bureau of
health
information

Healthcare Quarterly

Technical Supplement

Emergency department, ambulance, admitted patients and elective surgery

July to September 2017

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.

Contents

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 (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 technical supplements section of the BHI website **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*.

To produce this information in the *Healthcare Quarterly* report BHI used the following 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). Data are extracted from the centralised data warehouse, the Health Information Exchange (HIE), administered by the NSW Ministry of Health.

The activity and performance measures reported in the April to June 2017 edition of *Healthcare Quarterly* were based on 132 hospital EDs which had an electronic records system in place and reliable data in the EDDC for five or more consecutive quarters. In the July to September 2017 edition, the number has risen to 134 EDs that comprise the 'NSW totals' reported in *Healthcare Quarterly*. They account for approximately 96% of all ED presentations in NSW and 97% of records in the EDDC.

EDs are reported individually for hospitals in principal referral, major or district peer groups (A1, A2, A3, B, C1 and C2). A total of 78 EDs met the reporting criteria in the July to September 2017 quarter. The criteria for inclusion in the Healthcare Quarterly report are:

- Five or more quarters of stable data in the EDDC
- Inclusion of records in the Transfer of Care Reporting System (TCRS).

Not all hospitals that are in the TCRS meet these inclusion criteria.

Summary of changes

From the July to September 2017 edition, *Healthcare Quarterly,* data will be reported individually for three additional hospitals. Byron Central, Cooma and Cowra hospitals (peer group C2) now meet data quality standards and have at least five consecutive quarters of stable data.

Byron Central opened in June 2016 and replaced Byron District and Mullumbimby hospitals. Since then, it has contributed to NSW results for activity and performance. In previous appendix tables, it contributed to local health district (LHD) results under the 'Other' category. Having reached the criterion of five consecutive quarters of data, Byron Central will now be reported individually. While this will not affect NSW and LHD results, it will change the results reported for its peer group (C2).

The addition of Cooma and Cowra will affect activity and performance results at the NSW level, the LHD (Western NSW and Southern NSW LHDs, respectively), and the C2 peer group results.

As a result of these changes, the number of hospitals individually reported in *Healthcare Quarterly* increases from 75 to 78. In the C2 peer group, the number of hospitals contributing to activity and performance results grow from 23 to 26. The impact on NSW, affected LHDs and C2 peer group ED performance indicators are summarised in Tables 1 to 4.

To ensure accuracy in activity and performance comparisons between quarters in *Healthcare Quarterly, July to September 2017*, figures containing historical data incorporate the additional hospitals. Previous editions of *Healthcare Quarterly* do not and therefore discrepancies between the current and previous reports for a historical time point are expected. For this reason, the results reported in earlier releases of *Healthcare Quarterly* are not directly comparable to the current report.

Transfer of Care Reporting System

Data for calculating the number of ambulance arrivals and transfer of care time are downloaded from the TCRS portal. The TCRS incorporates data drawn from the NSW Ambulance information system and from the EDDC.

Changeover to a new records system

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

At a facility level, during a changeover period (the rollout of a new electronic information system), the only information from the EDDC reported by BHI is the total number of ED presentations. For aggregated NSW reporting (for example, for NSW, LHDs or peer groups[2]), data from affected hospitals are included in total counts but are excluded from calculation of all performance measures.

Quarters affected by system changeover will be shown on time trend graphs for individual hospitals, to help readers of BHI reports be aware of specific quarters when information system change is likely to be a contributor to any change in time measures between quarters.

In the following definitions, numbers in brackets indicate the HIE database field code used to identify records by ED visit type or mode of separation (as appropriate). The arrival date and time field is used to select records from the HIE for each quarter. Unless explicitly stated, records with incomplete information in the fields required for a calculation are excluded.

All presentations

All presentations is the count of every record in the ED visit database 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. 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).

Records are assigned to quarters of the year using the arrival date and time field.

Emergency presentations

Emergency presentations are records in the ED visit database 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 *Healthcare Quarterly* are reported by triage category.

Records with missing or invalid information for triage category are excluded from reported counts of emergency presentations.

Emergency presentations by quarter

The time series graphs in *Healthcare Quarterly* present the number of emergency presentations to an ED during each quarter for the preceding 21 quarters.

Ambulance arrivals

Ambulance arrivals is the count of all cases recorded in the TCRS as arriving at a hospital with an ED. Ambulance arrivals include all emergency and priority medical patients transported by ambulance.

All presentations by mode of separation

Presentations are reported based on the mode of separation field: treated and discharged, treated and admitted to hospital, left without, or before, completing treatment, transferred to another hospital and other modes of separation. Records with a missing mode of separation are included in the 'other' cohort.

The mode of separation cohorts are:

- Treated and discharged – presentations with mode of separation: departed with treatment complete (4)

AUSTRALASIAN TRIAGE SCALE CATEGORY	TREATMENT ACUITY (Maximum waiting time for medical assessment and treatment)	PERFORANCE 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%

- Treated and admitted to hospital – presentations with modes of separation: admitted to a ward/inpatient unit (1), admitted and discharged as an inpatient within ED (2), admitted and died in ED (3), admitted to a critical care ward (10), admitted via an operating theatre (11) or admitted – left at own risk (13)

- Left without, or before completing, treatment – presentations with modes of separation: departed, did not wait (6) and departed – left at their own risk (7). 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: dead on arrival (8) or departed for another clinical service location (9). Presentations with missing mode of separation are also included in this cohort.

Presentation time

Presentation time is the earlier of the following fields in the emergency visit database of the HIE:

- Arrival time – the date and time the patient presented at the ED

- Triage time – the date and time when the patient was assessed by a triage nurse.

If triage time is more than 12 hours before arrival time, then the triage time field is considered an error and presentation time is set equal to arrival time.

On arrival at the ED patients are allocated to one of five triage categories depending on how urgently they require treatment, based on the Australasian Triage Scale[1]:

Treatment time

Treatment time is the earlier of the following fields in the ED visit database of the HIE:

- 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).

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.

BHI does not report time from presentation to starting treatment for patients in triage category 1, since BHI considers that waiting time measures are not informative for these patients. 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.

Time spent in the ED

Time spent in the ED is calculated as the difference between presentation time and departure time.

Departure time is defined as:

- Actual departure time – for all patients other than those who were treated and discharged

- Ready for departure time – for patients who were treated and discharged.

Actual departure time

Actual departure time is 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

Ready for departure time is 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.

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.

Median

The median is a statistical measure of the midpoint of the waiting times distribution. This measure is used in *Healthcare Quarterly* to describe the time by which half of patients had their treatment start, left the ED or had their care transferred from ambulance to ED staff. The other half of patients took equal to or longer than this time. BHI uses the data for each patient and the empirical distribution function with averaging to compute the median in SAS©5. Results are rounded to the nearest whole minute for reporting.

