

Healthcare Quarterly

Technical Supplement

Emergency department, ambulance, admitted patients, seclusion and restraint, and elective surgery

July to September 2022

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Please check the online version at **bhi.nsw.gov.au** for any amendments or errata.

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The conclusions in this report are those of BHI and no official endorsement by the NSW Minister for Health, the NSW Ministry of Health or any other NSW public health organisation is intended or should be inferred.

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Introduction

This technical supplement describes the data, methods and technical terms used to calculate descriptive statistics and performance measures reported in the Bureau of Health Information's (BHI) *Healthcare Quarterly* report.

The supplement is technical in nature and intended for audiences interested in the creation and analysis of health system performance information.

A chronological account of additions and enhancements to the data and methods is available from the *Healthcare Quarterly* section of the BHI website at bhi.nsw.gov.au

Emergency department

This section contains information about the data and methods used for calculating measures of emergency department (ED) activity and performance reported in *Healthcare Quarterly*.

Data sources

Emergency Department Data Collection

ED information in *Healthcare Quarterly* is based on analyses of attendance data in the Emergency Department Data Collection (EDDC) extracted from the centralised data warehouse, the Health Information Exchange (HIE), administered by the NSW Ministry of Health. BHI also received a data file for Northern Beaches Hospital from the NSW Ministry of Health until the April to June 2022 quarter. As of the July to September 2022 issue of *Healthcare Quarterly*, this data is extracted from the HIE.

EDs are reported individually for hospitals in principal referral, major or district peer groups (A1, A2, A3, B, C1 and C2).

Hospitals are included in *Healthcare Quarterly* following assessment of data completeness and accuracy, and in ways that support fair and meaningful comparison.

EDs in NSW have progressively replaced historic information systems with more contemporary electronic record systems. Significant changes to electronic systems may impact the completeness and reliability of input data or extraction from local systems to the HIE for periods longer than one quarter.

Quarters affected by significant changes, for example in policies or systems, are highlighted on time-trend graphs to make readers aware when such changes have contributed to shifts in trend between quarters.

In the BHI Data Portal, detailed information is provided for the number of hospitals contributing to each quarter's results. This facilitates the interpretation of trends by showing the reader at what point in time new hospitals were introduced to quarterly reporting.

Transfer of Care Reporting System

Data for calculating the number of ambulance arrivals and transfer of care time are downloaded from the Transfer of Care Reporting System (TCRS) portal. The TCRS incorporates data drawn from the NSW Ambulance information system and from the EDDC. Transfer of care is reported for hospitals where the ambulance incident number and the date can be identified in both the NSW Ambulance data and the EDDC.

Inclusion of emergency departments in Healthcare Quarterly

The number of EDs reported in *Healthcare Quarterly* has increased over time as more EDs are included in the EDDC.

In the January to March 2014 quarter, the activity and performance measures reported in *Healthcare Quarterly* were based on 131 EDs. Between the January to March 2014 and October to December 2016 quarters, there were small changes in the number of EDs reported in *Healthcare Quarterly* from quarter to quarter due to hospital mergers and closures and/or the opening of small hospitals. However, the changes in the number of EDs do not affect the coverage of the NSW population provided by these services. These 131 EDs account for approximately 95% of all ED attendances in NSW.

In the January to March 2017 quarter, the activity and performance measures reported in *Healthcare Quarterly* were based on 175 EDs. These additional 44 small EDs, classified into peer groups D and F, are not reported on individually. They serve regional populations in the following LHDs: Western NSW, Southern NSW, Northern NSW, Murrumbidgee and Far West. Inclusion of these 44 EDs increases the number of attendances statewide, but has little impact on performance trends at the NSW level.

The activity and performance measures reported in *Healthcare Quarterly* are based on all EDs reporting to the EDDC in each quarter.

Premier's Priority – Improving service levels in hospitals

The NSW Government has set Premier's Priorities across a range of portfolios, including for health. The priority 'Improving service levels in hospitals' defines targets for the percentage of patients presenting to the ED who commence their treatment on time, to be reached by 2023.

The Premier's Priority targets are: 100% of triage category 1 (resuscitation) patients commencing treatment 'immediately', 95% of triage category 2 (emergency) patients commencing treatment within 10 minutes; and 85% of triage category 3 (urgent) patients commencing treatment within 30 minutes.

This Premier's Priority is measured differently to the related 'time to start treatment' measure reported throughout *Healthcare Quarterly*. The Premier's Priority is measured from the time a patient is triaged in the ED until their treatment begins, whereas *Healthcare Quarterly* measures 'time to start treatment' from the time a patient arrives at the ED until their treatment begins.

Acknowledging this difference, and in the interests of transparency, as of the April to June 2021 issue of *Healthcare Quarterly* BHI tracks performance against the Premier's Priority targets for triage 2 and 3 at NSW level. This information is included at the bottom of the ED tables in the 'Activity and performance' section of the main report. All existing time to start treatment results in the main report and other *Healthcare Quarterly* products continue to be calculated as previously by BHI.

Triage 1 performance is not reported in *Healthcare Quarterly* as clinicians are focused on providing immediate and essential care, rather than recording times for this cohort of patients.

Further information on the Premier's Priority can be found on the NSW Government website at nsw.gov.au/premiers-priorities/improving-service-levels-hospitals

Analyses by geographical areas

Hospitals are classified as 'urban' or 'rural' using Accessibility and Remoteness Index of Australia (ARIA+) developed by the Australian Bureau of Statistics (ABS).

Category 'urban' was created by mapping to 'major cities' of the ABS classification. Category 'rural' was mapped to 'inner regional', 'outer regional', and 'remote and very remote'.

Indicator specifications

For definitions of the ED indicators, see the Indicator specifications section.

Ambulance

This section contains information about the data and methods used for calculating measures of ambulance activity and performance that are reported in *Healthcare Quarterly*.

Data source

NSW Ambulance Computer Aided Dispatch System

The ambulance component of *Healthcare Quarterly* is based on analyses of data extracted from the NSW Ambulance Computer Aided Dispatch (CAD) system, which is used to manage and record ambulance activity and time points across the entire patient journey. The CAD system contains information from all ambulance local response areas in NSW. Information is recorded using calls, incidents, responses, transports, Emergency Department Network Access and Ambulance Release Teams as counting units.

The CAD system is a 'live' system and data is updated continuously. The NSW reporting system for CAD data is scheduled to refresh four times daily during business hours (at 6.30am, 10.30am, 2.30pm and 6.30pm). Records are checked for a rolling three-day period for any changes and updates are undertaken accordingly to reflect the changes. On the second day of the new

calendar month, all records in the previous month are closed off – that is, no further updating is allowed.

Priority codes P1–9 are included in *Healthcare Quarterly* as listed in Table 1. The following priority numbers are excluded for all results other than the number of calls:

- 14 (priority error)
- 35 (Inter-CAD Electronic Messaging System [ICEMS])
- 36 (ICEMS Urgent)
- 37 (area coverage).

Response grid changes and non-emergency patient transport

Changes to ambulance protocols have affected some results over time, and are re-presented as grey bars in relevant graphs throughout the *Healthcare Quarterly* report.

Changes to the way in which incidents and responses are coded are known as grid changes. Three grid changes (March 2013, April 2015 and May 2016) saw some incidents coded as priority 2 which had formerly

Table 1 Incident and response priority codes

| Code | Priority | Description | Example | Response required |
|------|---------------|-------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1 | 1A Emergency | Highest priority Life-threatening case | Cardiac or respiratory arrest, unconscious, ineffective breathing | Immediate response Median within 10 minutes Under 'lights and sirens' |
| | 1B Emergency | High priority | Unconscious | Emergency response Under 'lights and sirens' |
| | 1C Emergency | Priority | Breathing problems, chest or neck injury, serious haemorrhage | Emergency response Under 'lights and sirens' |
| 2 | Urgent | Urgent | Abdominal pain | Urgent response without 'lights and sirens' within specified timeframes |
| 3 | Time-critical | Time-critical | Medical responses requested by medical practitioners | Undelayed response within specified timeframes |
| 4–9 | Non-emergency | Non-emergency | Routine transport | Routine |

been coded as priority 1. Accordingly, there was an increase in the number of priority 2 incidents and a decrease in the number of priority 1 incidents around these times.

In September 2017, a change in protocol was introduced when triaging patients for inter-facility transport. Some of these responses remain as priority 3 while others require a higher priority response.

The introduction of the Patient Transport Service in May 2014 resulted in transfer of cases requiring less urgent patient transport from NSW Ambulance to HealthShare NSW.

Statistical areas used for reporting

As of the January to March 2019 issue of *Healthcare Quarterly*, BHI replaced zone-level reporting of ambulance activity and performance with reporting by statistical geographic areas. This change was in response to the increased public interest in ambulance performance at the local level, and the introduction of the Paramedic Response Network (PRN) across metropolitan Sydney. The new operational model is made up of superstations and smaller, standby facilities called Paramedic Response Points, forming local PRNs. The new PRN structure affected the geographical boundaries of local response areas (LRAs) and, in some instances, zone boundaries.

