1.2 Average length of stay

This graph compares the average length of stay for AHR episodes to the same figure for episodes without AHR over each quarter of the selected financial year.

#### Tool tip

If a combination of filters results in number of episodes with AHRs less than 20, all indicators and graphs are masked to maintain data security. However, if the combination of filters results in number of episodes with AHRs greater than **the minimum threshold**, but any values in graphs relating to the selected year is lower than 20, only the graphs containing these values will be masked.

### 7.1.3 Rate of age greater than 60 per 10,000 episodes

This graph compares the proportion of patients aged over 60 years – we compare the group of episodes which result in an AHR to the group of episodes which do not result in an AHR.

#### Formulae:

*AHR rate (patients over 60 years) = Number of episodes with AHR (patients over 60 years) / 10,000 episodes with AHR (all patients)*



*Non-AHR rate (patients over 60 years) = Number of episodes without AHR (patients over 60 years) / 10,000 episodes without AHR (all patients)*

### 7.1.4 Charlson score

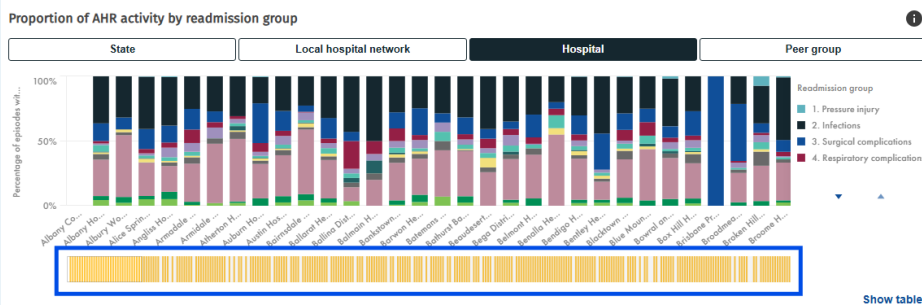
The CCI is a factor used in assessing the risk that a patient will undergo an AHR. The factors used in calculating the CCI are described in Section 6.1.4.

### 7.1.5 Proportion of AHR activity by readmission group

This graph presents proportion of AHRs within each category, by state. Users can toggle between tabs to replace the state level view with LHN, hospital or peer group level graphs.

#### Tool tip

Use the 'magnified rectangular box' as shown below to scroll left or right to view different LHNs/hospitals or alternatively select desired LHNs/hospitals from the filters.





## 7.2 AHR activity

This dashboard compares AHR rate to expected AHR rate for the user's chosen financial year to the previous financial year using different indicators and graphs.

### 7.2.1 How is expected rate of AHR calculated?

The probability of a AHR occurring is determined using the same gradient boosted decision tree that is used to calculate the readmission risk categories for the NEP Determination. This model takes into account several risk factors but is not a comprehensive assessment of a patient's care. Therefore, a comparison between observed and expected AHRs is not a valid assessment of a hospital's quality of care. Rather this should be used to highlight instances in which a highly complex patient cohort might contribute to the number of AHRs observed at a hospital.

Technical specifications for this model are available on [IHACPA's website](#).

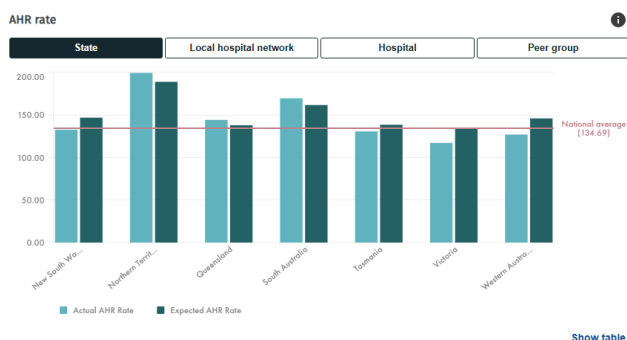
### 7.2.2 AHR activity indicators

The AHR activity dashboard looks at the following indicators:

- AHR rate: Episodes satisfying the definition of at least one readmission group per 10,000 eligible episodes.
- Expected AHR rate: An estimate of the number of AHRs based on the casemix of episodes satisfying the user's filter criteria.
- Episodes with AHRs: The number of episodes satisfying the definition of at least one readmission group.
- Expected number of episodes with AHRs: The expected number of AHRs per 10,000 episodes that satisfy the AHR eligibility criteria.
- Total eligible episodes: The number of episodes that meet the AHR eligibility criteria.

