

Healthcare Quarterly

Activity and performance

Emergency department, ambulance,
admitted patients and elective surgery

January to March 2017



BUREAU OF HEALTH INFORMATION

Level 11, 67 Albert Avenue
Chatswood NSW 2067
Australia
Telephone: +61 2 9464 4444
bhi.nsw.gov.au

© Copyright Bureau of Health Information 2017

This work is copyrighted. It may be reproduced in whole or in part for study or training purposes subject to the inclusion of an acknowledgement of the source. It may not be reproduced for commercial usage or sale. Reproduction for purposes other than those indicated above requires written permission from the Bureau of Health Information.

State Health Publication Number: (BHI) 170341
ISSN: 2207-9556 (print); 2207-9564 (online)

Suggested citation:

Bureau of Health Information. *Healthcare Quarterly, Activity and performance – Emergency department, ambulance, admitted patients and elective surgery, January to March 2017*. Sydney (NSW); BHI; 2017.

Please note there is the potential for minor revisions of data in this report.
Please check the online version at **bhi.nsw.gov.au** for any amendments.

Published June 2017

Healthcare Quarterly reports present data at the point in time when data become available to BHI. Changes in data coverage and analytic methods from quarter to quarter mean that figures published in this document are superseded by subsequent reports. At any time, the most up-to-date data are available on BHI's online data portal, Healthcare Observer, at **bhi.nsw.gov.au/healthcare_observer**

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.

Table of contents

Introducing Healthcare Quarterly	2
10 key findings	4
Healthcare Quarterly – activity and performance	5
About this report	9
Emergency department presentations	11
Time to treatment in the emergency department	13
Time spent in the emergency department	15
Transfer of care	17
Ambulance activity	19
Call to ambulance arrival time	21
Ambulance response time	23
Admitted patients	25
Elective surgery	27
Waiting time for elective surgery	29
Acknowledgements	31

Introducing Healthcare Quarterly

***Hospital Quarterly* has had an enhancement, a makeover and a name change.**

The Bureau of Health Information's quarterly reports on public hospital activity and performance are expanding in scope to include information about ambulance services in NSW. This information will supplement core measures of emergency department care, admitted patients and elective surgery that BHI has published every three months for the past seven years.

The opportunity to include ambulance data in BHI reports represents an important step forward in our ability to assess on patient care in NSW. Over the past 12 months, we have been working with colleagues at NSW Ambulance and the NSW Ministry of Health to develop robust, meaningful, timely and fair measures of ambulance performance. These developments prompted some restructuring, realignment and refocusing of our reporting products, resulting in the new *Healthcare Quarterly* report.

Much of the material in the report will be familiar to you. The number of emergency department presentations, admitted patient episodes and elective surgical procedures will continue to be reported, but in a new structure that places these activity measures alongside corresponding timeliness measures for emergency department and elective surgery services. New information will describe ambulance activity data together with ambulance timeliness measures that reflect on operational issues such as mobilisation, response and turnaround times. In addition, we will feature a new patient-focused measure – the 'call to ambulance arrival time' which covers the period from when a triple zero call is first answered in an ambulance control centre (phone pick-up) until an ambulance arrives at the scene of an incident.

In all our reporting efforts, we aim to strike a balance between providing enough information to give a rounded picture of performance and avoiding an information overload. As a result, we try to tailor products to audiences with different information needs. With the new *Healthcare Quarterly* report, we have produced an abridged set of the established *Hospital Quarterly* measures together with several ambulance measures – summarised in 10 key findings, translated into infographic displays, and published in a 32-page format. More detailed analyses and background information are available in three separate modules – one each for emergency departments, admitted patients and elective surgery, and ambulance services. Local health districts will receive tailored dashboards to inform them about relative performance at a glance; and specific information on hospitals and ambulance services will be released on our interactive data portal, Healthcare Observer.

Measuring and reporting on healthcare system performance have never been more important. Robust, timely and meaningful information supports statewide and local efforts to improve; helps clinical, managerial and policy decision-makers to respond to changing circumstances and priorities; and informs the people of NSW about how their healthcare system and local hospitals are performing.

In the coming months we will continue to refine the reporting products, with the objective of providing useful information to all of you who are interested in understanding and improving healthcare in NSW. We welcome any feedback you may have as we do so.

Kim Sutherland

Acting Chief Executive,
Bureau of Health Information

10 key findings

January to March 2017

- 1 There were 677,602 patients who presented to a NSW public hospital emergency department – making this the busiest January to March quarter ever reported in terms of emergency department presentations.** Thirteen out of 75 hospitals had an increase of more than 5% in the number of emergency department presentations. There was a 5.4% increase in the number of the most urgent cases (triage categories T1 and T2 combined) compared to the same quarter last year.
- 2 Altogether, 145,801 patients arrived by ambulance.** Most patients (91.5%, up 0.8 percentage points) had their care transferred from ambulance to emergency department staff within 30 minutes. Compared with transfer of care results for the same quarter last year, Wagga Wagga, Forbes, Deniliquin and Kempsey hospitals had an increase of more than 10 percentage points and no hospitals had a decrease of more than 10 percentage points.
- 3 Most emergency department patients received prompt care** – three quarters (75.2%, down 0.2 percentage points) of patients' treatment started within clinically recommended times. Compared with time to treatment results for the same quarter last year, Goulburn, Liverpool, Concord and Wagga Wagga hospitals had an increase of more than 10 percentage points and Westmead had a decrease of more than 10 percentage points.
- 4 Almost three quarters (73.2%, down 1.1 percentage points) of patients who visited an emergency department spent four hours or less there.** Compared with results in the same quarter last year, the proportion of patients who spent four hours or less in the emergency department in Manning Base and Nepean hospitals increased by more than 10 percentage points and in Westmead and South East Regional Hospital* the proportion decreased by more than 10 percentage points.
- 5 There were 277,218 (up 1.2%) ambulance responses (where a vehicle was dispatched).** Although this was higher than for the same quarter last year, long term trends show a marked decrease in the number of responses, reflecting deliberate efforts to provide non-urgent services via the Patient Transport Service.
- 6 NSW ambulance performance has been fairly stable over time in terms of call to ambulance arrival time across the two most urgent priority categories** – for both priority category 1 and 2, around 95% of arrival times were within respective 30 and 60 minute timeframes.
- 7 Across the state, performance was generally stronger for priority 1 call to ambulance arrival times in metropolitan zones and stronger for priority 2 call to ambulance arrival times in non-metropolitan zones.**
- 8 There were 457,535 (up 3.4%) patients admitted for acute care in a NSW public hospital and 51,830 (up 5.6%) elective surgical procedures performed.** Both of these figures represent an increase over the same quarter in previous years.
- 9 Almost all (97.1%) elective surgical procedures were performed within clinically recommended timeframes.** Median waiting times were either unchanged or shorter than the same quarter last year – this quarter they were 10 days for urgent surgery (unchanged), 46 days for semi-urgent surgery (one day less) and 221 days for non-urgent surgery (eight days less).
- 10 Across hospitals, timeliness indicator results for elective surgery were fairly stable.** The Children's Hospital at Westmead saw an improvement of 10.6 percentage points in elective surgical procedures performed within recommended timeframes.

* Comparisons should be made with caution – South East Regional Hospital replaced Bega District Hospital, which provided different services.

Healthcare Quarterly – Activity

Emergency department activity		January to March 2017	January to March 2016	Difference	% change
All arrivals at NSW EDs by ambulance		145,801	142,930	2,871	2.0%
All ED presentations		677,602	672,686	4,916	0.7%
Emergency presentations		654,189	646,083	8,106	1.3%
Emergency presentations by triage category					
Triage category	T1: Resuscitation	4,252	4,067	185	4.5%
	T2: Emergency	79,873	75,774	4,099	5.4%
	T3: Urgent	221,615	214,826	6,789	3.2%
	T4: Semi-urgent	277,964	280,450	-2,486	-0.9%
	T5: Non-urgent	70,485	70,966	-481	-0.7%
Admissions to hospital from NSW EDs		192,279	183,436	8,843	4.8%

Ambulance activity		January to March 2017	January to March 2016	Difference	% change
Calls		281,668	279,682	1,986	0.7%
Responses		277,218	273,959	3,259	1.2%
Priority category	P1: Emergency	121,162	127,114	-5,952	-4.7%
	P1A: Highest priority	5,141	5,117	24	0.5%
	P2: Urgent	122,958	111,151	11,807	10.6%
	P3: Time-critical	23,769	25,116	-1,347	-5.4%
	P4–9: Non-emergency	9,329	10,578	-1,249	-11.8%
Patient transports		163,265	162,126	1,139	0.7%

Note: Ambulance activity data do not include outage estimates

Admitted patient activity		January to March 2017	January to March 2016	Difference	% change
All admitted patient episodes		477,983	459,494	18,489	4.0%
All acute episodes		457,535	442,686	14,849	3.4%
Overnight episodes		245,195	237,852	7,343	3.1%
Same-day episodes		212,340	204,834	7,506	3.7%
Non-acute episodes		20,448	16,808	3,640	21.7%
Average length of stay (days)	All acute episodes	3.1	3.0	0.1	
	Acute overnight episodes	4.9	4.8	0.1	
	Non-acute episodes	22.1	15.4	6.7	
Hospital bed days	All bed days	1,853,263	1,600,674	252,589	15.8%
	Acute bed days	1,401,693	1,341,723	59,970	4.5%
	Non-acute bed days	451,570	258,951	192,619	74.4%
Babies born in NSW public hospitals		18,070	18,201	-131	-0.7%

Elective surgery activity		January to March 2017	January to March 2016	Difference	% change
Elective surgical procedures performed		51,830	49,069	2,761	5.6%
Urgency category	Urgent surgery	10,646	10,289	357	3.5%
	Semi-urgent surgery	16,492	15,415	1,077	7.0%
	Non-urgent surgery	21,915	20,744	1,171	5.6%
Patients on waiting list ready for elective surgery at end of quarter		74,855	74,250	605	0.8%
Urgency category	Urgent surgery	2,006	1,753	253	14.4%
	Semi-urgent surgery	11,803	11,297	506	4.5%
	Non-urgent surgery	61,046	61,200	-154	-0.3%

Healthcare Quarterly – Performance

Emergency department performance			January to March 2017	January to March 2016	Difference
Percentage of patients whose care was transferred within 30 minutes			91.5%	90.7%	+0.8 percentage points
Time to treatment by triage category	T2: Emergency	Median	8 mins	8 mins	0 mins
		90th percentile	26 mins	24 mins	2 mins
	T3: Urgent	Median	20 mins	20 mins	0 mins
		90th percentile	69 mins	68 mins	1 min
	T4: Semi-urgent	Median	26 mins	26 mins	0 mins
		90th percentile	101 mins	101 mins	0 mins
	T5: Non-urgent	Median	23 mins	23 mins	0 mins
		90th percentile	104 mins	101 mins	3 mins
Percentage of patients whose treatment started on time	All patients		75.2%	75.4%	-0.2 percentage points
	T2: Emergency		66.1%	67.6%	-1.5 percentage points
	T3: Urgent		70.2%	69.9%	+0.3 percentage points
	T4: Semi-urgent		77.9%	77.7%	+0.2 percentage points
	T5: Non-urgent		93.1%	93.4%	-0.3 percentage points
Median time spent in the ED			2h 44m	2h 40m	4 mins
90th percentile time spent in the ED			7h 7m	6h 51m	16 mins
Patients who spent four hours or less in the ED			73.2%	74.3%	-1.1 percentage points

