Healthcare Quarterly

Activity and performance

Emergency department, ambulance,
admitted patients and elective surgery

October to December 2018

**bureau of
health
information**

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The *Supplementary results* provide additional findings to the *Healthcare Quarterly* report for emergency departments, ambulance services, admitted patients and elective surgeries. Full results for *Healthcare Quarterly* are available through BHI's interactive data portal, Healthcare Observer. Results are reported at a state, local health district, hospital peer group and individual hospital level for public hospitals and at a state and zone level for ambulance services.

Please visit Healthcare Observer at **bhi.nsw.gov.au/Healthcare_Observer**

A guide to Healthcare Quarterly

Healthcare Quarterly reports on activity and performance in public hospitals and ambulance zones across NSW.

Healthcare Quarterly

Activity and performance

Emergency department, ambulance, admitted patients and elective surgery

The *Supplementary results* provide additional findings to the *Healthcare Quarterly* report for emergency departments, ambulance services, admitted patients and elective surgeries.

Healthcare Quarterly

Supplementary results

Emergency department, ambulance, admitted patients and elective surgery

This *Healthcare Quarterly* shows how public hospitals and ambulance services performed in the October to December 2018 quarter. The key measures focus on the timeliness of services delivered to people across NSW.
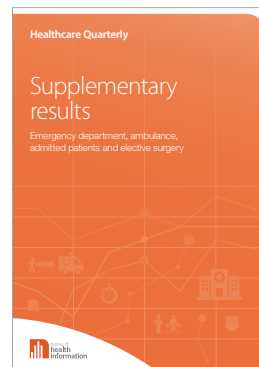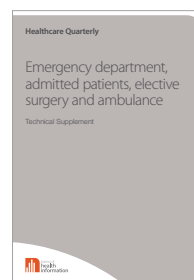
The *Technical Supplement* and *Spotlight on Measurement* explain how performance and activity were measured. Profiles report activity and performance at hospital, peer group and local health district level.

Full results are available from BHI's interactive data portal Healthcare Observer, at
bhi.nsw.gov.au/healthcare_observer

All reports and profiles are available at **bhi.nsw.gov.au**

10 key findings

October to December 2018

1 **There were 749,504 emergency department attendances in the October to December 2018 quarter, up 3.4% compared with the same quarter last year.** Across triage categories, emergency (triage 2) was up by 9.6% (8,316) to 95,202 attendances and urgent (triage 3) was up by 7.2% (16,924) to 253,257 attendances.

2 **Almost three-quarters (73.9%) of emergency department patients were treated within clinically recommended timeframes.** This was 2.5 percentage points lower than the same quarter last year.

3 **More than seven in 10 (72.0%) patients spent four hours or less in the ED during the October to December 2018 quarter, 2.2 percentage points lower than the same quarter last year.** The median time patients spent in the emergency department was 2 hours and 49 minutes, up nine minutes.

4 **The percentage of patients who had their care transferred from paramedics to hospital staff within 30 minutes was 90.1%, down 2.1 percentage points.** The number of ambulance arrivals to emergency departments was up by 8.9% (13,888) to 169,095 arrivals.

5 **The number of ambulance responses, where a vehicle was dispatched, was up by 8.0% (22,695) to 306,739.** Cases classified as emergencies (priority 1) were up by 8.6% (10,969) to 137,911 responses.

6 **Paramedics reached more than six in 10 (60.6%) emergency (priority 1) cases within 15 minutes, down 2.6 percentage points.** The percentage of urgent (priority 2) cases reached within 30 minutes was down 4.0 percentage points to 68.6%.

7 **The percentage of life-threatening (priority 1A) cases reached by paramedics within 10 minutes was down 1.4 percentage points to 70.7%.** The number of responses to life-threatening cases was up by 7.3% (435) to 6,382 responses.

8 **There were 483,569 admitted patient episodes in the October to December 2018 quarter, up by 1.1% (5,327).** Of these episodes, 94.0% were acute, 3.7% were non-acute and 2.4% involved treatment for mental health.

9 **The number of elective surgical procedures performed in the October to December 2018 quarter was up by 0.7% to 56,268 procedures.** The number of urgent procedures saw the largest change, up by 1.4% to 12,520 surgeries.

10 **The median waiting times for elective surgery were 10 days for urgent procedures (unchanged), 44 days for semi-urgent procedures (unchanged) and 222 days for non-urgent surgeries (up 12 days).** Almost all (97.4%) elective surgical procedures were performed within clinically recommended timeframes.

Healthcare Quarterly – Activity

Emergency department activity	October to December 2018	October to December 2017	Difference	% change
All arrivals at NSW EDs by ambulance	169,095	155,207	13,888	8.9%
All ED attendances	749,504	724,698	24,806	3.4%
Emergency presentations	724,306	698,098	26,208	3.8%
Emergency presentations by triage category				
Triage category — T1: Resuscitation	5,281	4,795	486	10.1%
Triage category — T2: Emergency	95,202	86,886	8,316	9.6%
Triage category — T3: Urgent	253,257	236,333	16,924	7.2%
Triage category — T4: Semi-urgent	298,805	294,669	4,136	1.4%
Triage category — T5: Non-urgent	71,761	75,415	-3,654	-4.8%
Admissions to hospital from NSW EDs	192,128	182,996	9,132	5.0%

Ambulance activity	October to December 2018	October to December 2017	Difference	% change
Calls	307,866	288,687	19,179	6.6%
Responses	306,739	284,044	22,695	8.0%
Priority category — P1: Emergency	137,911	126,942	10,969	8.6%
Priority category — P1A: Highest priority	6,382	5,947	435	7.3%
Priority category — P2: Urgent	145,465	134,514	10,951	8.1%
Priority category — P3: Time-critical	14,590	13,994	596	4.3%
Priority category — P4–9: Non-emergency	8,773	8,594	179	2.1%
Incidents	237,787	225,180	12,607	5.6%
Patient transports	182,556	168,645	13,911	8.2%

Admitted patient activity	October to December 2018	October to December 2017	Difference	% change
All admitted patient episodes	483,569	478,242	5,327	1.1%
All acute episodes	454,430	449,177	5,253	1.2%
Overnight episodes	242,779	239,075	3,704	1.5%
Same-day episodes	211,651	210,102	1,549	0.7%
Non-acute episodes	17,672	17,494	178	1.0%
Mental health episodes	11,467	11,571	-104	-0.9%
Average length of stay (days) — All episodes	3.5	3.4	0.1	
Average length of stay (days) — Acute episodes	2.8	2.8	0	
Average length of stay (days) — Non-acute episodes	12.4	12.4	0	
Average length of stay (days) — Mental health episodes	16.1	15	1.1	
Hospital bed days — All bed days	1,697,107	1,641,486	55,621	3.4%
Hospital bed days — Acute bed days	1,292,032	1,251,422	40,610	3.2%
Hospital bed days — Non-acute bed days	220,014	216,565	3,449	1.6%
Hospital bed days — Mental health bed days	185,061	173,499	11,562	6.7%
Babies born in NSW public hospitals	17,968	17,462	506	2.9%

Elective surgery activity	October to December 2018	October to December 2017	Difference	% change
Elective surgical procedures performed	56,268	55,871	397	0.7%
Urgency category — Urgent surgery	12,520	12,342	178	1.4%
Urgency category — Semi-urgent surgery	18,883	18,776	107	0.6%
Urgency category — Non-urgent surgery	22,046	21,985	61	0.3%
Patients on waiting list ready for elective surgery at end of quarter	80,836	76,037	4,799	6.3%
Urgency category — Urgent surgery	951	918	33	3.6%
Urgency category — Semi-urgent surgery	11,838	11,376	462	4.1%
Urgency category — Non-urgent surgery	68,047	63,743	4,304	6.8%

Notes: Ambulance activity data do not include outage estimates. Data drawn on: 22 January 2019 (Emergency department), 14 January 2019 (Ambulance), 22 January 2019 (Admitted patients), 21 January 2019 (Elective surgery).

Healthcare Quarterly – Performance

Emergency department performance		October to December 2018	October to December 2017	Difference
Percentage of patients transferred from ambulance to ED within 30 minutes		90.1%	92.2%	-2.1 percentage points
Time to treatment by triage category	T2: Emergency — Median	8 mins	8 mins	0 mins
	T2: Emergency — 90th percentile	26 mins	23 mins	3 mins
	T3: Urgent — Median	20 mins	19 mins	1 min
	T3: Urgent — 90th percentile	72 mins	65 mins	7 mins
	T4: Semi-urgent — Median	26 mins	25 mins	1 min
	T4: Semi-urgent — 90th percentile	104 mins	98 mins	6 mins
	T5: Non-urgent — Median	23 mins	21 mins	2 mins
	T5: Non-urgent — 90th percentile	104 mins	100 mins	4 mins
Percentage of patients whose treatment started on time	All patients	73.9%	76.4%	-2.5 percentage points
	T2: Emergency (Recommended: 80% in 10 minutes)	65.4%	68.8%	-3.4 percentage points
	T3: Urgent (Recommended: 75% in 30 minutes)	68.9%	71.5%	-2.6 percentage points
	T4: Semi-urgent (Recommended: 70% in 60 minutes)	77.1%	78.8%	-1.7 percentage points
	T5: Non-urgent (Recommended: 70% in 120 minutes)	92.9%	93.5%	-0.6 percentage points
Median time spent in the ED		2h 49m	2h 40m	9 mins
90th percentile time spent in the ED		7h 19m	6h 50m	29 mins
Percentage of patients who spent four hours or less in the ED		72.0%	74.2%	-2.2 percentage points