90th percentile

The 90th percentile is a statistical measure of the waiting time distribution. It is used in *Healthcare Quarterly* to describe the time by which 90% of patients had their treatment start, left the ED or had their care transferred from ambulance to ED staff. The final 10% of patients took equal to or longer than this time. BHI uses the data for each patient and the empirical distribution function with averaging to compute the 90th percentile in SAS©5. Results are rounded to the nearest whole minute for reporting.

Percentage of patients who started treatment within clinically recommended timeframes

This percentage is calculated as the number of presentations where the time from presentation to treatment was less than, or equal to, the clinically recommended time as a percentage of the total number of presentations.

A patient started treatment within the clinically recommended timeframe 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 of Emergency Medicine policy on the Australasian Triage Scale.[2]

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%

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.

Calculation of the time elapsed is described in more detail in the sections Presentation time, Treatment time, and Time from presentation to starting treatment.

Percentage of patients who started treatment, by time

The distribution curve in *Healthcare Quarterly* shows the cumulative percentage of emergency presentations by minutes from presentation until treatment by triage category. The cumulative percentage is computed by summing the proportions of patients whose treatment started in one minute intervals of time elapsed since presentation within each triage category.

Emergency patients who received treatment are patients with visit type = 1, 3 or 11 and mode of separation = 1, 2, 3, 4, 5, 7, 10, 11, 12 and 13. This cohort only includes patients who had a valid triage category and treatment time. Calculation of the time elapsed is described in the section Time from presentation to starting treatment. If the cumulative distribution does not reach 100%, it indicates that some patients in that triage category

waited longer than the maximum time shown on the horizontal axis for their treatment to start.

Percentage of patients who spent four hours or less in the ED

The percentage of patients who spent four hours or less in the ED is calculated as the number of patients with time from presentation to leaving the ED of four hours or less as a percentage of the total number of patients.

Records with missing time to departure are excluded from calculations of percentage leaving the ED within four hours.

Percentage of patients by time spent in the ED

The distribution curve in *Healthcare Quarterly* shows the cumulative percentage of patients and time spent in the ED by the number of hours from presentation until leaving the ED. The cumulative percentage is computed by summing the percentage of patients and time spent in the ED in one minute intervals of time elapsed from presentation to departure. Records that do not have a valid time from presentation to departure are excluded from calculation. Calculation of the time elapsed is described in the section Time from presentation to leaving the ED.

If the cumulative distribution does not reach 100%, it indicates that some patients waited longer than the maximum time shown on the horizontal axis to leave the ED.

Percentage of patients by time spent in the ED and mode of separation

The distribution curve in *Healthcare Quarterly* shows the cumulative percentage of patients by the number of hours spent in the ED by mode of separation. The cumulative percentage is computed by summing the percentage of patients and time spent in the ED in one minute intervals of time elapsed from presentation to departure for each mode of separation. Records that do not have a valid departure time are excluded from

calculation. Calculation of the time elapsed is described in the section Time spent in the ED.

If the cumulative distribution does not reach 100%, it indicates that some patients in that mode of separation waited longer than the maximum time shown on the horizontal axis of the graph, to leave the ED.

Arrivals by ambulance and transfer of care time

Ambulance arrivals is the count of all cases recorded in the TCRS as arriving at a hospital with an ED included in *Healthcare Quarterly*. Ambulance arrivals include all emergency and priority medical patients transported by ambulance.

Transfer of care time is the time from arrival of patients at the ED by ambulance and transfer of responsibility for their care from ambulance to ED staff in an ED treatment zone. Transfer of care time can only be calculated for matched records. These are records where the ambulance incident number and date can be identified in both the NSW Ambulance data and the ED data. Records which cannot be matched are excluded from all calculations that use transfer of care time.

If the time recorded for transfer of care is earlier than ambulance arrival time, then transfer of care time is calculated starting from ED triage time. If the time of transfer of care is earlier than both

arrival and triage time, then transfer of care time is set to missing and the record is excluded from all calculations requiring transfer of care time.

Transfer of care performance is reported as:

- Median time for transfer of care (minutes)

- 90th percentile time for transfer of care (minutes)

- Percentage of ambulance arrivals with transfer of care time within 30 minutes. The denominator for the percentage is the number of matched records with a valid transfer of care time.

Transfer of care performance is not reported for hospitals with fewer than 50 matched records in the quarter. Records from these hospitals are excluded from calculation of performance measures.

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.

For more information, see *Spotlight on Measurement: Measuring transfer of care from the ambulance to the emergency department* available at **bhi.nsw.gov.au**

Ambulance

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

To produce this information in the *Healthcare Quarterly* report BHI used the following 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 incident, response, transport, Emergency Department Network Access, Ambulance Release Teams and calls as the 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.

The following Priority Numbers have been excluded:

- 14 (Priority Error)
- 35 (ICEMS)
- 36 (ICEMS Urgent).

Measures of ambulance service activity and performance reported in *Healthcare Quarterly* are currently based on local response areas whose

vehicles have an electronic system in place. These local response areas comprise the 'NSW totals' reported in *Healthcare Quarterly*.

Results are reported for 24-hour, 24-hour with on-call, and non-24-hour local response areas which have reliable data in the CAD for five or more quarters. In the July to September 2017 quarter, a total of 145 local response areas met this reporting criterion. Data for community and volunteer ambulance local response areas are included in activity and performance totals for NSW and zones. Performance is not reported separately for this type of local response area due to the different types of services provided and data quality and completeness.

Number of calls

Number of calls is the count of calls requesting an ambulance vehicle, received by ambulance communication's (control) centre and recorded in the NSW Ambulance CAD system.

Number of incidents

Number of incidents is the count of all events requiring one or more ambulance responses.

An incident is a call that results in the dispatch of one or more ambulance vehicles. Incidents are prioritised as:

- Emergency (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)
- Undelayed response and non-emergency (priority 4–9).

Number of responses

Number of responses is the count of all dispatches of an ambulance service vehicle. A response is the dispatch of an ambulance vehicle. There may be multiple responses to a single incident. Responses are prioritised as per the incidents. Responses include vehicles which are cancelled prior to arrival at the incident scene.

Number of transports

Number of transports is the count of responses where a patient was transported by the ambulance service.

Ambulance priority codes

When a call is received by one of the four ambulance control centres, a priority code is assigned based on the information received from the caller. The urgency (seriousness) of the case determines the priority category (code) assigned to the case, which in turn determines the type and number of ambulance responses provided (Table 1). Priority 1A is the highest priority category and requires an immediate response (median time within 10 minutes) under 'lights and sirens' (Table 1).