### 7.2.3 AHR rate

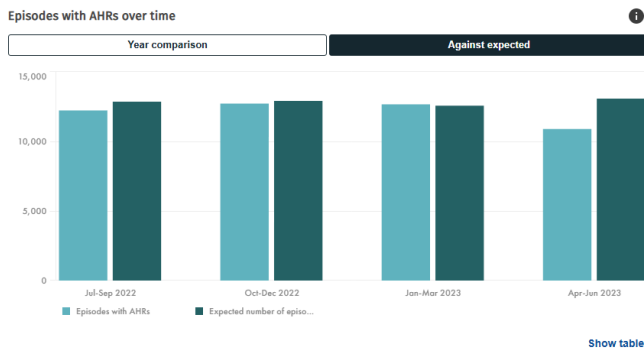
This graph compares actual AHR rate to the expected AHR rate. The user can toggle between 'State', 'Local hospital network', 'Hospital' and 'Peer group' tabs, and compare each graph to the national AHR rate.





## 7.2.4 Episodes with AHRs over time

This graph compares number of episodes with AHR by quarter for all financial years. Users have the option to switch to the 'Against expected' tab to view the graph as a bar chart comparing actual and expected number of episodes with AHR for the selected financial year by quarter.



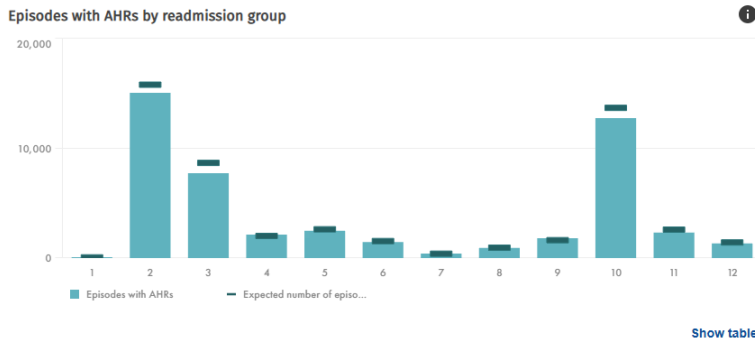
## 7.2.5 AHR prevalence by complexity group

This graph measures AHR rate by low, moderate and high complexity groups as compared to the previous year. The complexity group is a categorisation used by IHACPA to determine the degree of risk that a patient will undergo an AHR. This informs the size of any AHR deduction applied.



## 7.2.6 Episodes with AHRs by readmission group

This bar graph compares the number of AHRs to the expected number of AHRs for each readmission category. Users may select any readmission category to further split the bar graph into number of AHRs by each diagnosis category within the chosen readmission category. Each readmission category and diagnosis category has been defined in the readmission diagnosis table.



Readmission group	
1. Pressure injury	
2. Infections	
3. Surgical complications	
4. Respiratory complications	
5. Venous thromboembolism	
6. Renal failure	
7. Gastrointestinal bleeding	
8. Medication complications	
9. Delirium	
10. Cardiac complications	
11. Constipation	
12. Nausea and vomiting	



## 7.3 NWAU adjustments

This dashboard compares total NWAU adjustment for AHR episodes between the user's selected year and the previous year. NWAU deductions for AHRs first formed part of the NEP Determination in NEP21. As such, NWAU21 is used in each year up to and including 2021–22, and NWAU22 is used for 2022–23. The NWAU deduction should be understood as an estimate of the additional activity undertaken by the hospital system as a result of AHRs, rather than a measure of hospital performance.

The NWAU adjustment for each AHR is calculated on the basis of the NWAU of the readmission episode, the readmission group of the AHR, and the complexity group determined on the basis of characteristics of the index admission. A detailed explanation of the process can be found on IHACPA's website: [IHACPA Avoidable Hospital Readmissions Fact Sheet](#).

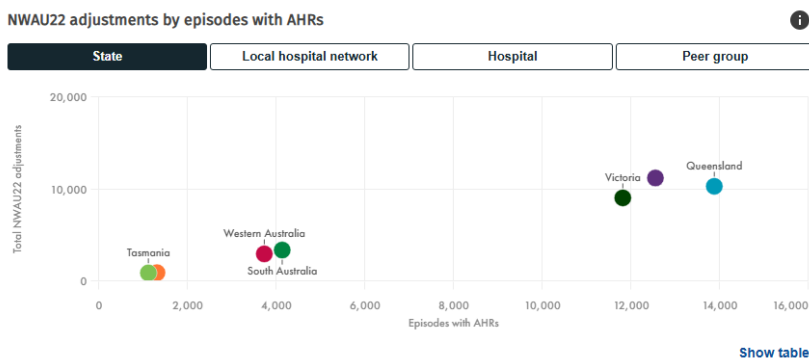
### 7.3.1 NWAU adjustment indicators

The NWAU adjustment dashboard looks at the following indicators:

- Total NWAU adjustments: This indicator calculates the total NWAU adjustments made to AHR episodes based on the complexity score. It also presents the growth compared to previous year based on using the current year's native NWAU in the previous year.
- Percentage of AHR adjustments to total NWAU: The AHR deduction as a percentage of the total NWAU accrued among the records meeting the user's selection criteria.
- Episodes with AHRs: the number of episodes satisfying the definition of at least one readmission group.
- Total eligible episodes: the total number of episodes that meet the AHR eligibility criteria.