Ambulance performance		October to December 2018	October to December 2017	Difference
Call to ambulance arrival time				
Percentage of P1 call to ambulance arrival within 15 minutes		60.6%	63.2%	-2.6 percentage points
Percentage of P1 call to ambulance arrival within 30 minutes		93.5%	94.5%	-1.0 percentage points
Percentage of P2 call to ambulance arrival within 30 minutes		68.6%	72.6%	-4.0 percentage points
Percentage of P2 call to ambulance arrival within 60 minutes		91.8%	94.0%	-2.2 percentage points
Mobilisation time				
P1: Emergency	Median	2.4m	2.4m	unchanged
	Percentage P1 within 3 minutes	62.2%	63.8%	-1.6 percentage points
Response time				
Percentage of P1A responses within 10 minutes		70.7%	72.1%	-1.4 percentage points
Number of days median priority 1A response time > 10 minutes		1 day	0 days	1 day
Turnaround time				
P1: Emergency	Median	37.9m	37.0m	0.9m
	90th percentile	61.7m	60.0m	1.7m
	Percentage within 45 minutes	67.1%	69.1%	-2.0 percentage points
P2: Urgent	Median	35.8m	34.7m	1.1m
	90th percentile	58.5m	56.5m	2.0m
	Percentage within 45 minutes	72.0%	74.3%	-2.3 percentage points

| Elective surgery performance		October to December 2018	October to December 2017	Difference
Median waiting time (days)	Urgent surgery	10 days	10 days	0 days
	Semi-urgent surgery	44 days	44 days	0 days
	Non-urgent surgery	222 days	210 days	12 days
Elective surgeries performed on time	All surgeries	97.4%	97.5%	-0.1 percentage points
	Urgent surgery (Recommended: 30 days)	99.9%	99.8%	+0.1 percentage points
	Semi-urgent surgery (Recommended: 90 days)	97.5%	97.2%	+0.3 percentage points
	Non-urgent surgery (Recommended: 365 days)	95.8%	96.4%	-0.6 percentage points

Notes: Data drawn on: 22 January 2019 (Emergency department), 14 January 2019 (Ambulance), 21 January 2019 (Elective surgery).

Triage 1 patients are the most urgent and are almost all treated within two minutes. Clinicians are focused on providing immediate and essential care, rather than recording times, therefore times to start treatment are generally not reported. Timeframes to treat other triage categories are recommended by the Australasian College for Emergency Medicine.

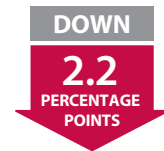# In the October to December 2018 quarter...

Emergency department

There were **749,504** emergency department attendances
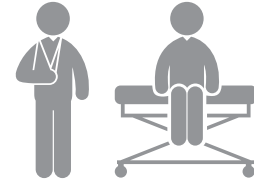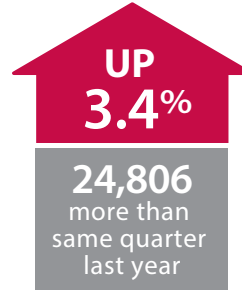
UP 3.4%

24,806 more than same quarter last year

73.9% of patients' treatment **started on time**

DOWN 2.5 PERCENTAGE POINTS

72.0% of patients spent **four hours or less** in the emergency department

DOWN 2.2 PERCENTAGE POINTS

Ambulance

There were **306,739** ambulance responses

UP 8.0%

22,695 more than same quarter last year

93.5% of priority 1 cases had a call to ambulance arrival time of 30 minutes or less

DOWN 1.0 PERCENTAGE POINTS

Note: All comparisons are in reference to the same quarter last year.

Admitted patients
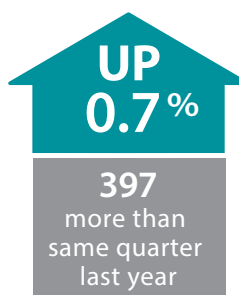
There were **483,569** admitted patient episodes of care

50.2% of acute admitted patient episodes were for overnight stays

Elective surgery

There were **56,268** elective surgical procedures performed

UP 0.7%

397 more than same quarter last year

Almost all (97.4%) were performed within recommended time frames

Median waiting times were unchanged for urgent and semi-urgent categories compared with same quarter last year

10 (unchanged), 44 (unchanged) and 222 (+12 days) days waiting for urgent, semi-urgent and non-urgent surgery, respectively

Note: All comparisons are in reference to the same quarter last year.

About this report

The data

Healthcare Quarterly draws on four main data sources:

- **Emergency Department Data Collection (EDDC)** – data drawn from the Health Information Exchange (HIE) on 22 January 2019

- **NSW Ambulance Computer Aided Dispatch (CAD) system** – provided on 14 January 2019

- **Admitted Patient Data Collection (APDC)** – data drawn from the HIE on 22 January 2019

- **Waiting List Collection Online System (WLCOS)** – data drawn on 21 January 2019

Hospital data are transmitted by the state's hospitals to centralised data warehouses administered by the NSW Ministry of Health and are extracted by the Bureau of Health Information (BHI) from the NSW Health Information Exchange. Ambulance data are provided directly to BHI by NSW Ambulance and resultant information is calculated independently by BHI.

The analyses

Organisational units in hospitals and ambulance services vary in size and in the types of services they provide. For some hospital analyses, results are stratified by 'peer group' into principal referral hospitals (peer group A), major hospitals (peer group B) and district hospitals (peer group C).

For some ambulance analyses, results are stratified by type of local response area (LRA) into 24-hour, 24-hour (with on-call), non-24-hour and community and volunteer. LRA-level measures are based on the location of the patient, not the station from which paramedics respond.

For both the hospital-based and ambulance-based indicators, stratification by acuity or urgency is also used. Strata are referred to as 'triage categories' (1–5) for emergency department (ED) analyses; 'urgent', 'semi-urgent' and 'non-urgent' for elective surgeries; and 'priority categories' (1–9) for ambulance (although BHI reports on ambulance performance for categories 1 and 2 only).

Data analyses are conducted in SAS 9.4. Codes that form the basis of routine reporting are written by two data analysts independently and only accepted when matching results are achieved. The indicator development process for ambulance reporting is detailed in an edition of *Spotlight on Measurement*, and all data specifications and analytic methods are described in technical supplements – available from the BHI website **bhi.nsw.gov.au**

The measures

Healthcare Quarterly uses nine core measures of performance (Table 1). For timeliness indicators, two different measurement approaches are used.

The first approach is based on units of time such as minutes or days and generally reports median and 90th percentile times, where:

- The median is the middle value of all observations, once they have been ordered from the lowest to the highest value. For example, in measuring the time that patients waited for their treatment to start, the median time refers to the 'middle wait' – half of all patients waited a shorter time and the other half waited a longer time.

- The 90th percentile time gives an indication of the longest waiting times experienced by patients – most patients have a shorter wait than the 90th percentile time but one in 10 patients wait longer.

The second approach is based on achievement against a recommended or defined time. Here, results are reported in proportions, such as the percentage of patients who received elective surgery within clinically recommended time periods of 30, 90 and 365 days.

The large datasets used in *Healthcare Quarterly* mean that analyses have considerable statistical power to detect significant differences. However, not all of these differences are clinically or organisationally meaningful. Therefore a more than five percentage point threshold is used to highlight hospitals with marked variation in results – either over time, or relative to the NSW result.

Reporting

ED, admitted patient and elective surgery data are reported for principal referral (peer group A), major (peer group B) and district (peer group C) hospitals.

Hospital results based on very few patients are not reported. If there are fewer than five patients in any group for admitted patient and ED data, patient numbers are displayed as < 5. NSW and local health district (LHD) results include data from all public hospitals.

Ambulance activity and performance are reported at a NSW and zone level. NSW and zone results include data from all constituent LRAs. Results for LRAs have been shown to be subject to random variation and impacted by non-modifiable factors (e.g. travel time and distance). While some analyses are presented at an LRA-level, the LRAs are not reported by name.

Healthcare Quarterly compares this quarter's results with the same quarter in previous years, to take into account seasonal effects on activity and performance.

Table 1   Description of main measures featured in *Healthcare Quarterly**

Emergency departments (ED)	
Transfer of care time	For patients who are transported to the emergency department (ED) by ambulance, the time from arrival at hospital to when responsibility for their care is transferred from paramedics to ED staff in an ED treatment zone.
Time to start treatment	The time from patient arrival at an ED until the start of clinical treatment.
Time spent in the ED	The time from patient arrival at the ED until their departure.
Ambulance	
Call to ambulance arrival time	The time from when a call is first answered in the ambulance control centre (phone pick-up), to the time the first ambulance arrives at the scene of an incident.
Mobilisation time	The time from placement of a Triple Zero (000) call 'in queue' for ambulance dispatch until the time a vehicle is en route to the incident.
Response time	The time from when a call for an ambulance is placed 'in queue' for vehicle dispatch by the ambulance control centre to the time the first vehicle arrives at the scene.
Turnaround time	The time from an ambulance arriving at a hospital until the ambulance is 'clear' and ready to respond to a new incident.
Admitted patients	
Average length of stay	Total bed days of admitted patient episodes that had an 'end date' during the quarter divided by the number of admitted patient episodes.
Elective surgery	
Elective surgery waiting time	The number of days from a patient's placement on the elective surgery waiting list until removal from the list (generally when they undergo surgery).

* For some measures, other agencies report similar metrics, often with slightly different data definitions, so cross publication comparisons should be made with care.

Emergency department activity and performance

Emergency presentations

NSW public hospital emergency departments (EDs) are open to everyone and provide specialised assessment and life-saving care for acutely unwell patients. EDs often act as an entry point to inpatient services.

There were 749,504 ED attendances in the October to December 2018 quarter; up 3.4% compared with the same quarter last year (Figure 1). The number of ambulance arrivals was up 13,888 (8.9%) to 169,095 in the October to December 2018 quarter.

Across triage categories, emergency (triage 2) and urgent (triage 3) saw the largest change in presentations, up by 8,316 to 95,202 presentations and by 16,924 to 253,257 presentations respectively (Figure 1).

