National Benchmarking Portal

User Guide

Cost per national weighted activity unit (NWAU) dashboards



Glossary

ABF Activity based funding

ADRG Adjacent Diagnosis Related Groups

ANSNAP Australian National Subacute and Non-Acute Patient

classification

AR-DRG Australian Refined Diagnosis Related Group

IHPA Independent Hospital Pricing Authority

LHN Local hospital network

MDC Major diagnostic category

NB New Born

NBP National Benchmarking Portal

NEC National efficient cost

NEP National efficient price

NHCDC National Hospital Cost Data Collection

NHRA National Health Reform Act

NWAU National weighted activity unit

SRG Service related groups

TIER2 Tier 2 Non-Admitted Services Classification

UQB Unqualified baby

URG Urgency related groups

WIP Work in progress

1. Introduction to IHPA and its datasets

The Independent Hospital Pricing Authority (IHPA) 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.

IHPA'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, which incentivises efficiency and increases transparency in the delivery and funding of public hospital services across Australia.

In order for activity based funding to be effective, each patient episode needs to be counted. This includes inpatient admissions, emergency department presentations and outpatient appointments as well as a range of mental health and rehabilitation services delivered by public hospitals.

To meet its commitments to provide an NEP and NEC Determination each year, IHPA collects data from each state and territory. Two sets of data inform the Determinations:

- National Hospital Cost Data Collection (NHCDC) – This is the primary data collection used to develop the NEP. It is an annual and voluntary collection of public hospital data.
- Activity data This data applies to service categories (with the exception of teaching, training and research) and is required to be submitted to IHPA quarterly on a 'year to date' basis.

To ensure the robustness of data used for the NEP and NEC Determinations, it undergoes validation, quality assurance checks and reporting. Each yearly collection includes an independent financial review.

The National Benchmarking Portal (NBP) restricts the datasets to matched activity and cost data and provides a granular level of comparison at various levels.

1.1 Purpose

Historically, the National Benchmarking Portal (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 IHPA, 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) and national level between financial years.

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

Each year IHPA publishes a standard set of reports including:

- IHPA's Annual Report
- NEP and NEC Determinations
- NHCDC Report
- <u>Pricing Framework for Australian Public</u>
 <u>Hospital Services</u>

These resources are available on <u>IHPA's</u> <u>website</u>.

2. Data included in the NBP

The data presented in the National Benchmarking Portal (NBP) comprises costed activity data that is in-scope for activity based funding (ABF).

Data elements for each stream include hospital name, hospital peer group, local hospital network (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

The Independent Hospital Pricing Authority (IHPA) receives the following types of episode and phase level data:

- Cost data, submitted annually, contains detailed information about the actual costs associated with an episode of patient care.
- Activity data, submitted quarterly in line with data set specifications unique to each activity stream, from which patient episodes are categorised by classifications.

The linkage of cost and activity data, as it relates to a particular patient episode, is referred to as 'costed data'. It is this costed data that is included in the NBP.

The following two sections outline further adjustments made to the data included in the NBP to allow more consistent benchmarking between establishments, LHNs and jurisdictions.

2.2 Unqualified baby adjustment

UQBs 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.

IHPA links costs associated with UQBs to the mother's separation. This results in UQB activity being removed from the NB care type; the costs are then transferred from NB care to the mother's admitted care separation.

2.3 Work in progress patients

A WIP patient is one that is not discharged at the end of the financial year. To improve the quality of patient cost data, for reporting Round 24 of the NHCDC, WIP patients were considered in-scope for reporting if they were admitted in the previous financial year and discharged in the reporting period. For example, for the 2019–20 reporting period, WIP patients are defined as patients admitted prior to 1 July 2018.

2.4 Data preparation

Costed activity data presented in the NBP is restricted to ABF hospitals only with funding sources priced by IHPA (as outlined in Section 3.6), subject to the National Health Reform Agreement. The data is further refined to records with a valid end-class in each stream. This ensures only data with activity appropriately measured using NWAUs 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 jurisdictions, hospitals, LHNs, years, streams, 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, all filters or groups of filters with less than 30 records have been masked in the dashboards.

