

## Healthcare Quarterly

# Emergency department

Activity and performance

January to March 2018



## BUREAU OF HEALTH INFORMATION

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*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Changes in data coverage and analytic methods from quarter to quarter mean that figures published in this document are superseded by subsequent reports.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 interactive data portal, Healthcare Observer, at **bhi.nsw.gov.au/healthcare\_observer**

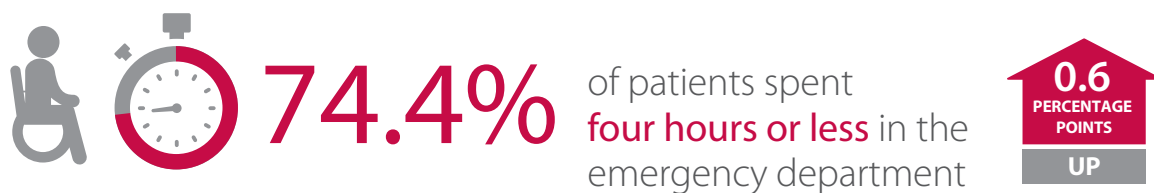
The conclusions in this report are those of BHI and no official endorsement by the NSW Minister for Health, the NSW Ministry of Health or any other NSW public health organisation is intended or should be inferred.

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In the January to March 2018 quarter...

## Emergency department



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

Emergency department activity			January to March 2018	January to March 2017	Difference	% change
All arrivals at NSW EDs by ambulance			154,876	149,729	5,147	3.4%
All ED presentations			714,101	703,060	11,041	1.6%
Emergency presentations			688,837	676,380	12,457	1.8%
Emergency presentations by triage category						
Triage category	T1: Resuscitation		4,609	4,326	283	6.5%
	T2: Emergency		87,346	81,676	5,670	6.9%
	T3: Urgent		235,072	227,339	7,733	3.4%
	T4: Semi-urgent		287,988	286,698	1,290	<1%
	T5: Non-urgent		73,822	76,341	-2,519	-3.3%
Admissions to hospital from NSW EDs			181,999	177,911	4,088	2.3%

Emergency department performance			January to March 2018	January to March 2017	Difference	
Percentage of patients transferred from ambulance to ED within 30 minutes			92.1%	91.5%	+0.6 percentage points	
Time to treatment by triage category	T2: Emergency	Median	8 mins	8 mins	unchanged	
		90th percentile	23 mins	26 mins	-3 mins	
	T3: Urgent	Median	20 mins	20 mins	unchanged	
		90th percentile	65 mins	68 mins	-3 mins	
	T4: Semi-urgent	Median	25 mins	25 mins	unchanged	
		90th percentile	98 mins	100 mins	-2 mins	
	T5: Non-urgent	Median	22 mins	21 mins	1 mins	
		90th percentile	97 mins	101 mins	-4 mins	
	Percentage of patients whose treatment started on time	All patients		76.2%	75.7%	+0.5 percentage points
		T2: Emergency (Recommended: 80% in 10 minutes)		68.5%	66.3%	+2.2 percentage points
T3: Urgent (Recommended: 75% in 30 minutes)		71.2%	70.6%	+0.6 percentage points		
T4: Semi-urgent (Recommended: 70% in 60 minutes)		78.7%	78.4%	+0.3 percentage points		
T5: Non-urgent (Recommended: 70% in 120 minutes)		93.8%	93.4%	+0.4 percentage points		
Median time spent in the ED			2h 42m	2h 40m	2 mins	
90th percentile time spent in the ED			6h 49m	7h 1m	-12 mins	
Percentage of patients who spent four hours or less in the ED			74.4%	73.8%	+ 0.6 percentage points	

Note: Data drawn from the Emergency Department Data Collection on 17 April 2018.

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.



# Emergency department activity and performance

# Emergency department presentations

During the January to March 2018 quarter, there were 714,101 visits to NSW public hospital emergency departments (ED), up 1.6% compared with the same quarter last year. Of these attendances, most were classified as 'emergency' presentations (688,837 patients, 96.5%) (Figure 1). The remaining 25,264 patients presented to ED for non-emergency reasons such as a planned return visit. The number of ambulance arrivals increased by 5,147 to 154,876, up 3.4% over the same quarter last year (Figure 1).






With the exception of triage category 5, the number of emergency presentations was higher in the January to March 2018 quarter. Notably, triage categories 2 and 3 were up by 5,670 (6.9%) and 7,733 (3.4%) presentations, respectively (Figure 1).

The number of emergency presentations by triage category showed rising trends over a five-year period. Part of this is due to drivers such as population growth and by the addition of hospitals to *Healthcare Quarterly* as their data become available. The bar graph at the bottom of Figure 2 shows how the number of hospitals included in the report has increased over time. Further information on hospital inclusions is available in the Technical supplement.

Compared with the same quarter last year, the number of total attendances was higher in 51 out of 78 EDs. Of these, four had an increase of more than 10%. Total attendances were down by more than 5% in nine EDs.

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

Figure 1 Emergency department presentations and ambulance arrivals, January to March 2018

	This quarter	Same quarter last year	Change since one year ago
All ED presentations	714,101	703,060	1.6%
Emergency presentations by triage category	688,837	676,380	1.8%
Triage 1: Resuscitation  0.7%	4,609	4,326	6.5%
Triage 2: Emergency  12.7%	87,346	81,676	6.9%
Triage 3: Urgent  34.1%	235,072	227,339	3.4%
Triage 4: Semi-urgent  41.8%	287,988	286,698	0.4%
Triage 5: Non-urgent  10.7%	73,822	76,341	-3.3%
Ambulance arrivals	154,876	149,729	3.4%

Note: In the January to March 2018 quarter, 44 small district hospitals were included in *Healthcare Quarterly* after being recently added to the Emergency Department Data Collection. These EDs contributed 19,562 attendances to the NSW total. Further information on inclusions and the implications for trend analyses is available in the Technical supplement.