NSW Ambulance performance		January to March 2017	January to March 2016	Difference
Call to ambulance arrival time				
Percentage of P1 call to ambulance arrival within 15 minutes		63.2%	64.5%	-1.3 percentage points
Percentage of P1 call to ambulance arrival within 30 minutes		94.7%	94.6%	0.1 percentage points
Percentage of P2 call to ambulance arrival within 30 minutes		75.6%	76.7%	-1.1 percentage points
Percentage of P2 call to ambulance arrival within 60 minutes		95.0%	95.2%	-0.2 percentage points
Mobilisation time				
P1: Emergency	Median	2.4m	2.4m	unchanged
	Percentage P1 within 3 minutes	62.5%	63.8%	-1.3 percentage points
Turnaround time				
P1: Emergency	Median	35.9m	36.4m	-0.5m
	90th percentile	58.5m	60.3m	-1.8m
	Percentage within 45 minutes	71.7%	69.9%	1.8 percentage points
P2: Urgent	Median	33.2m	33.9m	-0.7m
	90th percentile	55.1m	56.7m	-1.6m
	Percentage within 45 minutes	77.1%	75.2%	1.9 percentage points

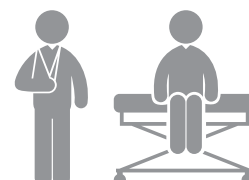
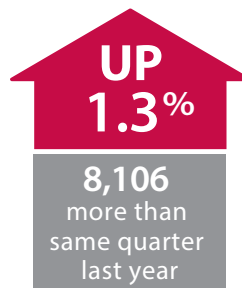
Elective surgery performance			January to March 2017	January to March 2016	Difference
Median waiting time (days)	Urgent		10 days	10 days	0 days
	Semi-urgent		46 days	47 days	-1 day
	Non-urgent		221 days	229 days	-8 days
Elective surgery procedures performed on time	All procedures		97.1%	97.0%	+0.1 percentage points
	Urgent surgery		99.7%	99.7%	unchanged
	Semi-urgent surgery		96.5%	96.6%	-0.1 percentage points
	Non-urgent surgery		96.3%	96.0%	+0.3 percentage points

In the January to March 2017 quarter...

Emergency department

There were **654,189**
emergency presentations

Highest ever for a January to March quarter!



75.2% of patients' treatment
started on time



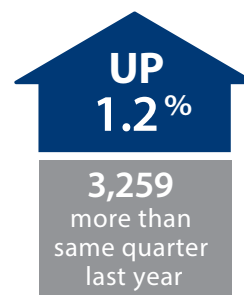
73.2% of all patients spent
four hours or less in the
emergency department



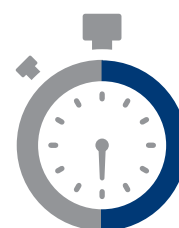
Ambulance



There were **277,218**
ambulance responses

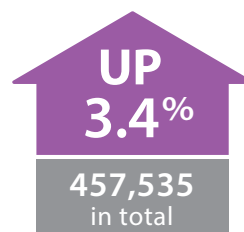


94.7% of priority 1 cases had a
call to ambulance arrival time
of 30 minutes or less



Admitted patients

There were **14,849**
more acute admissions
to hospital



The average length of stay
for patients admitted for
acute overnight care was

4.9 days



Elective surgery

There were **51,830**
elective surgical
procedures performed



Almost all (97.1%) were performed
within recommended time frames

Median waiting times were unchanged
or shorter than same quarter last year

10, 46 and 221 days for urgent, semi-urgent and non-urgent, respectively



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 18 April 2017
- **NSW Ambulance Computer Aided Dispatch (CAD) system** – provided on 15 April 2017
- **Admitted Patient Data Collection (APDC)**
– data drawn from the HIE on 20 April 2017
- **Waiting List Collection Online System (WLCOS)**
– data drawn on 18 April 2017

Hospital data are transmitted by the state's hospitals to centralised data warehouses administered by the NSW Ministry of Health and are extracted by BHI from the NSW HIE. Ambulance data are provided directly to BHI by NSW Ambulance.

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).

Similarly, 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 LRAs.

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; 'urgency categories' (A–C) for elective surgery; 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 9.3. 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 5+ 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 is reported at a NSW and zone level. NSW and zone results include

data from all constituent LRAs. Non-modifiable factors such as travel time and distance make attribution of performance difficult and so LRA results are shown on a non-nominal (not named) basis only. LRAs 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 not shown.

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 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 arrives 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 presentations

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

In the January to March 2017 quarter, a total of 677,602 people presented to NSW public hospital EDs; up 0.7% compared with the same quarter last year. Most presentations (96.5%) were unplanned (or emergency) (Figure 1). Over the past five years, the number of emergency presentations in the January to March quarter has increased by 21.7% (Figure 2).

Compared with the same quarter last year, the number of patients assigned to triage categories 1, 2, and 3 increased. The largest increase was in triage category 3 (6,789 more presentations; up 3.2%). There was a decrease in the number of patients assigned to triage category 4 (2,486 fewer patients; down 0.9%), and triage category 5 (481 fewer patients; down 0.7%) (Figure 1).

The number of ED presentations increased this quarter in 44 out of 75 NSW hospital EDs. Of these, four had an increase of more than 10%.

Hospitals identified in Figure 3 had more than 5,000 presentations this quarter and more than a 5% change in the number of presentations compared with the same quarter last year.

Hospitals with >10% change in ED presentations, compared with same quarter last year

Hospital	Peer group	Presentations	Change
Deniliquin	C2	2,433	19.4%
Bateman's Bay	C2	4,270	15.0%
South East Regional*	C1	4,231	13.8%
Kempsey	C2	7,382	11.2%

Figure 1 Patient presentations and ambulance arrivals at NSW emergency departments, January to March 2017

		This quarter	Same quarter last year	Change since one year ago
All ED presentations		677,602	672,686	0.7%
Emergency presentations by triage category		654,189	646,083	1.3%
Triage 1: Resuscitation	0.6%	4,252	4,067	4.5%
Triage 2: Emergency	12.2%	79,873	75,774	5.4%
Triage 3: Urgent	33.9%	221,615	214,826	3.2%
Triage 4: Semi-urgent	42.5%	277,964	280,450	-0.9%
Triage 5: Non-urgent	10.8%	70,485	70,966	-0.7%
Ambulance arrivals		145,801	142,930	2.0%

* Comparisons should be made with caution – South East Regional Hospital replaced Bega District Hospital, which provided different services.

Figure 2 Number of emergency presentations to an ED, January to March quarters, 2012 to 2017

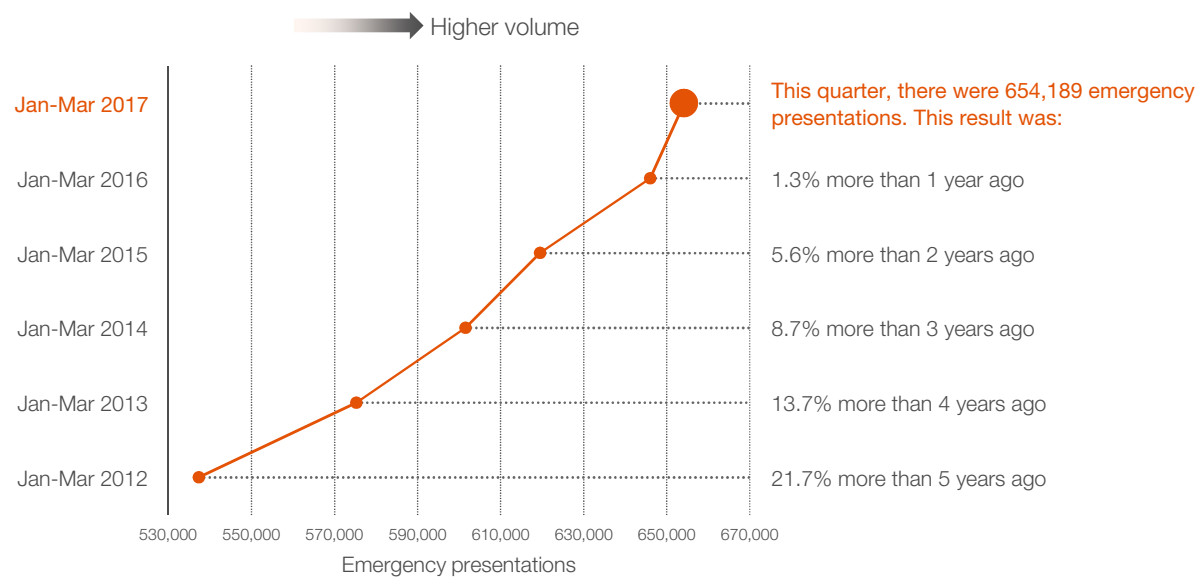
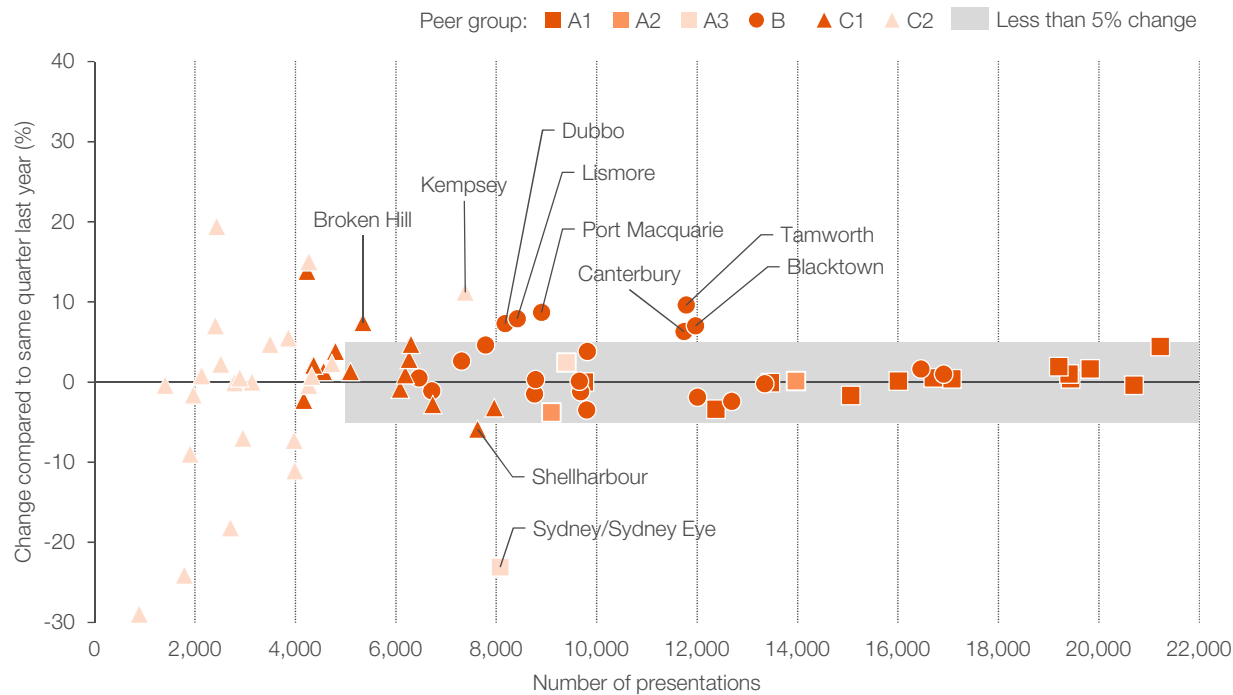


Figure 3 Change in number of emergency department presentations compared with the same quarter last year, hospitals by peer group, January to March 2017



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 waiting time within which treatment should start, ranging from within two minutes for triage 1 to within 120 minutes for triage 5.

In the January to March 2017 quarter, 75.2% of ED patients' treatment started within clinically recommended timeframes; down 0.2 percentage points compared with the same quarter last year (Figure 4). This result is 3.2 percentage points higher than in the same quarter in 2012 (Figure 5).