### 7.3.2 NWAU adjustment by episodes with AHRs

This scatter plot displays NWAU deducted due to AHR adjustment by each state. Users can toggle between tabs to view the NWAU deducted and number of episodes with AHR by LHN, hospital or peer group.



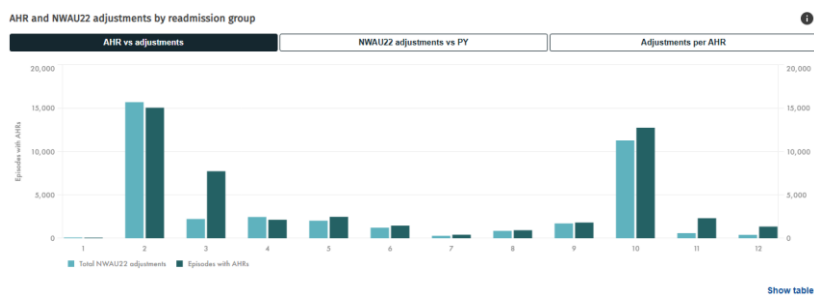


### 7.3.3 NWAU adjustments and episodes with AHRs over time

The line graph under the 'Year comparison' tab compares total AHR NWAU adjustments each quarter. The bar graph under the 'NWAU adjustments and AHRs per year' tab compares the total NWAU adjustments due to AHRs and the total number of episodes with AHRs for each quarter over time. The line graph under 'Percent of total NWAU' tab shows the NWAU adjustment due to AHR as a percentage of total NWAU per quarter over time.

### 7.3.4 AHR and NWAU adjustments by readmission group

The bar graph under the 'AHR vs adjustments' tab shows the number of episodes with AHR and the total NWAU adjustments due to AHRs within each readmission group. The 'NWAU adjustments vs PY' tab displays a year-on-year comparison of NWAU adjustments due to AHRs for the chosen time period. The 'adjustments per AHR' tab displays a year-on-year comparison of deduction per AHR for the chosen time period.



Readmission group
1. Pressure injury
2. Infections
3. Surgical complications
4. Respiratory complications
5. Venous thromboembolism
6. Renal failure
7. Gastrointestinal bleeding
8. Medication complications
9. Delirium
10. Cardiac complications
11. Constipation
12. Nausea and vomiting



## 8. Selecting filters

There are many ways to filter the NBP including:

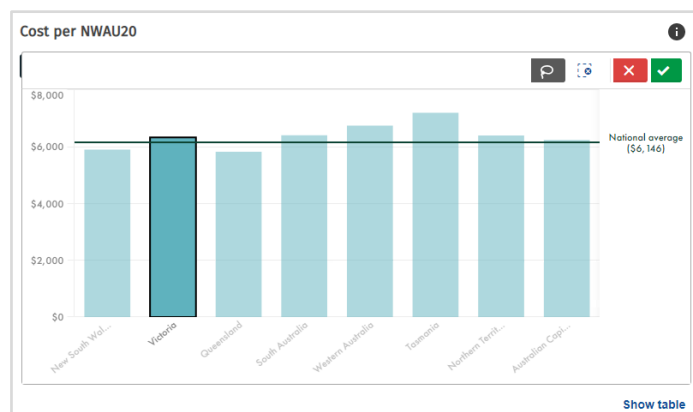
1. Using the filters selection panel provided on the left-hand side of the dashboards –


Users can select options from the drop-down menus by either clicking or searching for the desired values, followed by the green tick.

The screenshot shows a 'Filters' panel on the left with categories: Year, State, Local hospital ne..., Hospital, Stream, and Peer group. To the right, there are two search boxes. The first search box is for 'Alice Springs Hospital' and shows a list of hospitals including Albany Hospital, Albury Wodonga Health, Angliss Hospital, Anne Caudle, Armadale Kelmscott Memorial Hospital, Armidale Hospital, and Atherton Hospital. The second search box is for 'North' and shows a list of hospitals including North Lakes Day Hospital, North Mackay Private Hospital, North West Regional Hospital, Northam Hospital, Northeast Health Wangaratta, Royal North Shore Hospital, and The Northern Hospital.