Changes in the size of these areas affected the number of incidents reported at the zone level. Additionally, continual changes to the administrative boundaries of LRAs and zones impede time trend comparisons and render the data prone to interpretation errors.

Changes were made to report measures of ambulance activity and performance for areas that are stable geographic units and are also more meaningful for the local community. The Australian Bureau of Statistics (ABS) developed the Australian Statistical Geography Standards (ASGS), which classify

Australia into a hierarchy of statistical areas. The ASGS boundaries remain stable for five years, thereby allowing comparisons of data over time.²

The statistical area level 3 (SA3) and statistical area level 4 (SA4) units have been designed for the output of regional data. They have been adopted by BHI to report ambulance activity and performance as they are small enough to be meaningful to the community yet large enough to capture sufficient incidents to provide stable estimates of performance.

There are 91 SA3 geographies in NSW. Three criteria are used to define the boundaries of SA3s:³

- Regional identity – neighbouring areas are grouped according to similar geographic and socioeconomic characteristics.
- Population – the population of an SA3 generally ranges from 30,000 to 130,000 residents. Priority is given to the regional identity of an area for defining the boundaries and this can result in SA3s with smaller or larger populations.
- Functionality – the area of an SA3 is defined in relation to transport and commercial centres.

SA4s are built by aggregating whole SA3s. The SA4 regions are the largest sub-State regions in the main structure of ASGS. There are 28 SA4 geographies in NSW reported on as of the January to March 2019 quarter. Two criteria are used to define the boundaries of SA4s:⁴

- Population – a minimum of 100,000 persons was set for the SA4. It ranges from 100,000 – 300,000 in regional areas to 300,000 – 500,000 in metropolitan areas.
- Functionality – the area of an SA4 is designed to reflect the highest degree of interconnectivity between the labour supply and demand.

Reporting activity and performance measures by statistical areas

As of the January to March 2019 issue of *Healthcare Quarterly*, quarterly activity and performance measures are reported by statistical areas. Measures of activity and performance are reported by SA3 for all response priorities, with the exception of priority 1A (P1A). For P1A, the median response time is reported by SA4 as the number of P1A incidents in some SA3s is too low to permit consistent reporting of response times. Reporting by SA4 still provides local information but is based on a higher number of incidents.

As of the January to March 2022 issue of *Healthcare Quarterly*, BHI uses the ASGS Edition 3 (2021) definitions of statistical areas. Digital boundary files were accessed from the ABS website,² and SAS©9 was used to map CAD data.

Analyses by geographical areas

Local areas are classified as 'urban' or 'rural' using ARIA+ developed by the ABS.

Digital boundary files for ASGS Edition 3 (2016) definitions of remoteness areas were accessed from the ABS website and SAS©9 was used to map CAD data.

Category 'urban' was created by mapping cases to 'major cities' of the ABS classification. Category 'rural' was mapped to 'inner regional', 'outer regional', and 'remote and very remote'.

Indicator specifications

For definitions of the ambulance indicators, see the Indicator specifications section.

Admitted patients

This section contains information about the data and methods used for calculating measures of activity and performance for admitted patient episodes of care reported in *Healthcare Quarterly*.

Data source

Admitted Patient Data Collection

Admitted patient information in *Healthcare Quarterly* is based on analyses of data in the Admitted Patient Data Collection (APDC). Data are extracted from a centralised data warehouse administered by the NSW Department of Health called the Health Information Exchange (HIE). BHI also received a data file for Northern Beaches Hospital from the NSW Ministry of Health until the April to June 2022 quarter. As of the July to September 2022 issue of *Healthcare Quarterly*, this data is extracted from the HIE.

Hospitals are reported individually if they are classified as principal referral, major or district peer groups (A1, A2, A3, B, C1 and C2).

Hospitals are included in *Healthcare Quarterly* following assessment of data completeness and accuracy, and in ways that support fair and meaningful comparison.

Quarters affected by significant changes, for example in policies or systems, are highlighted on time-trend graphs to make readers aware when such changes may contribute to shifts in trend between quarters.

To ensure accuracy in activity and performance comparisons between quarters in *Healthcare Quarterly*, information is provided for the number of hospitals contributing to each quarter's results. This facilitates the interpretation of trends by showing the reader at what point in time new hospitals were introduced in quarterly reporting. Showing the fluctuations in the number of hospitals contributing to results over time is intended to aid the reader's interpretation of changes in trends.

Forensic patients

Forensic patient admissions are included in *Healthcare Quarterly* but are not reported separately. Long Bay Hospital and the Forensic Hospital are included in totals for the 'Other' group and for NSW. There are forensic units in Cumberland Hospital, Morisset Hospital and Orange Health Service. Forensic patients are not reported separately in these hospitals. Cumberland Hospital and Morisset Hospital are from peer group F, and included in totals for the 'Other' group and for NSW. Orange Health Service is included in totals for peer group B and for NSW.

Analyses by geographical areas

Hospitals are classified as 'urban' or 'rural' using ARIA+ developed by ABS.

Category 'urban' was created by mapping to 'major cities' of the ABS classification. Category 'rural' was mapped to 'inner regional', 'outer regional', and 'remote and very remote'.

Summary of changes

Reporting on emergency admissions involving surgery

As of the July to September 2022 issue of *Healthcare Quarterly*, BHI started reporting on 'emergency admissions involving surgery'. This refers to hospital admissions that include a surgical procedure, and for which the patient requires admission within 24 hours.

Analytic methods

Urgency of admission

Urgency of admission describes the status of a hospital admission. Only admissions assigned an 'emergency' urgency status were included in this analysis.

Diagnosis codes

The Australian Refined Diagnosis Related Groups (AR-DRGs) is an admitted patient classification system that provides a clinically meaningful way of relating the number and type of patients treated in admitted acute episodes of care to the resources required in treatment.

The AR-DRG Version 10 is currently in use. The codes included in this analysis are those with the second digit from 0 to 39 inclusive, excluding codes for childbirth-related AR-DRGs.

Indicator specifications

For definitions of the admitted patient indicators, see the Indicator specifications section.

Seclusion and restraint

This section contains information about the data and methods used for calculating measures of activity and performance for seclusion and restraint reported in *Healthcare Quarterly*.

Data source

Seclusion and restraint data collection

Seclusion and restraint information in *Healthcare Quarterly* is based on analyses of data extracted from the centralised data warehouse administered by the NSW Ministry of Health, the Health Information Exchange (HIE), and a data file provided by the NSW Ministry of Health.

The HIE provides information on the number of mental health episodes of care and the number of days a mental health bed was in use. The data on seclusion and restraint are manually collected by each LHD and specialty health network (SHN) and aggregated at the mental health service unit level. The data file includes information on the number of seclusion and restraint events, the number of mental health episodes of care with at least one seclusion or restraint event, and the total duration of seclusion and restraint events at the unit level for each public hospital with one or more specialised acute mental health units.

Comparisons between facilities

Healthcare Quarterly reports seclusion and restraint measures for facilities with specialised declared and non-declared acute mental health units.

In NSW, there are more than 40 public hospitals, plus the forensic hospital, with specialised acute mental health units that treat patients with varying severities of mental illness. To support fair and meaningful comparisons, hospitals are grouped into three broad categories based on the types of services provided: hospitals with a Mental Health Intensive Care Unit (MHICU); hospitals without a MHICU; and the Justice Health and Forensic Mental Health Network (JHFMHN).

MHICUs provide specialist, intensive multidisciplinary care to people with high levels of clinical complexity and risk that cannot be safely and effectively managed in a standard acute mental health unit. Six hospitals with a MHICU, where seclusion and restraint events are more likely to occur, are grouped together in *Healthcare Quarterly* to acknowledge their delivery of statewide tertiary mental health services.

JHFMHN provides assessment, care, treatment and other services to people with a mental illness who are, or have been, in contact with the criminal justice system. JHFMHN data are reported separately in *Healthcare Quarterly* and excluded from NSW totals because of substantial differences in model of care and patient cohort. The use of seclusion and restraint is more common in forensic services and forensic seclusion events are typically of longer duration.

For more information on peer grouping for benchmarking, see *Measurement Matters: Reporting on seclusion and restraint in NSW public hospitals*, available at bhi.nsw.gov.au

Changes in facilities

The number of public hospitals with specialised acute mental health units reported in *Healthcare Quarterly* has changed over time. Please note the following inclusion information about individual facilities:

- Byron Central Hospital was included in the data from January to December 2017.
- Manly Hospital, which was closed on 30 October 2018, has not been included from the January to March 2019 quarter onwards.
- Northern Beaches Hospital (NBH) opened on 30 October 2018. As of the July to September 2022 issue of *Healthcare Quarterly*, BHI reports seclusion and restraint results for this hospital. Its results are also included in aggregated data for hospitals without a MHICU, and NSW totals, in the five-year trends back to July to September 2020. NBH operates as a public/private partnership with NSW Health. Only public patients are included in this analysis, unlike other hospitals where both public and private admissions may be included.
- The acute mental health unit at Bathurst Hospital closed in May 2020 in response to the COVID-19 pandemic. It was later reopened as a non-acute/rehabilitation ward and no longer provides acute mental health services. Bathurst Hospital has therefore not been included from the April to June 2021 quarter onwards.