Response grid changes and non-emergency patient transport

Changes to the way in which incidents and responses are coded are known as 'grid' changes. Three grid changes over the past five years (March 2013, April 2015 and May 2016) saw some incidents, formerly coded as priority 1, subsequently coded as priority 2. There was therefore an increase in the number of priority 2 incidents and a decrease in the number of priority 1 incidents around these times.

The introduction of the Patient Transport Service in May 2014 resulted in transfer of cases requiring less urgent patient transport from NSW Ambulance to NSW HealthShare. These changes have affected some results over time, and are represented as grey bars in relevant graphs throughout the *Healthcare Quarterly* report.

Ambulance local response area types

Local response areas are functional units that deliver ambulance services. They generally comprise a station, one or more vehicles and paramedics. The size and staffing arrangements for local response areas differ across the state. In order to make fair comparisons of performance, in *Healthcare Quarterly*, local response areas are categorised into four types (Table 2). Community and volunteer local response area data are included in activity and performance totals for NSW and zones. Performance is not reported separately for this group due to the different types of services provided and data quality and completeness.

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

Table 2 Ambulance local response area types

Service type	Description
24-hour	Primarily situated in urban areas providing mostly urban, 24-hour operation. These are higher volume response areas, the majority with multiple vehicles and ambulance staff.
24-hour (with on-call)	Primarily situated in regional areas providing 24-hour operation, supplemented with on-call staff.
Non-24-hour	Primarily situated in regional and rural areas providing 8, 12 or 16-hour operation with remaining time covered by on-call staff.
Community and volunteer (volunteer ambulance officers, community first responder programs and community initiated groups)	Volunteer ambulance officers provide a first response and transport role in more remote areas. Some are attached to smaller stations, work with certified paramedics and respond in an ambulance vehicle. Members of community first responder programs are attached to emergency services, such as Fire Rescue NSW, NSW Rural Fire Service and the NSW State Emergency Service, and respond in their agency vehicle. Community-initiated groups (not attached to a response agency) can form a community first responder unit. Members agree to be available on a regular basis and respond from within the community in a private, or community-funded, vehicle.

Ambulance response time

In NSW, ambulance response time is measured from when a call is placed in queue (for an ambulance to be dispatched) to the time the first ambulance arrives at the scene of an incident. Though measured in slightly different ways, response time is an established measure of responsiveness of ambulance services across jurisdictions. Short or decreasing times are generally regarded as reflecting good performance.

In this report, median and 90th percentile response times are reported for priority 1, 1A and 2 responses. In NSW there is a target of 10 minutes for the median time within which priority 1A responses should have been provided. Response time is also reported as the percentage of priority 1A responses within 10 minutes, and the number of days the median target was not met.

Call to ambulance arrival time

Call to ambulance arrival time is measured from when a call is first answered in the ambulance control centre (phone pickup), to the time the first ambulance arrives at the scene of an incident, reflecting the patient's perspective on the responsiveness of the system. In line with benchmarking approaches used in other jurisdictions, measures include the percentage of priority 1 responses within 15 and 30 minutes and the percentage of priority 2 responses provided within 30 and 60 minutes.

Mobilisation time

Mobilisation time is the time measured from when a call is placed in queue for an ambulance to the time the first vehicle is en route to the incident.

Turnaround time

Turnaround time is the time from when an ambulance which is transporting a patient arrives at a hospital to when the ambulance is ready to respond to a new incident (minutes).

Notes about the measures

Performance results are rounded to one decimal point for reporting.

Admitted patients and elective surgery

This section contains information about the data and methods used for calculating measures of admitted patients elective surgery activity and performance reported in *Healthcare Quarterly*.

To produce this information in the *Healthcare Quarterly* report BHI used the following data sources:

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).

Measures of admitted patient activity reported in *Healthcare Quarterly* are currently based on 222 public hospitals which have had an electronic records system in place.

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

Summary of changes

Byron Central opened in June 2016 and replaced Byron District and Mullumbimby hospitals. In previous appendix tables, it contributed to the 'Other' peer group category. Having completed five consecutive quarters of data, Byron Central will now be reported individually. While this will not affect the NSW and LHD results, it will change the results reported for its peer group (C2). The effects of this change on activity results are summarised in Table 5.

Waiting List Collection On-line System

The elective surgery component of *Healthcare Quarterly* is based on analyses of data extracted from the central data warehouse, the Waiting List Collection On-line System (WLCOS). WLCOS 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.

Measures of elective surgery activity and performance reported in *Healthcare Quarterly* are currently based on 96 public hospitals which have had an electronic records system in place and reliable data in WLCOS for five or more quarters. These 96 hospitals comprise the 'NSW totals' reported in *Healthcare Quarterly*. Hospitals are reported individually for hospitals in principal referral, major or district peer groups (A1, A2, A3, B, C1 and C2). In July to September 2017, a total of 79 hospitals met this reporting criterion.

Elective surgery waiting time

Patient records are provided with a list date when added to the WLCOS and a removal date when they are taken off the hospital's booking list. Patients who are not ready for surgery are recorded as 'NRFC'. The number of days ready for care is calculated by subtracting any days that the patient is recorded as being NRFC from the total waiting time of each patient. 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'. It is also minus any days the patient was waiting in a less urgent clinical urgency category

than their clinical urgency category at removal from the waiting list.

There are differences between hospitals in the way hospitals calculate waiting time for patients who are considered NRFC for part of their time on the waiting list. These differences may arise from patient administration software and/or in the interpretation of NSW Ministry of Health policies on the elective surgery waiting list.

To enable fair comparisons of waiting time measures between hospitals, BHI uses three decision rules to determine whether patients should be included in elective surgery waiting time calculations. This is particularly important for measures of waiting times for elective surgery, such as median and 90th percentile waiting times and percentage of patients seen on time.

The following patients are deemed to be staged and are not included in calculation of waiting times:

- Patients who were coded as NRFC at the time of surgery

- Patients who were recorded as NRFC on the day they were entered onto the wait list and who were transferred to another urgency category within a day or two of removal date

- Patients who received cystoscopy and were in the non-urgent category.

Patients on the waiting list ready for surgery

The number of patients who are on the waiting list at the end of the quarter and who are ready for their surgery include 'ready for care' patients who are prepared to be admitted to hospital or to begin the process leading directly to admission. Patients whose urgency category at the end of the quarter is 'D', whose surgery is deemed staged as described in the appendix, or who are waiting for a non-urgent cystoscopy are not included. The waiting time reported for these patients is the number of days ready for care, as recorded in WLCOS. Days when the patient was not ready for

care are not included. The number of patients ready for surgery on the waiting list and their waiting time is reported by urgency, specialty of surgeon and for common procedures.

Patients not ready for surgery on waiting list

The number of patients who are on the waiting list at the end of the quarter but are not ready for surgery include patients that are:

- 'Staged' – patients with a medical condition that will not require or be amenable to surgery until some future date; for example, a patient who has had internal fixation of a fractured bone and who will require removal of the fixation device after a suitable time

- 'Deferred'– patients who for personal reasons are not yet prepared to be admitted to hospital; for example, patients with work or other commitments which preclude their being admitted to hospital for a time.