2. Selecting values from graphs –

Users can click on any bar(s) in the bar graph or dot(s) in the scatter plot to apply filters, followed by the green tick.



3. Lasso functionality  – Users can use the lasso function to draw a circle around desired values, followed by the green tick.
4. Line graph – Users can click and drag values on the line graph to select a time period. All selections are displayed on the grey bar and applied to the indicators for the current selections.



## 9. Definitions

### **Adjacent Diagnosis Related Groups (ADRG)**

An episode of care is initially assigned to an ADRG which broadly group episodes with the same diagnosis and intervention profile before finally subdividing (or splitting) into individual DRGs based on the episode clinical complexity and occasionally other factors such as length of stay and transfer status.

### **Average cost per record**

Total cost divided by total records for that selection.

### **Australian Refined Diagnosis Related Groups (AR-DRGs)**

A classification system, which provides a clinically meaningful way to relate the number and type of patients treated in a hospital to the resources required by the hospital. It is used for pricing admitted acute care in Australian public hospitals.

### **Classification end class**

The group to which a patient record is assigned under a hospital service classification, such as the AR-DRG or SRG classification. The assignment is generally based on diagnostic criteria and on services rendered to the patient.

### **Cost per NWAU**

Total cost divided by total NWAU.

### **Direct cost**

Expenses incurred in the delivery of a patient care product and/or service allocated to a patient using evidence of resource utilisation. Non-clinical examples of these expenses may include:

- interpreters
- patient food.

### **Financial year**

A 12-month period starting on 1 July and ending on 30 June. For example, the 2019–20 financial year starts on 1 July 2019 and ends on 30 June 2020.

### **Funding source**

The source of funds for an admitted patient episode or non-admitted patient service event, as represented by a code.

### **Indirect cost**

Expenses incurred in the delivery of a patient care product and/or service that is allocated using a method to apportion the expense. Examples include:

- patient equipment and associated maintenance
- sterilisation.



<b>Major diagnostic category (MDC)</b>	A classification of admitted episodes of care, determined by the primary affected body system or cause of admission. This is a coarser classification than the AR-DRGs classification.
<b>National Hospital Cost Data Collection (NHCDC)</b>	This is the primary data collection used to develop the NEP. It is an annual and voluntary collection of public hospital data.
<b>National weighted activity unit (NWAU)</b>	A measure of health service activity expressed as a common unit, against which the NEP is paid. It provides a way of comparing and valuing each public hospital service, whether it is an emergency department presentation, admitted episode or non-admitted service event, each weighted for clinical complexity. A new NWAU version is calculated by IHACPA each financial year.
<b>NWAU per record</b>	Total NWAU divided by the total records.
<b>Native NWAU</b>	Each NWAU version is calculated for the purpose of measuring hospital activity growth between one financial year and the next. The NWAU version is said to be the native NWAU for the second of these years. For example, NWAU19 was calculated for the purpose of measuring hospital activity growth between the 2018–19 and 2019–20 financial years. NWAU19 is said to be the native NWAU for the 2019–20 financial year.
<b>Peer group</b>	A group of similar hospitals based on shared characteristics. The categorisation used is the Australian hospital peer groups classification, developed by the Australian Institute of Health and Welfare (AIHW). For more information, see the NBP technical specifications.
<b>Service related groups (SRGs)</b>	A classification of admitted episodes of care, based on AR-DRGs and aimed at grouping episodes according to service needs and access. This classification is coarser than the AR-DRGs classification and was developed for use in planning services and projecting potential trends in hospital usage.
<b>Total cost</b>	Total sum of cost drivers used to deliver patient care by jurisdictions, submitted annually through the NHCDC.
<b>Total NWAU</b>	A measure of total hospital activity calculated by summing the NWAU for all patients whose treatment was eligible for ABF and who were admitted and discharged within the same or consecutive financial years.



**Total records**

Total number of records admitted in the current or previous financial year and discharged in the current financial year.



# Useful links

[IHACPA's website](#)

[IHACPA's annual report](#)

[NHCDC public sector report](#)

[NWAU calculators](#)

[Classifications](#)

[Funding Source \(METEOR\)](#)





Independent Health and Aged Care Pricing Authority

Eora Nation, Level 12, 1 Oxford Street  
Sydney NSW 2000

Phone 02 8215 1100

Email [enquiries.ihacpa@ihacpa.gov.au](mailto:enquiries.ihacpa@ihacpa.gov.au)

[www.ihacpa.gov.au](http://www.ihacpa.gov.au)