Indicator specifications

For definitions of the seclusion and restraint indicators, see the Indicator specifications section.

Elective surgery

Elective surgery is planned and can be booked in advance. As a result of a specialist clinical assessment, patients are placed on a waiting list and given a clinical priority category depending on the urgency of their condition. This section contains information about the data and methods used for calculating measures of activity and performance for elective surgery.

Data source

Waiting List Collection On-line System

The elective surgery component of *Healthcare Quarterly* is based on analyses from the Waiting List Collection On-line System (WLCOS), extracted from NSW Health's Enterprise Data Warehouse for Analysis Reporting and Decisions (EDWARD). WLCOS data are a monthly census, which includes information on the date a patient is listed for a surgical procedure, the type of procedure required, the specialty of the surgeon, the urgency category of their surgery and whether the patient is currently ready for surgery. Some of these factors may change during the time a patient is on the waiting list.

Hospitals are included in *Healthcare Quarterly* following assessment of data completeness and accuracy, and in ways that support fair and meaningful comparison.

Quarters affected by significant changes, for example in policies or systems, are highlighted on time-trend graphs to make readers aware of changes that may contribute to shifts in trends between quarters.

Transition to EDWARD

NSW Health is rolling out EDWARD as the new single-source-of-truth, enterprise data warehouse, enabling the provision of high quality activity and performance information for emergency departments, admitted and non-admitted patients, elective surgery waiting list and operating theatre.

The staged transition to EDWARD and eventual decommissioning of the HIE and WLCOS is designed to drive improvements in data quality and standardisation; provide flexibility to expand data collections and the ability to capture new data formats; develop patient journey analysis; and realise operational efficiencies.

Data access from EDWARD

All elective surgery results for reporting periods from January 2021 onwards are based on analyses of data acquired from the WLCOS datamart in EDWARD. For all reporting periods prior to this, data were acquired from the WLCOS data portal.

Reporting to EDWARD by NSW local health districts

As part of the staged transition to EDWARD, Mid North Coast LHD and Northern NSW LHD began reporting elective surgery data to EDWARD from 1 March 2021, via a newly implemented Cerner Wait List module. Central Coast LHD and Northern Sydney LHD made the transition to reporting elective surgery data to EDWARD from 1 June 2022. All other LHDs continued reporting elective surgery data via a monthly census to WLCOS. The transition will be progressively implemented to all LHDs.

Following the transition to reporting to EDWARD, the data from Central Coast, Mid North Coast, Northern NSW and Northern Sydney LHDs are aggregated in EDWARD to a monthly census and combined with the WLCOS monthly census data. As of the July to September 2022 issue of *Healthcare Quarterly*, the full statewide elective surgery waiting list dataset was extracted from EDWARD on 27 October 2022.

While it has been identified that reporting through EDWARD may result in slightly longer reported elective surgery waiting times than in WLCOS, BHI determined, following extensive data quality assessment, that the data reported to EDWARD for Central Coast, Mid North Coast, Northern NSW and Northern Sydney is sufficient for public reporting in *Healthcare Quarterly*.

Waiting list validity analysis

BHI performs quality assurance on the elective surgery waiting list records to assess the reliability and validity of the data. This is to ensure fair comparisons between hospitals regarding their management of elective surgery patients.

Validity analyses include, but are not limited to the:

- percentage of patients changed from Ready for Care (RFC) to Not Ready for Care (NRFC)
- percentage of patients changed from NRFC to RFC
- percentage of RFC patients changed to a higher urgency category
- percentage of RFC patients changed to a lower urgency category
- percentage of NRFC patients with listing status as staged and deferred.

Results for individual hospitals were consistent with the NSW results, demonstrating that hospitals adopted similar approaches to reporting the management of elective surgery patients following advice provided by the NSW Ministry of Health for changes to elective surgery as a result of COVID-19.

Analyses by geographic areas

Hospitals are classified as 'urban' or 'rural' using ARIA+ developed by ABS.

Category 'urban' was created by mapping to 'major cities' of the ABS classification. Category 'rural' was mapped to 'inner regional', 'outer regional', and 'remote and very remote'.

Indicator specifications

For definitions of the elective surgery indicators, see the Indicator specifications section.

COVID-19 confirmed cases and hospitalisation

Data source

COVID-19 confirmed cases and hospitalisation information is provided by the COVID-19 Public Health Response Branch, NSW Ministry of Health. It was first published in the Ministry's *NSW respiratory surveillance reports – COVID-19 and Influenza*.

Analytical methods

COVID-19 confirmed cases

'COVID-19 cases by test date' is based on the date the person presented for the test. Positive test results can be confirmed by nucleic acid amplification (NAA) COVID-19 tests, which include polymerase chain reaction (PCR) tests and transcription mediated amplification (TMA) tests, or by rapid antigen tests (RATs). In *Healthcare Quarterly, July to September 2022*, 'PCR' is used to refer to all NAA tests. Where both NAA and RAT records are found for a case, only the NAA result is counted. People were able to register their RAT results from 1 January 2022 onwards. Mandatory registration of positive RAT results began on 19 January.

COVID-19 hospitalisation

'Number of patients with COVID-19 admitted to hospital' refers to the total number of people with COVID-19 who were admitted to hospital each day. The count only includes patients who were admitted to any hospital ward, excluding those admitted to the ED or the intensive care unit (ICU).

'Number of patients with COVID-19 admitted to ICU' refers to the total number of people with COVID-19 who were admitted to ICU each day.

People with COVID-19 were included in this analysis if their COVID-19 diagnosis was up to 14 days prior to their admission, or any time after the admission. Comparisons of data either side of 3 February should be made with caution. The COVID-19 diagnosis can be confirmed before or any time after the admission. People with COVID-19 may be admitted to hospital or ICU for reasons unrelated to COVID-19. A seven-day rolling average uses the average of the previous seven days of data to smooth daily variations in data and make it easier to observe trends over time.

Suppression rules

Small numbers in any group need to be treated cautiously to protect patients' identities.

BHI suppresses information if it is based on very few patients. If there are fewer than five patients in any group for admitted patient and emergency department data, patient numbers are displayed as <5.

For seclusion and restraint reporting, episode numbers are displayed as <5 if there are fewer than five seclusion or physical restraint events. Average duration of seclusion and physical restraint events is suppressed if there are fewer than five seclusion or physical restraint events. Changes in average duration of seclusion and physical restraint events are suppressed if there are fewer than five seclusion or physical restraint events either in the reporting period or in the same quarter the previous year. Due to the infrequent use of mechanical restraint, it is only reported at NSW level to protect patient privacy.

For ambulance reporting at SA3 level, performance measures for two SA3s, Blue Mountains – South and Illawarra Catchment Reserve, are suppressed because the estimated resident population in the area is less than 1,000, and the very small volume of ambulance responses results in unstable estimates.

For elective surgery measures reported by urgency category, low counts have been pooled with another urgency group. Because the staged procedure category is excluded from performance measure calculations, low counts in this group are not suppressed.

If there are fewer than 10 patients in any group, on-time performance and median waiting times are suppressed. If there are fewer than 100 patients in any group, the 90th percentile is suppressed.