Patients who are not ready for surgery are coded as urgency D (NRFC) in WLCOS, with the reason recorded in the listing status variable.

Patients are not coded NRFC if their operation is postponed for reasons other than their own unavailability, for example; their surgeon is unavailable, or operating theatre time is unavailable owing to emergency workload.

These patients are still 'ready for care'.

Patients ready for elective surgery, on the waiting list for longer than 12 months

This count is the number of patients who were on the waiting list and ready for care at the end of the quarter, and who had accrued more than 365 days ready for care.

Surgical specialty

Surgical specialty in this report is the clinical expertise of the surgeon who will perform the elective surgery. The category 'Other medical' includes medical practitioners who are not specialist surgeons.

Procedure

Procedures reported include the 15 procedures listed by the Australian Institute for Health and Welfare (AIHW) in December 2011.

See
www.meteor.aihw.gov.au/content/index.phtml/itemId/472513

In addition, BHI reports information for two other procedures, which are among the four most common procedures in NSW but are not already included in the AIHW list.

Patients who received elective surgery by urgency category

This indicator includes a count of patients who were removed from the waiting list during the quarter 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. The count for a hospital does not include admissions contracted to another public hospital.

Prior to July 2012, patients with a condition requiring surgery within 24 hours (removal status coded 2) were excluded. These patients are included in the count from July 2012.

From July 2012 counts are also presented for the same quarter in the previous five years.

The records of these patients all have the following information in WLCOS:

- A valid removal date

- A code of 'S' for elective surgery

- Codes '1' or '2' or '8' for removal status.

Suppression rules

Small numbers in any group need to be treated cautiously to protect patients' identity. BHI suppresses information 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 ambulance reporting, local response areas with less than five consecutive quarters of data, those with on average fewer than 100 responses per quarter, and those with a coefficient of variation of over 10% are suppressed. Results are shown on a non-nominal basis to illustrate intra-zone performance.

For elective surgery measures reported by urgency category, 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.

Appendix

Table A1 Comparison of activity and performance results before and after hospital additions (Cooma and Cowra), NSW, July to September 2017

Indicator	After hospital additions	Before hospital additions	Change
Number of presentations	720,564	715,836	4,728
Percentage of patients leaving the ED within four hours	68.4	68.3	0.1 percentage points
Transfer of care			
Median	13 min	13 min	unchanged
90th percentile	36 min	36 min	unchanged
Percentage of patients transferred within 30 minutes	85.6%	85.6%	unchanged
Time to treatment			
Triage2			
Median	9 min	9 min	unchanged
90th percentile	29 min	29 min	unchanged
Triage 3			
Median	23 min	23 min	unchanged
90th percentile	83 min	84 min	-1 min
Triage 4			
Median	30 min	30 min	unchanged
90th percentile	121 min	121 min	unchanged
Triage 5			
Median	26 min	26 min	unchanged
90th percentile	118 min	118 min	unchanged
Percentage of patients starting treatment within recommended timeframes			
Triage 2	63.4%	63.4%	unchanged
Triage 3	64.3%	64.2%	0.1 percentage points
Triage 4	72.9%	72.8%	0.1 percentage points
Triage 5	90.6%	90.5%	0.1 percentage points

Table A2 Comparison of activity and performance before and after individually reporting Cooma Health Service, Southern NSW LHD, July to September 2017

Indicator	After hospital additions	Before hospital additions	Change
Number of presentations	26,836	23,797	3,039
Percentage of patients leaving the ED within four hours	82.0%	81.5%	0.5 percentage points
Transfer of care			
Median	11 min	11 min	unchanged
90th percentile	23 min	24 min	-1 min
Percentage of patients transferred within 30 minutes	93.7%	93.2%	0.5 percentage points
Time to treatment			
Triage2			
Median	8 min	9 min	-1 min
90th percentile	26 min	27 min	-1 min
Triage 3			
Median	21 min	21 min	unchanged
90th percentile	70 min	72 min	-2 min
Triage 4			
Median	27 min	27 min	unchanged
90th percentile	106 min	107 min	-1 min
Triage 5			
Median	25 min	26 min	-1 min
90th percentile	108 min	110 min	-2 min
Percentage of patients starting treatment within recommended timeframes			
Triage 2	62.9%	62.6%	0.3 percentage points
Triage 3	68.2%	67.7%	0.5 percentage points
Triage 4	76.2%	76.0%	0.2 percentage points
Triage 5	91.8%	91.5%	0.3 percentage points

Table A3 Comparison of activity and performance before and after individually reporting Cowra District Hospital, Western NSW LHD, July to September 2017

Indicator	After hospital additions	Before hospital additions	Change
Number of presentations	33,856	32,167	1,689
Percentage of patients leaving the ED within four hours	76.6%	76.0%	0.6 percentage points
Transfer of care			
Median	11 min	11 min	unchanged
90th percentile	30 min	30 min	unchanged
Percentage of patients transferred within 30 minutes	89.5%	89.5%	unchanged
Time to treatment			
Triage2			
Median	6 min	6 min	unchanged
90th percentile	16 min	16 min	unchanged
Triage 3			
Median	20 min	21 min	-1 min
90th percentile	62 min	63 min	-1 min
Triage 4			
Median	24 min	25 min	-1 min
90th percentile	95 min	97 min	-2 min
Triage 5			
Median	21 min	22 min	-1 min
90th percentile	104 min	106 min	-2 min
Percentage of patients starting treatment within recommended timeframes			
Triage 2	80.1%	80.2%	-0.1 min
Triage 3	71.1%	70.0%	1.1 min
Triage 4	80.5%	79.7%	0.8 min
Triage 5	93.0%	92.7%	0.3 min

Table A4 Comparison of activity and performance for C2 peer group before and after individually reporting additional hospitals, July to September 2017

Indicator	After hospital additions	Before hospital additions	Change
Number of presentations	85,053	75,753	9,300
Percentage of patients leaving the ED within four hours	83.9%	84.1%	-0.2 percentage points
Transfer of care			
Median	10 min	11 min	-1 min
90th percentile	25 min	26 min	-1 min
Percentage of patients transferred within 30 minutes	92.0%	91.7%	0.3 min
Time to treatment			
Triage2			
Median	8 min	8 min	unchanged
90th percentile	27 min	27 min	unchanged
Triage 3			
Median	19 min	20 min	-1 min
90th percentile	64 min	67 min	-3 min
Triage 4			
Median	26 min	27 min	-1 min
90th percentile	101 min	104 min	-3 min
Triage 5			
Median	23 min	24 min	-1 min
90th percentile	103 min	106 min	-3 min
Percentage of patients starting treatment within recommended timeframes			
Triage 2	64.8%	64.2%	0.6 percentage points
Triage 3	70.3%	69.1%	1.2 percentage points
Triage 4	77.3%	76.6%	0.7 percentage points
Triage 5	92.8%	92.5%	0.3 percentage points