Changes to Northern Sydney LHD

On 30 October 2018, services at Manly and Mona Vale hospitals were transferred to Northern Beaches Hospital. BHI has not reported on the timeliness of care provided in the emergency department (ED) for Northern Beaches Hospital, nor for Northern Sydney LHD, for October to December 2018 because of challenges experienced in the implementation of a new information system at Northern Beaches ED following its opening. *Healthcare Quarterly* only includes data relating to publicly contracted services at Northern Beaches Hospital. Emergency department results from Northern Beaches, Manly and Mona Vale hospitals contribute to NSW and peer group B totals throughout this report and associated information products.

BHI cautions against comparing results for Northern Beaches, Manly and Mona Vale hospitals against other hospitals because their results do not cover the full October to December 2018 reporting period.

Emergency care continues to be provided at Mona Vale Hospital through its Urgent Care Centre after 30 October. BHI does not report on Urgent Care Centres.

Figure 1   Patient presentations and ambulance arrivals at NSW emergency departments, October to December 2018

|		This quarter	Same quarter last year	Change since one year ago
All ED attendances		749,504	724,698	3.4%
Emergency presentations by triage category		724,306	698,098	3.8%
Triage 1: Resuscitation	0.7%	5,281	4,795	10.1%
Triage 2: Emergency	13.1%	95,202	86,886	9.6%
Triage 3: Urgent	35.0%	253,257	236,333	7.2%
Triage 4: Semi-urgent	41.3%	298,805	294,669	1.4%
Triage 5: Non-urgent	9.9%	71,761	75,415	-4.8%
Ambulance arrivals		169,095	155,207	8.9%

Most attendances (96.6%) were classified as emergency presentations (Figure 1). The remaining 25,198 attendances to ED were for non-emergency reasons such as a planned return visit.

Compared with the same quarter last year, the number of ED attendances was higher this quarter in 61 out of 76 public hospital EDs in NSW. Hospitals identified in Figure 2 had more than 5,000 ED attendances this quarter and more than a 5% change in the number of attendances compared with the same quarter last year.

Hospitals with >10% change in the number of ED attendances, compared with same quarter last year

Hospital	Peer group	All presentations	Change (%)
Port Macquarie	B	9,729	12.9
Lismore	B	10,018	12.4
Lithgow	C2	3,449	12.3
Deniliquin	C2	2,648	12.2
Wagga Wagga	B	11,728	11.8
Forbes	C2	2,043	11.5
Campbelltown	B	19,791	10.5
Sutherland	B	14,295	10.1
Gunnedah	C2	1,925	-10.6
Moree	C2	2,181	-11.8
Kurri Kurri	C2	899	-12.9

Figure 2   Change in number of emergency department attendances compared with the same quarter last year, hospitals by peer group, October to December 2018
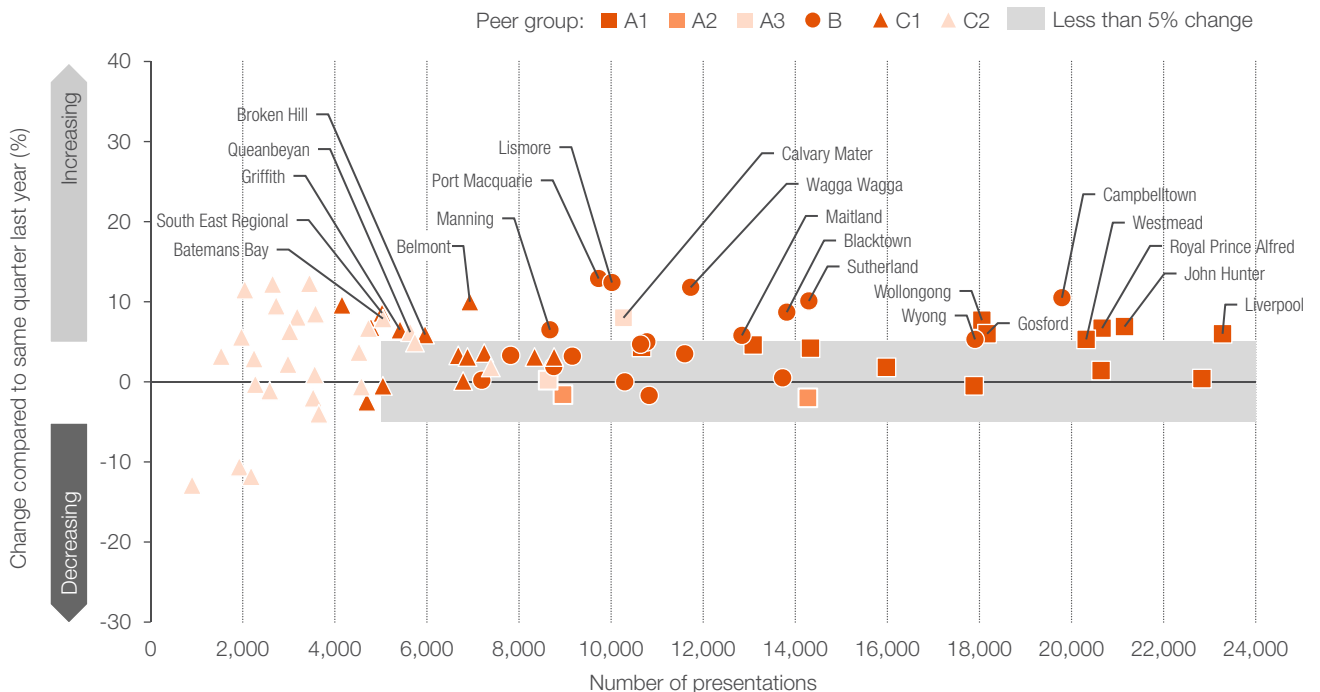
Time to treatment in the emergency department

On arrival at the ED, patients are allocated to one of five triage categories, based on urgency. Each category has a maximum recommended wait time within which treatment should start, ranging from two minutes for triage category 1 to 120 minutes for triage category 5.

In the October to December 2018 quarter, 73.9% of ED patients' treatment started within clinically recommended timeframes, 2.5 percentage points lower than the same quarter last year. The percentage of patients starting treatment on time was lower across all triage categories (Figure 3).

The median time to treatment was unchanged for triage category 2 and longer for triage categories 3, 4 and 5. The 90th percentile time to starting treatment was longer across all triage categories.

Figure 3   Percentage of patients whose treatment started on time, by triage category, October to December 2018

	This quarter	Same quarter last year	Percentage point change since one year ago
All emergency presentations	73.9%	76.4%	-2.5
Triage category 2	Recommended: 80% in 10 minutes 65.4%	68.8%	-3.4
Triage category 3	Recommended: 75% in 30 minutes 68.9%	71.5%	-2.6
Triage category 4	Recommended: 70% in 60 minutes 77.1%	78.8%	-1.7
Triage category 5	Recommended: 70% in 120 minutes 92.9%	93.5%	-0.6

	This quarter	Same quarter last year	Change since one year ago
Triage 2 Emergency (e.g. chest pain, severe burns): 93,959 presentations			
Median time to start treatment	8m	8m	unchanged
90th percentile time to start treatment	26m	23m	3m
Triage 3 Urgent (e.g. moderate blood loss, dehydration): 246,184 presentations			
Median time to start treatment	20m	19m	1m
90th percentile time to start treatment	1h 12m	1h 5m	7m
Triage 4 Semi-urgent (e.g. sprained ankle, earache): 275,661 presentations			
Median time to start treatment	26m	25m	1m
90th percentile time to start treatment	1h 44m	1h 38m	6m
Triage 5 Non-urgent (e.g. small cuts or abrasions): 61,442 presentations			
Median time to start treatment	23m	21m	2m
90th percentile time to start treatment	1h 44m	1h 40m	4m

Note: Triage 1 patients are the most urgent and are almost all treated within two minutes. Clinicians are focused on providing immediate and essential care, rather than recording times, therefore times to start treatment are generally not reported. Timeframes to treat other triage categories are recommended by the Australasian College for Emergency Medicine.

Four hospitals saw a change of more than 10 percentage points in patients whose treatment started on time.

Figure 4 maps hospital results this quarter compared with the same quarter last year. Hospitals labelled had an increase or decrease of more than five percentage points in patients whose treatment started on time, compared with the same quarter last year.

Hospitals with >10 percentage point change in the percentage of patients whose treatment started on time in ED, compared with same quarter last year

Hospital	Peer group	Emergency visits treated on time (%)	Percentage point change
Blacktown	B	81.4	13.8
Gunnedah	C2	81.0	11.5
Westmead	A1	51.4	-12.0
Auburn	B	59.8	-12.2