Figure 2

## Emergency presentations by triage category, January 2013 to March 2018

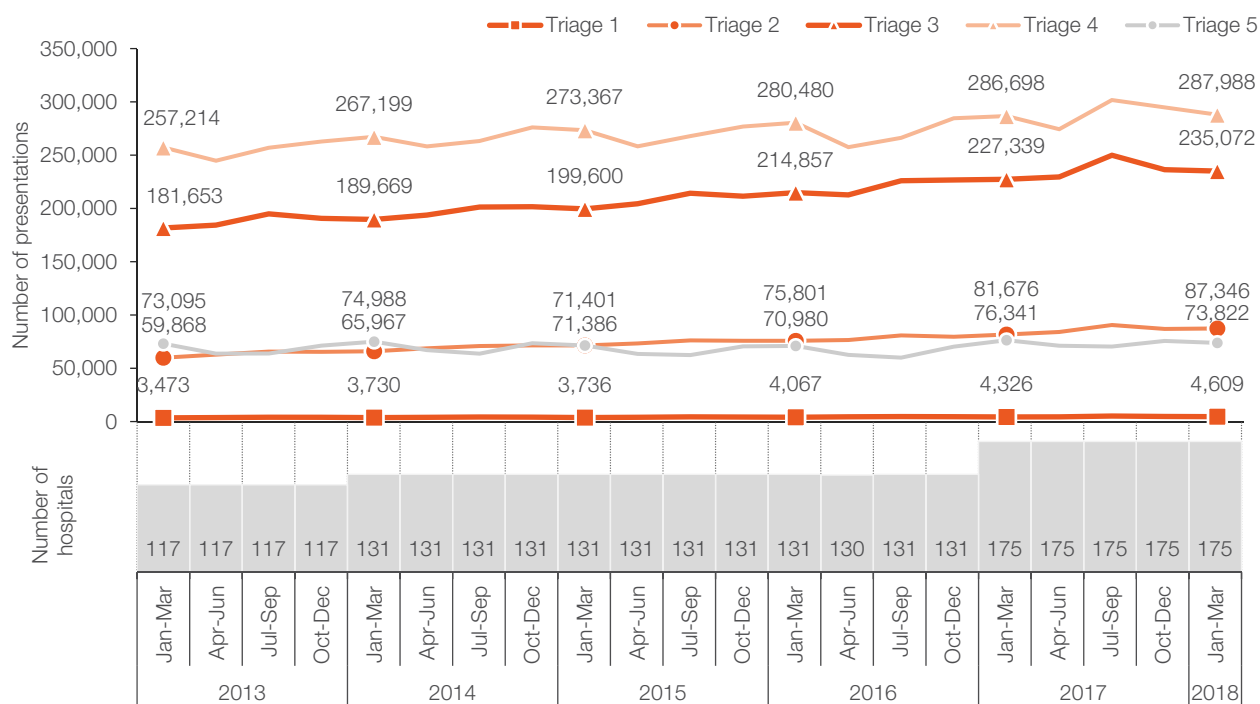
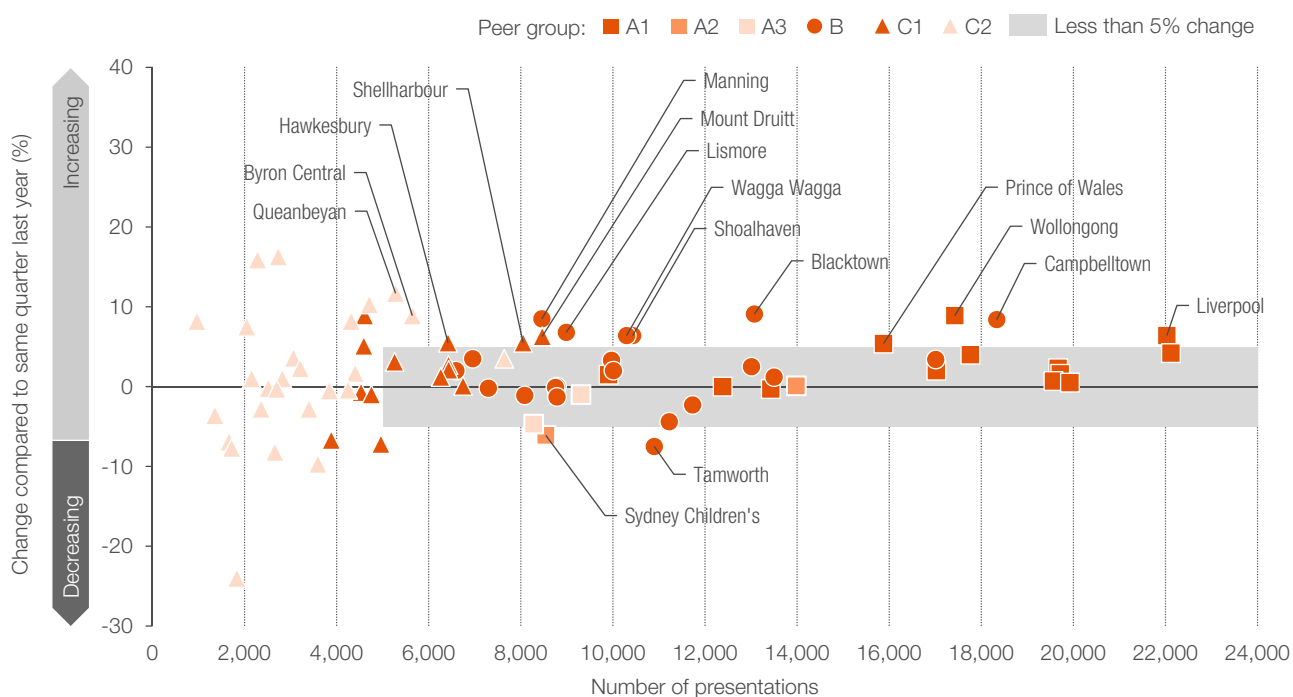


Figure 3

## Change in number of all emergency department presentations compared with the same quarter last year, hospitals by peer group, January to March 2018



# Time to treatment









Upon arrival at the ED, patients are allocated to one of five triage categories, based on urgency. For each category, the Australasian College for Emergency Medicine recommends a threshold waiting time within which treatment should start:

- Triage 1: Resuscitation (within two minutes)
- Triage 2: Emergency (80% within 10 minutes)
- Triage 3: Urgent (75% within 30 minutes)
- Triage 4: Semi-urgent (70% within 60 minutes)
- Triage 5: Non-urgent (70% within 120 minutes).

In the January to March 2018 quarter, the median time from arriving at the ED to starting treatment was unchanged in triage categories 2, 3 and 4. The 90th percentile times dropped by two to four minutes across all triage categories (Figure 4).

Trends by triage category showed shorter or unchanged median and 90th percentile times to treatment. The bar graphs at the bottom of Figures 5 and 6 contextualise some of these trends by showing how the number of hospitals included in the report has increased over time. Further information on hospital inclusions is available in the Technical supplement.

Figure 4 Time from presentation to starting treatment, by triage category, January to March 2018

		This quarter	Same quarter last year	Change since one year ago
Triage 2 Emergency (e.g. chest pain, severe burns): 86,277 patients				
Median time to start treatment		8m	8m	unchanged
90th percentile time to start treatment		23m	26m	-3m
Triage 3 Urgent (e.g. moderate blood loss, dehydration): 229,499 patients				
Median time to start treatment		20m	20m	unchanged
90th percentile time to start treatment		1h 5m	1h 8m	-3m
Triage 4 Semi-urgent (e.g. sprained ankle, earache): 267,882 patients				
Median time to start treatment		25m	25m	unchanged
90th percentile time to start treatment		1h 38m	1h 40m	-2m
Triage 5 Non-urgent (e.g. small cuts or abrasions): 63,766 patients				
Median time to start treatment		22m	21m	1m
90th percentile time to start treatment		1h 37m	1h 41m	-4m

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.

Figure 5

Median time from presentation to starting treatment, by triage category,  
January 2013 to March 2018