Table A5 Comparison of C2 peer group hospital admission activity before and after addition of Byron Central Hospital, July to September 2017

Indicator	After hospital additions	Before hospital additions	Change
All episodes			
Total episodes	29,590	28,606	984
Planned episodes	14,267	14,166	101
Unplanned/other episodes	15,323	14,440	883
Acute episodes			
Same-day	14,383	14,083	300
Overnight	13,603	13,018	585
Total acute bed days	68,550	66,449	2101
Average length of stay (days)	2.4	2.5	-0.1

Indicator specifications

Emergency department: Activity measures

All ED presentations or unplanned return visits or disaster	All emergency and non-emergency attendances at the ED.
Emergency presentations	All presentations that have a triage category and are coded as emergency presentations.
Mode of separation	ED presentations by mode of separation includes all presentations at the ED that have a departure time recorded.
Triage category	A classification system based on how urgent the patient's need is for treatment: 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

Description of measure	The time from first presenting at the ED to the time treatment started in a designated ED treatment area.
Cohort description (numerator and denominator)	Emergency presentations to NSW EDs Emergency presentations are records in the ED visit database 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 are reported by triage category.
Further details (inclusions, exclusions)	Inclusions: 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) are included. Exclusions: 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) If treatment time is more than 12 hours before presentation time or more than 31 days after presentation time, then that time from presentation until treatment is considered an error and set to missing. If treatment time is before presentation time by 12 hours or less, then time from presentation until treatment is set to zero.
Data source	Emergency Department Data Collection

Measures used in this report

Median time to starting treatment	Time from presentation by which half of patients had their treatment started.
	The other half of patients took equal to or longer than this time.

90th percentile time to starting treatment	Time from presentation by which 90% of patients had treatment start.
	The final 10% of patients took equal to or longer than this time.

Percentage of patients whose treatment started within clinically recommended time	The number of presentations where the time from presentation to treatment was less than, or equal to, the clinically recommended 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.
	Denominator: All emergency presentations to NSW public hospital EDs
	Numerator: Denominator cases where the time between arrival at the ED and treatment time was within the clinically recommended timeframe for the relevant triage category. A patient started treatment within the clinically recommended timeframe 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.

Time spent in the ED

Description of measure	The difference between presentation time and departure time.

Cohort description (numerator and denominator)	All ED presentations with a valid departure time.
	'All presentations' is the count of every record in the ED visit database 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. Records are assigned to quarters of the year using the arrival date and time field.

Further details (exclusions)	Exclusions: 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

Median time spent in the ED	The time half the patients spent in the ED, calculated as the difference between presentation time and departure time. The other half of patients spent equal to or longer than this time.

90th percentile time spent in the ED	The time by which 90% of patients had left the ED.

The remaining 10% spent equal to or longer than this time.

Percentage of patients who spent four hours or less in the ED	Denominator: All presentations to NSW public hospital EDs Numerator: 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

Description of measure	The difference between arrival time and time responsibility for the patients' care was transferred from paramedics to ED staff in an ED treatment zone
Cohort description (numerator and denominator)	All patients arriving by ambulance at hospitals with an ED which is included in Healthcare Quarterly and has records in the Transfer of Care Reporting System (TCRS).
Further details (exclusions)	Inclusions: Matched records; those where the ambulance incident number and date can be identified in both the NSW Ambulance data and the ED data. Exclusions: Hospitals with less 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	Transfer of Care Reporting System (TCRS) portal. The TCRS incorporates data drawn from the NSW Ambulance information system and from the EDDC.

Measures used in this report

Median transfer of care time	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. The other half took equal to or longer than this time.
90th percentile transfer of care time	The time between arrival of patients at the ED by ambulance and transfer of responsibility for their care of 90% of patients from paramedics to ED staff in an ED treatment zone. The final 10% of patients took equal to or longer than this time.
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

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

Description of measure	Count of all events requiring one or more ambulance responses. An incident is a call that results in the dispatch of one or more ambulance vehicles. Incidents are prioritised as emergency (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); undelayed response and non-emergency (priority 4–9).
Data element description	Count of the number of calls where at least one response vehicle is assigned

Number of responses

Description of measure	Count of all dispatches of an ambulance service vehicle. A response is the dispatch of an ambulance vehicle. There may be multiple responses to a single incident. Responses are prioritised as per incidents. Responses include vehicles which are cancelled prior to arrival at the incident scene.
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

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.
Calculation	Difference between 'Time_phonepickup' and 'Time_First_Unit_Arrived'

Measures used in this report

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 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	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.
Percentage of priority 1 incidents with call to ambulance arrival time within 30 minutes	Percentage of emergency (priority 1) incidents where it takes less 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	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.
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 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	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.
Percentage of priority 2 incidents with call to ambulance arrival	Percentage of all State wide urgent (priority 2) response times where it takes less or equal to 60 minutes for the first ambulance service vehicle to arrive at the scene after the call is received.

time within 60 minutes	
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	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.

Mobilisation time

Description of measure	The time from when a call is placed in queue for an ambulance to the time the first vehicle is en route to the incident.
NSW Ambulance Business rule	WHEN: 'Time_CallEnteredQueue' IS NOT NULL AND 'Time_Enroute' IS NOT NULL AND 'Time_CallEnteredQueue' is a valid date AND 'Time_Enroute' is a valid date AND 'Time_CallEnteredQueue' is prior to 'Time_First_Unit_Enroute' AND 'Time_First_Unit_Enroute' = a.'Time_Enroute' THEN calculate time difference (in seconds) between 'Time_CallEnteredQueue' and 'Time_First_Unit_Enroute'
Further details (inclusions, exclusions)	Only the first unit en route is used in the calculation. Community and volunteer response areas are included in NSW and zone totals but are not reported separately.