Indicator specifications

Emergency department: Activity measures

| | |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All ED attendances | <p>All ED attendances is the count of every record in the Emergency Department Data Collection (EDDC) of the HIE. This count includes presentations of all ED visit types including emergency presentations, planned return visits, pre-arranged admissions, some outpatient visits, private referrals, persons pronounced dead on arrival and patients in transit.</p> <p>This count excludes records entered in error (mode of separation = 99), telehealth and eHealth presentations (ED visit type = 12), and presentations by patients who are already admitted to the same hospital (ED visit type = 13).</p> |
| Emergency presentations | <p>Emergency presentations are records in the EDDC of the HIE of presentations with an ED visit type of: emergency (1), an unplanned return visit for a continuing condition (3) or disaster (11). Emergency presentations in <i>Healthcare Quarterly</i> are reported by triage category.</p> |
| Mode of arrival | <p>ED attendances by mode of arrival includes all attendances at the ED that have a mode of arrival recorded. Mode of arrival categories include:</p> <ul style="list-style-type: none">• Arrival by ambulance – presentations with mode of arrival: state ambulance vehicle (1), helicopter rescue service (4), and air ambulance service (5)• Arrival by police – presentations with mode of arrival: police/correctional services vehicle (7)• Arrival by other – presentations with mode of arrival: community/public transport (2), private vehicle (3), internal ambulance/transport (6), other, e.g. undertakers/contractors (8), no transport (walked in) (9), retrieval (including NETS) (10), and internal bed/wheelchair (11). Presentations with missing mode of arrival are also included in this cohort. |
| Mode of leaving ED | <p>ED attendances by mode of leaving ED includes all attendances at the ED that have a departure time recorded. Mode of leaving ED categories include:</p> <ul style="list-style-type: none">• Treated and discharged – presentations with mode of separation: admitted and discharged as patient within ED (2) or departed with treatment complete (4). The admitted and discharged as patient within ED (2) code was discontinued on 1 January 2018 due to the update to a new HIE Emergency Department Data Dictionary.• Treated and admitted to hospital – presentations with modes of separation: admitted to a ward/inpatient unit (1), admitted to a critical care ward (10), or admitted via an operating theatre (11)• Left without, or before completing, treatment – presentations with modes of separation: departed, did not wait (6), departed – left at their own risk (7) or admitted – left at own risk (13). Patients who 'did not wait' were triaged, but left the ED before treatment commenced. Patients who 'left at their own risk' were triaged and treatment had begun by a clinician or nurse, but the patient left prior to completing their treatment• Transferred to another hospital – presentations with mode of separation: transferred to another hospital (5) or admitted and then transferred to another hospital (12)• Other – presentations with modes of separation: admitted and died in ED (3), dead on arrival (8) or departed for another clinical service location (9). Presentations with missing mode of separation are also included in this cohort. |
| Triage category | <p>A classification system based on how urgent the patient's need is for treatment:</p> <ul style="list-style-type: none">• Triage category 1: Resuscitation (for example, cardiac arrest)• Triage category 2: Emergency (for example, chest pain, severe burns)• Triage category 3: Urgent (for example, moderate blood loss, dehydration)• Triage category 4: Semi-urgent (for example, sprained ankle, earache)• Triage category 5: Non-urgent (for example, small cuts, abrasions). |

Emergency department: Performance measures

Time to starting treatment in the ED

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| Description of measure | <p>The time from first presenting at the ED to the time treatment started in a designated ED treatment area.</p> <p>Treatment time is the earlier of the following fields in the EDDC of the HIE:</p> <ul style="list-style-type: none">• First seen by clinician time – the date and time when the patient is first seen by a medical officer and has a physical examination or treatment performed that is relevant to their presenting problem(s)• First seen by nurse time – the date and time when the patient is first seen by a nurse and has an assessment or treatment performed that is relevant to their presenting problem(s). <p>If either 'first seen by clinician time' or 'first seen by nurse time' is more than 12 hours before presentation time or more than 31 days after presentation time, then that field is considered an error and is excluded from calculations. If both 'first seen by clinician time' and 'first seen by nurse time' are more than 12 hours before presentation time or more than 31 days after presentation time, then treatment time for that record is considered an error and excluded from calculations. If treatment time is earlier than presentation time, but 12 hours or less before presentation time, then time from presentation until treatment is set to zero.</p> <p>BHI does not report time from presentation to starting treatment for patients in triage category 1, because BHI considers waiting time for these patients to not be informative. Recording of presentation, triage and treatment times for patients who should be assessed or treated within two minutes (triage 1) is unlikely to be recorded precisely enough to report against a two-minute benchmark, particularly when clinicians are focused on providing immediate and essential care.</p> |
| Cohort description (numerator and denominator) | <p>Emergency presentations to NSW EDs.</p> <p>Emergency presentations are records in the EDDC of the HIE of presentations with an ED visit type of emergency (1), an unplanned return visit for a continuing condition (3) or disaster (11).</p> <p>Emergency presentations are reported by triage category.</p> |
| Further details (inclusions, exclusions) | <p>Inclusions:</p> <ul style="list-style-type: none">• Patients who had a valid triage category and treatment time• Records with an ED visit type of Emergency (1), Unplanned return visit for a continuing condition (3) and Disaster (11). <p>Exclusions:</p> <ul style="list-style-type: none">• Non-emergency presentations• Records with a missing treatment time• Records with missing or invalid information for triage category are excluded from reported counts of emergency presentations• Records with a mode of separation of Did not wait for treatment (6), Dead on Arrival (8) or Departed for other Clinical Service Location (9). |
| Data source | Emergency Department Data Collection (EDDC) |

Measures used in this report

| Median time to starting treatment | Time from presentation by which half of patients started their treatment. The other half of patients took equal to or longer than this time. | | | | | | | | | | | | | | | | | | |
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| 90th percentile time to starting treatment | Time from presentation by which 90% of patients started treatment. The final 10% of patients took equal to or longer than this time. | | | | | | | | | | | | | | | | | | |
| Percentage of patients whose treatment started within clinically recommended maximum waiting time | <p>The number of presentations where the time from presentation to treatment was less than, or equal to, the clinically recommended maximum waiting time as a percentage of the total number of presentations. The percentage is reported for emergency patients with a triage category of 2 to 5. It is reported by triage category, and for these triage categories combined.</p> <p>Denominator:</p> <ul style="list-style-type: none"> All emergency presentations to NSW public hospital EDs. <p>Numerator:</p> <ul style="list-style-type: none"> Denominator cases where the time between arrival at the ED and treatment time was within the clinically recommended maximum waiting time for the relevant triage category. A patient started treatment within the clinically recommended maximum waiting time if the time from presentation to the start of clinical treatment is less than, or equal to, the maximum waiting times recommended in the Australasian College for Emergency Medicine policy on the Australasian Triage Scale. | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>AUSTRALASIAN TRIAGE SCALE CATEGORY</th> <th>TREATMENT ACUITY (maximum waiting time for medical assessment and treatment)</th> <th>PERFORMANCE INDICATOR THRESHOLD</th> </tr> </thead> <tbody> <tr> <td>Triage 1: Resuscitation</td> <td>Immediate</td> <td>100%</td> </tr> <tr> <td>Triage 2: Emergency</td> <td>10 minutes</td> <td>80%</td> </tr> <tr> <td>Triage 3: Urgent</td> <td>30 minutes</td> <td>75%</td> </tr> <tr> <td>Triage 4: Semi-urgent</td> <td>60 minutes</td> <td>70%</td> </tr> <tr> <td>Triage 5: Non-urgent</td> <td>120 minutes</td> <td>70%</td> </tr> </tbody> </table> | AUSTRALASIAN TRIAGE SCALE CATEGORY | TREATMENT ACUITY (maximum waiting time for medical assessment and treatment) | PERFORMANCE INDICATOR THRESHOLD | Triage 1: Resuscitation | Immediate | 100% | Triage 2: Emergency | 10 minutes | 80% | Triage 3: Urgent | 30 minutes | 75% | Triage 4: Semi-urgent | 60 minutes | 70% | Triage 5: Non-urgent | 120 minutes | 70% |
| AUSTRALASIAN TRIAGE SCALE CATEGORY | TREATMENT ACUITY (maximum waiting time for medical assessment and treatment) | PERFORMANCE INDICATOR THRESHOLD | | | | | | | | | | | | | | | | | |
| Triage 1: Resuscitation | Immediate | 100% | | | | | | | | | | | | | | | | | |
| Triage 2: Emergency | 10 minutes | 80% | | | | | | | | | | | | | | | | | |
| Triage 3: Urgent | 30 minutes | 75% | | | | | | | | | | | | | | | | | |
| Triage 4: Semi-urgent | 60 minutes | 70% | | | | | | | | | | | | | | | | | |
| Triage 5: Non-urgent | 120 minutes | 70% | | | | | | | | | | | | | | | | | |

Percentage of patients whose time from triage to commencing treatment was within clinically recommended maximum waiting times (Premier's Priority)*

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| Description of measure | <p>The number of emergency presentations where the time from triage to commencing treatment was less than, or equal to, the clinically recommended maximum waiting time as a percentage of the total number of presentations. The percentage is reported for emergency patients with a triage category of 2 or 3.</p> <p>Denominator:</p> <ul style="list-style-type: none"> All emergency presentations to NSW public hospital EDs. <p>Numerator:</p> <ul style="list-style-type: none"> Denominator cases where the time between triage time and treatment time was within the clinically recommended maximum waiting time for the relevant triage category. A patient started treatment within the clinically recommended maximum waiting time if the time from presentation to the start of clinical treatment is less than, or equal to, the maximum waiting times recommended in the Australasian College for Emergency Medicine policy on the Australasian Triage Scale. The clinically recommended maximum waiting time for triage 2 and triage 3 categories are 10 minutes and 30 minutes, respectively. <p>Premier's Priority targets: 95% of triage category 2 and 85% of triage category 3 patients commencing treatment on time by 2023.</p> |
| Cohort description (numerator and denominator) | <p>Emergency presentations to NSW EDs.</p> <p>Emergency presentations are records in the EDDC with an ED visit type of emergency (1), an unplanned return visit for a continuing condition (3) or disaster (11).</p> <p>Emergency presentations are reported by triage category.</p> |
| Further details (inclusions, exclusions) | <p>Inclusions:</p> <ul style="list-style-type: none"> Patients who had a valid triage category and treatment time Records with an ED visit type of Emergency (1), Unplanned return visit for a continuing condition (3) and Disaster (11). <p>Exclusions:</p> <ul style="list-style-type: none"> Non-emergency presentations Records with a missing treatment time Records with missing or invalid information for triage category are excluded from reported counts of emergency presentations Records with a mode of separation of Did not wait for treatment (6), Dead on Arrival (8) or Departed for other Clinical Service Location (9). |
| Data source | Emergency Department Data Collection (EDDC) |

*This Premier's Priority is measured differently to the related 'time to start treatment' measure reported throughout *Healthcare Quarterly*. The Premier's Priority is measured from the time a patient is triaged in the ED until their treatment begins, whereas *Healthcare Quarterly* measures 'time to start treatment' from the time a patient arrives at the ED until their treatment begins.