Figure 6 maps hospital results this quarter compared with the same quarter last year. Hospitals labelled are those that had an increase or a decrease of more than five percentage points in the percentage of 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	% on time	Percentage point change
Goulburn	C1	76.1	16.1
Liverpool	A1	82.0	15.1
Concord	A1	84.7	13.6
Wagga Wagga	B	84.1	10.7
Westmead	A1	35.8	-23.7

Figure 4 Percentage of patients whose treatment started on time, by triage category, January to March 2017

	This quarter	Same quarter last year	Percentage point change since one year ago
All emergency presentations	75.2%	75.4%	-0.2
Triage category 2	Recommended: 10 minutes 66.1%	67.6%	-1.5
Triage category 3	Recommended: 30 minutes 70.2%	69.9%	0.3
Triage category 4	Recommended: 60 minutes 77.9%	77.7%	0.2
Triage category 5	Recommended: 120 minutes 93.1%	93.4%	-0.3

	This quarter	Same quarter last year	Change since one year ago
Triage 2 Emergency (e.g. chest pain, severe burns): 78,784 patients			
Median time to start treatment	8m	8m	0m
90th percentile time to start treatment	26m	24m	2m
Triage 3 Urgent (e.g. moderate blood loss, dehydration): 215,790 patients			
Median time to start treatment	20m	20m	0m
90th percentile time to start treatment	1h 9m	1h 8m	1m
Triage 4 Semi-urgent (e.g. sprained ankle, earache): 257,983 patients			
Median time to start treatment	26m	26m	0m
90th percentile time to start treatment	1h 41m	1h 41m	0m
Triage 5 Non-urgent (e.g. small cuts or abrasions): 60,369 patients			
Median time to start treatment	23m	23m	0m
90th percentile time to start treatment	1h 44m	1h 41m	3m

Note: Triage 1 patients are the most urgent and are almost all treated within two minutes. Clinicians treating them are focused on providing immediate and essential care, rather than recording times, therefore times to start treatment are generally not reported.

Figure 5 Percentage of patients whose treatment started within clinically recommended timeframes, January to March quarters, 2012 to 2017

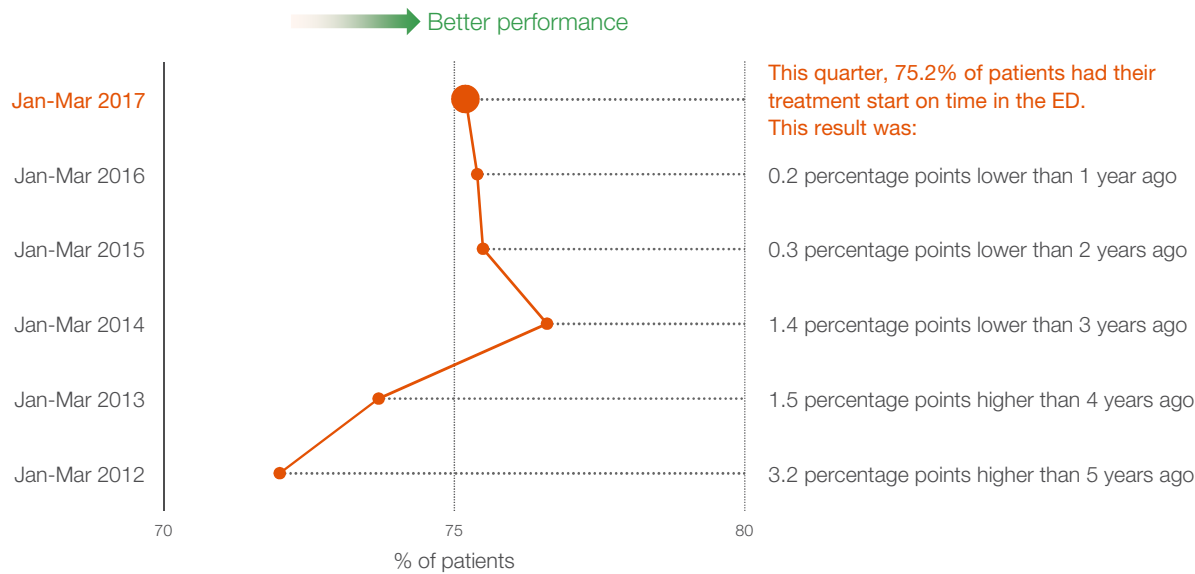
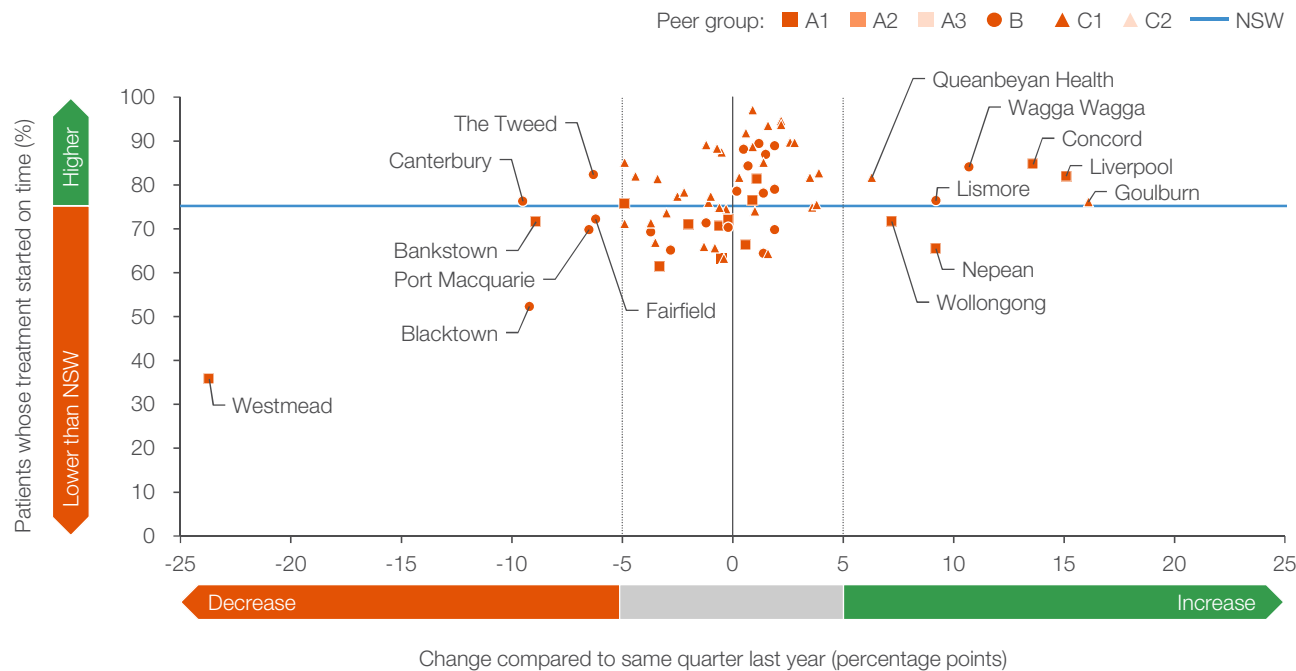


Figure 6 Percentage of patients whose treatment started on time, and percentage point change compared with same quarter last year, hospitals by peer group, January to March 2017



Time spent in the emergency department

Following assessment, stabilisation and treatment in the ED, patients are either discharged home, admitted to a short stay unit (SSU), admitted to a hospital ward, or transferred to another facility. A small percentage of patients choose not to wait for treatment.

Patients who require admission to hospital from the ED usually have more complex health needs than those who are treated in the ED and discharged. Patients whose ED visit ends in admission to hospital therefore often spend longer periods in the ED. Among patients who were treated and subsequently admitted to hospital this quarter, less than half (42.1%) spent four hours or less in the ED. Among patients who were treated and discharged this quarter, 86.0% spent four hours or less in the ED (Figure 7).

In the January to March 2017 quarter, 73.2% of patients spent four hours or less in the ED. This was 1.1 percentage points lower than in the same quarter last year and 12.1 percentage points higher than in the same quarter in 2012 (Figure 8).

Compared with the same quarter last year:

- In 29 hospitals, there was an increase in the proportion of patients who spent four hours or less in the ED. Of these, six hospitals had an increase of more than five percentage points, including three that had an increase of more than 10 percentage points.
- In 46 hospitals, there was a decrease in the proportion of patients who spent four hours or less in the ED. Of these, 12 hospitals had a decrease of more than five percentage points, including two that had a decrease of more than 10 percentage points (Figure 9).

Figure 7 Percentage of patients who spent four hours or less in the emergency department, by mode of separation, January to March 2017






	Number		This quarter	Same quarter last year	Percentage point change since one year ago
All ED presentations	495,675		73.2%	74.3%	-1.1
Treated and discharged	361,555		86.0%	86.4%	-0.4
Treated and admitted	80,953		42.1%	43.4%	-1.3
Left without, or before completing, treatment	34,146		90.4%	91.5%	-1.1
Transferred to another hospital	6,216		44.6%	45.4%	-0.8

Figure 8 Percentage of patients who spent four hours or less in the ED, January to March quarters, 2012 to 2017

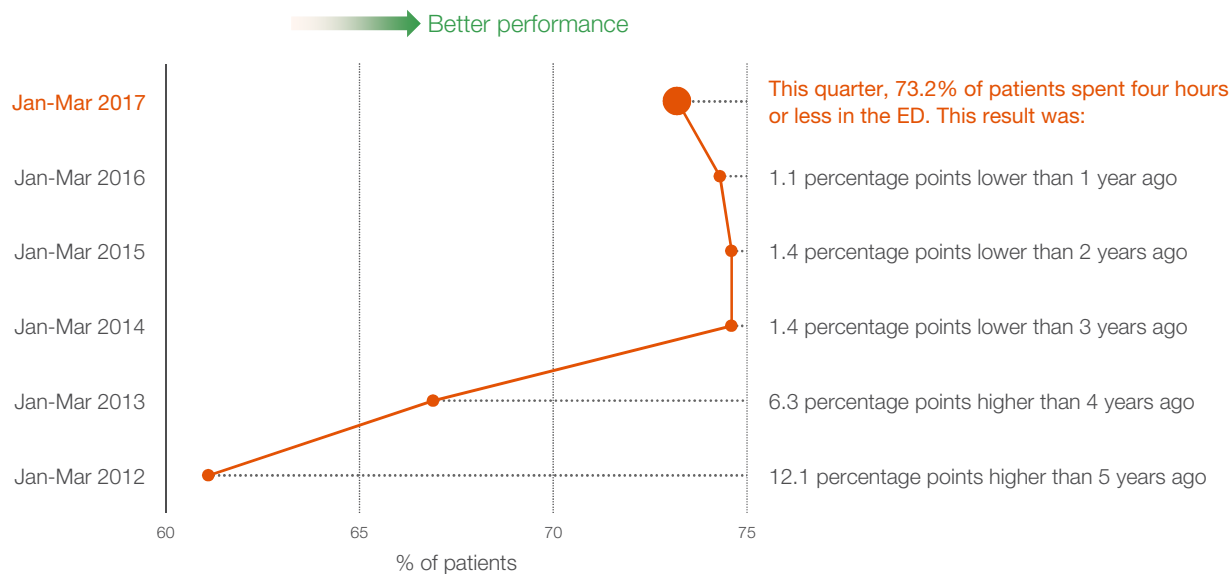
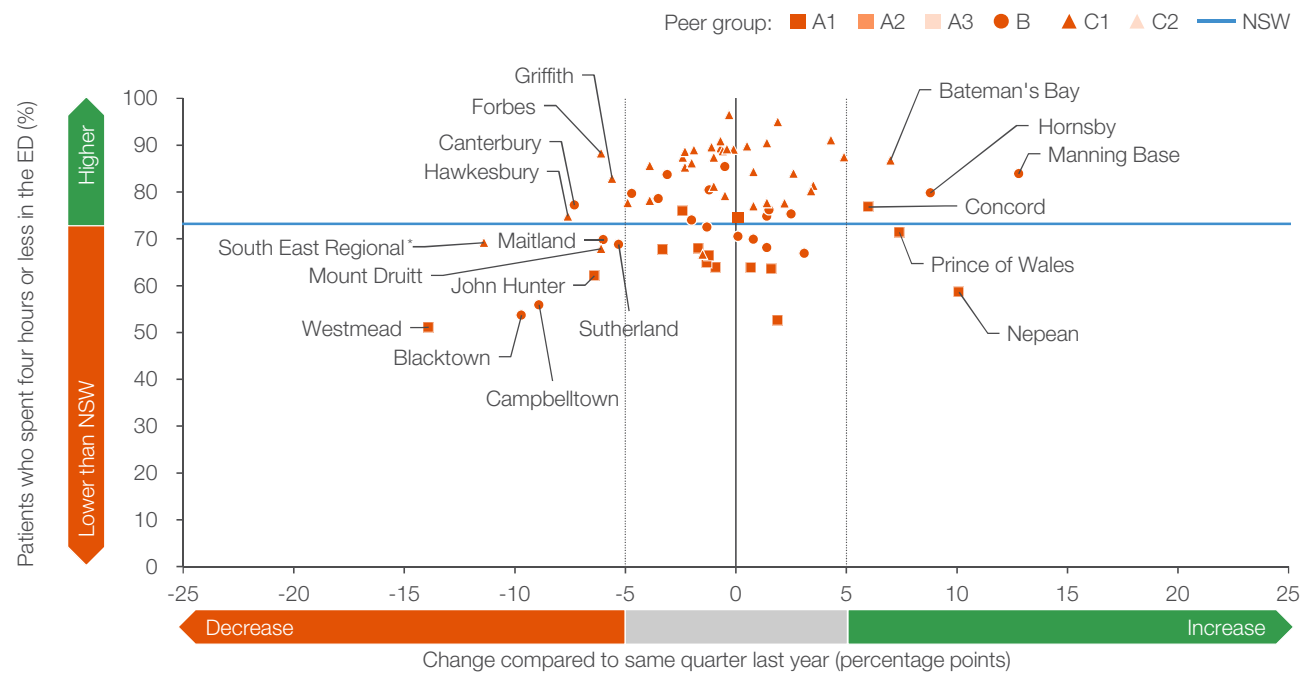