Measures used in this report

Median mobilisation time	The total time from call placed in queue by which half of first vehicles were en route to priority 1 incidents. The other half took equal or longer than this time. Median (50th percentile) mobilisation times are reported for priority 1 responses.
90th percentile mobilisation time	The time by which 90% of first vehicles were en route to priority 1 incidents. The final 10% took equal or longer than this time. 90th percentile response times are reported for priority 1 responses.
Percentage of priority 1 responses mobilised within 3 minutes	Percentage of emergency (priority 1) responses (requiring at least one immediate response under lights and sirens), where the time from when a call is placed in the queue for an ambulance to the time the first vehicle is en route to the incident responded to in under or equal to three minutes

Ambulance response time

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.
NSW Ambulance Business rule	WHEN: 'Time_CallEnteredQueue' is a valid date AND 'Time_ArrivedAtScene' is valid date AND 'Time_CallEnteredQueue' is a valid date AND 'Time_ArrivedAtScene' is a valid date AND 'Time_CallEnteredQueue' is prior to 'Time_ArrivedAtScene' AND 'Time_First_Unit_Arrived' = 'Time_ArrivedAtScene' THEN calculate time difference between 'Time_CallEnteredQueue' and 'Time_First_Unit_Arrived'

Measures used in this report

Median (50th percentile) ambulance response time	The total time by which half of incidents were responded to by ambulance service vehicles. The other half took equal or longer than this time. The median is a statistical measure of the midpoint of the response time distribution. 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.
Data element description	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. Results (minutes) are rounded to one decimal point for reporting.
Inclusions	Responses with a priority code of 1, 1A and 2. First ambulance service vehicle to arrive at the scene after the call is placed in queue.
Exclusions	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.
90th percentile ambulance response time	The time by which 90% of incidents were responded to by ambulance service vehicles. The final 10% took equal or longer than this time. 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.
Data element description	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. Results (minutes) are rounded to one decimal point for reporting.
Exclusions	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.
Percentage of priority 1A responses within 10 minutes	Percentage of emergency (priority 1A) incidents (requiring at least one immediate response under lights and sirens) responded to in under or equal to 10 minutes
Calculation	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. Results (%) are rounded to one decimal point for reporting.
Inclusions	Responses with a priority code of 1A. First ambulance service vehicle to arrive at the scene after the call is placed in queue. All values 0 and higher are acceptable.
Exclusions	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.
Number of days the median priority 1A response time was within 10 minutes	In NSW there is a target of 10 minutes for the median time within which priority 1A responses should have occurred.
Inclusions	Responses with a priority code of 1A. First ambulance service vehicle to arrive at the scene after the call is placed in queue.

Turnaround time

Description of measure	The time from when an ambulance which is transporting a patient arrives at a hospital to when the ambulance is ready to respond to a new incident (minutes).
NSW Ambulance Business rule	WHEN: 'Destination_Name' is the name of a public hospital in NSW AND 'Time_Arrive_Destination' is a valid date AND 'Time_Call_Cleared' is a valid date

AND 'Time_Arrive_Destination' is before 'Time_Call_Cleared'
AND THEN calculate difference between 'Time_Arrive_Destination' and 'Time_Call_Cleared'

'Destination_City' is used whe the same 'Destination_Name' may refer to different destinations.

Inclusions	Responses with a priority code of 1 and 2. Destinations which are a public hospital in NSW All values 0 and higher are acceptable.
Exclusions	Community and volunteer response areas are included in NSW and zone totals but are not reported separately.

Measures used in this report

Median turnaround time	The time by which half of ambulances transporting a patient take from arrival at a hospital to when the ambulance is ready to respond to a new incident. The other half took equal or longer than this time.
Inclusions	Responses with a priority code of 1 and 2. Destinations which are a public hospital in NSW
90th percentile turnaround time	The time by which 90% of ambulances transporting a patient take from arrival at a hospital to when the ambulance is ready to respond to a new incident. The final 10% took equal or longer than this time.
Percent within 45 minutes	Percentage of priority 1 and 2 responses where the time from when an ambulance which is transporting a patient arrives at a hospital to when the ambulance is ready to respond to a new incident was less than, or equal to, 45 minutes as a percentage of the total number of priority 1 and 2 responses where an ambulance which is transporting a patient arrives at a hospital. Results (%) are rounded to one decimal point for reporting.

Admitted patients

Episode of care	A period of care in a hospital or other healthcare facility with a defined start and end. When a person is admitted to hospital they begin what is termed an admitted patient episode or 'episode of care'. Acute episodes are typically short-term admissions for immediate care or treatment. Non-acute episodes include admissions for rehabilitation, palliative care and other non-acute reasons. Patients can have more than one episode of care during the same hospital admission. For example, a patient may begin with acute care and then change to rehabilitation or palliative care.
Total episodes	The count of all records with an episode end date in the defined period.
Planned episodes	The count of all recorded admissions with an emergency status of 'non-emergency / planned' or 'regular same-day planned admission'.
Unplanned / other episodes	All episodes with an episode end date in the defined period minus planned episodes.
Babies born	The count of records 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	Admitted patient episodes 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. Admitted patient episodes 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).

Acute episodes	The count of records with episode of care type values of 1 (acute care) and 5 (newborn care).
Acute same day episodes	The count of acute episode records with an episode start date equal to the episode end date.
Acute overnight episodes	The count of the acute episode records with an episode start date earlier (not equal) to the episode end date.
Bed days	Bed days are calculated for all admitted patient episodes completed during the reference period. Total acute bed days is the sum of bed days for all episodes with an episode end date within the defined period. Total acute 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.
Total acute bed days	The sum of bed days for all acute episodes with an episode end date within the defined period. Total acute 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.
Average length of stay	The mean of total bed days for all acute episodes with an episode end date in the defined period. That is, the total number of days in hospital for all admitted patient episodes (including same-day and overnight patients) divided by the total number of admitted patient episodes. The average length of stay is usually measured from midnight.

Elective surgery: Activity measures

The number of patients who received elective surgery during the quarter	The count of patients who were removed from the waiting list during the quarter 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
The number of patients waiting for elective surgery at the end of the quarter	The count of all patients who are on the waiting list at the end of the quarter.
Ready for care	Ready for care patients are those who are prepared to be admitted to hospital or to begin the process leading directly to admission. Patients ready for elective surgery and on the waiting list excludes those waiting for staged procedures. Patients ready for non-urgent surgery on the waiting list also excludes those waiting for non-urgent cystoscopy.
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: Urgent surgery: Admission within 30 days is desirable for a condition that has potential to deteriorate quickly and become an emergency. Semi-urgent surgery: Admission within 90 days is desirable for a condition unlikely to deteriorate quickly. Non-urgent surgery: Admission within 365 days acceptable for a condition unlikely to deteriorate quickly.
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 surgery 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

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.
Cohort description (numerator and denominator)	All patients removed from the waiting list during the quarter 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: 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 onto the wait list and who were transferred to another urgency category within a day or two of removal date. Patients who received 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 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. 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. 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 period to be admitted and receive their surgery. BHI reports the 90th percentile by urgency category. The 90th percentile waiting time is also reported using the Commonwealth waiting time definition.