Figure 4

Percentage of patients whose treatment started on time, and percentage point change compared with same quarter last year, hospitals by peer group, October to December 2018
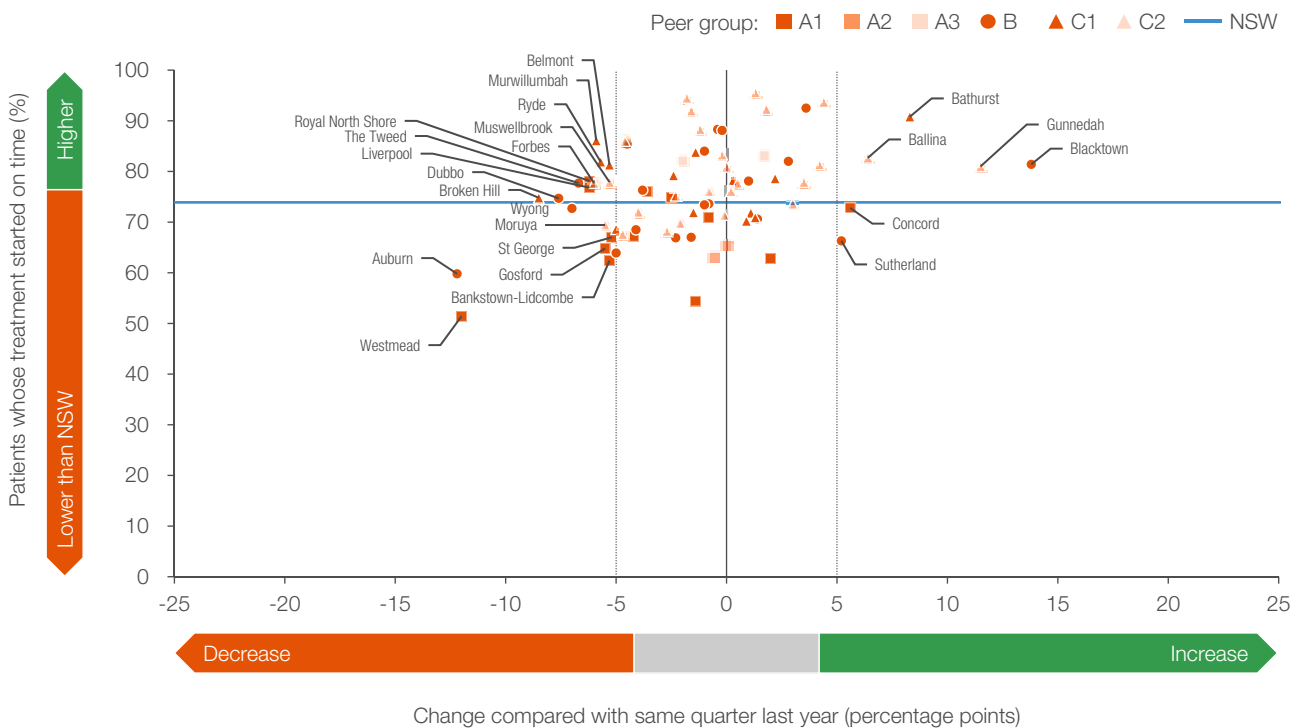
Time spent in the emergency department

Following treatment in the ED, the majority of patients are either discharged home or admitted to hospital. Some patients choose not to wait for treatment and leave, and others are transferred to a different hospital. Collectively, these categories are referred to as the 'mode of separation'.

More than seven in 10 (72.0%) patients spent four hours or less in the ED during the October to December 2018 quarter, 2.2 percentage points lower than the same quarter last year (Figure 5).

Patients who require admission to hospital from the ED or who are transferred to another hospital usually have more complex health needs than those who are treated and discharged, and therefore often spend longer periods in the ED. Less than half of these patients left within four hours.

The percentage of patients spending four hours or less in the ED was lower across all modes of separation, particularly for those who were treated and admitted which was down 3.3 percentage points to 41.1% (Figure 5).

Figure 5   **Percentage of patients who spent four hours or less in the emergency department, by mode of separation, October to December 2018**

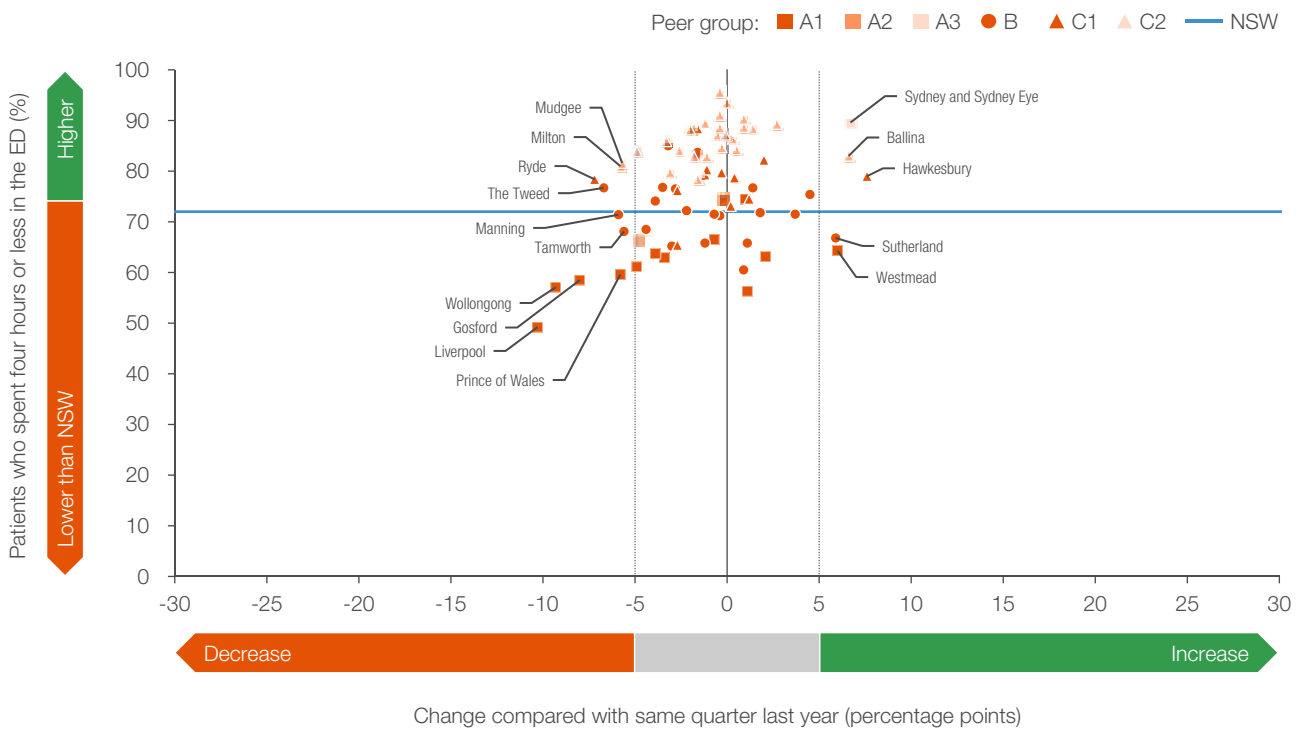|	Number		This quarter	Same quarter last year	Percentage point change since one year ago
All ED attendances	539,653		72.0%	74.2%	-2.2
Treated and discharged	399,911		83.1%	84.7%	-1.6
Treated and admitted	79,003		41.1%	44.4%	-3.3
Left without, or before completing, treatment	38,962		86.7%	89.2%	-2.5
Transferred to another hospital	7,631		46.8%	48.8%	-2.0

Compared with the same quarter last year:

- In 25 hospitals, the percentage of patients who spent four hours or less in the ED was higher.

- In 49 hospitals, there was a drop in the proportion of patients who spent four hours or less in the ED. Liverpool was the only hospital to have a change of more than 10 percentage points (Figure 6).

Hospitals with >10 percentage point change in the percentage of patients who spent four hours or less in the ED, compared with same quarter last year

Hospital	Peer group	Left ED within four hours (%)	Percentage point change
Liverpool	A1	49.2	-10.3

Figure 6

Percentage of patients who spent four hours or less in the emergency department, and percentage point change since same quarter last year, hospitals by peer group, October to December 2018

Transfer of care

The median time for patient care to be transferred from paramedics to ED staff in the October to December 2018 quarter was 12 minutes; one minute longer than the same quarter last year (Figure 7).

In NSW, transfer of care should occur within 30 minutes for at least 90% of patients. In the October to December 2018 quarter, 90.1% of patients who arrived by ambulance had their care transferred within 30 minutes, down 2.1 percentage points from the same quarter last year (Figure 7).

Compared with the same quarter last year, the number of ambulance arrivals (used to calculate transfer of care time) in October to December 2018 was up 10.8% to 149,845 arrivals (Figure 7).

Compared with the same quarter last year, the number of ambulance arrivals in 21 hospitals was up by more than 10%. The change was more than 20% in four hospitals: Mount Druitt (33.4%), Milton (25.2%), Wagga Wagga (24.8%) and Queanbeyan (21.8%). The number of arrivals was down by 10.1% at Goulburn.

Figure 8 shows variation between and within hospital peer groups in the percentage of patients who had their care transferred within 30 minutes in the October to December 2018 quarter.

Figure 7 Emergency presentations, ambulance arrivals and transfer of care time, October to December 2018

	This quarter	Same quarter last year	Change since one year ago
Emergency presentations	724,306	698,098	3.8%
Ambulance arrivals (number used to calculate transfer of care time)	149,845	135,228	10.8%
ED transfer of care time			
Median time	12m	11m	1m
90th percentile time	29m	26m	3m
Percentage of patients transferred from ambulance to ED within 30 minutes	90.1%	92.2%	-2.1 percentage points

Note: Transfer of care time requires matched records between ambulance service and ED data.