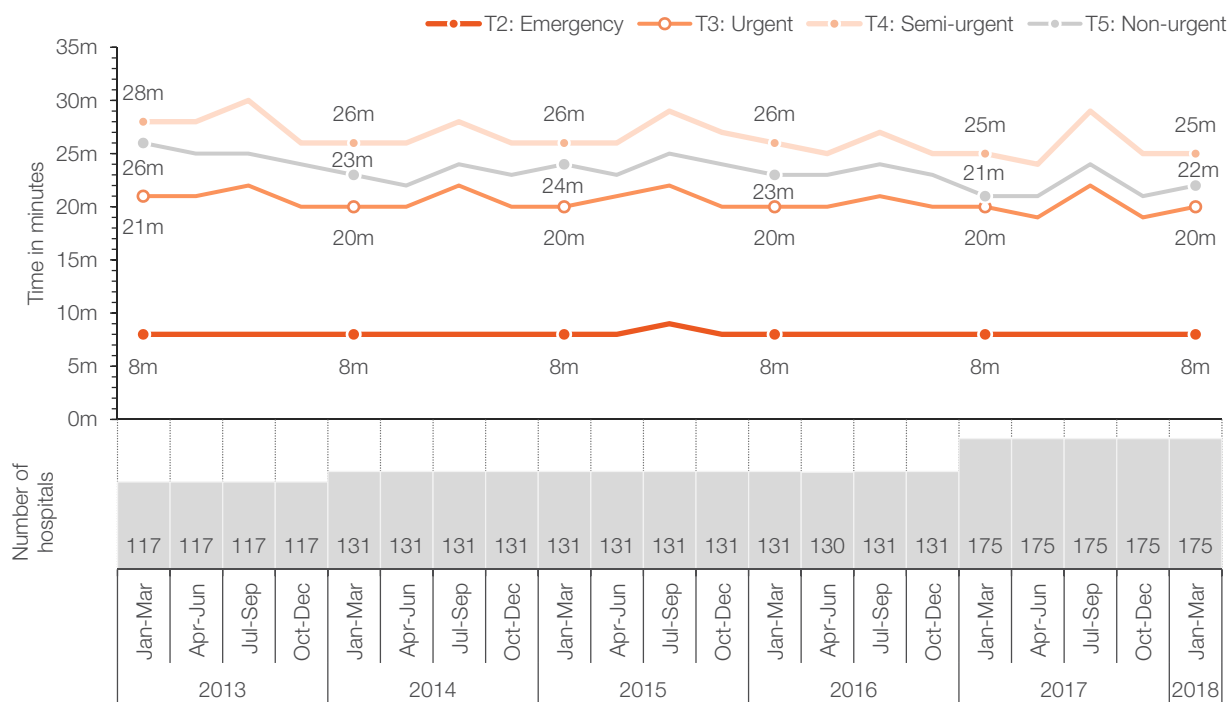
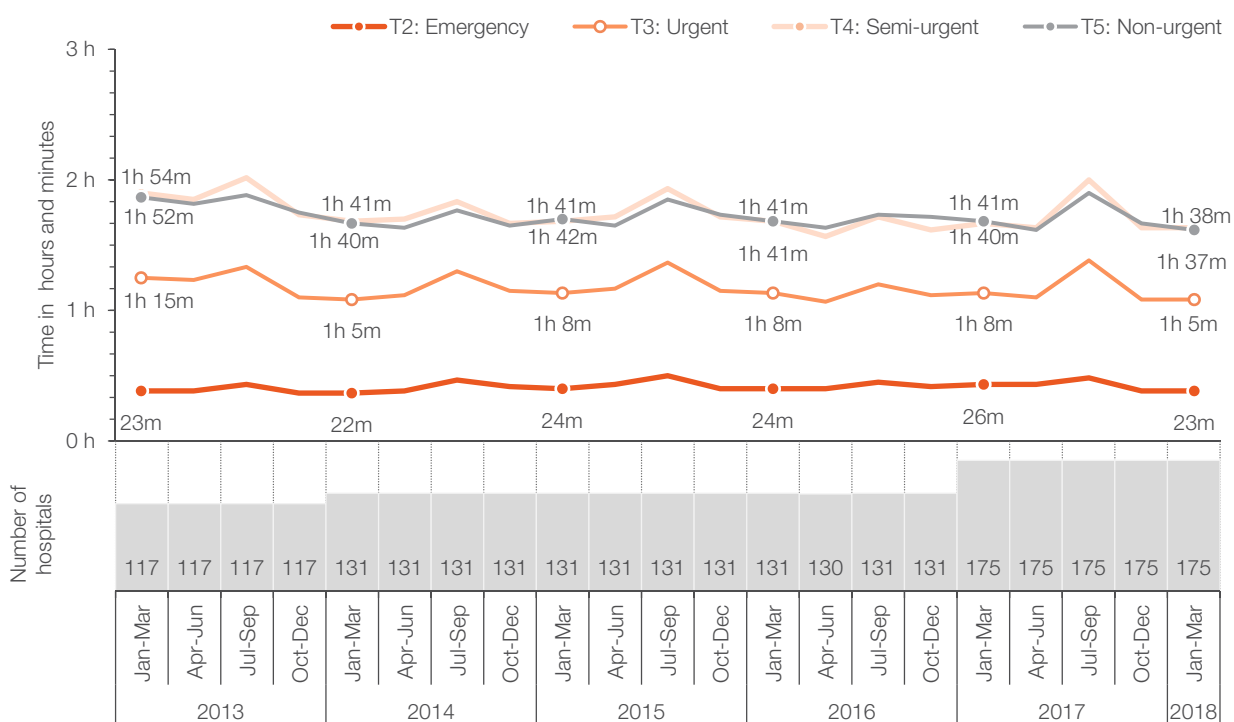


Figure 6

90th percentile time from presentation to starting treatment, by triage category,  
January 2013 to March 2018



# Percentage of patients whose treatment started on time

In the January to March 2018 quarter, 76.2% of ED patients' treatment started within clinically recommended timeframes, 0.5 percentage points higher than the same quarter last year (Figure 7).

Higher percentages of patients starting treatment within recommended timeframes were recorded across all triage categories. Triage category 2 was up 2.2 percentage points to 68.5% (Figure 7).

Trends by triage category showed seasonality and variability in the percentage of patients starting treatment on time. The bar graphs at the bottom of Figure 8 contextualise some of these trends by showing how the number of hospitals included in the report has increased over time. Further information on hospital inclusions is available in the Technical supplement.

Figure 9 shows hospital results for this quarter on two axes: the percentage of patients whose treatment started on time (Y-axis), and the percentage point change since the same quarter last year (X-axis). For hospitals shown above the blue NSW line, a higher percentage of patients started treatment on time compared with the overall NSW result. For hospitals below this line, a lower

percentage of patients' treatment started on time compared with the overall NSW result. Hospitals shown to the left of the vertical '0' line had lower results compared with the same quarter last year, while those shown to the right of the vertical line had higher results.

Hospitals labelled in Figure 9 are those that had more than a five percentage point change compared with the same quarter last year.

The percentage of patients whose treatment started on time was higher this quarter for 40 out of 78 hospitals. Eleven hospitals were up by more than five percentage points and 11 hospitals were down by more than five percentage points (Figure 9).

Due to differences in data definitions, *Healthcare Quarterly* results for the percentage of patients whose treatment started on time are not directly comparable with figures reported by other jurisdictions. For more information refer to the Technical supplements section of the BHI website at [bhi.nsw.gov.au](http://bhi.nsw.gov.au).

Figure 7 Percentage of patients whose treatment started on time, by triage category, January to March 2018

	This quarter	Same quarter last year	Percentage point change since one year ago
All emergency presentations	76.2%	75.7%	0.5
Triage category 2	Recommended: 80% in 10 minutes 68.5%	66.3%	2.2
Triage category 3	Recommended: 75% in 30 minutes 71.2%	70.6%	0.6
Triage category 4	Recommended: 70% in 60 minutes 78.7%	78.4%	0.3
Triage category 5	Recommended: 70% in 120 minutes 93.8%	93.4%	0.4

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.

Figure 8

Percentage of patients whose treatment started on time, by triage category, January 2013 to March 2018