Percentage of patients admitted within the recommended timeframe

Description of measure	The proportion of patients admitted within the clinically recommended timeframe for each of the elective surgery urgency categories.
Cohort description (numerator and denominator)	Denominator: Number of patients admitted to hospital for their elective surgery within the clinically recommended timeframe, 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. Numerator: Total number of patients admitted for elective surgery in each urgency category

Index of ambulance local response areas by zone and local response area type

Local response area	Zone	Local response area type
Albury	Murrumbidgee Zone	24 hour LRA (with on call)
Armidale	New England Zone	24 hour LRA (with on call)
Auburn	Western Sydney	24 hour LRA
Avalon	Northern Sydney	24 hour LRA
Balgowlah	Northern Sydney	24 hour LRA
Ballina	Northern Rivers Zone	24 hour LRA (with on call)
Bankstown	South West Zone 2	24 hour LRA
Barraba	New England Zone	non 24 hour LRA
Bateau Bay	Central Coast	24 hour LRA
Batemans Bay	Southern NSW Zone	24 hour LRA (with on call)
Bathurst	Central West Zone 1	24 hour LRA (with on call)
Bega	Southern NSW Zone	non 24 hour LRA
Belmont	Hunter Zone 1	24 hour LRA
Belrose	Northern Sydney	24 hour LRA
Beresfield	Hunter Zone 2	24 hour LRA
Birmingham Gardens	Hunter Zone 1	24 hour LRA
Blacktown	Western Sydney	24 hour LRA
Blayney	Central West Zone 1	non 24 hour LRA
Bomaderry	Illawarra	24 hour LRA (with on call)
Bonalbo	Northern Rivers Zone	non 24 hour LRA
Bondi	Sydney	24 hour LRA
Boolaroo	Hunter Zone 1	24 hour LRA
Bowral	South West Zone 1	24 hour LRA (with on call)
Broken Hill	Central and Far West Zone 2	24 hour LRA (with on call)
Bulahdelah	Hunter Zone 2	non 24 hour LRA
Bulli	Illawarra	24 hour LRA
Camden	South West Zone 1	24 hour LRA

Local response area	Zone	Local response area type
Campbelltown	South West Zone 1	24 hour LRA
Campsie	Sydney	24 hour LRA
Cardiff	Hunter Zone 1	24 hour LRA
Caringbah	South Eastern Sydney	24 hour LRA
Casino	Northern Rivers Zone	non 24 hour LRA
Castle Hill	Western Sydney	24 hour LRA
Cessnock	Hunter Zone 2	24 hour LRA
Coffs Harbour	Mid North Coast Zone	24 hour LRA (with on call)
Coleambally	Murrumbidgee Zone	non 24 hour LRA
Colyton	Nepean Blue Mountains	24 hour LRA
Concord	Sydney	24 hour LRA
Coolah	Central West Zone 1	non 24 hour LRA
Cooma	Southern NSW Zone	non 24 hour LRA
Coonabarabran	Central and Far West Zone 2	non 24 hour LRA
Coonamble	Central and Far West Zone 2	non 24 hour LRA
Corowa	Murrumbidgee Zone	non 24 hour LRA
Cowra	Central West Zone 1	non 24 hour LRA
Dapto	Illawarra	24 hour LRA
Deniliquin	Murrumbidgee Zone	non 24 hour LRA
Doyalson	Central Coast	24 hour LRA
Drummoyne	Sydney	24 hour LRA
Dubbo	Central and Far West Zone 2	24 hour LRA (with on call)
Dunedoo	Central West Zone 1	non 24 hour LRA
Engadine	South Eastern Sydney	24 hour LRA
Ettalong	Central Coast	24 hour LRA
Evans Head	Northern Rivers Zone	non 24 hour LRA
Fairfield	South West Zone 2	24 hour LRA
Forbes	Central West Zone 1	non 24 hour LRA
Gilgandra	Central and Far West Zone 2	non 24 hour LRA
Glen Innes	New England Zone	non 24 hour LRA

Local response area	Zone	Local response area type
Goulburn	Southern NSW Zone	24 hour LRA (with on call)
Grafton	Northern Rivers Zone	24 hour LRA (with on call)
Green Valley	South West Zone 1	24 hour LRA
Griffith	Murrumbidgee Zone	24 hour LRA (with on call)
Hamilton	Hunter Zone 1	24 hour LRA
Hawkesbury River	Central Coast	24 hour LRA
Hay	Murrumbidgee Zone	non 24 hour LRA
Hurstville	South Eastern Sydney	24 hour LRA
Huskisson	Illawarra	24 hour LRA (with on call)
Inverell	New England Zone	non 24 hour LRA
Katoomba	Nepean Blue Mountains	24 hour LRA
Kempsey	Mid North Coast Zone	24 hour LRA (with on call)
Kiama	Illawarra	24 hour LRA
Kingscliff	Northern Rivers Zone	non 24 hour LRA
Kogarah	South Eastern Sydney	24 hour LRA
Kurri Kurri	Hunter Zone 2	24 hour LRA
Lane Cove	Northern Sydney	24 hour LRA
Lismore	Northern Rivers Zone	24 hour LRA (with on call)
Lithgow	Central West Zone 1	24 hour LRA (with on call)
Liverpool	South West Zone 2	24 hour LRA
Macksville	Mid North Coast Zone	24 hour LRA (with on call)
Maclean	Northern Rivers Zone	non 24 hour LRA
Macquarie Fields	South West Zone 2	24 hour LRA
Manilla	New England Zone	non 24 hour LRA
Maroubra	South Eastern Sydney	24 hour LRA
Marrickville	Sydney	24 hour LRA
Mascot	South Eastern Sydney	24 hour LRA
Menai	South Eastern Sydney	24 hour LRA
Merimbula	Southern NSW Zone	non 24 hour LRA
Morisset	Central Coast	24 hour LRA

Local response area	Zone	Local response area type
Mudgee	Central West Zone 1	non 24 hour LRA
Mullumbimby	Northern Rivers Zone	non 24 hour LRA
Murwillumbah	Northern Rivers Zone	24 hour LRA (with on call)
Muswellbrook	Hunter Zone 2	non 24 hour LRA
Nambucca Heads	Mid North Coast Zone	non 24 hour LRA
Naremburn	Northern Sydney	24 hour LRA
Narooma	Southern NSW Zone	non 24 hour LRA
Narrabeen	Northern Sydney	24 hour LRA
Narrabri	New England Zone	non 24 hour LRA
Nelson Bay	Hunter Zone 1	24 hour LRA
Oak Flats	Illawarra	24 hour LRA
Orange	Central West Zone 1	24 hour LRA (with on call)
Paddington	Sydney	24 hour LRA
Parkes	Central West Zone 1	non 24 hour LRA
Parramatta	Western Sydney	24 hour LRA
Penrith	Nepean Blue Mountains	24 hour LRA
Picton	South West Zone 1	24 hour LRA
Point Clare	Central Coast	24 hour LRA
Port Macquarie	Mid North Coast Zone	24 hour LRA (with on call)
Queanbeyan	Southern NSW Zone	24 hour LRA (with on call)
Quirindi	New England Zone	non 24 hour LRA
Randwick	South Eastern Sydney	24 hour LRA
Raymond Terrace	Hunter Zone 2	24 hour LRA
Richmond	Nepean Blue Mountains	24 hour LRA
Riverstone	Western Sydney	24 hour LRA
Rutherford	Hunter Zone 2	24 hour LRA
Ryde	Northern Sydney	24 hour LRA
SAC	Sydney	24 hour LRA
Scone	Hunter Zone 2	non 24 hour LRA
Singleton	Hunter Zone 2	non 24 hour LRA