Hospitals with >10% change in the number of ambulance arrivals, compared with same quarter last year

Hospital	Peer group	Ambulance arrivals	Change (%)
Mount Druitt	C1	1,306	33.4
Milton	C2	571	25.2
Wagga Wagga	B	3,019	24.8
Queanbeyan	C2	692	21.8
Fairfield	B	1,965	17.9
Auburn	B	1,372	17.2
Shoalhaven	B	2,898	16.8
Concord	A1	2,800	16.2
Hawkesbury	C1	1,236	15.6
Shellharbour	C1	2,036	14.2
Campbelltown	B	5,333	14.1

Hospital	Peer group	Ambulance arrivals	Change (%)
Tamworth	B	2,269	13.9
Belmont	C1	1,507	13.6
Blacktown	B	4,708	13.5
Maitland	B	2,648	13.5
Liverpool	A1	7,559	12.4
Blue Mountains	C2	1,039	12.0
Lithgow	C2	650	11.5
Lismore	B	2,410	11.1
Cessnock	C2	582	10.4
Gosford	A1	5,528	10.3
Goulburn	C1	893	-10.1

Figure 8   Percentage of patients transported to the ED by ambulance whose care was transferred within 30 minutes, by peer group, October to December 2018
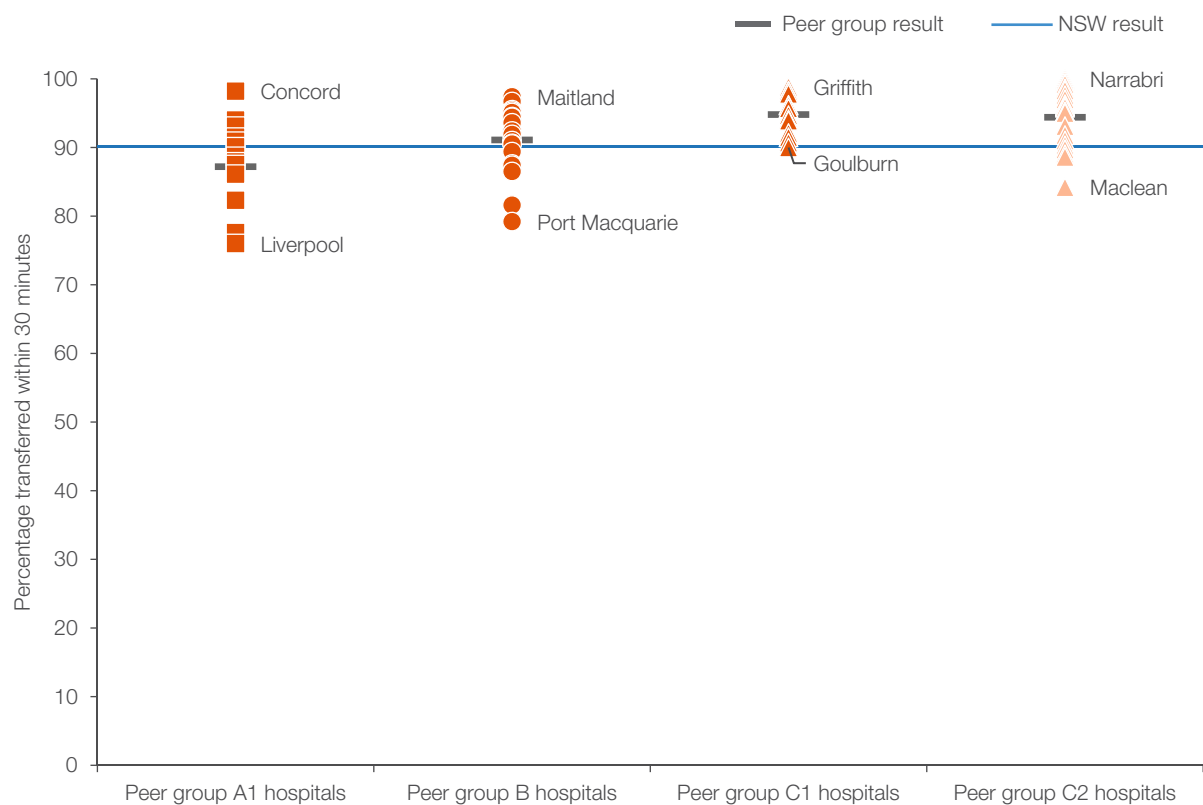
Ambulance activity and performance

Ambulance activity

Ambulance activity can be quantified in terms of calls, incidents, responses and patient transports (Table 2).

There were 306,739 ambulance responses in the October to December 2018 quarter; up 8.0% compared with the same quarter last year (Figure 9). The number of responses was higher across all priority categories, particularly for emergency (priority 1; up by 10,969 responses) and urgent (priority 2; up by 10,951 responses).

Most responses were categorised as emergency (priority 1; 45.0%) or urgent (priority 2; 47.4%). Of priority 1 responses, 6,382 (4.6%) were categorised as the highest priority, 1A (Figure 9).

Table 2   Description of ambulance activity counts

| Calls	Calls received at the ambulance control centre, requesting an ambulance vehicle.
Incidents	A call that results in the dispatch of one or more ambulance vehicles.
Responses	The dispatch of an ambulance vehicle from a local response area. There may be multiple responses to a single incident. Responses include vehicles cancelled prior to arrival at the incident scene. Responses are prioritised as priority 1 (emergency response under lights and sirens; with category 1A as highest acuity); priority 2 (urgent – undelayed response required without lights and sirens); priority 3 (time-critical – undelayed response required); and priority 4-9 (non-emergency).
Patient transports	Number of patients transported by NSW Ambulance.

Figure 9   Ambulance calls, incidents, responses and transports, October to December 2018

		This quarter	Same quarter last year	Change since one year ago
Calls		307,866	288,687	6.6%
Incidents		237,787	225,180	5.6%
All responses		306,739	284,044	8.0%
P1: Emergency	45.0%	137,911	126,942	8.6%
P1A: Highest priority	4.6%	6,382	5,947	7.3%
P2: Urgent	47.4%	145,465	134,514	8.1%
P3: Time-critical	4.8%	14,590	13,994	4.3%
P4–9: Non-emergency	2.9%	8,773	8,594	2.1%
Patient transports		182,556	168,645	8.2%

Note: Ambulance activity data do not include CAD outages and activity estimates. All calls, incidents and responses that have been assigned a priority number are included in the total counts. Most priority numbers correspond to priority codes P1 to P9.

Figure 10 shows the daily number of priority 1, 2 and 3 responses in the October to December 2018 quarter. The daily number of responses for the priority 1 category varied from 1,226 to 1,722 responses (Figure 10).

Figure 10   Daily number of priority category 1, 2 and 3 responses, October to December 2018
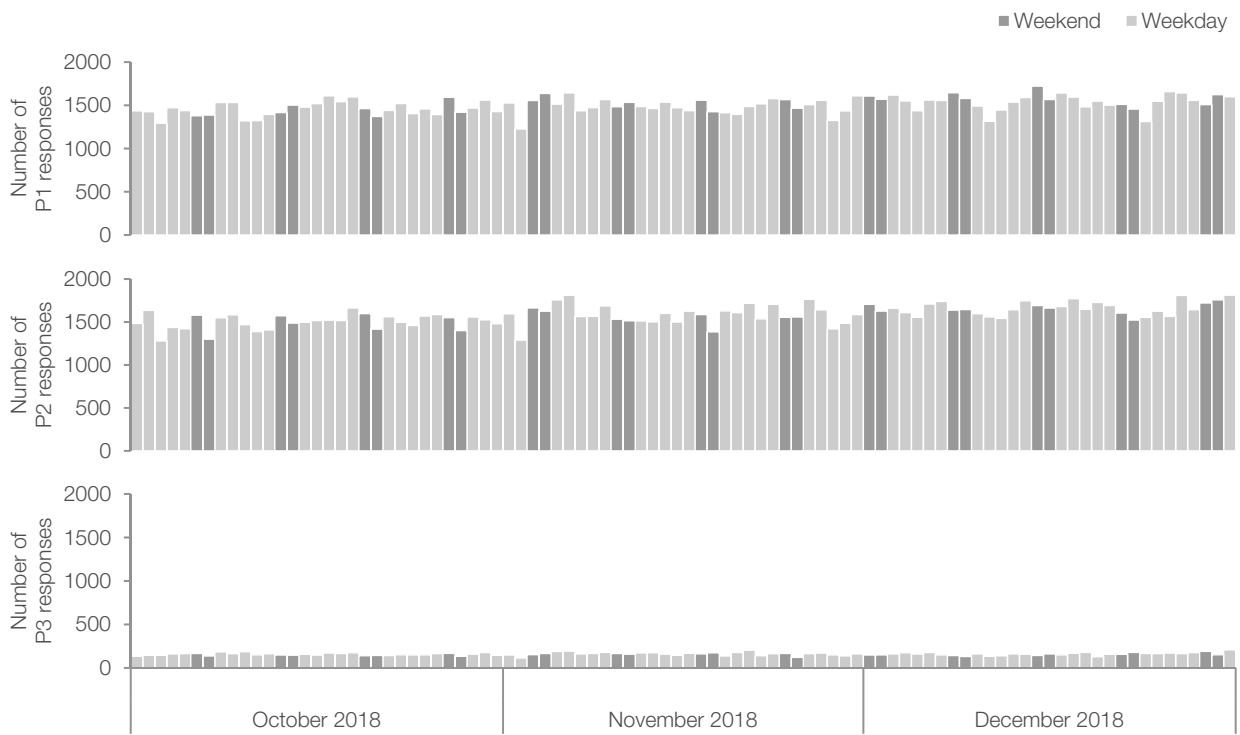
Call to ambulance arrival time

Call to ambulance arrival time covers the period from when a Triple Zero (000) call is first answered in the ambulance control centre (phone pick-up), to the time an ambulance arrives at the scene (Figure 11).

Compared with the same quarter last year, the percentage of priority 1 (emergency) call to ambulance arrival times within 15 minutes was lower at 60.6%, down 2.6 percentage points. The percentage of priority 2 (urgent) call to ambulance arrival times within 30 minutes was lower at 68.6%, down 4.0 percentage points (Figure 12).

In the October to December 2018 quarter, most priority 1 call to ambulance arrival times were within 30 minutes (93.5%; down 1.0 percentage points). The percentage of priority 2 responses with a call to ambulance arrival time within 60 minutes was 91.8%, down 2.2 percentage points) (Figure 12).

Figure 11   Intervals covering call to ambulance arrival time, NSW

Call answer	Call in queue	Call complete	Vehicle assigned	Vehicle responding	Arrive at scene	Depart scene	Arrive hospital	Delayed available	Clear case

Figure 12   Call to ambulance arrival time, by priority category, October to December 2018

Priority category		This quarter	Same quarter last year	Change since one year ago
P1 responses	101,114			
Within 15 minutes		60.6%	63.2%	-2.6 percentage points
Within 30 minutes		93.5%	94.5%	-1.0 percentage points
Local response areas meeting 90% threshold (arrival within 30 minutes)		101 (of 153)	109 (of 153)	
P2 responses	108,230			
Within 30 minutes		68.6%	72.6%	-4.0 percentage points
Within 60 minutes		91.8%	94.0%	-2.2 percentage points
Local response areas meeting 90% threshold (arrival within 60 minutes)		118 (of 153)	143 (of 153)	

Local response areas (LRAs) are mapped geographically around individual ambulance stations and can be categorised as 24-hour, 24-hour (with on-call), non-24-hour or community and volunteer. Ambulance zones are larger administrative regions that incorporate multiple LRAs. LRA-level measures are based on the location of the patient, not the station from which paramedics respond.