Figure 9 Percentage of patients who spent four hours or less in the emergency department, and percentage point change since same quarter last year, hospitals by peer group, January to March 2017



* Comparisons should be made with caution – South East Regional Hospital replaced Bega District Hospital, which provided different services.

Transfer of care

Out of 654,189 emergency patient presentations this quarter, 21.5% arrived by ambulance. The timeliness with which their care is transferred from the ambulance crew to the emergency department staff is measured by the transfer of care time.

Both the median and 90th percentile transfer of care times were one minute shorter this quarter compared with the same quarter last year (11 minutes and 27 minutes respectively) (Figure 10).

In NSW, transfer of patient care from ambulance to ED staff, should have occurred within 30 minutes for 90% of patients. This quarter, 91.5% of patients who arrived by ambulance had their care transferred within 30 minutes; 0.8 percentage points higher than in the same quarter last year and 4.4 percentage points higher than the same quarter in 2014 (Figure 11).

Figure 12 shows variation between and within hospital peer groups in the percentage of patients who had their care transferred within 30 minutes this quarter. Widest variation was among major hospitals (peer group B), with results ranging from 74.2% to 99.0%.

Compared with the same quarter last year, in five hospitals, ambulance arrivals increased by more than 10% and in five hospitals they decreased by more than 10%.

The percentage of patients who had their care transferred within 30 minutes increased by more than 10 percentage points in four hospitals. There were no hospitals with a decrease of more than 10 percentage points.

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

Hospital	Peer group	Ambulance arrivals	Change
Kurri Kurri	C2	43	115.0%
South East Regional*	C1	919	28.2%
Blue Mountains	C2	994	16.7%
Murwillumbah	C1	366	14.7%
Casino	C2	374	14.0%
Sydney Children's	A3	633	-11.5%
Ballina District	C2	616	-11.7%
Deniliquin	C2	243	-12.9%
Mount Druitt	C1	880	-15.5%
Forbes District	C2	178	-22.6%

Hospitals with >10 percentage point change in transfer of care on time, compared with same quarter last year

Hospital	Peer group	% within 30 mins	Percentage point change
Wagga Wagga	B	95.2	22.8
Forbes	C2	90.0	20.6
Deniliquin**	C2	90.5	14.1
Kempsey	C2	93.3	12.7

** Caution – transfer of care could not be calculated for more than 30% of records

Figure 10 Emergency presentations, ambulance arrivals and transfer of care time, January to March 2017

	This quarter	Same quarter last year	Change since one year ago
Emergency presentations	654,189	646,083	1.3%
Ambulance arrivals	132,747	127,349	4.2%
ED transfer of care time			
Median time	11m	12m	-1m
90th percentile time	27m	28m	-1m

* Comparisons should be made with caution – South East Regional Hospital replaced Bega District Hospital, which provided different services.

Figure 11 Percentage of patients transported to the ED by ambulance whose care was transferred within 30 minutes, January to March quarters, 2014 to 2017

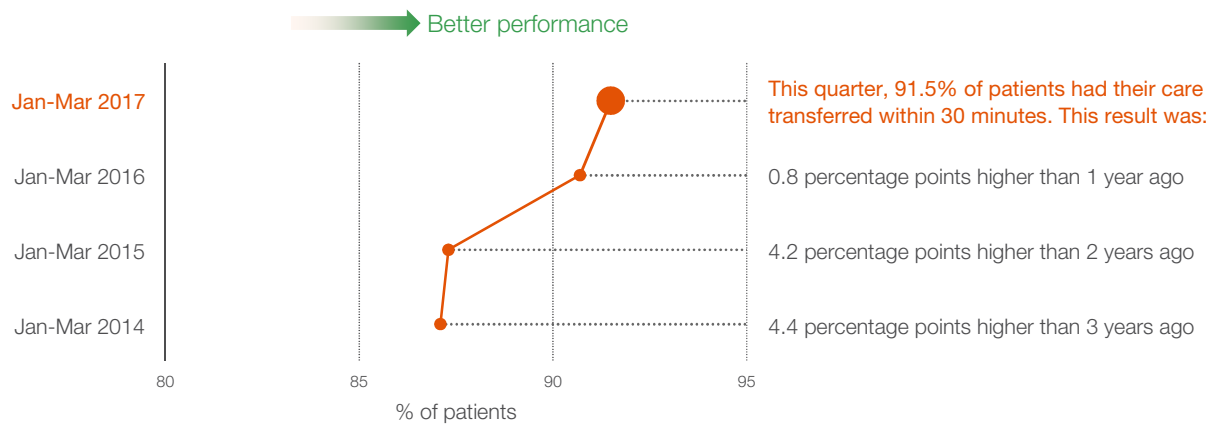
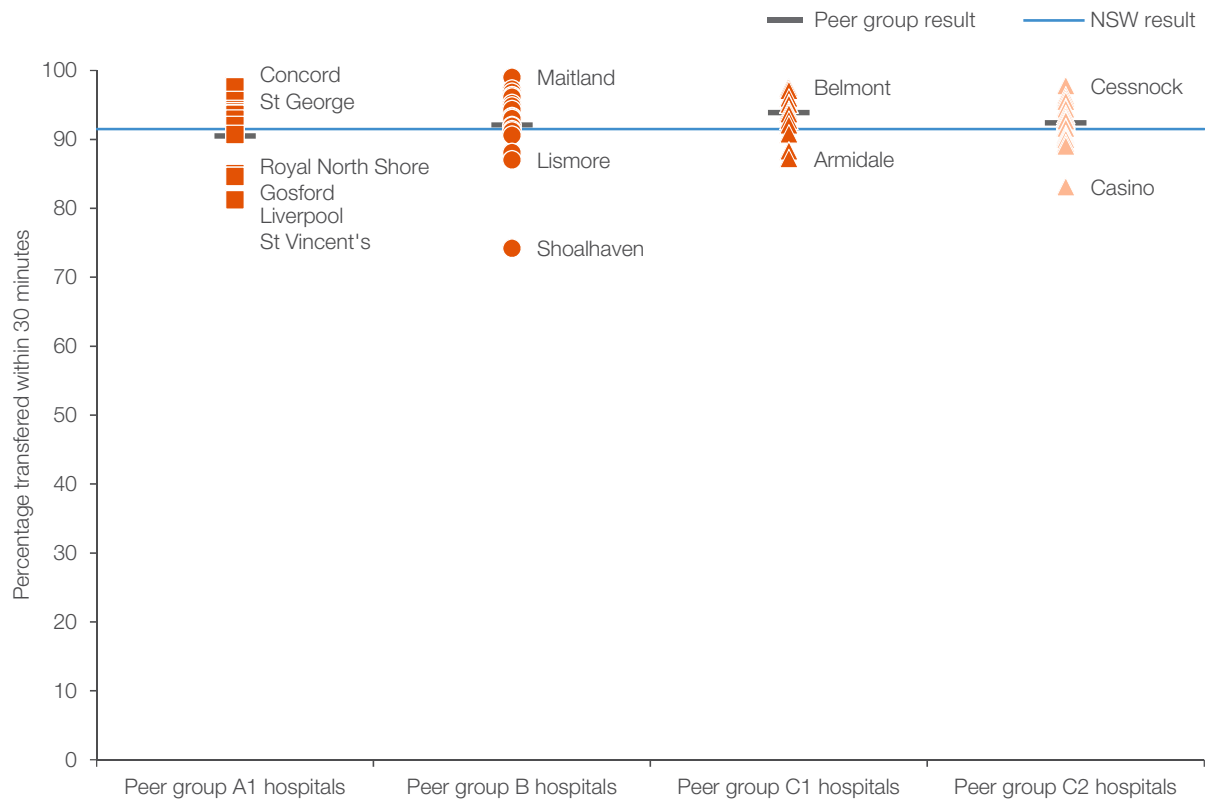


Figure 12 Percentage of patients transported to the ED by ambulance whose care was transferred within 30 minutes, by peer group, January to March 2017



Ambulance activity

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

In the January to March 2017 quarter, there were 281,668 calls and 277,218 ambulance responses; increases of 0.7% and 1.2% respectively compared with the same quarter last year (Figure 13).

This quarter, the majority of responses were categorised as either priority 1 (43.7% of the total responses) or priority 2 (44.4% of the total responses).

The total number of priority 1–3 responses this quarter was 1.7% higher than in the same quarter last year and 12.8% higher than in the same quarter in 2012 (Figure 14).

Figure 15 shows the daily number of priority category 1, 2 and 3 responses this quarter. The level of activity fluctuated across the quarter, and was particularly high on 1 January and in mid-February 2017.

Table 2 Description of ambulance activity counts

Calls	Calls received at the ambulance communication (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 which are cancelled prior to arrival at the incident scene. Responses are prioritised as priority category 1 (emergency response under lights and sirens; with category 1A as highest acuity); priority category 2 (urgent – undelayed response required without lights and sirens); priority category 3 (time-critical – undelayed response required); and priority categories 4-9 (non-emergency).
Patient transports	Number of patients transported by the ambulance service.