Time spent in the ED

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| Description of measure | <p>The difference between presentation time and departure time.</p> <p>Departure time is defined as:</p> <ul style="list-style-type: none"> Actual departure time – the date and time at which the patient physically leaves the ED as recorded in the actual departure time field in the emergency visit database in the HIE. If the time recorded for actual departure is before the presentation time or more than 31 days after the presentation time, then the actual departure time field is treated as missing and the record is excluded from calculations that use actual departure time. Ready for departure time – the date and time when the assessment and initial treatment of the person is completed such that if home arrangements of the person (including transport) were available, the person could leave the ED. It is recorded in the ready for departure time field in the emergency visit database in the HIE. <p>Ready for departure time is used to calculate time spent in the ED for patients who are treated and discharged. Actual departure time is used for all other patients.</p> <p>If the time recorded for ready for departure is before presentation time or more than 31 days after presentation time, then that departure time field is considered an error and treated as missing. If the time recorded for ready for departure time is missing or is later than the time recorded for actual departure time, then actual departure time is used in calculations. If both ready for departure time and actual departure time are missing, the record is excluded from calculations that use ready for departure time.</p> |
| Cohort description (numerator and denominator) | <p>All ED presentations with a valid departure time.</p> <p>'All presentations' is the count of every record in the EDDC of the HIE. This count includes presentations of all ED visit types including emergency presentations, planned return visits, pre-arranged admissions, some outpatient visits, private referrals, persons pronounced dead on arrival and patients in transit.</p> <p>Records are assigned to the reporting period using the arrival date and time field.</p> |
| Further details (exclusions) | <p>Exclusions:</p> <ul style="list-style-type: none"> Records entered in error (mode of separation = 99), telehealth and eHealth presentations (ED visit type = 12), and presentations by patients who are already admitted to the same hospital (ED visit type = 13). If the time recorded for ready for departure time is missing, is before presentation time or more than 31 days after presentation time, or is later than the time recorded for actual departure time, then actual departure time is used in calculations. Records with missing time to departure are excluded from calculations that use time to departure. |
| Data source | Emergency Department Data Collection |

Measures used in this report

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| Median time spent in the ED | <p>The time half the patients spent in the ED, calculated as the difference between presentation time and departure time.</p> <p>The other half of patients spent equal to or longer than this time.</p> |
| 90th percentile time spent in the ED | <p>The time by which 90% of patients had left the ED.</p> <p>The remaining 10% spent equal to or longer than this time.</p> |
| Percentage of patients who spent four hours or less in the ED | <p>Denominator:</p> <ul style="list-style-type: none"> All presentations to NSW public hospital EDs. <p>Numerator:</p> <ul style="list-style-type: none"> Denominator cases where the time between arrival at and departure from the ED was equal to or less than four hours. |

Transfer of care time

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| Description of measure | <p>The difference between arrival time and the time responsibility for the patient's care was transferred from paramedics to ED staff in an ED treatment zone.</p> <p>For more information, see <i>Spotlight on Measurement: Measuring transfer of care from the ambulance to the emergency department</i> available at bhi.nsw.gov.au</p> |
| Cohort description (numerator and denominator) | All patients arriving by ambulance at hospitals with an ED which is included in <i>Healthcare Quarterly</i> and with records in the Transfer of Care Reporting System (TCRS). |
| Further details (exclusions) | <p>Inclusions:</p> <ul style="list-style-type: none"> Matched records; those where the ambulance incident number and date can be identified in both the NSW Ambulance data and the ED data. <p>Exclusions:</p> <ul style="list-style-type: none"> Hospitals with fewer than 50 matched records in the quarter. Caution is advised when interpreting performance results for hospitals where transfer of care could not be calculated for more than 30% of total records because records were not matched or transfer of care time was missing. |
| Data source | <p>Transfer of Care Reporting System (TCRS) portal.</p> <p>The TCRS incorporates data drawn from the NSW Ambulance information system and from the EDDC.</p> |

Measures used in this report

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| Median transfer of care time | <p>The time between arrival of patients at the ED by ambulance and transfer of responsibility for their care, for half of the patients, from paramedics to ED staff in an ED treatment zone.</p> <p>The other half took equal to or longer than this time.</p> |
| 90th percentile transfer of care time | <p>The time between arrival of patients at the ED by ambulance and transfer of responsibility for their care for 90% of patients from paramedics to ED staff in an ED treatment zone.</p> <p>The final 10% of patients took equal to or longer than this time.</p> |
| Percentage of patients whose care was transferred within 30 minutes | The percentage of patients who arrived by ambulance for whom responsibility for their care was transferred from paramedics to ED staff in an ED treatment zone within 30 minutes. The denominator for the percentage is the number of matched records with a valid transfer of care time. |

Ambulance: Activity measures

Number of calls

| | |
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| Description of measure | Count of all calls requesting an ambulance vehicle, received by NSW Ambulance's Computer Aided Dispatch (CAD) system. |
| CAD data element description | Count of records where 'Time_CallTakingComplete' is a valid date. |

Number of incidents

| | |
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| Description of measure | <p>Count of all events requiring one or more ambulance responses.</p> <p>An incident is a call that results in the dispatch of one or more ambulance vehicles.</p> <p>Incidents are prioritised as highest priority (priority 1A) – immediate response under lights and sirens required (incident is potentially life threatening), priority 1 (emergency response under lights and sirens required); urgent (priority 2) – undelayed response required without lights and sirens; time-critical (priority 3) – medical responses requested by health professionals, often pre-booked; undelayed response and non-emergency (priority 4–9).</p> |
| CAD data element description | Count of the number of calls where at least one response vehicle is assigned. |

Number of responses

| | |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | <p>Count of all dispatches of an ambulance service vehicle.</p> <p>A response is the dispatch of an ambulance vehicle. There may be multiple responses to a single incident.</p> <p>Responses are prioritised as per incidents.</p> <p>Responses include vehicles which are cancelled prior to arrival at the incident scene.</p> |
| CAD data element description | When 'Time_Enroute' is a valid date. |

Number of patient transports

| | |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | Count of the number of responses where a patient was transported by the ambulance service. |
| CAD data element description | Responses where 'Time_ArrivedAt_Scene' is a valid date AND 'Time_Depart_Scene' is a valid date AND 'Time_ArrivedAtScene' is prior to 'Time_Depart_Scene'. |

Ambulance: Performance (timeliness) measures

Call to ambulance arrival time

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| Description of measure | Call to ambulance arrival time is measured from the time the call is answered (phone pickup) to the time the first ambulance service response arrives at the incident scene. No more than one call to ambulance arrival time for each incident is used. |
| Calculation | When: <ul style="list-style-type: none"> 'Time_PhonePickUp' is a valid date AND 'Time_ArrivedAtScene' is valid date AND 'Time_PhonePickUp' is prior to 'Time_ArrivedAtScene' AND Local Response Area has a valid Geo_Id code AND 'Time_First_Unit_Arrived' = 'Time_ArrivedAtScene' THEN calculate time difference between 'Time_PhonePickUp' and 'Time_First_Unit_Arrived' |

Measures used in this report

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| Percentage of priority 1 incidents with call to ambulance arrival time within 15 minutes | Percentage of emergency (priority 1) response times where it takes less than or equal to 15 minutes for the first ambulance service vehicle to arrive at the scene after the call is received. |
| Calculation | The number of emergency (priority 1) incidents responded to in under or equal to 15 minutes as a percentage of emergency (priority 1) incidents. Results (%) are rounded to one decimal point for reporting. |
| Inclusions | Responses with a priority code of 1. First ambulance service vehicle to arrive at the scene after the call answered. All values 0 and higher are acceptable. |
| Exclusions | N/A |
| Percentage of priority 1 incidents with call to ambulance arrival time within 30 minutes | Percentage of emergency (priority 1) incidents where it takes less than or equal to 30 minutes for the first ambulance service vehicle to arrive at the scene after the call is received. |
| Calculation | The number of emergency (priority 1) incidents responded to in under or equal to 30 minutes as a percentage of emergency (priority 1) incidents. Results (%) are rounded to one decimal point for reporting. |
| Inclusions | Responses with a priority code of 1. First ambulance service vehicle to arrive at the scene after the call answered. All values 0 and higher are acceptable. |
| Exclusions | N/A |
| Percentage of priority 2 incidents with call to ambulance arrival time within 30 minutes | Percentage of urgent (priority 2) response times where it takes less than or equal to 30 minutes for the first ambulance service vehicle to arrive at the scene after the call is received. |
| Calculation | The number of urgent (priority 2) incidents responded to in under or equal to 30 minutes as a percentage of urgent (priority 2) incidents. Results (%) are rounded to one decimal point for reporting. |

| | |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inclusions | Responses with a priority code of 2. First ambulance service vehicle to arrive at the scene after the call answered. All values 0 and higher are acceptable. |
| Exclusions | N/A |
| Percentage of priority 2 incidents with call to ambulance arrival time within 60 minutes | Percentage of all statewide urgent (priority 2) response times where it takes less than or equal to 60 minutes for the first ambulance service vehicle to arrive at the scene after the call is received. |
| Calculation | The number of urgent (priority 2) incidents responded to in under or equal to 60 minutes as a percentage of urgent (priority 2) incidents. Results (%) are rounded to one decimal point for reporting. |
| Inclusions | Responses with a priority code of 2. First ambulance service vehicle to arrive at the scene after the call answered. All values 0 and higher are acceptable. |
| Exclusions | N/A |