Among LRAs, 101 of 153 met a 90% threshold for the percentage of priority 1 call to ambulance arrival times within 30 minutes (Figure 13).

For priority 2 responses, more than three-quarters of LRAs met a 90% threshold for the percentage of call to ambulance arrival times within 60 minutes (77.1%). This was down 16.4 percentage points compared with the same quarter last year (93.5%) [data not shown].

Figure 13   Percentage of priority category 1 responses with a call to ambulance arrival time within 30 minutes, by zone and local response area type, October to December 2018

	Number	Total LRAs		LRAs achieving 90% in 30 minutes	
				2018	2017
Sydney	10,389	8		8	8
South Eastern Sydney	7,238	7		7	7
Northern Sydney	7,878	9		9	9
Central Coast	6,141	9		7	7
Western Sydney	9,053	5		5	5
Nepean Blue Mountains	6,215	7		6	5
Illawarra-Shoalhaven	6,511	11		9	9
South West Zone 1	5,582	5		4	5
South West Zone 2	8,106	4		4	4
Hunter Zone 1	6,062	9		7	7
Hunter Zone 2	3,735	7		3	7
New England Zone	2,455	9		6	6
Mid North Coast Zone	5,085	13		4	4
Northern Rivers Zone	4,627	11		3	5
Murrumbidgee Zone	3,864	8		5	4
Southern NSW Zone	3,324	12		4	4
Central West Zone 1	2,834	12		6	7
Central and Far West Zone 2	1,975	7		4	6
Total		153		101	109

Legend: ● Non-24-hour ● 24-hour (on call) ● 24-hour ▌Zone result

% within 30 minutes

Ambulance response time

In NSW, ambulance response time refers to the period from the placement of a Triple Zero (000) call 'in queue' for ambulance dispatch until the first vehicle arrives at the scene (Figure 14).

In the October to December 2018 quarter, median response times were 11.3 minutes for priority 1 (emergency) cases, 7.6 minutes for priority 1A (life threatening) cases and 19.6 minutes for priority 2 (urgent) cases (Figure 15).

In NSW, the benchmark for the median priority 1A response time is 10 minutes. The median response time for priority 1A cases exceeded 10 minutes on one day during the October to December 2018 quarter [data not shown].

There has been little change in median priority 1 and 1A response times since 2013. Median priority 2 response times showed more variation. Of the October to December quarters since 2013, the 2018 quarter saw the longest median priority 2 response time (19.6 minutes; up 2.9 minutes) (Figure 15).

Figure 14   Intervals covering response time, NSW

| Call answer | Call in queue | Call complete | Vehicle assigned | Vehicle responding | Arrive at scene | Depart scene | Arrive hospital | Delayed available | Clear case |

Figure 15   Median ambulance response time (minutes), by priority category, October 2013 to December 2018
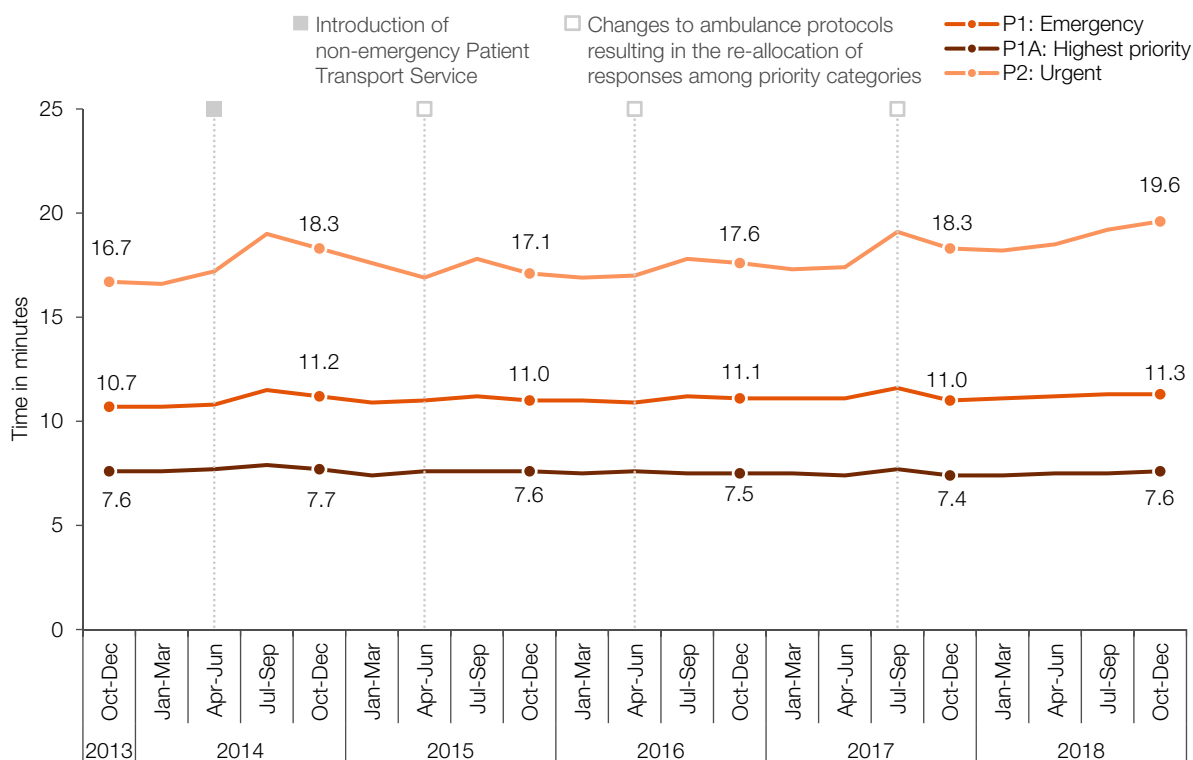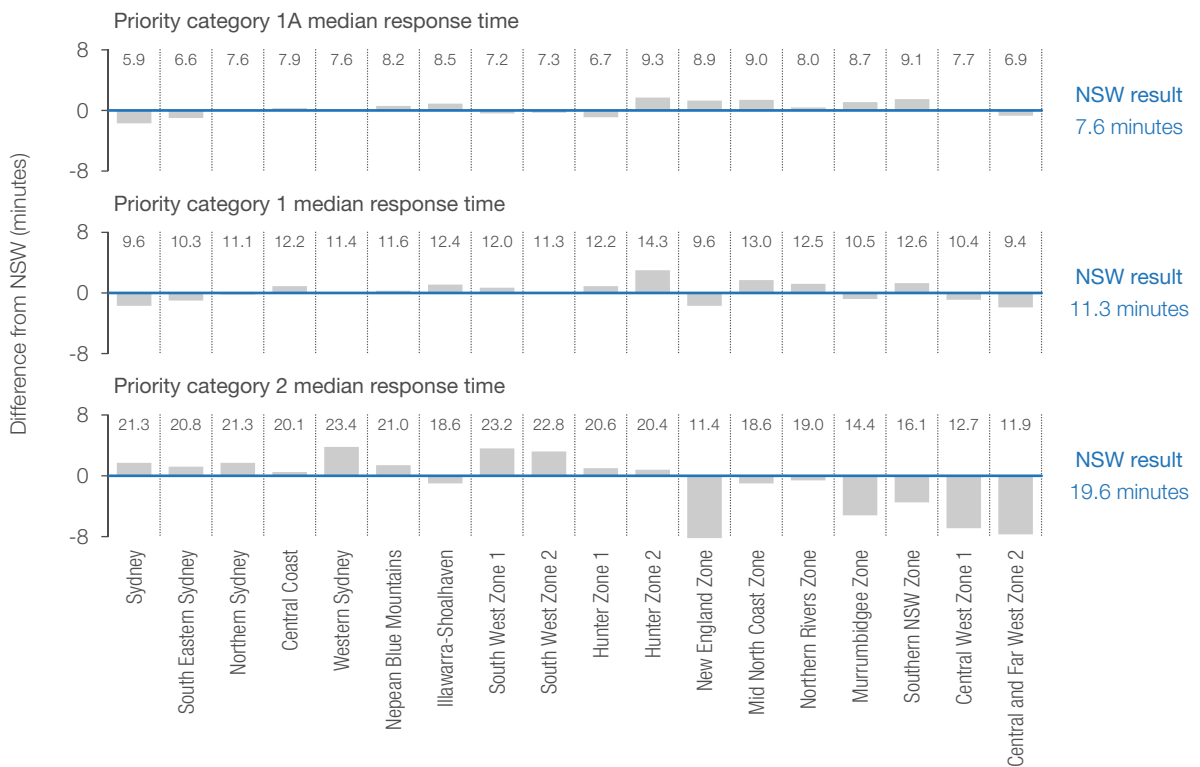
Figure 16 shows this quarter's priority 1A, 1 and 2 median response times for zones relative to the NSW result. For priority category 2, non-metropolitan zones generally had shorter response times than metropolitan zones.