Figure 13 Ambulance calls, incidents, responses and transports, January to March 2017

		This quarter	Same quarter last year	Change since one year ago
Calls		281,668	279,682	0.7%
Incidents		220,174	219,960	0.1%
All responses		277,218	273,959	1.2%
P1: Emergency	<div><div></div></div> 43.7%	121,162	127,114	-4.7%
P1A: Highest priority	<div><div></div></div> 4.2%	5,141	5,117	0.5%
P2: Urgent	<div><div></div></div> 44.4%	122,958	111,151	10.6%
P3: Time-critical	<div><div></div></div> 8.6%	23,769	25,116	-5.4%
P4–9: Non-emergency	<div><div></div></div> 3.4%	9,329	10,578	-11.8%
Patient transports		163,265	162,126	0.7%

Note: Ambulance activity data do not include CAD outages and activity estimates

Figure 14 Number of priority category 1, 2 and 3 responses, January to March quarters, 2012 to 2017

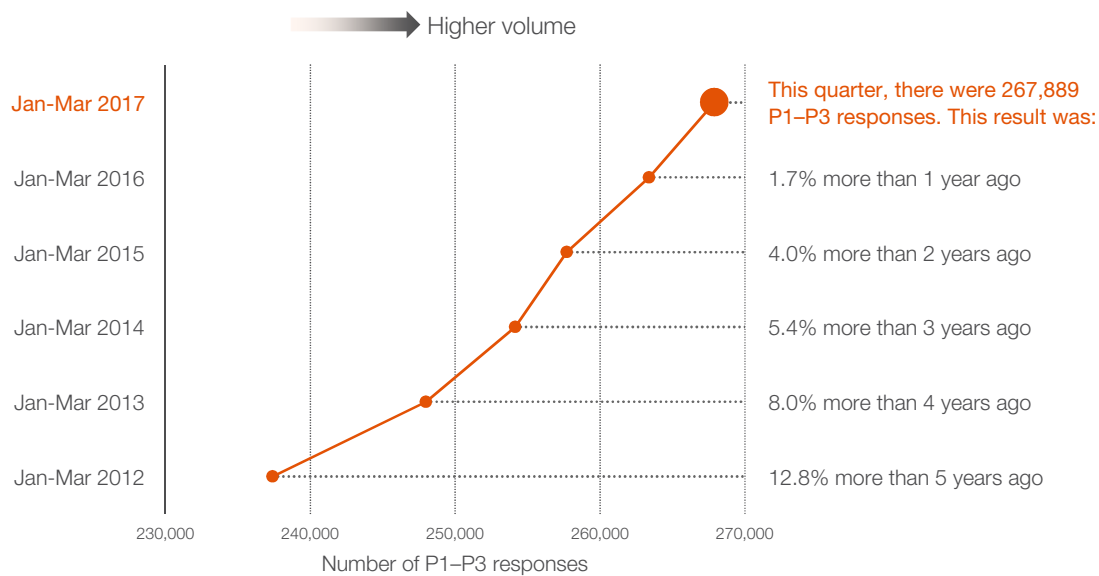
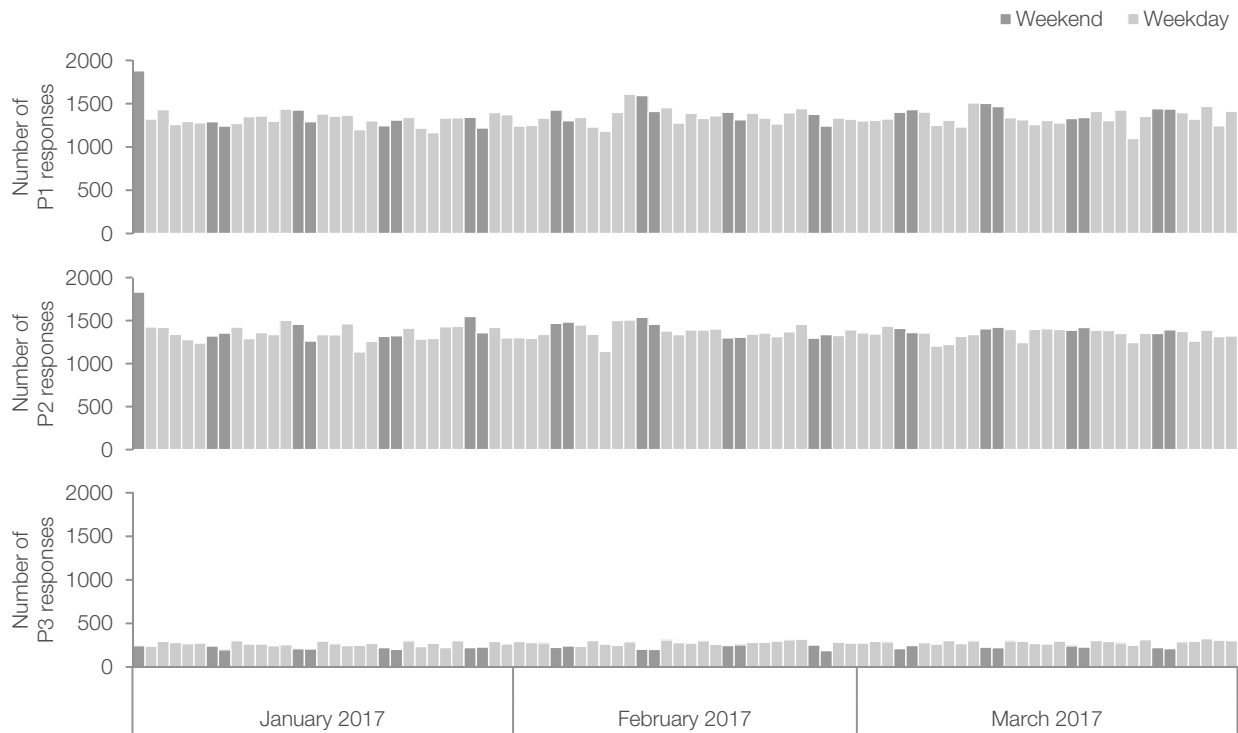


Figure 15 Daily number of priority category 1, 2 and 3 responses, January to March 2017



Call to ambulance arrival time

Call to ambulance arrival time covers the period from when a triple zero call is first answered in the ambulance control centre (phone pick-up), to the time the first ambulance arrives at the scene. This quarter, most priority category 1 call to ambulance arrival times were within 30 minutes (94.7%). A similar proportion of priority category 2 responses had a call to ambulance arrival time within 60 minutes (95.0%) (Figure 16).

The percentage of call to ambulance arrival times within 30 minutes for priority 1 and within 60 minutes for priority 2 were almost unchanged this quarter compared to the same quarter one year ago (Figure 16). Compared with the same quarter in 2012, the percentage of priority 1 call to ambulance arrival times within 30 minutes has decreased by 0.7 percentage points (Figure 17).

Among local response areas (LRAs), about three quarters (116 out of 153 or 75.8%) met a 90% threshold for the percentage of priority 1 call to ambulance arrival time within 30 minutes. This is a slightly higher proportion than in the same quarter last year (113 out of 153, or 73.8%).

For priority 2, all 153 LRAs met the 90% threshold for the percentage of call to ambulance arrival time within 60 minutes [data not shown].

Figure 16 Call to ambulance arrival time, by priority category, January to March 2017





Priority category		This quarter	Same quarter last year	Change since one year ago
P1 responses	89,939			
Within 15 minutes		63.2%	64.5%	-1.3 percentage points
Within 30 minutes		94.7%	94.6%	0.1 percentage points
Local response areas meeting 90% threshold (arrival within 30 minutes)		116 (of 153)	113 (of 153)	
P2 responses	94,681			
Within 30 minutes		75.6%	76.7%	-1.1 percentage points
Within 60 minutes		95.0%	95.2%	-0.2 percentage points
Local response areas meeting 90% threshold (arrival within 60 minutes)		153 (of 153)	150 (of 153)	

Figure 17 Percentage of priority category 1 responses with call to ambulance arrival time within 30 minutes, January to March quarters, 2012 to 2017

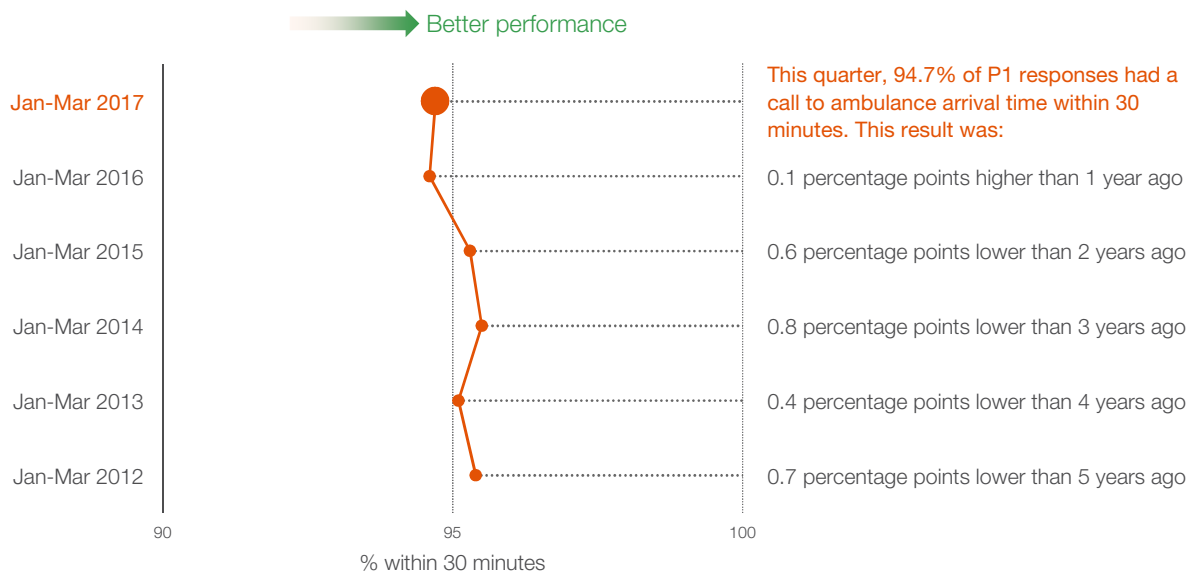
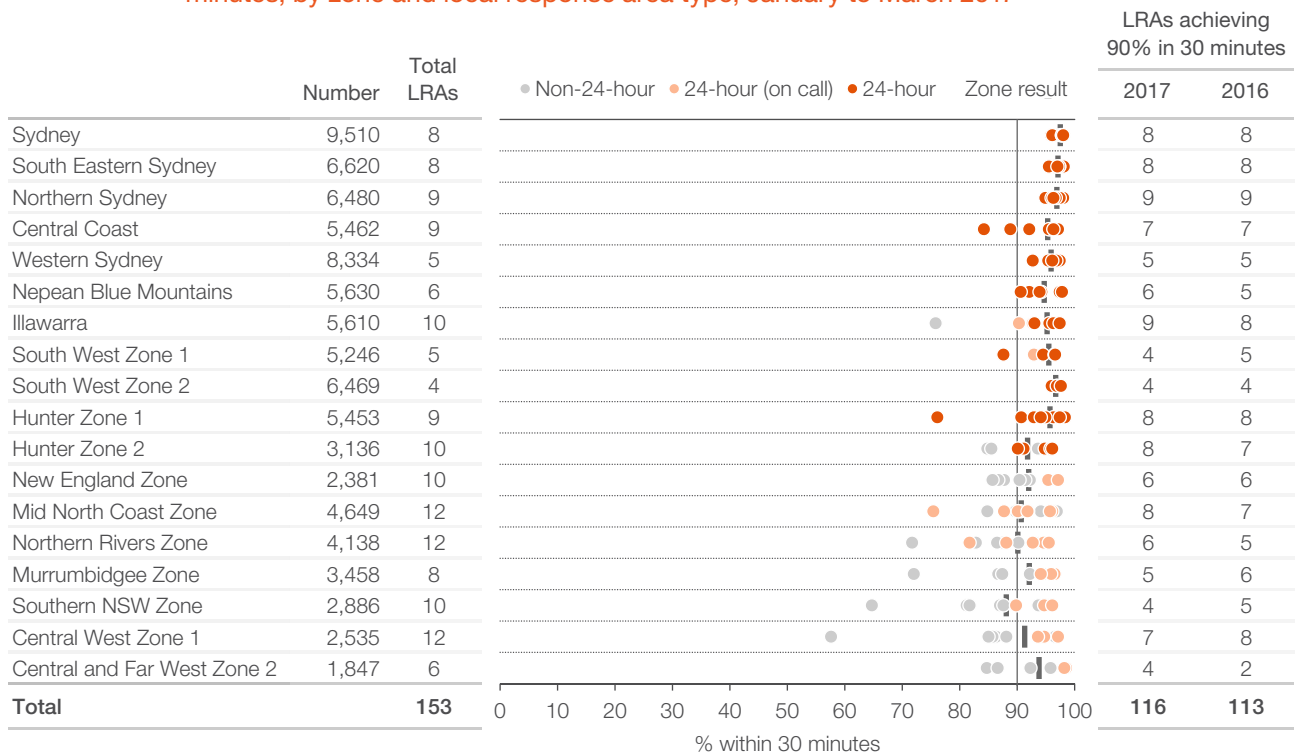


Figure 18 Percentage of priority category 1 responses with a call to ambulance arrival time within 30 minutes, by zone and local response area type, January to March 2017



Ambulance response time

In NSW, ambulance response time refers to the period from the placement of a triple zero call 'in queue' for ambulance dispatch, until the first vehicle arrives at the scene.