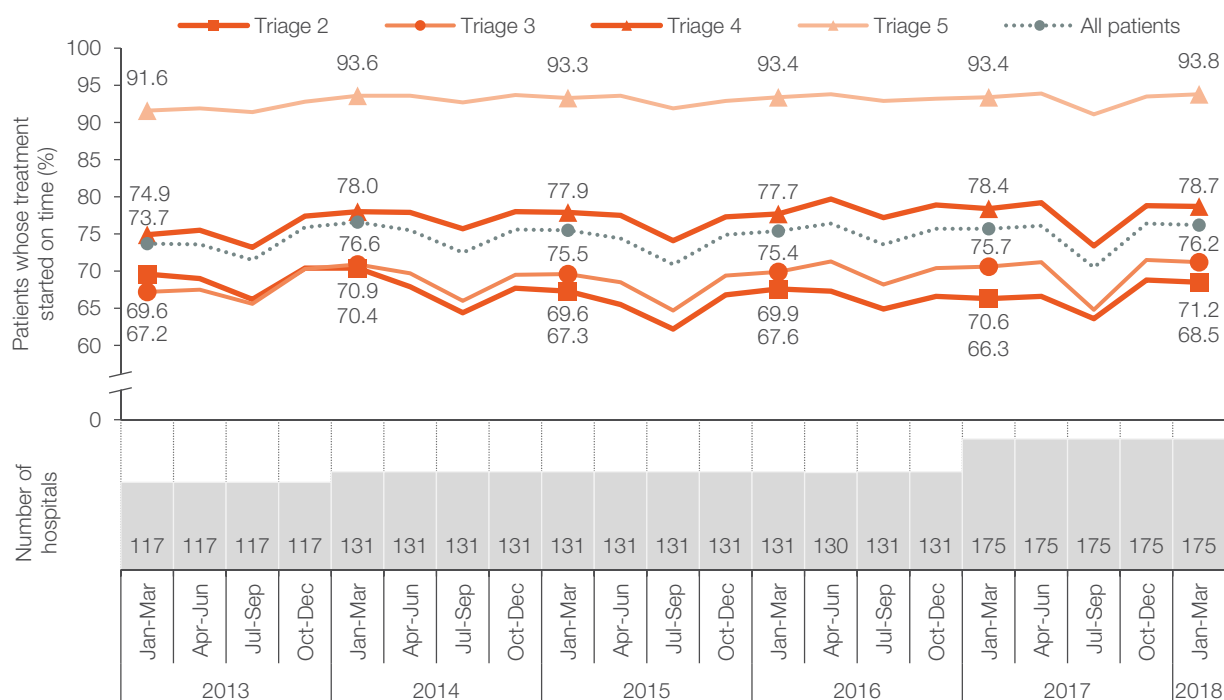
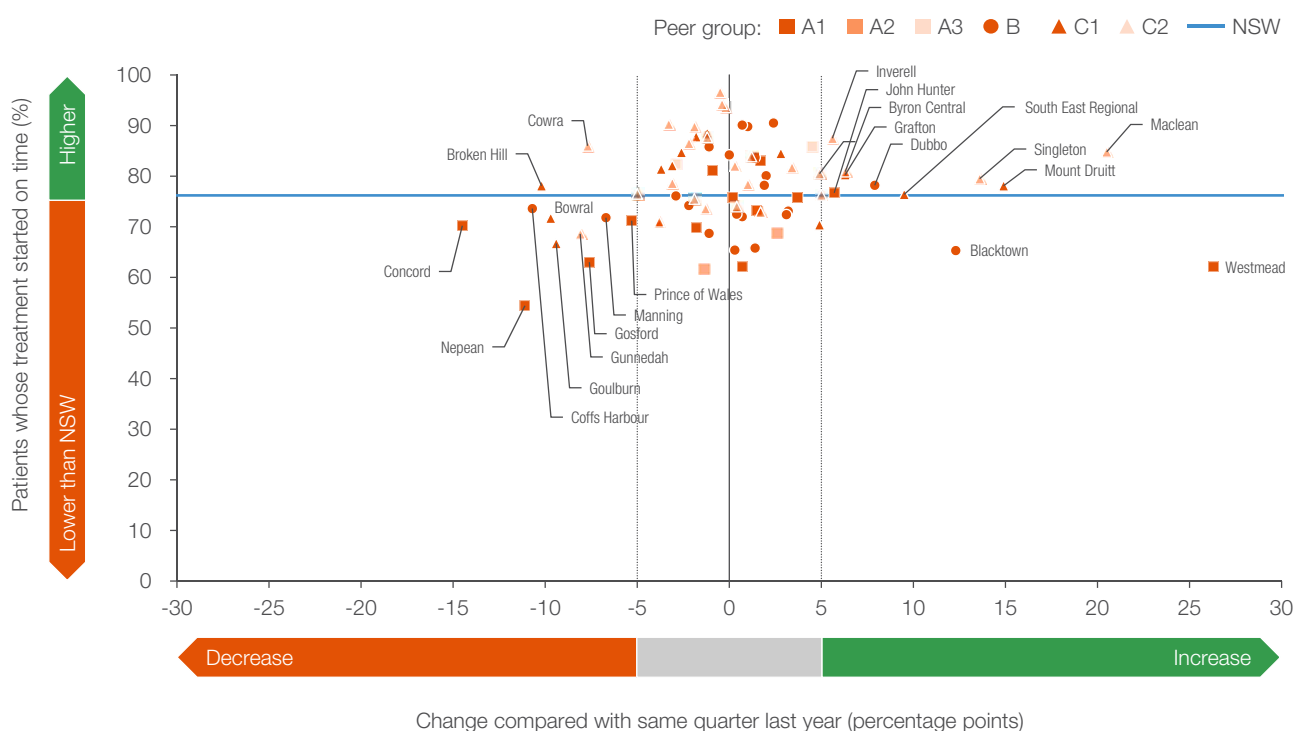


Figure 9

Percentage of patients whose treatment started on time, and percentage point change since same quarter last year, hospitals by peer group, January to March 2018



## After leaving 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'.

During the January to March 2018 quarter, 65.1% of patients were treated and discharged from the ED (465,207, up 1.6%) and 25.5% of patients were treated and admitted to hospital (181,999, up 2.3%). Compared with the same quarter last year, 687 fewer patients left the ED without, or before completing, treatment (37,841, down 1.8%) (Figure 10).

Around three-quarters of patients in triage category 1 and more than half of the patients in triage category 2 were admitted to hospital (75.7% and 51.8%, respectively) (Figure 11). In triage categories 3, 4 and 5, most patients were treated and discharged (Figure 12).

The number of emergency presentations by mode of separation showed general rising trends over a five-year period. Part of this is due to drivers such as population growth and by the addition of hospitals to *Healthcare Quarterly* as their data become available. The bar graph at the bottom of Figure 13 shows how the number of hospitals included in the report has increased over time. Further information on hospital inclusions is available in the Technical supplement.

Figure 10 Patients who presented to the emergency department, by mode of separation, January to March 2018






		This quarter	Same quarter last year	Change since one year ago
Treated and discharged	 65.1%	465,207	457,736	1.6%
Treated and admitted to hospital	 25.5%	181,999	177,911	2.3%
Left without, or before completing, treatment	 5.3%	37,841	38,528	-1.8%
Transferred to another hospital	 2.2%	15,494	15,271	1.5%
Other	 1.9%	13,560	13,614	-0.4%

Figure 11 Percentage of patients who were treated and admitted, by triage category, January to March 2018