Figure 16   Median ambulance response time, by zone, relative to NSW, October to December 2018

Priority category 1A median response time

| 5.9 | 6.6 | 7.6 | 7.9 | 7.6 | 8.2 | 8.5 | 7.2 | 7.3 | 6.7 | 9.3 | 8.9 | 9.0 | 8.0 | 8.7 | 9.1 | 7.7 | 6.9 |

NSW result
7.6 minutes

Priority category 1 median response time

| 9.6 | 10.3 | 11.1 | 12.2 | 11.4 | 11.6 | 12.4 | 12.0 | 11.3 | 12.2 | 14.3 | 9.6 | 13.0 | 12.5 | 10.5 | 12.6 | 10.4 | 9.4 |

NSW result
11.3 minutes

Priority category 2 median response time

| 21.3 | 20.8 | 21.3 | 20.1 | 23.4 | 21.0 | 18.6 | 23.2 | 22.8 | 20.6 | 20.4 | 11.4 | 18.6 | 19.0 | 14.4 | 16.1 | 12.7 | 11.9 |

NSW result
19.6 minutes

Difference from NSW (minutes)

Sydney | South Eastern Sydney | Northern Sydney | Central Coast | Western Sydney | Nepean Blue Mountains | Illawarra-Shoalhaven | South West Zone 1 | South West Zone 2 | Hunter Zone 1 | Hunter Zone 2 | New England Zone | Mid North Coast Zone | Northern Rivers Zone | Murrumbidgee Zone | Southern NSW Zone | Central West Zone 1 | Central and Far West Zone 2

Admitted patient activity

Admitted patients

There were 483,569 admitted patient episodes in NSW public hospitals in the October to December 2018 quarter – up 1.1% compared with the same quarter last year, and up 6.8% compared with the same quarter five years ago (Figure 17).

The trend in acute overnight admitted patient episodes shows more seasonal variation than the number of same-day acute episodes. The number of acute overnight episodes was 6.7% higher than the same quarter five years ago (Figure 18).

Figure 19 shows differences in the proportion of same-day acute admitted patient episodes across hospital peer groups in the October to December 2018 quarter. Overall, peer group C2 (smaller district hospitals) had a higher percentage of same-day episodes compared with other peer groups.

Changes to Northern Sydney LHD

On 30 October 2018, services at Manly and Mona Vale hospitals were transferred to Northern Beaches Hospital. Admitted patient results from Northern Beaches, Manly and Mona Vale hospitals contribute to NSW, Northern Sydney LHD and peer group B totals throughout this report and associated information products. *Healthcare Quarterly* only includes data relating to publicly contracted services at Northern Beaches Hospital.

BHI cautions against comparing results for Northern Beaches, Manly and Mona Vale hospitals against other hospitals because their results do not cover the full October to December 2018 reporting period.

Figure 17   Total, acute, non-acute and mental health episodes, October 2013 to December 2018

Note: Same-day refers to patients who are admitted and discharged on the same day. Same-day episodes count as one bed day.
* Estimates of mental health episodes calculated using a flag for days in a psychiatric unit.

Phase-in of new policy

Between 1 July 2016 and 30 June 2017, all local health districts (LHDs) and health networks introduced a mental health stay type when classifying newly admitted or long-standing mental health patients. The new mental health stay type comprises patients who were previously included in the acute and non-acute stay types that are routinely reported by BHI.

Fair comparisons cannot be made with results from the policy phase-in period due to staggered implementation across LHDs that affected activity counts in the acute, non-acute and mental health categories. Mental health activity counts presented before the introduction of the classification change are estimates that were calculated using a flag for days in a psychiatric unit. Accordingly, comparisons between the pre- and post-policy period should be made with caution.

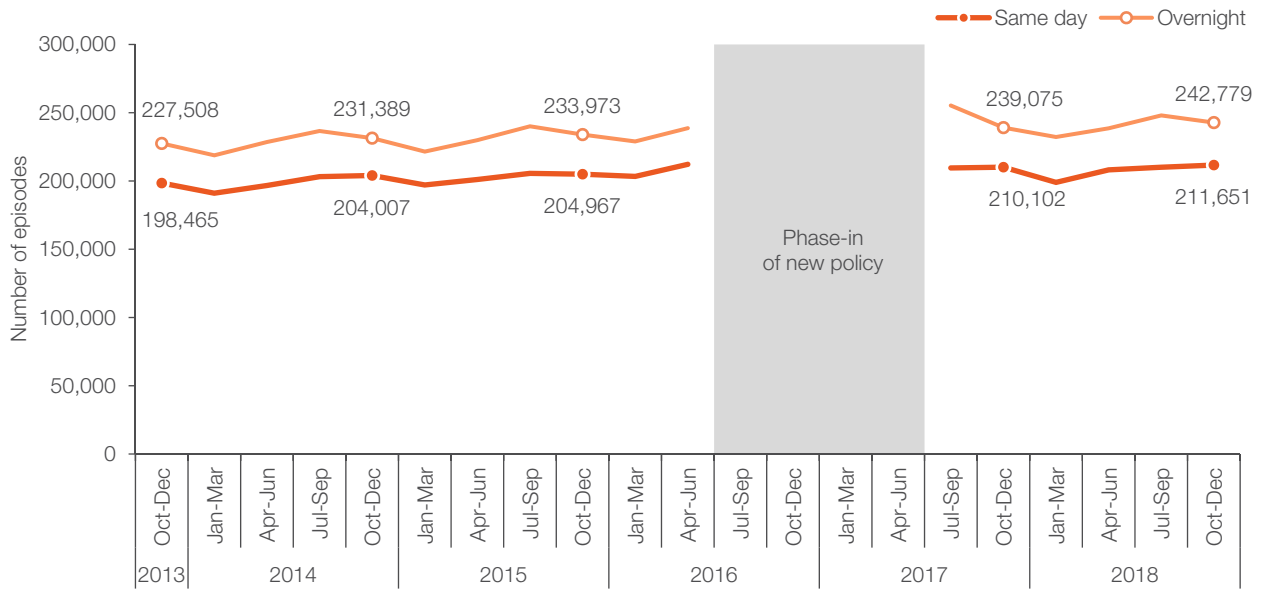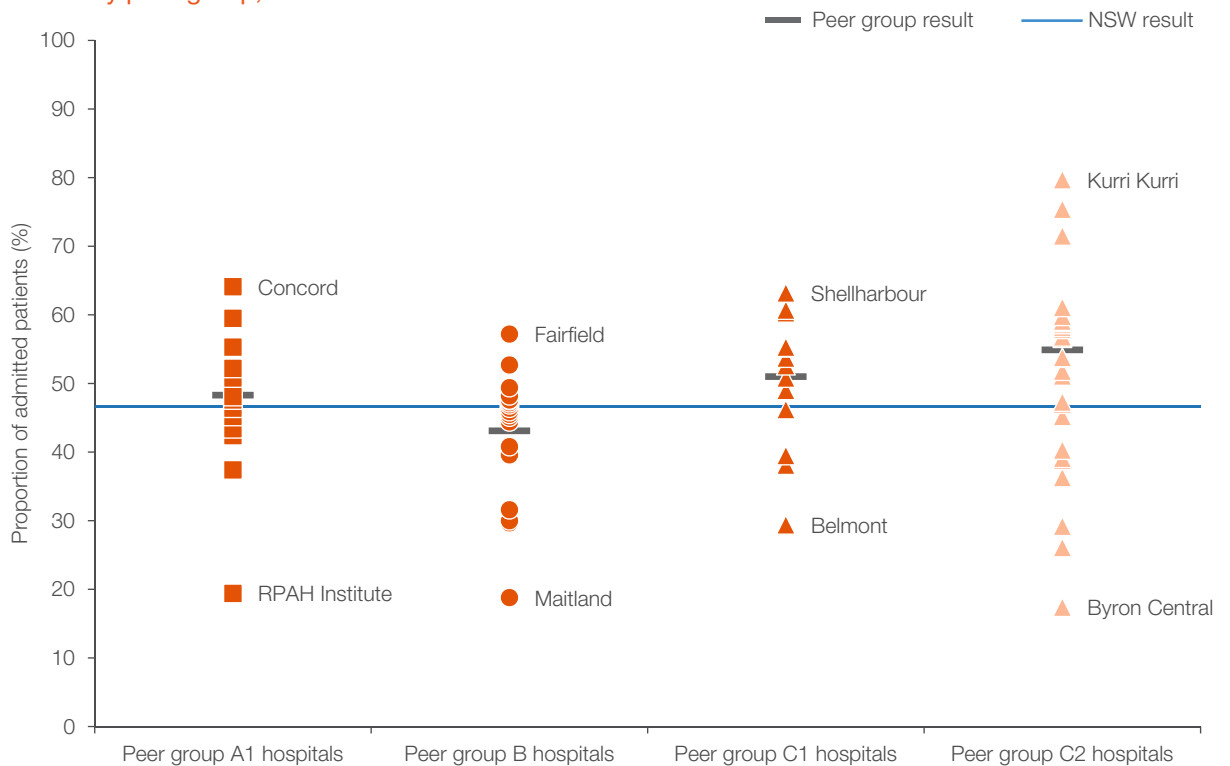Figure 18   Overnight and same day acute admitted patient episodes, October 2013 to December 2018

Figure 19   Same day admitted patient episodes as percentage of all acute admitted patient episodes, by peer group, October to December 2018

Elective surgery activity and performance

Elective surgery

In the October to December 2018 quarter, 56,268 elective surgical procedures were performed, 0.7% more than the same quarter last year (Figure 20).

There are three main categories for elective surgery: urgent, semi-urgent and non-urgent. The urgency category is determined by the surgeon and is based on clinical criteria. More than half (55.9%) of all procedures performed this quarter were either urgent or semi-urgent (Figure 20).

Of the hospitals that performed more than 500 surgeries in the October to December 2018 quarter, the number of elective surgical procedures was up by more than 10% in five hospitals and down by more than 10% in two hospitals.

Changes to Northern Sydney LHD

On 30 October 2018, services at Manly and Mona Vale hospitals were transferred to Northern Beaches Hospital. Elective surgery results from Northern Beaches, Manly and Mona Vale hospitals contribute to NSW, Northern Sydney LHD and peer group B totals throughout this report and associated information products. *Healthcare Quarterly* only includes data relating to publicly contracted services at Northern Beaches Hospital.

BHI cautions against comparing results for Northern Beaches, Manly and Mona Vale hospitals against other hospitals because their results do not cover the full October to December 2018 reporting period.