In the January to March 2017 quarter, the median response time was 7.5 minutes for priority 1A responses, 11.1 minutes for priority 1 responses, and 17.3 minutes for priority 2 responses (Figure 19).

In NSW, the target for the median priority 1A response time is 10 minutes. This quarter, 71.9% of priority 1A response times were within this timeframe; an increase of 0.4 percentage points compared with the same quarter last year. There were three days in the quarter when the median response time exceeded 10 minutes, compared to 1 day in the same quarter, last year [data not shown].

Over the past five years, median priority 1 response times have remained relatively steady (Figure 19 and 20) but the median priority 2 response time has decreased. Part of this decrease reflects reclassification of priority categories (priority 1 to priority 2) in 2013, 2015 and 2016.

Figure 21 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 19 Ambulance response time (minutes), by priority category, January to March 2017

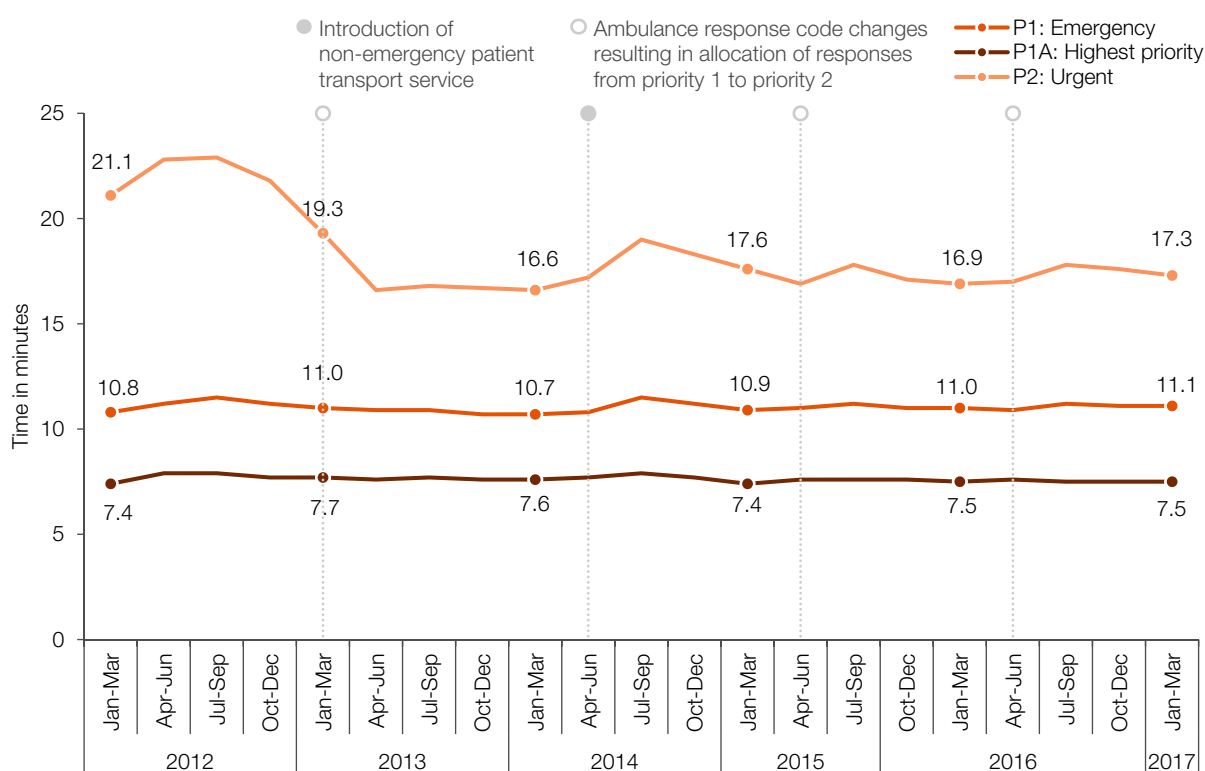


Figure 20 Median priority category 1 response time, January to March quarters, 2012 to 2017

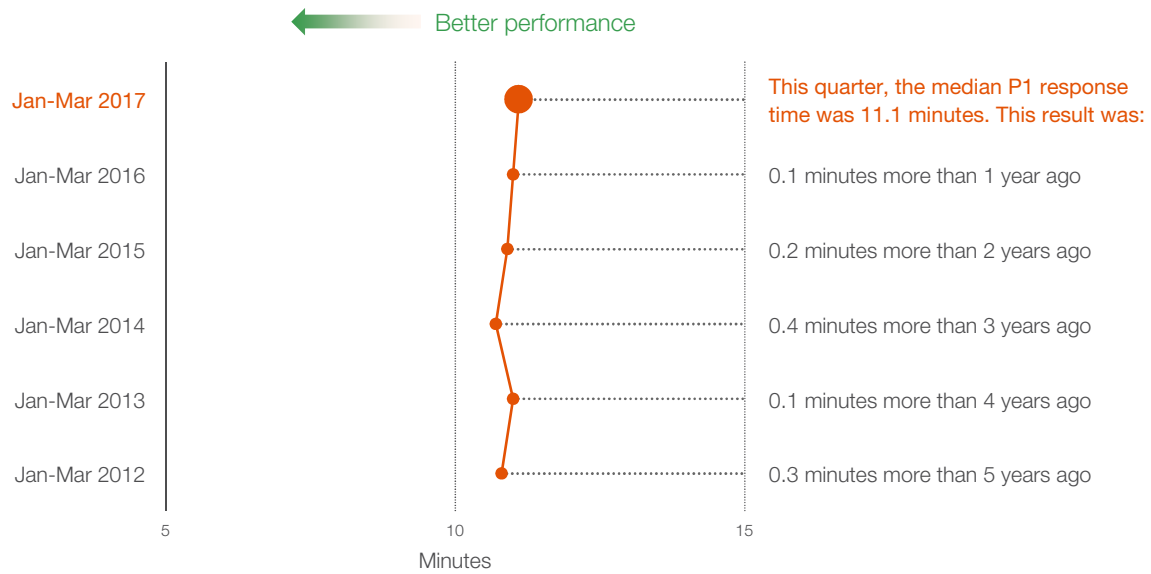
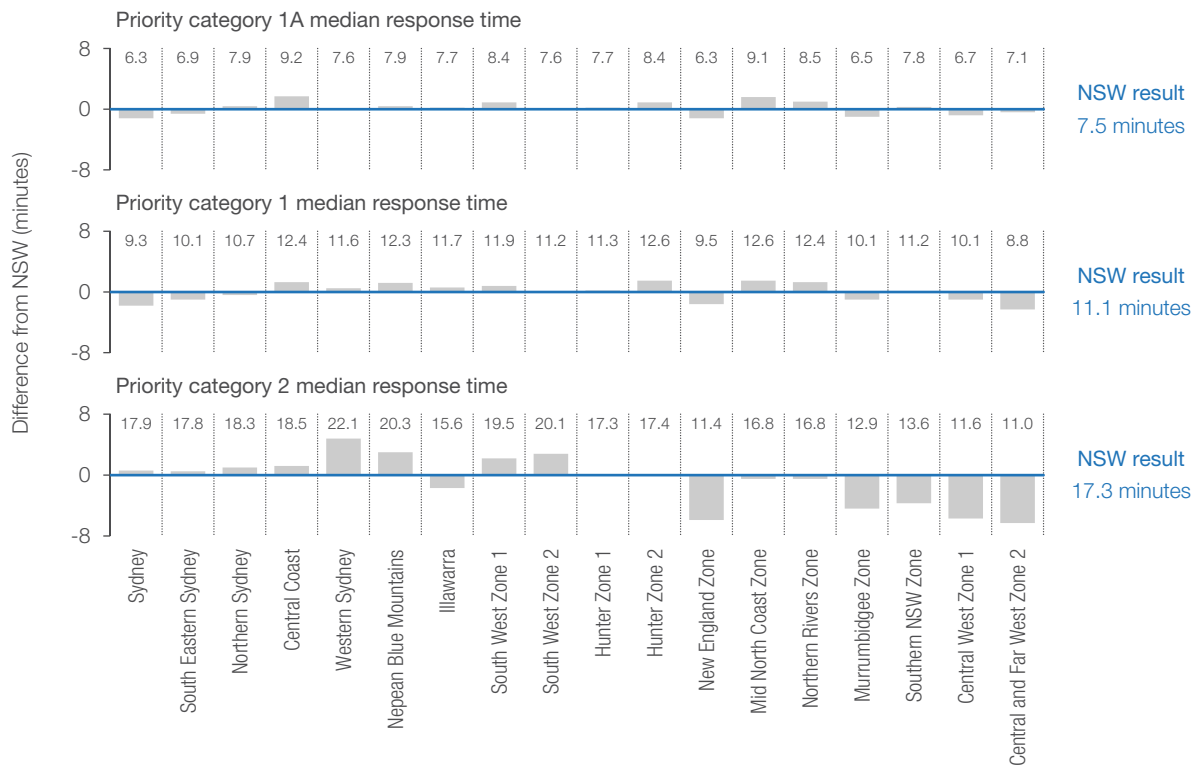


Figure 21 Median ambulance response time, by priority category, January 2012 to March 2017



Admitted patients

In the January to March 2017 quarter, there were 477,983 admitted patient episodes (up 18,489; 4.0%) and 1.6 million bed days (up 252,589; 15.8%) compared with the same quarter last year. The majority of admitted patient episodes (95.7%) and bed days (75.6%) were for acute care (Figure 22).

Bed days are calculated for all admitted patient episodes completed during the reference period. Total 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.

The 1,401,693 acute bed days in the January to March 2017 quarter, represent a 4.5% increase over the number of bed days in the same quarter in 2016 and a 4.7% increase in the January to March quarter in 2012 (Figure 23).

The average length of stay for all acute episodes was 3.1 days this quarter and 4.9 days for all acute overnight episodes (both up 0.1 days compared with the same quarter last year). The average length of stay for all acute episodes has remained relatively stable for January to March quarters over the past five years.

There were hospital-level differences in the average length of stay for acute overnight episodes between and within hospital peer groups. Greatest variation was among principal referral hospitals (peer group A) where there was an 8.2 day difference between the highest and lowest average length of stay, and least variation was among major hospitals (peer group B) with a 2.2 day difference (Figure 24).

Length of stay measures are not adjusted for differences in case mix and variation across hospitals should be interpreted with care.