3. Streams

The Independent Hospital Pricing Authority (IHPA) collects and reports data across five streams of hospital activity: admitted acute care, subacute and non-acute care, emergency patient care, non-admitted patient care, and mental health patient care.

3.1 Admitted acute

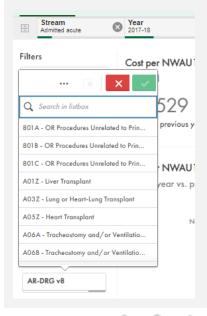
Admitted acute care activity data is reported once a separation has occurred.

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

The version used to develop the native national weighted activity unit (NWAU) for 2019–20 data is AR-DRG version 9.0 for financial years 2018–19 and 2019–20 and version 8.0 for financial year 2017–18.



Selection of a stream in the National Benchmarking Portal (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, service related groups and primary 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 four 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 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

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

In the emergency department, urgency related groups are used to classify patient presentations.

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 Mental health

Mental health patient 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 classification and NWAU calculation methodologies used in the mental health stream are the same as those used



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 contradictive selection; when these values are selected, the current selections are cleared from the filters bar.

A full list of classifications by stream can be found on IHPA's website.

3.6 In-scope funding sources

Costed activity data with funding sources in scope under the National Health Reform Agreement have been presented in the NBP. For the admitted streams, in-scope funding sources include

- 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
- 13 Self-funded

For the non-admitted stream, in-scope funding sources include

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

For the emergency stream, non-DVA and noncompensable records are considered in-scope.

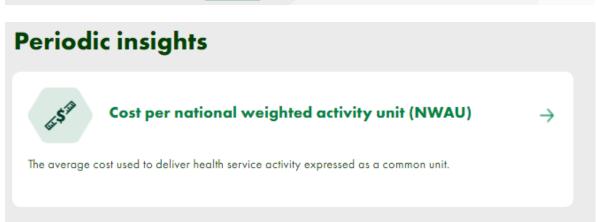
4. Accessing the NBP

The National Benchmarking Portal (NBP) can be accessed via the <u>Independent Hospital Pricing Authority's website</u>.

The URL is: http://benchmarking.ihpa.gov.au/.

To view the NBP dashboards, select Periodic insights' then 'Cost per National weighted activity unit (NWAU)'.





5. Dashboards

Currently, there are three cost per national weighted activity unit dashboards:

- 1. Overview
- 2. Cost detail
- 3. NWAU detail

Each dashboard contains indicators or headline figures and graphs comparing data for the year selected to the previous year. Data can be filtered by:

- state
- local hospital network
- hospital
- stream and classification
- peer group
- · cost buckets.

Currently the dashboards represent three financial years of data: 2017–18, 2018–19 and 2019–20.

Before exploring the 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 national efficient price is paid. It provides a way of comparing and valuing different types public hospital services within each of the streams (emergency department presentations, admissions and outpatient episodes), which are each weighted for clinical complexity.

What is total cost?

'Total cost' refers to the sum of the direct and overhead expenses incurred to deliver patient care. Direct expenses are expenses that can be directly allocated to a patient, whereas overhead expenses refer to expenses within hospitals that relate to organisational services not directly involved in patient care, such as the functions of the Chief Executive Officer, Department of Finance and patient-level costing.

5.1 Overview dashboard

The overview dashboard of the National Benchmarking Portal (NBP) presents cost per NWAU information using six indicators and two graphs, which each show the total cost of delivery divided by the total native NWAU. Below is a list of native NWAU's used for each year

Financial Year	Native NWAU
2017–18	NWAU17
2018–19	NWAU18
2019–20	NWAU19

5.1.1 Cost per NWAU indicators

'Cost per national weighted activity unit (NWAU)' refers to the average cost of delivery of health service activity, expressed as a common unit.

The cost per NWAU indicators are:

- 1. National: National figure for the current year (and stream if selected)
- 2. Peer Group: Selected or underlying peer group for the current selection
- 3. Current Selection: All other selections

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

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 current selection indicators and visualisations.

Cost per n	ational we	ighted activity	y unit (NWAU)	
Overview	Cost detail	NWAU detail	Glossary	

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.

To calculate the growth in cost per NWAU for 2019–20, NWAU19 is applied to both the current and previous year.