Ambulance response time

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| Description of measure | Ambulance response time is measured from the time a call is placed in queue (for an ambulance to be dispatched) to the time the first ambulance service response arrives at the incident scene. No more than one response time for each incident is used. |
| Calculation | When: <ul style="list-style-type: none"> • 'Time_CallEnteredQueue' is a valid date • AND 'Time_ArrivedAtScene' is valid date • AND 'Time_CallEnteredQueue' is prior to 'Time_ArrivedAtScene' • AND Local Response Area maps to a valid Geo_Id code • AND 'Time_First_Unit_Arrived' = 'Time_ArrivedAtScene' • AND Local Response Area has a valid Geo_Id code • THEN calculate time difference between 'Time_CallEnteredQueue' and 'Time_First_Unit_Arrived'. |

Measures used in this report

| | |
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| Median (50th percentile) ambulance response time | <p>The total time by which half of incidents were responded to by ambulance service vehicles. The other half took equal to or longer than this time.</p> <p>The median is a statistical measure of the midpoint of the response time distribution.</p> <p>BHI uses the data for the first vehicle to arrive at the scene and the empirical distribution function with averaging to compute the median in SAS©9.</p> |
| Data element description | <p>Response time is the difference in minutes between when a call is placed in queue (for an ambulance to be dispatched) to the time the first ambulance service response arrives at the incident scene.</p> <p>Results (minutes) are rounded to one decimal point for reporting.</p> |
| Inclusions | <p>Responses with a priority code of 1, 1A and 2.</p> <p>First ambulance service vehicle to arrive at the scene after the call is placed in queue.</p> |
| Exclusions | N/A |
| 90th percentile ambulance response time | <p>The time by which 90% of incidents were responded to by ambulance service vehicles. The final 10% took equal to or longer than this time.</p> <p>The 90th percentile is a statistical measure of response time distribution. BHI uses the first vehicle to arrive at the scene and the empirical distribution function with averaging to compute the 90th percentile in SAS©9.</p> |
| Data element description | <p>Response time is the difference in minutes between when a call is placed in the queue (for an ambulance to be dispatched) to the time the first ambulance service response arrives at the incident scene.</p> <p>Results (minutes) are rounded to one decimal point for reporting.</p> |
| Exclusions | N/A |
| Percentage of priority 1A responses within 10 minutes | <p>Percentage of emergency (priority 1A) incidents (requiring at least one immediate response under lights and siren) responded to in under or equal to 10 minutes.</p> |
| Calculation | <p>The percentage is calculated as the number of priority 1A responses where the time from when a call is placed in queue (for an ambulance to be dispatched) to the time the first ambulance service response arrives at the incident scene was less than, or equal to, 10 minutes as a percentage of the total number of priority 1A responses.</p> <p>Results (%) are rounded to one decimal point for reporting.</p> |
| Inclusions | <p>Responses with a priority code of 1A.</p> <p>First ambulance service vehicle to arrive at the scene after the call is placed in queue.</p> <p>All values 0 and higher are acceptable.</p> |
| Exclusions | N/A |

Admitted patients

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|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Episode of care | <p>The period of admitted patient care between a formal or statistical admission and a formal or statistical separation, characterised by only one Care Type. It is designed to reflect the changing diagnosis and/or treatment of the patient and ends when the care type changes or the patient separates from the hospital.</p> <p>When a person is admitted to hospital they begin what is termed an admitted patient episode or 'episode of care'. Admitted patient episodes can be acute (admissions for immediate treatment) or non-acute (admissions for rehabilitation, palliative care, or other reasons). Admissions that involve treatment for mental health can be acute or non-acute. Patients may have more than one type of care during the same hospital admission, each of which is regarded as a separate 'episode of care'. For example, a patient may begin with acute care and then change to rehabilitation or palliative care.</p> |
| Total episodes | The count of all episodes of care which end within a defined period (i.e. with an episode end date in the defined period). |
| Acute episodes | The count of completed episodes of care with a care type value of 1 (acute care) or 5 (newborn care). |
| Non-acute episodes | The count of completed episodes of care with a care type value of 2 (rehabilitation care), 3 (palliative care), 4 (maintenance care), 7 geriatric evacuation and management) or 8 (psycho-geriatric). |
| Mental health episodes | The count of completed episodes of care with a care type value of M (mental health care). |
| Planned episodes | The count of completed episodes of care with an urgency of admission value of 2 (non-emergency/planned) or 5 (regular same-day planned admission). |
| Unplanned/other episodes | All completed episodes of care within a defined period minus planned episodes. |
| Babies born | The count of completed episodes of care with source of referral of 'born in hospital'; it is a subset of unplanned episodes. Unlike all other fields in the admitted patient dataset, babies born uses the 'episode' table of the Health Information Exchange. |
| Stay type | <p>Episodes of care can be for 'same-day' or 'overnight' care. Same-day refers to patients who are admitted and discharged on the same day. Overnight refers to patients who spend at least one night in hospital.</p> <p>Episodes of care can be either 'planned' or 'unplanned'. Planned refers to admissions that are arranged in advance (for example, patients who are admitted for planned elective surgery) Unplanned refers to emergency admissions (for example, for unplanned surgical patients).</p> |
| Same-day episodes | The count of completed episodes of care with an episode start date equal to the episode end date. |
| Overnight episodes | The count of completed episodes of care with an episode start date that is earlier (not equal) to the episode end date. |
| Bed days | <p>Bed days are calculated for all episodes of care completed during the reference period.</p> <p>Bed days for an overnight episode is the difference, in days, between the episode start date and the episode end date, minus the number of episode leave days recorded. Same-day episodes count as one bed day.</p> |
| Acute bed days | The sum of bed days for all completed acute episodes within the defined period. |
| Non-acute bed days | The sum of bed days for all completed non-acute episodes within the defined period. |
| Mental health bed days | The sum of bed days for all completed mental health episodes within the defined period. |
| Average length of stay | The mean of total bed days for all completed episodes of care within the defined period. That is, the total number of days in hospital for all episode of care (including same-day and overnight patients) divided by the total number of episodes of care. The average length of stay is usually measured from midnight. |
| Emergency surgery | Emergency surgery is reported as emergency admissions involving surgery. This refers to hospital admissions for which the urgency of admission is reported as emergency (admission required within 24 hours) and where the assigned AR-DRG is surgical (excluding childbirth-related AR-DRGs). |

Seclusion and restraint

Number of seclusion events

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|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | Count of all seclusion events occurring in public specialised acute mental health inpatient units, manually collected by each local health district at mental health service unit level and reported to the NSW Ministry of Health. |
| Inclusions | All specialised declared and non-declared acute mental health units. Same-day and overnight separations. Complete and non-complete episodes in the reporting period. |
| Exclusions | N/A |

Number of restraint events

| | |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | Count of all restraint events occurring in public specialised acute mental health inpatient units, manually collected by each local health district at mental health service unit level and reported to NSW Ministry of Health. |
| Inclusions | All specialised declared and non-declared acute mental health units. Same-day and overnight separations. Complete and non-complete episodes in the reporting period. Mechanical and physical types of restraints. |
| Exclusions | N/A |

Rate of seclusion

| | |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | Number of seclusion events per 1,000 bed days. |
| Calculation | Denominator: <ul style="list-style-type: none">Number of accrued mental health care days in public specialised acute mental health inpatient units in the reporting period. Numerator: <ul style="list-style-type: none">Number of seclusion events in public specialised acute mental health inpatient units in the reporting period. Results are rounded to one decimal point for reporting. |
| Inclusions | All specialised declared and non-declared acute mental health units. Same-day and overnight separations. Complete and non-complete episodes in the reporting period. |
| Exclusions | Leave days. |