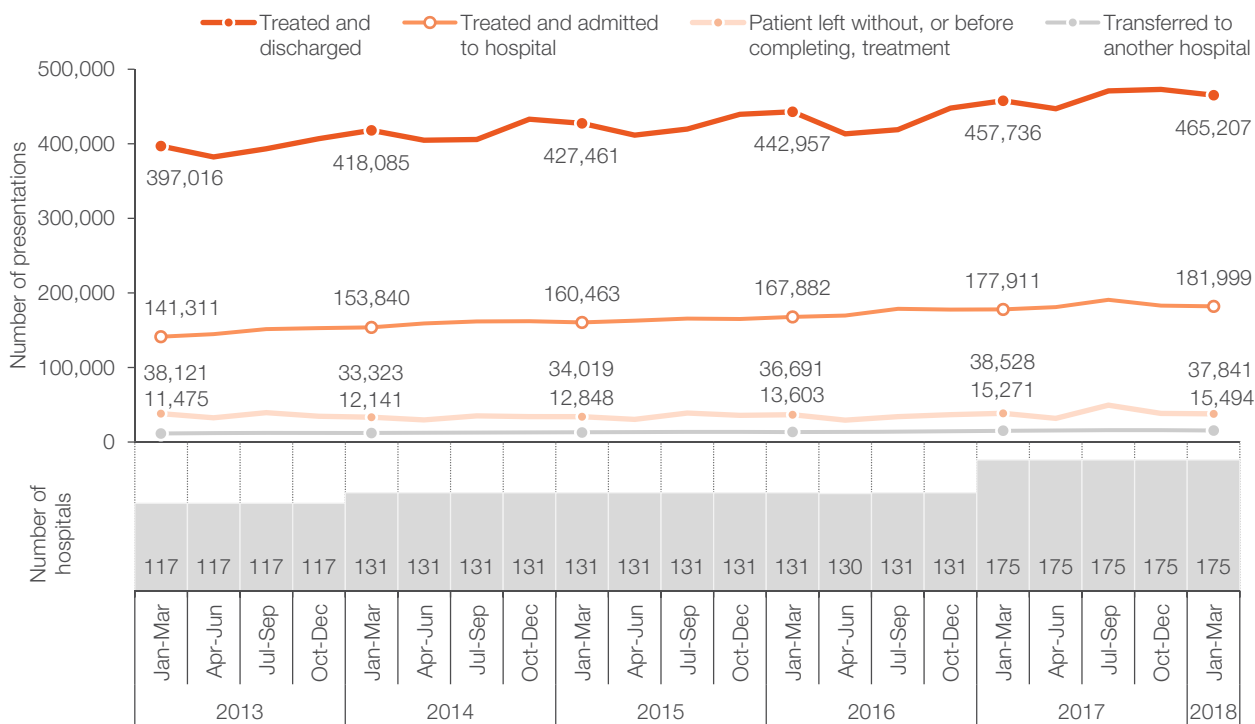
		This quarter	Same quarter last year	Percentage point change since one year ago
All ED presentations	 25.5%		25.3%	0.2
Triage 1	 75.7%		75.3%	0.4
Triage 2	 51.8%		52.7%	-0.9
Triage 3	 36.6%		36.8%	-0.2
Triage 4	 14.4%		14.6%	-0.2
Triage 5	 4.5%		4.6%	-0.1

Figure 12 Percentage of patients who were treated and discharged, by triage category, January to March 2018

	This quarter	Same quarter last year	Percentage point change since one year ago
All ED presentations	65.2%	65.2%	0.0
Triage 1	12.9%	13.3%	-0.4
Triage 2	40.0%	39.5%	0.5
Triage 3	56.0%	55.6%	0.4
Triage 4	75.6%	75.2%	0.4
Triage 5	82.5%	81.9%	0.6











Figure 13 Patients who presented to the emergency department, by mode of separation, January 2013 to March 2018



# Median time patients spent in the emergency department

The median time that patients spent in the ED during the January to March 2018 quarter was two hours and 42 minutes – up two minutes compared with the same quarter last year. In triage category 2, the median and 90th percentile times spent in the ED fell by 5 and 45 minutes to three hours and 47 minutes and nine hours and 19 minutes, respectively (Figure 14).

Figure 14 Time patients spent in the emergency department, January to March 2018

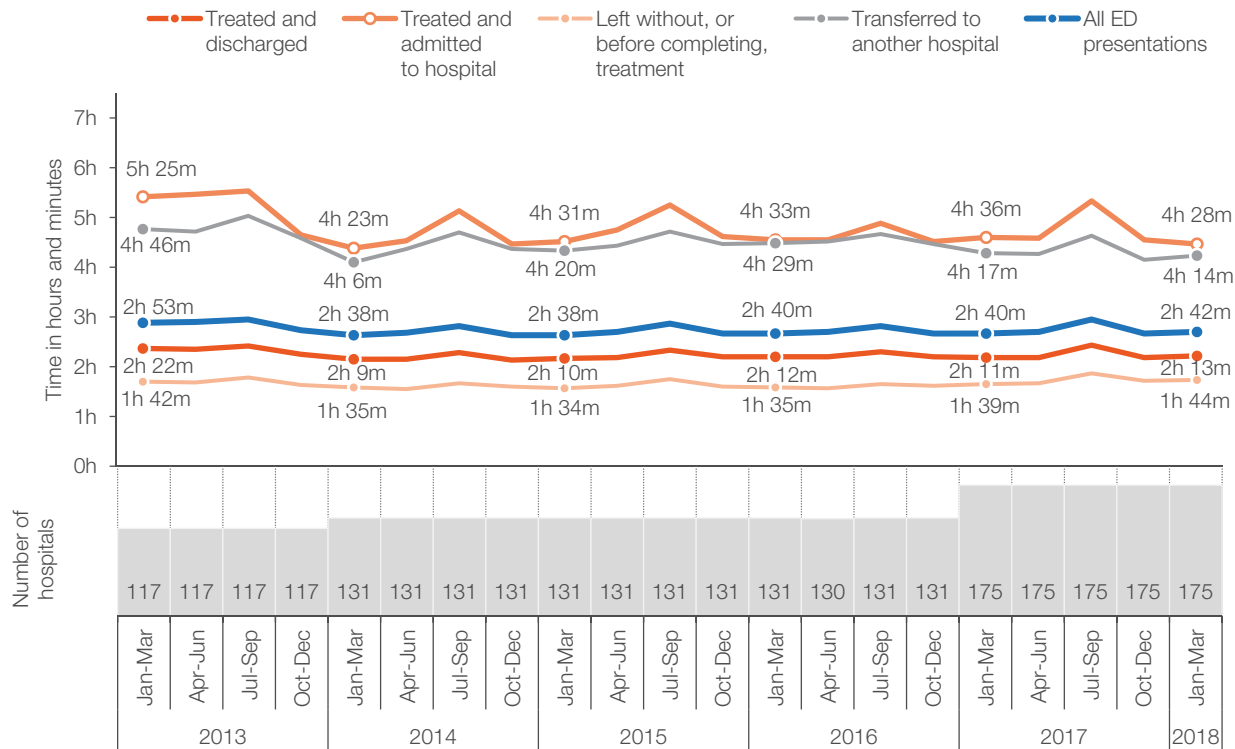
		This quarter	Same quarter last year	Change since one year ago
Median time spent in the ED		2h 42m	2h 40m	2m
90th percentile time spent in the ED		6h 49m	7h 1m	-12m
Triage 2 Emergency (e.g. chest pain, severe burns):				
Triage 2 Median		3h 47m	3h 52m	-5m
Triage 2 90th percentile		9h 19m	10h 4m	-45m
Triage 3 Urgent (e.g. moderate blood loss, dehydration)				
Triage 3 Median		3h 27m	3h 28m	-1m
Triage 3 90th percentile		8h 11m	8h 39m	-28m
Triage 4 Semi-urgent (e.g. sprained ankle, earache)				
Triage 4 Median		2h 16m	2h 15m	1m
Triage 4 90th percentile		5h 30m	5h 34m	-4m
Triage 5 Non-urgent (e.g. small cuts or abrasions)				
Triage 5 Median		1h 8m	1h 6m	2m
Triage 5 90th percentile		3h 28m	3h 27m	1m



Since January to March 2017, the median time to departure rose by five minutes among patients who left without, or before completing, treatment (Figure 15).

All other trends showed overall declines over a five-year period. The bar graph at the bottom of Figure 15 contextualises some of these trends by showing how the number of hospitals included in the report has increased over time. Further information on hospital inclusions is available in the Technical Supplement.

Figure 15 Median time patients spent in the emergency department, by mode of separation, January 2013 to March 2018



# Percentage of patient stays of four hours or less

Almost three-quarters (74.4%) of patients spent four hours or less in the ED during the January to March 2018 quarter, 0.6 percentage points higher than the same quarter last year (Figure 16).

Patients who require admission to hospital from the ED 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 (45.5%).

Patients who left without, or before completing, treatment were the only group to see a drop in the percentage leaving in four hours (88.9%; down 1.6 percentage points) (Figure 16). The bar graph at the bottom of Figure 17 contextualises the trends in the percentage of patients leaving within four hours by showing how the number of hospitals included in the report has increased over time. Further information on hospital inclusions is available in the Technical supplement.