5.1.2 Total records indicator

'Total records' refers to the number of costed records for the current selection, as defined in 'Data included in the NBP'.

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 the:

- current selection
- national average
- · relevant peer group

This indicator compares the current and previous year's numbers and represents the direction of movement versus 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 the:

- current selection
- national average

· relevant peer group

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

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

5.1.5 Cost per NWAU graphs

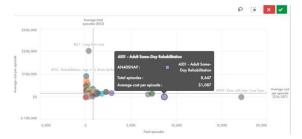
Horizontal and vertical bar graphs are used to visually present the indicators.

 The horizontal bar graph (graph one) compares the current (represented by the bar) and previous year's (dot) cost per

NWAU. Values are presented at a national (default), state, LHN local hospital network (LHN), hospital and peer group level. All figures are based on current selections.

The vertical bar graph (graph two) compares the cost per NWAU for each state (default), LHN, hospital and all streams, with the national indicator (represented by the horizontal line graph). 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 groups 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

Cost per national weighted activity unit (NWAU)

Overview Cost detail NWAU detail Glossary

The Cost detail dashboard presents cost per NWAU information through five indicators, as seen on the overview tab and three detailed graphs focusing on the end-class, cost bucket and month 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 three 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 selection
- Current selection All other selections

5.2.2 Total cost

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

5.2.3 Total records

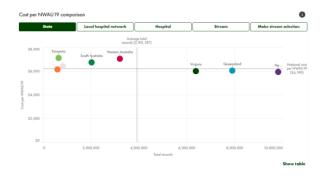
'Total records' refers to the number of costed records for the current selection, as defined by data included in the NBP. The default value for this statistic is the total number for all records for the current financial year.

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 end-class. The end-class tab can be used once a stream is selected. The graph is presented using cost per NWAU on the y (vertical) axis and total records for that selection on the x (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 selection.



7 Tool tip

Users can utilise the scroll function on the mouse to zoom in and click on the $\widehat{\bullet}$ to return to the default setting.

5.2.5 Cost per NWAU

This bar graph compares the average cost per NWAU across all cost buckets (sum of direct and overhead). This graph contains three toggling options:

- National (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)
- 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 bar 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 bar on top) using the native NWAU of the current year.

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 for example NWAU19 for the financial year 2019–20, at monthly intervals over three financial years: 2017–18, 2018–19 and 2019–20.

When more than one state is selected, another tab appears in the graph to distinguish between the selected states.



5.3 NWAU detail dashboard

The 'national weighted activity unit detail' dashboard delves into the denominator used in the cost per NWAU statistic.

Cost per national weighted activity unit (NWAU) Overview Cost detail NWAU detail Glossary

5.3.1 NWAU per record indicators

'NWAU per record' refers to the sum of all activity expressed as common unit divided by the total number of records.

Within the NBP, there are five indicators for NWAU per record. The headline figures show the total native NWAU for the year divided by the total number of records, that is, NWAU19 for 2019–20.

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 selection
- Current selection All other selections

5.3.2 Total NWAU

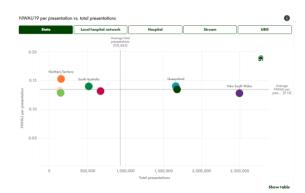
Collective sum of all activity expressed as a common unit native to the selected year. The default value for this statistic is the total NWAU for the current financial year selected.

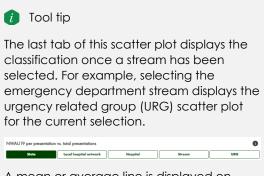
5.3.3 Total records

'Total records' refers to the number of costed records for the current selection, as defined by data included in the NBP. The default value for this statistic is the total number for all records for the current financial year.

5.3.4 NWAU per record vs total records

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





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

5.3.5 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 monthly intervals over three financial years: 2017–18, 2018–19 and 2019–20.

When more than one state is selected, another tab appears in the graph to distinguish between the selected states.

5.3.6 Drivers of admitted acute NWAU arowth

The waterfall graph presents a decomposition of the drivers that contribute to admitted acute NWAU 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 the number of patients to which other NWAU adjustments apply. These adjustments are detailed in Table 1.