Rate of physical restraint

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|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | Number of physical restraint events per 1,000 bed days. |
| Calculation | <p>Denominator:</p> <ul style="list-style-type: none"> Number of accrued mental health care days in public specialised acute mental health inpatient units in the reporting period. <p>Numerator:</p> <ul style="list-style-type: none"> Number of physical restraint events occurring in public specialised acute mental health inpatient units in the reporting period. <p>Results are rounded to one decimal point for reporting.</p> |
| Inclusions | <p>All specialised declared and non-declared acute mental health units.</p> <p>Same-day and overnight separations.</p> <p>Complete and non-complete episodes in the reporting period.</p> |
| Exclusions | Leave days. |

Frequency of seclusion

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| Description of measure | Percentage of mental health admitted episodes of care where at least one seclusion event occurred. |
| Calculation | <p>Denominator:</p> <ul style="list-style-type: none"> Number of admitted mental health episodes of care in public specialised acute mental health inpatient units in the reporting period. <p>Numerator:</p> <ul style="list-style-type: none"> Number of admitted mental health episodes of care with at least one seclusion event in public specialised acute mental health inpatient units in the reporting period. <p>Results (%) are rounded to one decimal point for reporting.</p> |
| Inclusions | <p>All specialised declared and non-declared acute mental health units.</p> <p>Same-day and overnight separations.</p> <p>Complete and non-complete episodes in the reporting period.</p> |
| Exclusions | N/A |

Frequency of physical restraint

| | |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | Percentage of mental health admitted episodes of care where at least one physical restraint event occurred. |
| Calculation | Denominator: <ul style="list-style-type: none"> Number of admitted mental health episodes of care in public specialised acute mental health inpatient units in the reporting period. Numerator: <ul style="list-style-type: none"> Number of admitted mental health episodes of care with at least one physical restraint event in public specialised acute mental health inpatient units in the reporting period. Results (%) are rounded to one decimal point for reporting. |
| Inclusions | All specialised declared and non-declared acute mental health units. Same-day and overnight separations. Complete and non-complete episodes in the reporting period. |
| Exclusions | N/A |

Average duration of seclusion

| | |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | The average duration in hours and minutes of seclusion events. |
| Calculation | Total duration of seclusion events divided by the number of seclusion events in public specialised acute mental health inpatient units. |
| Inclusions | All specialised declared and non-declared acute mental health units. Same-day and overnight separations. Complete and non-complete episodes in the reporting period. |
| Exclusions | N/A |

Average duration of restraint

| | |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | The average duration in minutes of restraint events. |
| Calculation | Total duration of restraint events divided by the number of restraint events in public specialised acute mental health inpatient units. |
| Inclusions | All specialised declared and non-declared acute mental health units. Same-day and overnight separations. Complete and non-complete episodes in the reporting period. Mechanical and physical types of restraints. |
| Exclusions | N/A |

Elective surgery: Activity measures

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| The number of patients who received elective surgery | The count of patients who were removed from the waiting list during the reporting period because they were a routine admission for surgery, an admission for their listed procedure as an emergency admission, an admission contracted to another hospital, or an admission for surgery contracted to a private hospital or private day procedure centre. |
| The number of patients who were added to the elective surgery waiting list | The number of patients who were added to the waiting list during the reporting period. The count is the number of patients whose listing date was within the reporting period. The cohort is any patient who was on the waiting list during the reporting period. That is: <ul style="list-style-type: none"> count of patients who were added to the waiting list during the reporting period count of patients who may have received surgery during the reporting period or still be on the waiting list at the end of reporting period. |
| The number of patients ready for elective surgery, on the waiting list at the end of the reporting period, who had not received elective surgery within clinically recommended maximum waiting time for their urgency category | The number of patients who were on the waiting list and ready for care at the end of the reporting period, and who had waited longer than clinically recommended maximum waiting times, which are defined as: <ul style="list-style-type: none"> Urgent surgery: patients had accrued more than 30 days ready for care Semi-urgent surgery: patients had accrued more than 90 days ready for care Non-urgent surgery: patients had accrued more than 365 days ready for care. <p>This measure appears in <i>Healthcare Quarterly</i> at NSW level from April to June 2020.</p> |
| The number of patients waiting for elective surgery | The count of all patients who were on the waiting list at the end of the reporting period. |
| Not ready for care | 'Not ready for care' patients are those who are not in a position to be admitted to hospital. Patients not ready for surgery on the waiting list includes those waiting for staged procedures, non-urgent cystoscopy, and patients currently not available for personal reasons. |
| Urgency category | A classification system based on how urgent the patient's need for surgery is: <p>Urgent surgery: Admission within 30 days is desirable for a condition that has potential to deteriorate quickly and become an emergency.</p> <p>Semi-urgent surgery: Admission within 90 days is desirable for a condition unlikely to deteriorate quickly.</p> <p>Non-urgent surgery: Admission within 365 days acceptable for a condition unlikely to deteriorate quickly.</p> |
| Staged surgery | Surgery that, for medical reasons, cannot take place before a certain amount of time has elapsed. BHI uses this term to define all patients that could be identified as being a staged patient for most of their time on the waiting list and all non-urgent cystoscopy patients. |
| Common procedure | Commonly performed elective surgical procedures. |
| Specialty | The area of clinical expertise held by the doctor who performed the surgery. Medical (specialty) refers to any surgery performed by a non-specialist medical practitioner. |

Elective surgery: Performance measures

Elective surgery waiting time

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|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | The waiting period for a particular patient is defined as the time between the list date and the removal date. The time a patient waited for the initial appointment with a specialist is not included in the time a patient spent on the waiting list for elective surgery. Waiting time is calculated using the Commonwealth waiting time definition. The number of days is calculated by subtracting the listing date for care from the removal date, minus any days when the patient was 'not ready for care', and also minus any days the patient was waiting with a less urgent clinical urgency category than their clinical urgency category at removal from the waiting list. |
| Cohort description (numerator and denominator) | All patients removed from the waiting list during the reporting period because they were a routine admission for surgery, an admission for their listed procedure as an emergency admission, or an admission for surgery contracted to a private hospital or private day procedure centre. |
| Further details (inclusions, exclusions) | Exclusions: <ul style="list-style-type: none">• Patients who were coded as not ready for surgery (NRFC) at the time of surgery• Patients who were recorded as NRFC on the day they were entered on to the waitlist and who had a single urgency change to their final urgency category• Patients who received a cystoscopy and were in the non-urgent category• The count for a hospital does not include admissions contracted to another public hospital. |
| Data source | Waiting List Collection On-line System (WLCOS). |

Measures used in this report

| | |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Median waiting time in days | The number of days it took for half of patients who received elective surgery during the reporting period to be admitted and receive their surgery. The other half took equal to or longer than this time. Median waiting time is calculated using the Commonwealth waiting time definition. BHI reports the median by urgency category, surgical specialty and common procedure. |
| 90th percentile waiting time in days | The number of days it took for 90 percent of patients who received elective surgery during the reporting period to be admitted and receive their surgery. The 90th percentile waiting time is also reported using the Commonwealth waiting time definition. BHI reports the 90th percentile by urgency category. |

Percentage of patients admitted and who received surgery within the clinically recommended maximum waiting time

| | |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measure | The proportion of patients admitted within the clinically recommended maximum waiting time for each of the elective surgery urgency categories. |
| Cohort description (numerator and denominator) | Numerator : <ul style="list-style-type: none">• Number of patients admitted to hospital for their elective surgery within the clinically recommended maximum waiting time, i.e. in 30 days or less for category A patients, 90 days or less for category B patients and 365 days or less for category C patients. Denominator: <ul style="list-style-type: none">• Total number of patients admitted for elective surgery in each urgency category. |

COVID-19 testing

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|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COVID-19 testing cohort | The COVID-19 testing cohort refers to patients identified as visiting an ED for a COVID-19 test only. The cohort is defined using a combination of five data elements: with COVID-19 included in the presenting problem or diagnosis fields; as triage 5 (non-urgent) attendances; and as treated and discharged (Table 1). The five data elements in the EDDC are: triage category, mode of separation, provisional diagnosis, additional diagnosis, presenting problem. |
| Provisional diagnosis | The diagnosis or condition established after assessment to be the main reason for the person presenting to the ED. ICD-10-AM sites: ed_diagnosis_type='P' At ICD-10-AM sites, this field is described as the principal diagnosis. SNOMED-CT-AU sites ed_diagnosis_type='D' At SNOMED-CT-AU sites, this field is described as the discharge diagnosis. |
| Additional diagnosis | An additional diagnosis or condition includes: existed at the time the person presented to the ED, arose while the person was in ED, is expected to affect the person's treatment care plan and/or length of stay in the ED. ICD-10-AM sites: ed_diagnosis_type='1' At ICD-10-AM sites, this field is described as the additional diagnosis. SNOMED-CT-AU sites ed_diagnosis_type='P' At SNOMED-CT-AU sites, this field is described as the admission diagnosis. |