Figure 18 maps hospital results this quarter compared with the same quarter last year. Hospitals labelled are those that had a change of more than five percentage points in the proportion of patients who spent four hours or less in the ED, compared with the same quarter last year.

Due to differences in data definitions, period of reporting and the number of hospitals included, *Healthcare Quarterly* results for the percentage of patients who spent four hours or less in the ED are not directly comparable with figures reported by the NSW Ministry of Health or the Commonwealth. For more information refer to the Technical supplements section of the BHI website at [bhi.nsw.gov.au](http://bhi.nsw.gov.au)

Figure 16 Percentage of patients who spent four hours or less in the emergency department, by mode of separation, January to March 2018

	Number		This quarter	Same quarter last year	Percentage point change since one year ago
All ED presentations	531,185		74.4%	73.8%	0.6
Treated and discharged	394,239		84.7%	84.3%	0.4
Treated and admitted	82,796		45.5%	44.0%	1.5
Left without, or before completing, treatment	33,640		88.9%	90.5%	-1.6
Transferred to another hospital	7,459		48.1%	47.6%	0.5

Figure 17

Percentage of patients who spent four hours or less in the emergency department, by mode of separation, January 2013 to March 2018

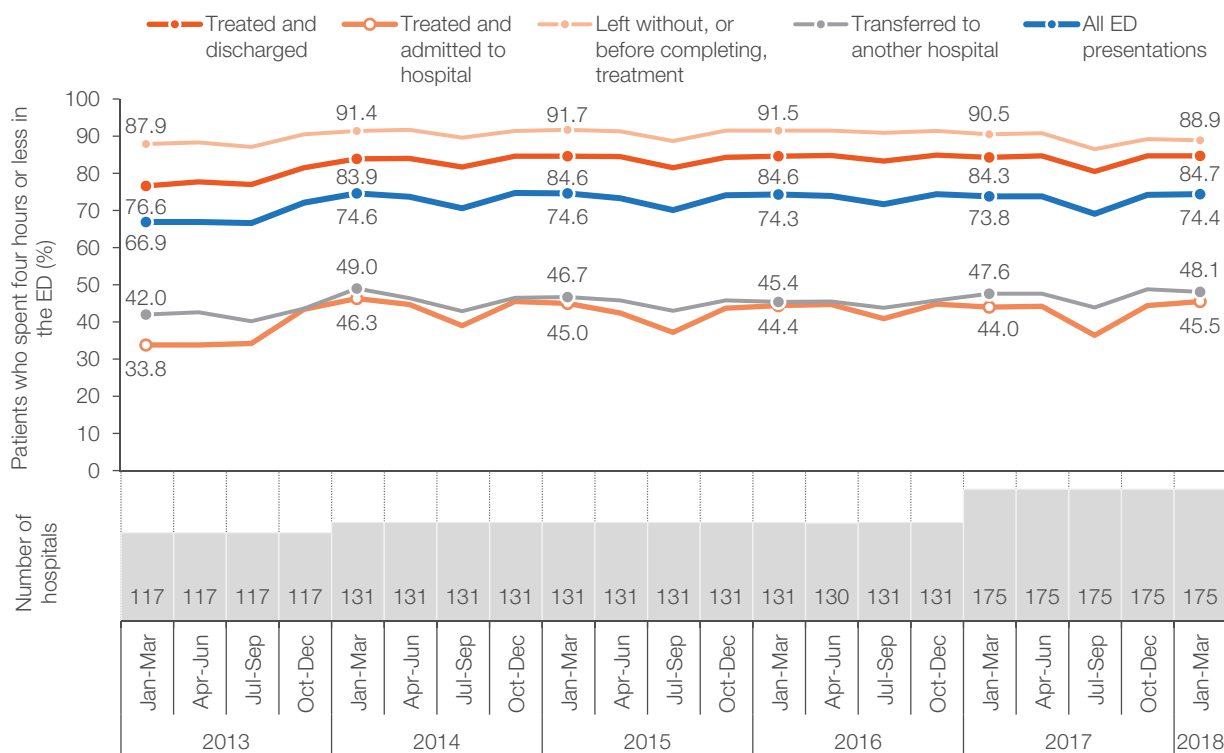
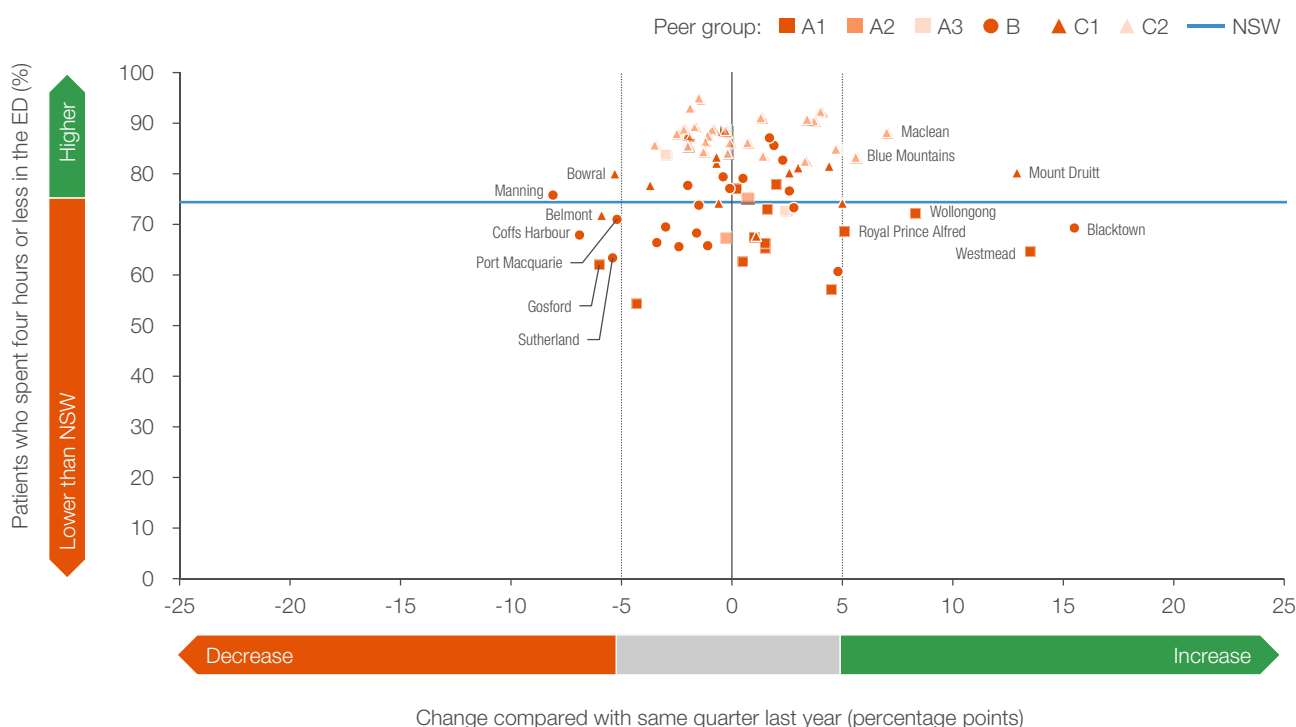