Hospitals with >10% change in admitted patient episodes, compared with same quarter last year

Hospital	Peer group	Admitted patient episodes	Change
Kurri Kurri	C2	734	27.7%
South East Regional*	C1	3,160	22.5%
Narrabri	C2	390	-13.9%
Gunnedah	C2	375	-16.3%

Figure 22 Total number of admitted patient episodes and hospital bed days, by episode type, January to March 2017

		This quarter	Same quarter last year	Change since one year ago
Total admitted patient episodes		477,983	459,494	4.0%
Acute	95.7%	457,535	442,686	3.4%
Non-acute	4.3%	20,448	16,808	21.7%
Total bed days		1,853,263	1,600,674	15.8%
Acute	75.6%	1,401,693	1,341,723	4.5%
Non-acute	24.4%	451,570	258,951	74.4%

Note: The 74.4% increase in the number of bed days for non-acute care this quarter may reflect changes in the designation of mental health care stay types, creating an artefactual spike in results.
* Comparisons should be made with caution – South East Regional Hospital replaced Bega District Hospital, which provided different services.

Figure 23 Number of bed days for acute care, January to March quarters, 2012 to 2017

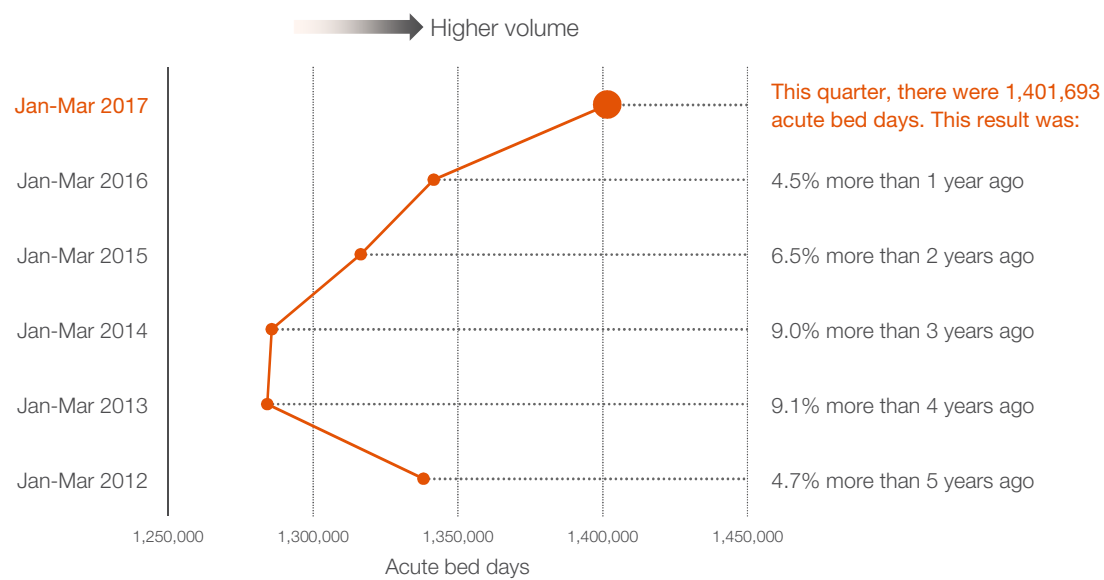
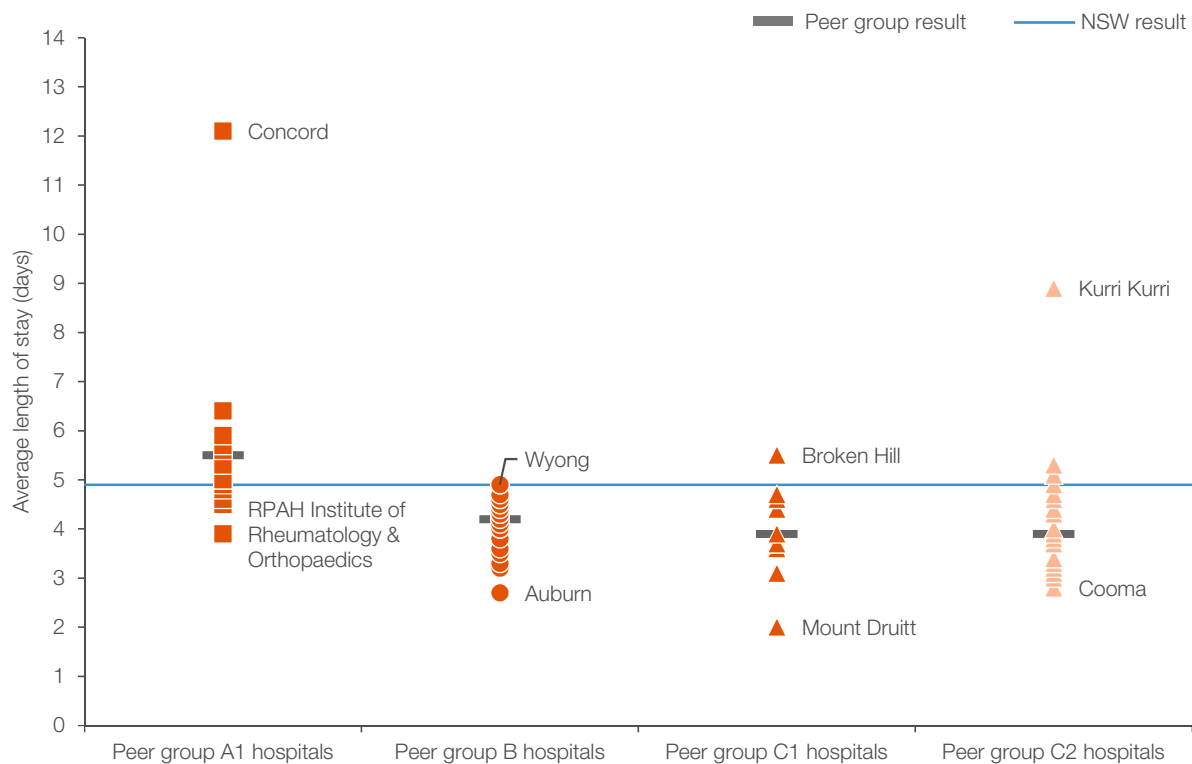


Figure 24 Average length of stay for acute overnight admitted patient episodes, by peer group, January to March 2017



Elective surgery

In the January to March 2017 quarter, a total of 51,830 elective surgical procedures were performed; 5.6% higher than the same quarter last year and 6.9% higher than in 2012 (Figures 25 and 26).

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. Just over half of all procedures performed this quarter were either urgent or semi-urgent.





There are clear seasonal fluctuations in the number of elective surgical procedures performed. For the January to March 2017 quarter there were increases across all urgency categories. The largest absolute increase was for non-urgent procedures (1,171 more; up 5.6%) (Figure 25).

The number of semi-urgent and non-urgent procedures has increased over the past five years while the number of urgent and staged procedures has decreased (Figure 27).

Hospitals with 10% change in elective surgery, compared with same quarter last year

Hospital	Peer group	Procedures	Percentage point change
Deniliquin	C2	59	55.3
Narrabri	C2	31	47.6
Goulburn	C1	397	42.8
Moruya	C2	172	34.4
Kempsey	C2	337	31.6
Shoalhaven	B	749	-13.2
Port Macquarie	B	875	-13.7
Singleton	C2	80	-14.9
Queanbeyan	C2	227	-18.1
Milton and Ulladulla	C2	12	-20.0

Figure 25 Elective surgical procedures performed, by urgency category, January to March 2017

		This quarter	Same quarter last year	Change since one year ago
Total number of elective surgical procedures		51,830	49,069	5.6%
Urgent	 20.5%	10,646	10,289	3.5%
Semi-urgent	 31.8%	16,492	15,415	7.0%
Non-urgent	 42.3%	21,915	20,744	5.6%
Staged*	 5.4%	2,777	2,621	6.0%

* 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).

Figure 26 Elective surgical procedures performed, January to March quarters, 2012 to 2017

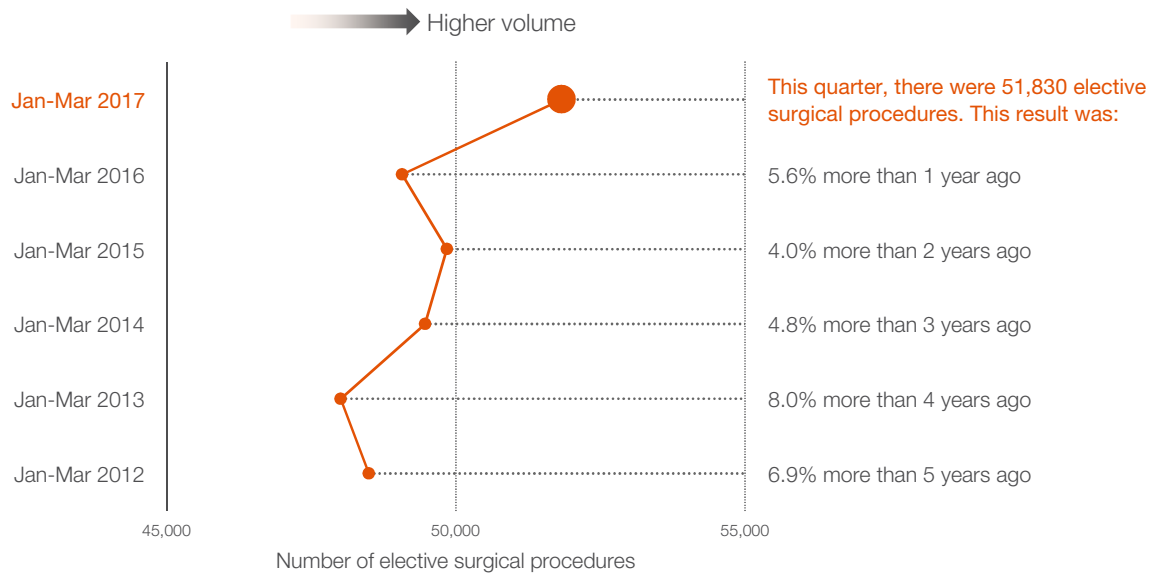
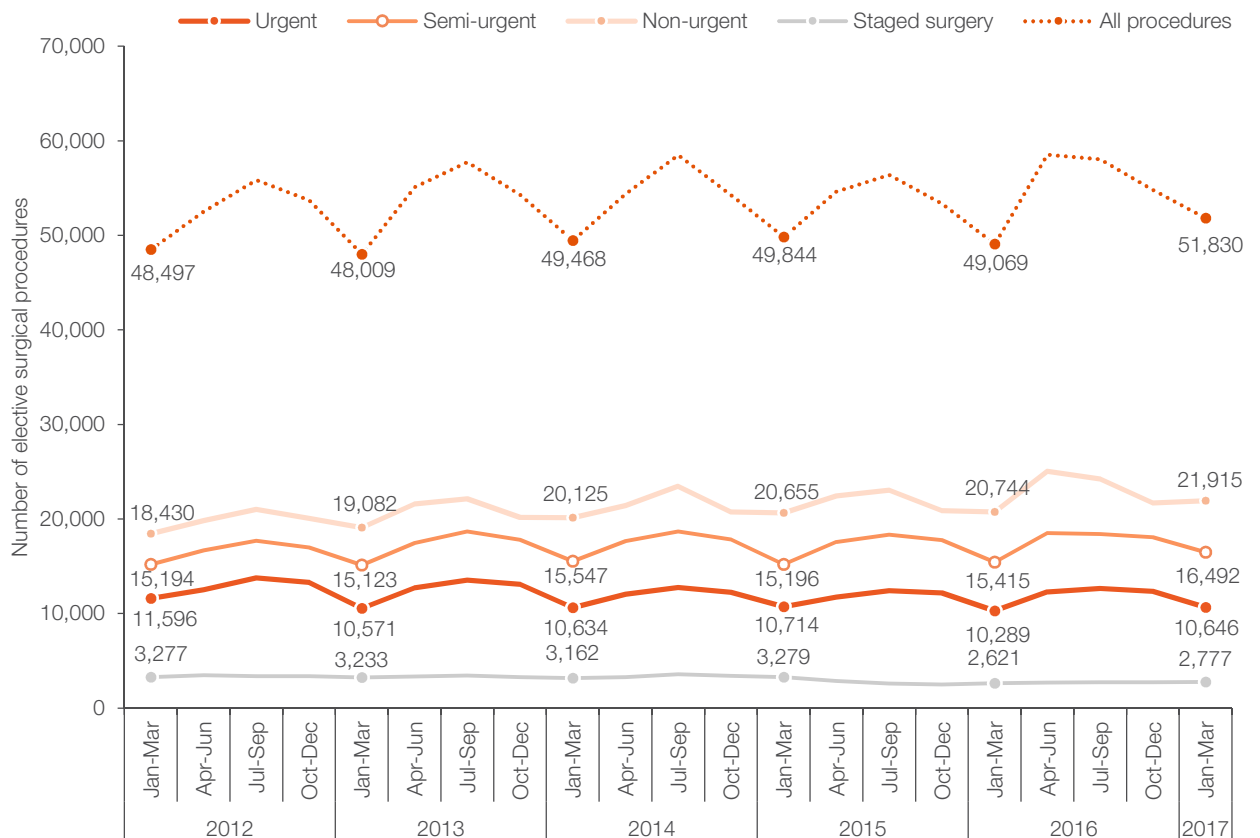


Figure 27 Elective surgical procedures performed, by urgency category, January to March 2017



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 timeframes.