List of statistical areas level 4 (SA4s) by statistical areas level 3 (SA3s)

| SA4 | SA3s |
|----------------------------------------|---------------------------------------------------------------------------------------|
| Capital Region | Goulburn – Mulwaree, Queanbeyan, Snowy Mountains, South Coast and Young – Yass |
| Central Coast | Gosford and Wyong |
| Central West | Bathurst, Lachlan Valley, Lithgow – Mudgee and Orange |
| Coffs Harbour – Grafton | Clarence Valley and Coffs Harbour |
| Far West and Orana | Bourke – Cobar – Coonamble, Broken Hill and Far West and Dubbo |
| Hunter Valley excl. Newcastle | Lower Hunter, Maitland, Port Stephens and Upper Hunter |
| Illawarra | Dapto – Port Kembla, Illawarra Catchment Reserve, Kiama – Shellharbour and Wollongong |
| Mid North Coast | Great Lakes, Kempsey – Nambucca, Port Macquarie and Taree – Gloucester |
| Murray | Albury, Lower Murray and Upper Murray excl. Albury |
| New England and North West | Armidale, Inverell – Tenterfield, Moree – Narrabri and Tamworth – Gunnedah |
| Newcastle and Lake Macquarie | Lake Macquarie – East, Lake Macquarie – West and Newcastle |
| Richmond – Tweed | Richmond Valley – Coastal, Richmond Valley – Hinterland and Tweed Valley |
| Riverina | Griffith – Murrumbidgee (West), Tumut – Tumbarumba and Wagga Wagga |
| Southern Highlands and Shoalhaven | Shoalhaven and Southern Highlands |
| Sydney – Baulkham Hills and Hawkesbury | Baulkham Hills, Dural – Wisemans Ferry, Hawkesbury and Rouse Hill – McGraths Hill |
| Sydney – Blacktown | Blacktown, Blacktown – North and Mount Druitt |
| Sydney – City and Inner South | Botany, Marrickville – Sydenham – Petersham and Sydney Inner City |
| Sydney – Eastern Suburbs | Eastern Suburbs – North and Eastern Suburbs – South |
| Sydney – Inner South West | Bankstown, Canterbury, Hurstville and Kogarah – Rockdale |
| Sydney – Inner West | Canada Bay, Leichhardt and Strathfield – Burwood – Ashfield |
| Sydney – North Sydney and Hornsby | Chatswood – Lane Cove, Hornsby, Ku-ring-gai and North Sydney – Mosman |
| Sydney – Northern Beaches | Manly, Pittwater and Warringah |
| Sydney – Outer South West | Camden, Campbelltown (NSW) and Wollondilly |
| Sydney – Outer West and Blue Mountains | Blue Mountains, Blue Mountains – South, Penrith, Richmond – Windsor and St Marys |
| Sydney – Parramatta | Auburn, Carlingford, Merrylands – Guildford and Parramatta |
| Sydney – Ryde | Pennant Hills – Epping and Ryde – Hunters Hill |
| Sydney – South West | Bringelly – Green Valley, Fairfield and Liverpool |
| Sydney – Sutherland | Cronulla – Miranda – Caringbah and Sutherland – Menai – Heathcote |

List of hospitals by local health district and hospital peer group, A1–C2 only

| Hospital | Local health district | Hospital peer group |
|-------------------------------------------------|-----------------------|---------------------|
| Armidale Hospital | Hunter New England | C1 |
| Auburn Hospital | Western Sydney | B |
| Ballina District Hospital | Northern NSW | C2 |
| Bankstown–Lidcombe Hospital | South Western Sydney | A1 |
| Batemans Bay District Hospital | Southern NSW | C2 |
| Bathurst Health Service | Western NSW | C1 |
| Belmont Hospital | Hunter New England | C1 |
| Blacktown Hospital | Western Sydney | B |
| Blue Mountains District Anzac Memorial Hospital | Nepean Blue Mountains | C2 |
| Bowral and District Hospital | South Western Sydney | C1 |
| Broken Hill Health Service | Far West | C1 |
| Byron Central Hospital | Northern NSW | C2 |
| Calvary Mater Newcastle | Hunter New England | A3 |
| Campbelltown Hospital | South Western Sydney | B |
| Canterbury Hospital | Sydney | B |
| Casino & District Memorial Hospital | Northern NSW | C2 |
| Cessnock Hospital | Hunter New England | C2 |
| Coffs Harbour Health Campus | Mid North Coast | B |
| Concord Repatriation General Hospital | Sydney | A1 |
| Cooma Hospital and Health Service | Southern NSW | C2 |
| Cowra Health Service | Western NSW | C2 |
| Deniliquin Hospital and Health Services | Murrumbidgee | C2 |
| Dubbo Base Hospital | Western NSW | B |
| Fairfield Hospital | South Western Sydney | B |
| Gosford Hospital | Central Coast | A1 |
| Goulburn Base Hospital and Health Service | Southern NSW | C1 |
| Grafton Base Hospital | Northern NSW | C1 |
| Griffith Base Hospital | Murrumbidgee | C1 |
| Gunnedah Hospital | Hunter New England | C2 |
| Hawkesbury District Health Services | Nepean Blue Mountains | C1 |
| Hornsby Ku-ring-gai Hospital | Northern Sydney | B |
| Inverell Hospital | Hunter New England | C2 |
| John Hunter Hospital | Hunter New England | A1 |
| Kempsey District Hospital | Mid North Coast | C2 |
| Kurri Kurri Hospital | Hunter New England | C2 |
| Lachlan Health Service – Forbes | Western NSW | C2 |
| Lismore Base Hospital | Northern NSW | B |
| Lithgow Hospital | Nepean Blue Mountains | C2 |
| Liverpool Hospital | South Western Sydney | A1 |
| Macksville District Hospital | Mid North Coast | C2 |
| Maclean District Hospital | Northern NSW | C2 |
| Maitland Hospital | Hunter New England | B |

| Hospital | Local health district | Hospital peer group |
|-----------------------------------------|-----------------------------|---------------------|
| Manning Hospital | Hunter New England | B |
| Milton Ulladulla Hospital | Illawarra Shoalhaven | C2 |
| Moree Hospital | Hunter New England | C2 |
| Moruya District Hospital | Southern NSW | C2 |
| Mount Druitt Hospital | Western Sydney | C1 |
| Mudgee Health Service | Western NSW | C2 |
| Murwillumbah District Hospital | Northern NSW | C1 |
| Muswellbrook Hospital | Hunter New England | C2 |
| Narrabri Hospital | Hunter New England | C2 |
| Nepean Hospital | Nepean Blue Mountains | A1 |
| Northern Beaches Hospital | Northern Sydney | B |
| Orange Health Service | Western NSW | B |
| Port Macquarie Base Hospital | Mid North Coast | B |
| Prince of Wales Hospital | South Eastern Sydney | A1 |
| Queanbeyan Hospital and Health Service | Southern NSW | C2 |
| Royal North Shore Hospital | Northern Sydney | A1 |
| Royal Prince Alfred Hospital | Sydney | A1 |
| Ryde Hospital | Northern Sydney | C1 |
| Shellharbour Hospital | Illawarra Shoalhaven | C1 |
| Shoalhaven District Memorial Hospital | Illawarra Shoalhaven | B |
| Singleton Hospital | Hunter New England | C2 |
| South East Regional Hospital | Southern NSW | C1 |
| St George Hospital | South Eastern Sydney | A1 |
| St Vincent's Hospital Sydney | St Vincent's Health Network | A1 |
| Sutherland Hospital | South Eastern Sydney | B |
| Sydney Children's Hospital, Randwick | Sydney Children's Network | A2 |
| Sydney Hospital and Sydney Eye Hospital | South Eastern Sydney | A3 |
| Tamworth Hospital | Hunter New England | B |
| The Children's Hospital at Westmead | Sydney Children's Network | A2 |
| The Tweed Hospital | Northern NSW | B |
| Wagga Wagga Rural Referral Hospital | Murrumbidgee | B |
| Westmead Hospital | Western Sydney | A1 |
| Wollongong Hospital | Illawarra Shoalhaven | A1 |
| Wyong Hospital | Central Coast | B |
| Young Health Service | Murrumbidgee | C2 |

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About the Bureau of Health Information

The Bureau of Health Information (BHI) is a board-governed organisation that provides independent information about the performance of the NSW healthcare system.

BHI was established in 2009 and supports the accountability of the healthcare system by providing regular and detailed information to the community, government and healthcare professionals. This in turn supports quality improvement by highlighting how well the healthcare system is functioning and where there are opportunities to improve.

BHI manages the NSW Patient Survey Program, gathering information from patients about their experiences and outcomes of care in public hospitals and other healthcare facilities.

BHI publishes a range of reports and information products, including interactive tools, that provide objective, accurate and meaningful information about how the health system is performing.

BHI's work relies on the efforts of a wide range of healthcare, data and policy experts. All of our assessment efforts leverage the work of hospital coders, analysts, technicians and healthcare providers who gather, codify and supply data. Our public reporting of performance information is enabled and enhanced by the infrastructure, expertise and stewardship provided by colleagues from NSW Health and its pillar organisations.

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