Figure 18

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 2018

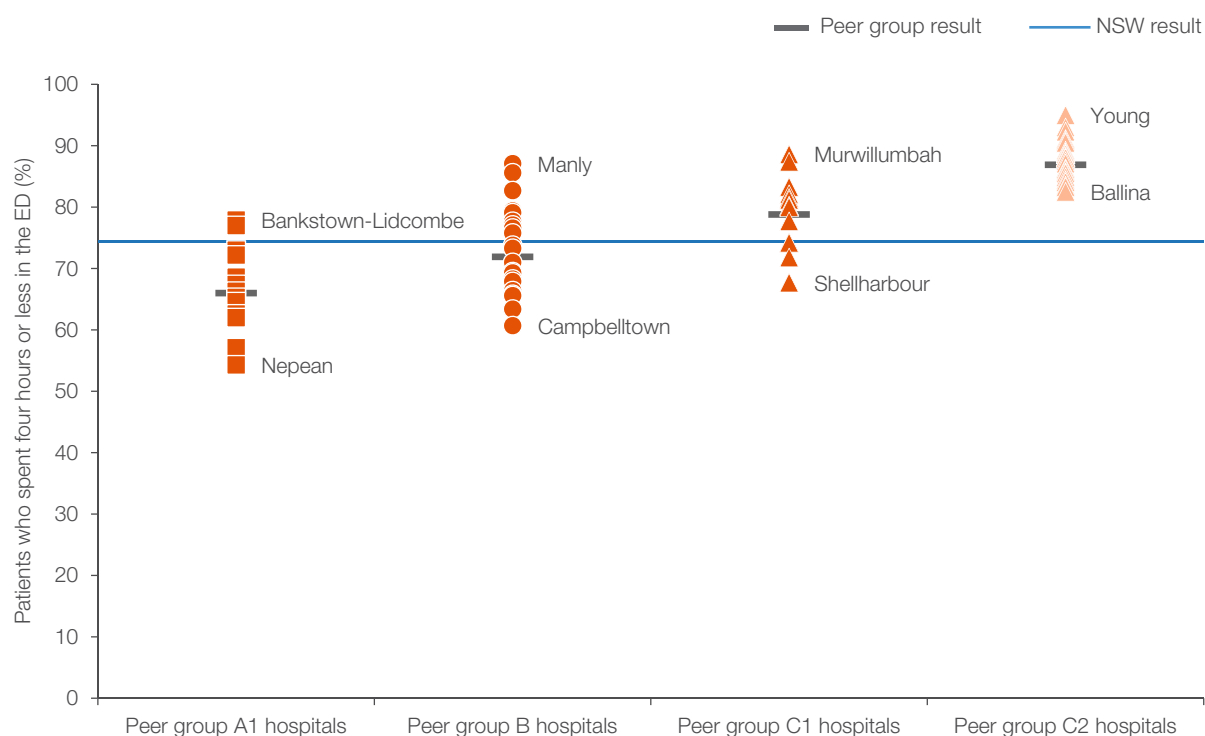


# Percentage of patient stays of four hours or less – peer group variation

There was variation between and within hospital peer groups in the percentage of patients who spent four hours or less in the ED. Peer group results followed a gradient with a higher percentage of patients who spent four hours or less in EDs in

smaller district hospitals (peer group C2) versus the principal referral hospitals (peer group A1) (Figure 19).

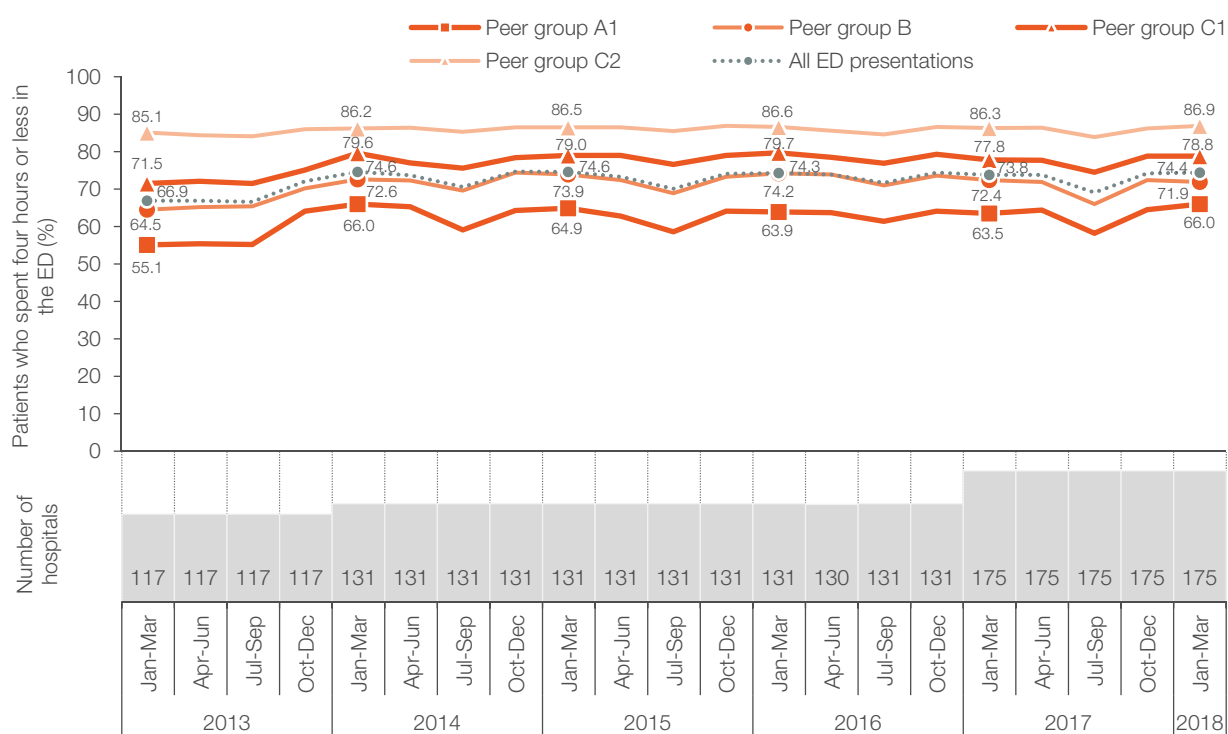
Figure 19 Percentage of patients who spent four hours or less in the emergency department, by peer group, January to March 2018



The bar graph at the bottom of Figure 20 shows how the number of hospitals included in the report increased over time. The additional hospitals were small facilities that did not affect the number included in peer groups A1 and B. Comparisons with the

same quarter in 2013 showed that the percentage of patients leaving the ED within four hours in peer groups A1 and B was up by 10.9 and 7.4 percentage points, respectively. Further information on hospital inclusions is available in the Technical supplement.

Figure 20 Percentage of patients who spent four hours or less in the emergency department, by peer group, January 2013 to March 2018



# Transfer of care from the ambulance to the emergency department

A total of 154,876 patients arrived at NSW EDs by ambulance (up 3.4% compared with the same quarter last year) during the January to March 2018 quarter. Transfer of care time was calculated using 136,046 patient records (matched between ambulance service and ED records) (Figure 21).

The median and 90th percentile transfer of care times from ambulance paramedics to ED staff were unchanged and shorter compared with the same quarter last year (Figure 21).

In NSW, the agreed target time for transfer of care from ambulance to ED staff is 30 minutes for at least 90% of patients. There was an overall rising trend amidst seasonal variation in the percentage of ambulance arrivals with a transfer of care time within 30 minutes (Figure 22). The bar graph at the bottom of the figure contextualises some of these trends by showing how the number of hospitals included in the report increased over time.

District hospitals in peer groups C1 had the highest percentage of patients transferred within 30 minutes (95.1%) (Figure 23).