Results for the January to March 2017 quarter show median waiting times were unchanged or lower compared with the same quarter last year for all urgency categories. The largest change was for non-urgent surgery (down eight days) (Figure 29).

The maximum times by which surgery should be performed are: 30 days for urgent, 90 days for semi-urgent, and 365 days for non-urgent procedures. Most procedures (97.1%) were performed within recommended timeframes this quarter (up 0.1 percentage points compared with the same quarter last year) (Figure 29).





The percentage of elective surgical procedures performed on time in the January to March quarter was 6.5 percentage points higher in 2017 than in 2012 (Figure 30).

Median waiting times decreased slightly between 2012 and 2017 for each urgency category (Figure 31).

Hospitals with >10 percentage point change in procedures on time, compared with same quarter last year

Hospital	Peer group	% on time	Percentage point change
The Children's Hospital at Westmead	A3	95.6	10.6

Figure 29 Percentage of elective surgical procedures performed on time and waiting times, by urgency category, January to March 2017

		This quarter	Same quarter last year	Percentage point change since one year ago
All procedures		97.1%	97.0%	0.1
Urgent		99.7%	99.7%	unchanged
Semi-urgent		96.5%	96.6%	-0.1
Non-urgent		96.3%	96.0%	0.3







		This quarter	Same quarter last year	Change since one year ago
Urgent: 10,646 patients				
Median time to receive surgery		10 days	10 days	0 days
90th percentile time to receive surgery		26 days	26 days	0 days
Semi-urgent: 16,492 patients				
Median time to receive surgery		46 days	47 days	-1 day
90th percentile time to receive surgery		84 days	84 days	0 days
Non-urgent: 21,915 patients				
Median time to receive surgery		221 days	229 days	-8 days
90th percentile time to receive surgery		356 days	356 days	0 days

Figure 30 Percentage of elective surgical procedures performed on time, January to March quarters, 2012 to 2017

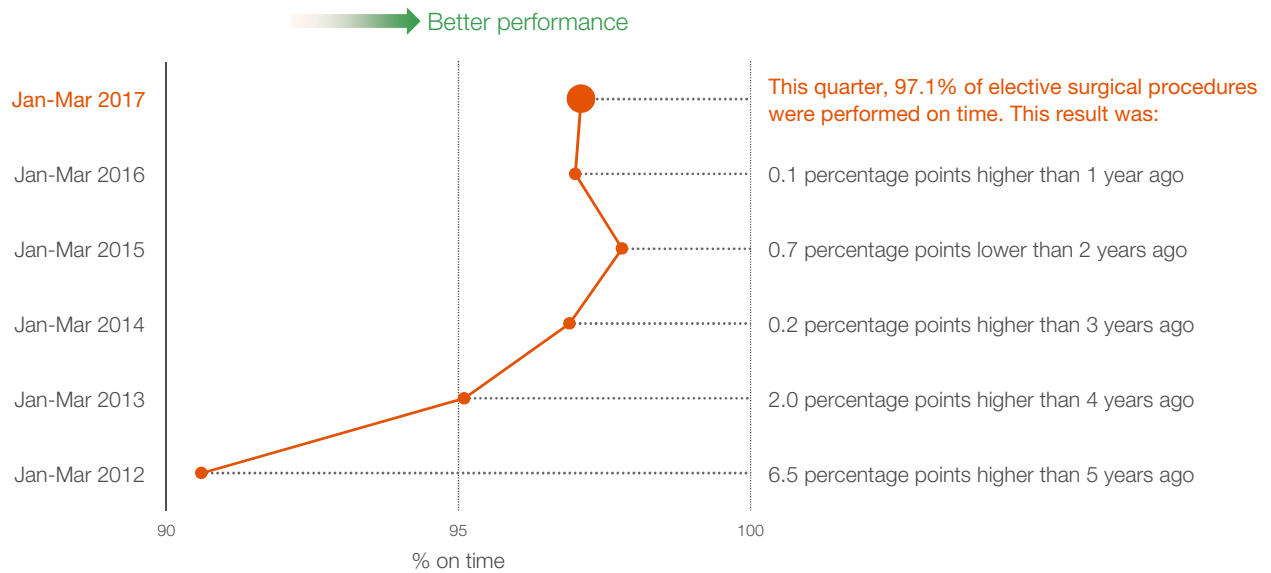
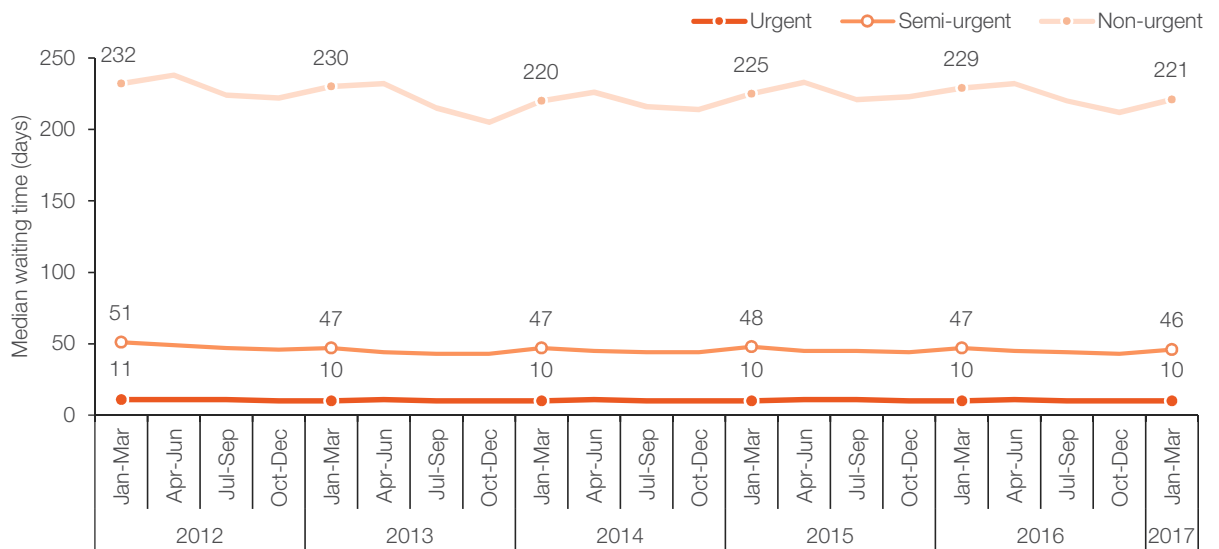


Figure 31 Median waiting times for elective surgery, by urgency category, January to March 2017



Acknowledgements

The Bureau of Health Information (BHI) is the main source of information for the people of NSW about the performance of their public healthcare system. A NSW board-governed organisation, BHI is led by Chairperson Professor Carol Pollock and Acting Chief Executive Dr Kim Sutherland.

External Advisors and Reviewers

NSW Ambulance

Queensland Ambulance Service

Ambulance Victoria

Health Quality and Safety Commission New Zealand

We would also like to acknowledge the contribution of Dr Jean-Frederic Levesque for his leadership and guidance at BHI during the development of this report. We would like to thank our expert advisors, colleagues at the Ministry of Health and NSW Ambulance, reviewers and staff who contributed to the report.

Bureau of Health Information Project Team

Analytics

Renee Carter

Carolynn Fredericks

Jill Kaldor

Behnoosh Khalaj

Research

Lilian Daly

Design

Ed Bury

Adam Myatt

Efren Sampaga

Mark Williams

Communications and Stakeholder Engagement

Rohan Lindeman

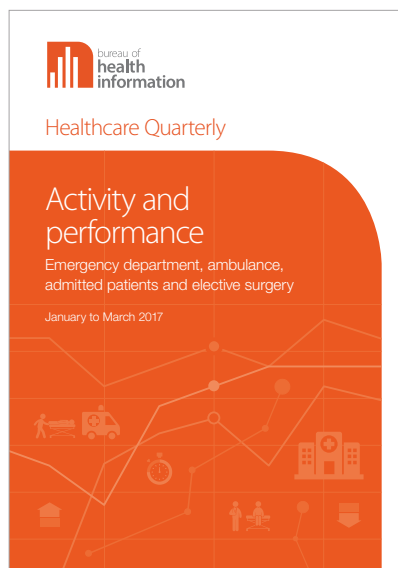
Karen Perini

Stephanie Watson

Healthcare Quarterly

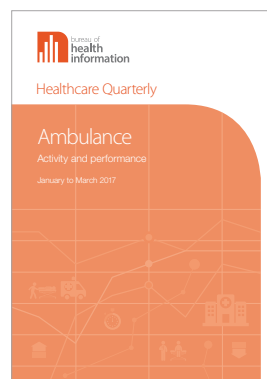
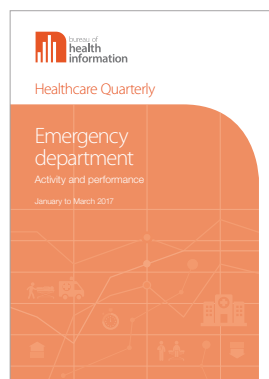
Healthcare Quarterly is a series of regular reports that describes the number and types of services provided to the people of NSW and the timeliness with which they are provided.

The reports feature key indicators of activity and performance across ambulance and public hospital services in NSW.

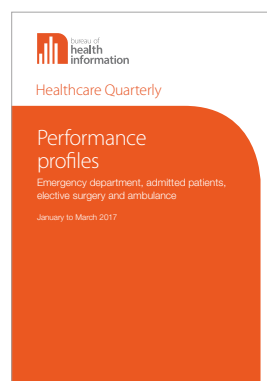
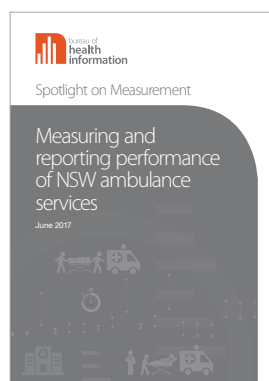


Every day around 25,000 people receive care in the NSW public hospital system and around 1,800 are transported to hospital by ambulance.

Healthcare Quarterly is published alongside three standalone modules that provide more detailed information about emergency department care, admitted patients and elective surgery, and ambulance services.



Additional information on local performance is available in our hospital profiles or from BHI's interactive portal Healthcare Observer, at bhi.nsw.gov.au/healthcare_observer



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

Additional information on local performance is available from BHI's interactive portal Healthcare Observer, at bhi.nsw.gov.au/healthcare_observer

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.

bhi.nsw.gov.au