There are four buttons above the Drivers of admitted acute NWAU chart, for 'National', 'State', 'Local Hospital Network' and 'Peer Group'. The button selected determines how separation and 'Between ADRG changes' change is measured. If the 'National'

button is selected, then the expected NWAU growth due to separation change is fixed at the national rate of separation growth.



If the user filters to certain states then they may also select the 'State' button, and separation 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 figure at the top of the dashboard.

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

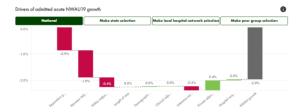
Table 1: Description of each component of the Drivers of Acute NWAU growth chart

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 adjacent DRGs with relatively low weights in 2018–19, to services in adjacent DRGs with relatively high weights in 2019–20, this would have a positive impact on NWAU growth.
Within ADRG changes	The impact of changes within adjacent DRGs on NWAU growth. For example, if a hospital continued to deliver services in the same adjacent DRGs, 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, 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 Complication adjustment	Impact of changes in the volume and distribution of HACs on the growth in NWAU.
NWAU growth	The growth in NWAU between the selected year and the previous year.

Further details and calculations are provided in the NBP technical specifications available on IHPA's website.

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

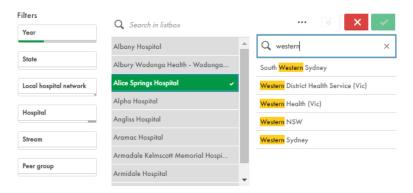


6. Selecting filters

There are many ways to filter the National Benchmarking Portal (NBP) including:

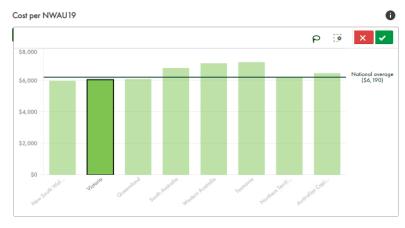
 Using the filters selection panel provided on the left-hand side of the dashboards –

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



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 P-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 current selection indicators.

7. 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 LOS 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 national weighted activity unit.

Direct cost

Expenses that can be directly allocated to a patient.

Financial year

A 12-month period starting on 1 July and ending on 30 June. For 2019-20 the 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.

Major diagnostic category

A classification of admitted episodes of care, determined by the primary effected body system or cause of admission. This is a coarser classification than the Australian Refined Diagnosis Related Groups (AR-DRGs) classification.

National Hospital Cost Data Collection (NHCDC)

This is the primary data collection used to develop the national efficient price. It is an annual and voluntary collection of public hospital data.

(NWAU)

National weighted activity unit A measure of health service activity expressed as a common unit, against which the National Efficient Price is paid. It provides a way of comparing and valuing each public hospital service, whether it is an emergency department presentation, admission or outpatient episode, each weighted for clinical complexity. A new NWAU version is calculated by IHPA each financial year.

NWAU per record

Average national weighted activity unit per record calculated by dividing the Total NWAU by the Total records.

Native NWAU

Each NWAU version is calculated for the purpose of measuring hospital activity growth between one financial year and the next. This 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.

Overhead cost

Expenses within hospitals that relate to organisational services not directly involved in patient care, such as the functions of the Chief Executive Officer, Department of Finance and patient-level costing.

Peer group

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 National Benchmarking Portal Technical Specifications.

Service related groups (SRGs)

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.

Total cost

Total sum of cost drivers used to deliver patient care by jurisdictions, submitted annually through the National Hospital Cost Data Collection.

Total NWAU

Measure of total hospital activity calculated by summing the national weighted activity unit for all patients whose treatment was eligible for funding 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

IHPA's website <u>ihpa.gov.au</u>

IHPA's annual report ihpa.gov.au/publications/ihpa-annual-report-

2020-21

NHCDC public sector report <u>ihpa.gov.au/what-we-do/nhcdc/public-sector</u>

NWAU calculators <u>ihpa.gov.au/what-we-do/national-weighted-activity-</u>

<u>unit-nwau-calculators</u>

IHPA's Glossary <u>ihpa.gov.au/ahpcs/glossary</u>

Classifications <u>ihpa.gov.au/what-we-do/classifications</u>

Funding Source (METEOR) https://meteor.aihw.gov.au/content/679815