Figure 21      Emergency department transfer of care time, January to March 2018

	This quarter	Same quarter last year	Change since one year ago
Emergency presentations	688,837	676,380	1.8%
Ambulance arrivals (number used to calculate transfer of care time)	136,046	129,698	4.9%
ED transfer of care time			
Median time	11m	11m	unchanged
90th percentile time	26m	27m	-1m
Percentage of patients transferred from ambulance to ED within 30 minutes	92.1%	91.5%	+0.6 percentage points

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

Figure 22      Percentage of ambulance arrivals with transfer of care time within 30 minutes, April 2013 to March 2018

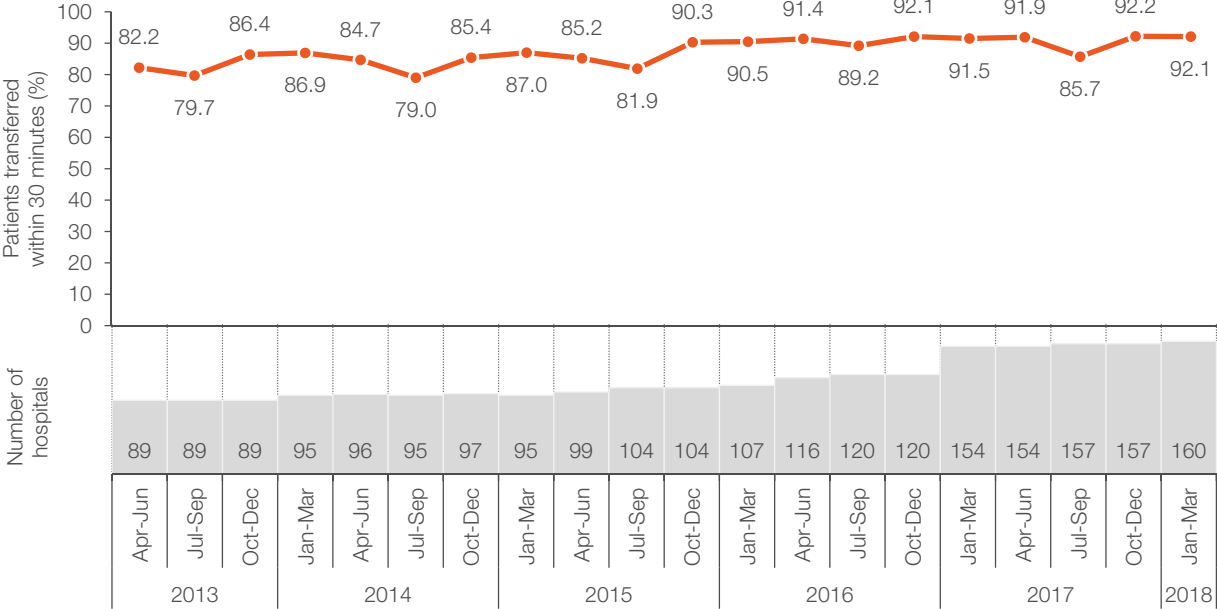
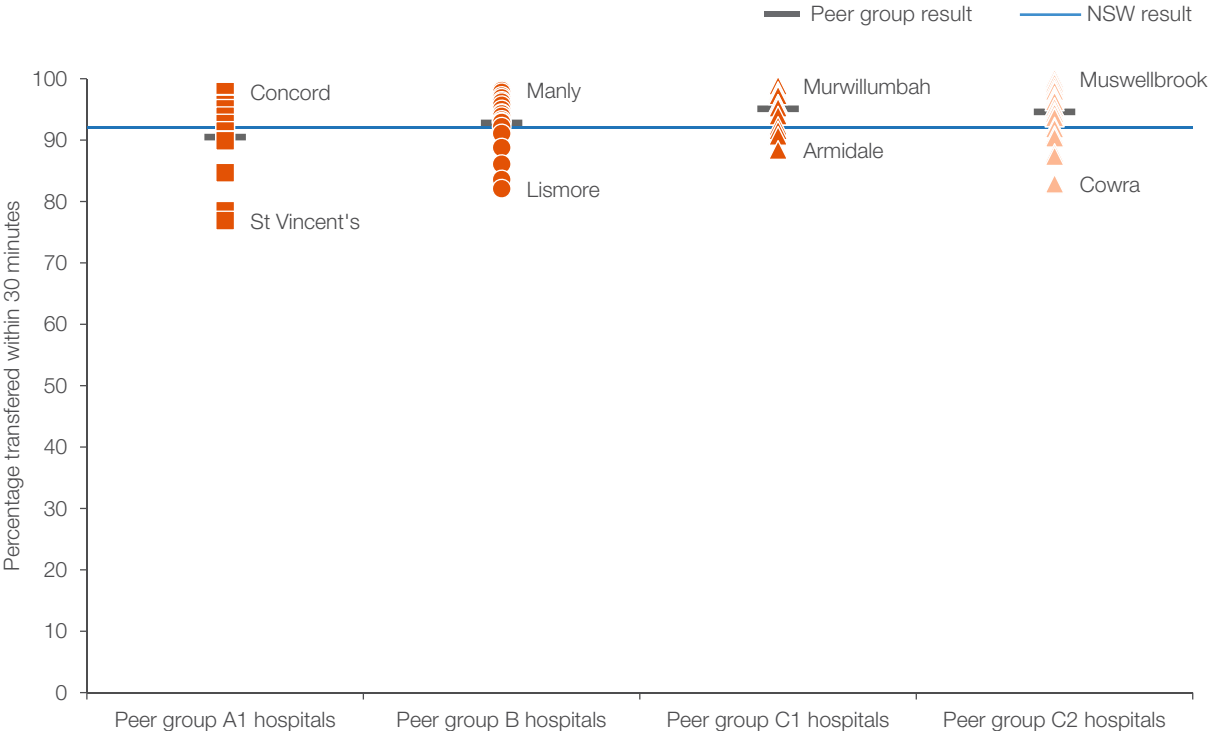


Figure 23      Percentage of ambulance arrivals whose care was transferred within 30 minutes, by peer group, January to March 2018



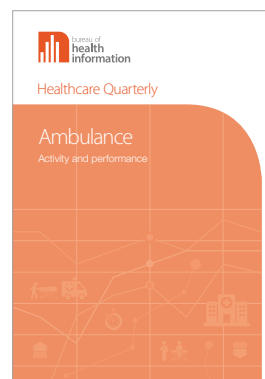
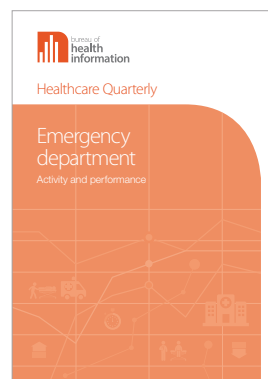
# Healthcare Quarterly

*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.

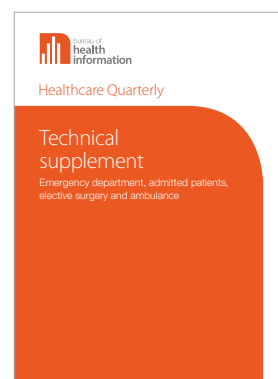
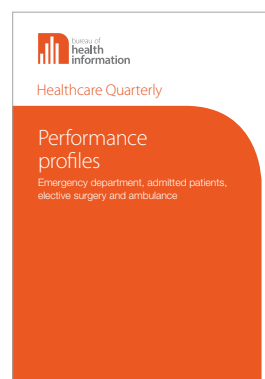
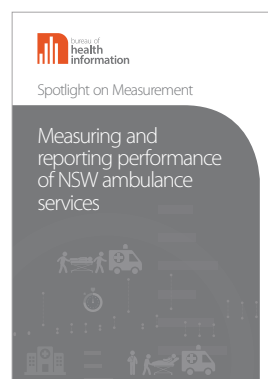
The reports feature key indicators of activity and performance across ambulance and public hospital services in NSW.



*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](http://bhi.nsw.gov.au/healthcare_observer)



All reports and profiles are available at [bhi.nsw.gov.au](http://bhi.nsw.gov.au)

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## About the Bureau of Health Information

The Bureau of Health Information (BHI) is a board-governed organisation that provides independent information about the performance of the NSW 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](http://bhi.nsw.gov.au)