Local response area	Zone	Local response area type
Springwood	Nepean Blue Mountains	24 hour LRA
St Ives	Northern Sydney	24 hour LRA
Stockton	Hunter Zone 1	24 hour LRA
Summer Hill	Sydney	24 hour LRA
Tamworth	New England Zone	24 hour LRA (with on call)
Tamworth South	New England Zone	24 hour LRA (with on call)
Tanilba Bay	Hunter Zone 1	24 hour LRA
Taree	Mid North Coast Zone	24 hour LRA (with on call)
Temora	Southern NSW Zone	non 24 hour LRA
Tenterfield	New England Zone	non 24 hour LRA
Terrigal	Central Coast	24 hour LRA
Toronto	Hunter Zone 1	24 hour LRA
Toukley	Central Coast	24 hour LRA
Tregear	Nepean Blue Mountains	24 hour LRA
Tuncurry	Mid North Coast Zone	24 hour LRA (with on call)
Tweed Heads	Northern Rivers Zone	24 hour LRA (with on call)
Ulladulla	Illawarra	24 hour LRA (with on call)
Urunga	Mid North Coast Zone	non 24 hour LRA
Wagga Wagga	Murrumbidgee Zone	24 hour LRA (with on call)
Wahroonga	Northern Sydney	24 hour LRA
Walcha	New England Zone	non 24 hour LRA
Warrawong	Illawarra	24 hour LRA
Wellington	Central and Far West Zone 2	non 24 hour LRA
Wollongong	Illawarra	24 hour LRA
Woolgoolga	Mid North Coast Zone	non 24 hour LRA
Wyong	Central Coast	24 hour LRA
Yamba	Northern Rivers Zone	non 24 hour LRA
Yass	Southern NSW Zone	non 24 hour LRA

Index of hospitals by local health district and hospital peer group

Hospital name	Local health district	Hospital peer group
Armidale and New England Hospital	Hunter New England	C1
Auburn Hospital	Western Sydney	B
Ballina District Hospital	Northern NSW	C2
Bankstown / Lidcombe Hospital	South Western Sydney	A1
Bateman's Bay District Hospital	Southern NSW	C2
Bathurst Base Hospital	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 Base Hospital	Far West	C1
Byron Central	Northern NSW	C2
Calvary Mater Newcastle	Hunter New England	A3
Campbelltown Hospital	South Western Sydney	B
Canterbury Hospital	Sydney	B
Casino and District Memorial Hospital	Northern NSW	C2
Cessnock District Hospital	Hunter New England	C2
Coffs Harbour Base Hospital	Mid North Coast	B
Concord Hospital	Sydney	A1
Cooma Health Service	Southern NSW	C2
Cowra District Hospital	Western NSW	C2
Deniliquin Health Service	Murrumbidgee	C2
Dubbo Base Hospital	Western NSW	B
Fairfield Hospital	South Western Sydney	B
Forbes District Hospital	Western NSW	C2
Gosford Hospital	Central Coast	A1
Goulburn Base Hospital	Southern NSW	C1

Hospital name	Local health district	Hospital peer group
Grafton Base Hospital	Northern NSW	C1
Griffith Base Hospital	Murrumbidgee	C1
Gunnedah District Hospital	Hunter New England	C2
Hawkesbury District Health Services (public hospital services only)	Nepean Blue Mountains	C1
Hornsby and Ku-Ring-Gai Hospital	Northern Sydney	B
Inverell District Hospital	Hunter New England	C2
John Hunter Hospital	Hunter New England	A1
Kempsey Hospital	Mid North Coast	C2
Kurri Kurri District Hospital	Hunter New England	C2
Lismore Base Hospital	Northern NSW	B
Lithgow Health Service	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
Manly District Hospital	Northern Sydney	B
Manning Base Hospital	Hunter New England	B
Milton and Ulladulla Hospital	Illawarra Shoalhaven	C2
Mona Vale and District Hospital	Northern Sydney	B
Moree District Hospital	Hunter New England	C2
Moruya District Hospital	Southern NSW	C2
Mount Druitt Hospital	Western Sydney	C1
Mudgee District Hospital	Western NSW	C2
Murwillumbah District Hospital	Northern NSW	C1
Muswellbrook District Hospital	Hunter New England	C2
Narrabri District Hospital	Hunter New England	C2
Nepean Hospital	Nepean Blue Mountains	A1
Orange Health Service	Western NSW	B
Port Macquarie Base Hospital	Mid North Coast	B
Prince of Wales Hospital	South Eastern Sydney	A1

Hospital name	Local health district	Hospital peer group
Queanbeyan Health Service	Southern NSW	C2
RPAH Institute of Rheumatology & Orthopaedics	Sydney	A1
Royal Hospital for Women	South Eastern Sydney	A3
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 District Hospital	Hunter New England	C2
South East Regional Hospital	Southern NSW	C1
St George Hospital	South Eastern Sydney	A1
St Vincent's Hospital, Darlinghurst	St Vincent's Health Network	A1
Sutherland Hospital	South Eastern Sydney	B
Sydney Children's Hospital	Sydney Children's Network	A2
Sydney/Sydney Eye Hospital	South Eastern Sydney	A3
Tamworth Base 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

References

1. Australasian College for Emergency Medicine. Policy on the Australian Triage Scale (revised July 2013) [online]. Available from **www.acem.org.au/getattachment/693998d7-94be-4ca7-a0e7-3d74cc9b733f/Policy-on-the-Australasian-Triage-Scale.aspx**

2. Health System Information & Performance Reporting, NSW Ministry of Health, NSW Hospital peer groups 2016, 06 April 2016 [online] [cited 04 November 2016]. Available from www1.health.nsw.gov.au/PDS/pages/doc.aspx?dn=IB2016_013

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 public healthcare system.

BHI was established in 2009 to provide system-wide support through transparent reporting.

BHI 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 in public hospitals and other healthcare facilities.

BHI publishes a range of reports and tools that provide relevant, accurate and impartial information about how the health system is measuring up in terms of:

- Accessibility – healthcare when and where needed

- Appropriateness – the right healthcare, the right way

- Effectiveness – making a difference for patients

- Efficiency – value for money

- Equity – health for all, healthcare that's fair

- Sustainability – caring for the future.

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 report 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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