Figure 20   Elective surgical procedures performed, by urgency category, October to December 2018

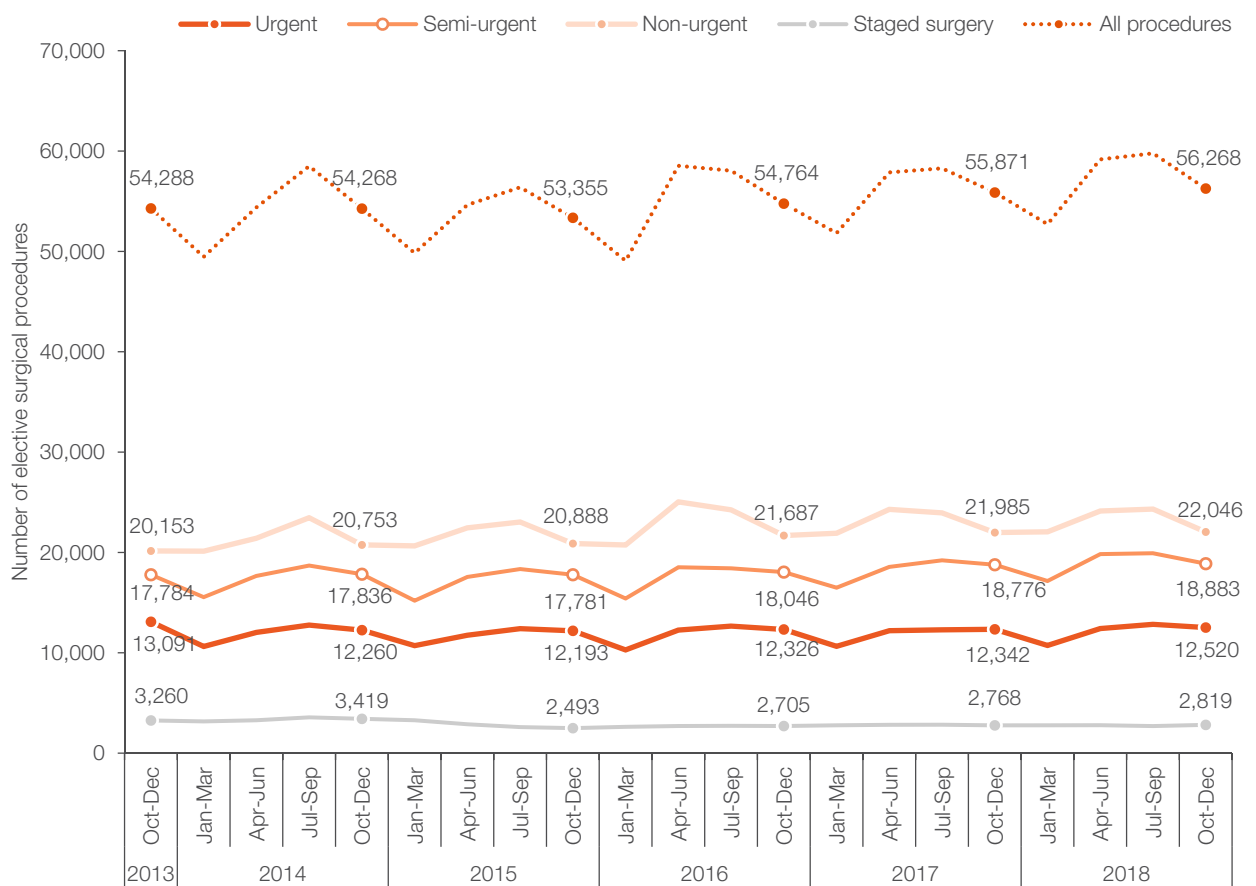|		This quarter	Same quarter last year	Change since one year ago
Total number of elective surgical procedures		56,268	55,871	0.7%
Urgent	22.3%	12,520	12,342	1.4%
Semi-urgent	33.6%	18,883	18,776	0.6%
Non-urgent	39.2%	22,046	21,985	0.3%
Staged*	5.0%	2,819	2,768	1.8%

* Staged surgery is surgery that, for medical reasons, cannot take place before a certain amount of time has elapsed (includes all non-urgent cystoscopy patients).

Hospitals with >10% change in elective surgical procedures, compared with same quarter last year

Hospital	Peer group	Number of procedures	Change (%)
St George	A1	1,339	18.2
Shellharbour	C1	761	13.9
Wagga Wagga	B	1,416	11.5
Dubbo	B	985	11.4
Kurri Kurri	C2	657	10.2
Belmont	C1	713	-12.0
Grafton	C1	508	-17.9

Elective surgical activity is subject to seasonal change. For this reason, comparisons are made with the same quarter in preceding years. Compared with the same quarter in 2013, the total number of procedures that were performed increased by 3.6% (1,980) (Figure 21).

Figure 21

Elective surgical procedures performed, by urgency category, October 2013 to December 2018

Legend: Urgent — Semi-urgent — Non-urgent — Staged surgery — All procedures

All procedures: 54,288 · 54,268 · 53,355 · 54,764 · 55,871 · 56,268

Non-urgent: 20,153 · 20,753 · 20,888 · 21,687 · 21,985 · 22,046

Semi-urgent: 17,784 · 17,836 · 17,781 · 18,046 · 18,776 · 18,883

Urgent: 13,091 · 12,260 · 12,193 · 12,326 · 12,342 · 12,520

Staged surgery: 3,260 · 3,419 · 2,493 · 2,705 · 2,768 · 2,819

Y-axis: Number of elective surgical procedures (0 to 70,000)

X-axis: Oct-Dec (2013); Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec (2014); Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec (2015); Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec (2016); Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec (2017); Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec (2018)

Waiting time for elective surgery

Timeliness of elective surgery is measured by median and 90th percentile waiting times, and the percentage of procedures performed within clinically recommended time frames.

Compared with the same quarter last year, median waiting times in the October to December 2018 quarter were 10 days for urgent (unchanged), 44 days for semi-urgent (unchanged) and 222 days for non-urgent procedures (up 12 days) (Figure 21).

The recommended waiting times for elective surgery are up to: 30 days for urgent, 90 days for semi–urgent, and 365 days for non–urgent procedures. Almost all procedures (97.4%) were performed within recommended timeframes (Figure 21).

Figure 22   Percentage of elective surgical procedures performed on time and waiting times, by urgency category, October to December 2018

		This quarter	Same quarter last year	Percentage point change since one year ago
All procedures		97.4%	97.5%	-0.1
Urgent	Recommended: 30 days	99.9%	99.8%	0.1
Semi-urgent	Recommended: 90 days	97.5%	97.2%	0.3
Non-urgent	Recommended: 365 days	95.8%	96.4%	-0.6

		This quarter	Same quarter last year	Change since one year ago
Urgent: 12,520 patients				
Median time to receive surgery		10 days	10 days	unchanged
90th percentile time to receive surgery		26 days	26 days	unchanged
Semi-urgent: 18,883 patients				
Median time to receive surgery		44 days	44 days	unchanged
90th percentile time to receive surgery		83 days	83 days	unchanged
Non-urgent: 22,046 patients				
Median time to receive surgery		222 days	210 days	12 days
90th percentile time to receive surgery		356 days	354 days	2 days

Over a longer period, median waiting times for non-urgent procedures showed more fluctuation than urgent and semi-urgent procedures. Compared with the same quarter five years ago, the median wait time for non-urgent elective surgeries increased by 17 days and was unchanged for urgent and up by one day for semi-urgent procedures (Figure 22).

Figure 23   Median waiting times for elective surgery, by urgency category, October 2013 to December 2018
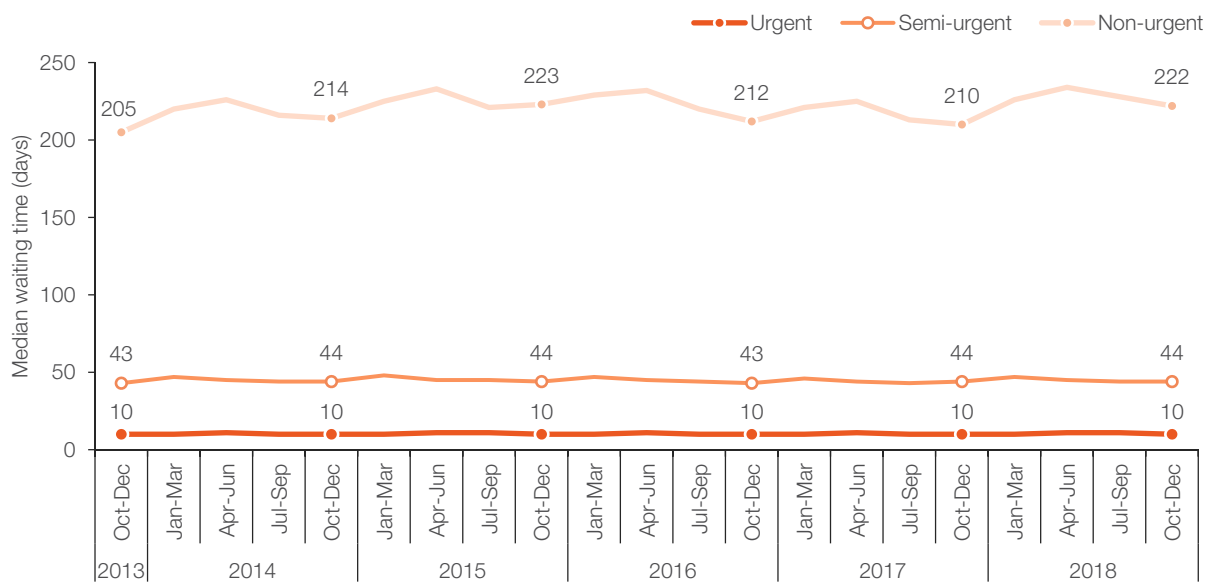
About the Bureau of Health Information

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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