

# Emergency Departments

## Hospital Quarterly:

Performance of  
NSW public hospitals

### October to December 2013

There were more than half a million patient visits to NSW public hospital emergency departments (EDs) during October to December 2013, 3% more than the same quarter in 2012.

The number of patients arriving by ambulance increased by 5% compared to the same quarter last year. The percentage of these patients transferred from the care of ambulance paramedics into the care of ED clinicians within 30 minutes of arrival is 87%, higher than the same time last year (83%).

The median times to start treatment are unchanged or slightly shorter compared with the same quarter one year ago and the 95th percentile times to start treatment have decreased by two minutes (triage 2), 13 minutes (triage 3), 14 minutes (triage 4), and 8 minutes (triage 5).

In this quarter, 70% of all patients left the ED within four hours, which is a six percentage point increase from the same quarter last year and five percentage point increase from the previous quarter (July to September 2013).

The Bureau again presents analysis of the differences between hospitals across NSW and important factors that can influence a patient's experience in the ED.

This is one of three *Hospital Quarterly* modules. For the Elective Surgery and Admitted Patients modules visit [www.bhi.nsw.gov.au](http://www.bhi.nsw.gov.au)

During the quarter	Oct–Dec 2012	Oct–Dec 2013	The difference
All emergency department attendance	579,937 visits	594,607 visits	14,670 (+3%)
All arrivals at NSW hospitals by ambulance	116,912	122,385	5,473 (+5%)
Emergency attendances that were categorised as triage 2	59,318 attendances	64,119 attendances	+ 4,801 (+8%)
Median time to start treatment for triage 2 patients	8 mins	8 mins	unchanged
People leaving the ED within four hours of presentation	64%	70%	+6 percentage points
Admissions to hospital from NSW EDs	155,406 admissions	162,165 admissions	+ 6,759 (+4%)

# Emergency department journeys

Most patients attend a NSW ED to receive treatment for an injury or acute illness. Emergency patients are *'triaged'* by specialist clinical staff after they arrive in ED and are allocated to one of five categories, depending on how urgently they require care. Each triage category has a recommended maximum time that the patient should wait to be seen by a healthcare professional.

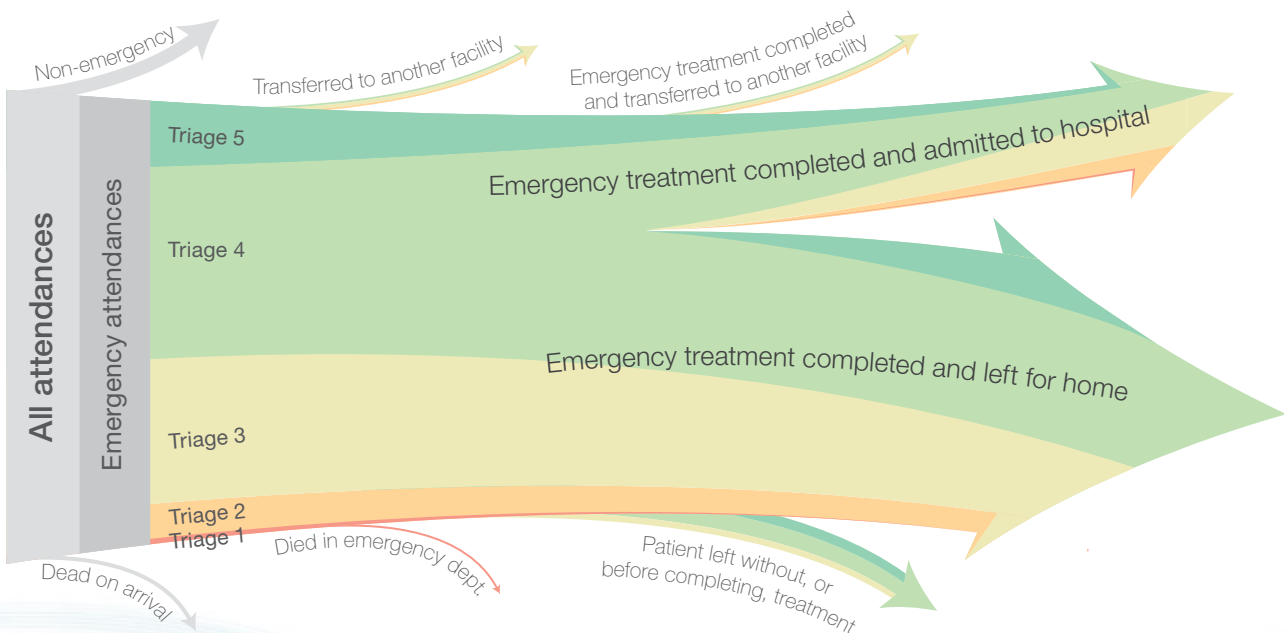
The majority of patients leave the ED after their treatment is complete or when they are admitted to hospital. Some patients are transferred to other hospitals or choose not to wait to begin or complete treatment. The journeys of all these patients during the October to December 2013 quarter are presented in this report and are summarised in [Figure 1](#).

What happens next depends on the clinical needs of patients. Patients from the most urgent triage categories (triage categories 1 and 2) are given priority and care typically begins immediately upon arrival. Patients from the less urgent triage categories (3 to 5) typically complete triage and administrative processes before treatment begins.

Figure 1: Summary of patients' journeys through NSW emergency departments

The thickness of each arrow is approximately proportional to the number of NSW emergency department patients in each category. The arrows are coloured by triage level.

- Triage 1 Resuscitation
- Triage 2 Emergency
- Triage 3 Urgent
- Triage 4 Semi-urgent
- Triage 5 Non-urgent



# Emergency attendances and admissions over time

In the October to December 2013 quarter there were 575,951 emergency attendances.

This is a two per cent increase on the same quarter one year ago (562,175) and the highest number over two years (Figure 2).

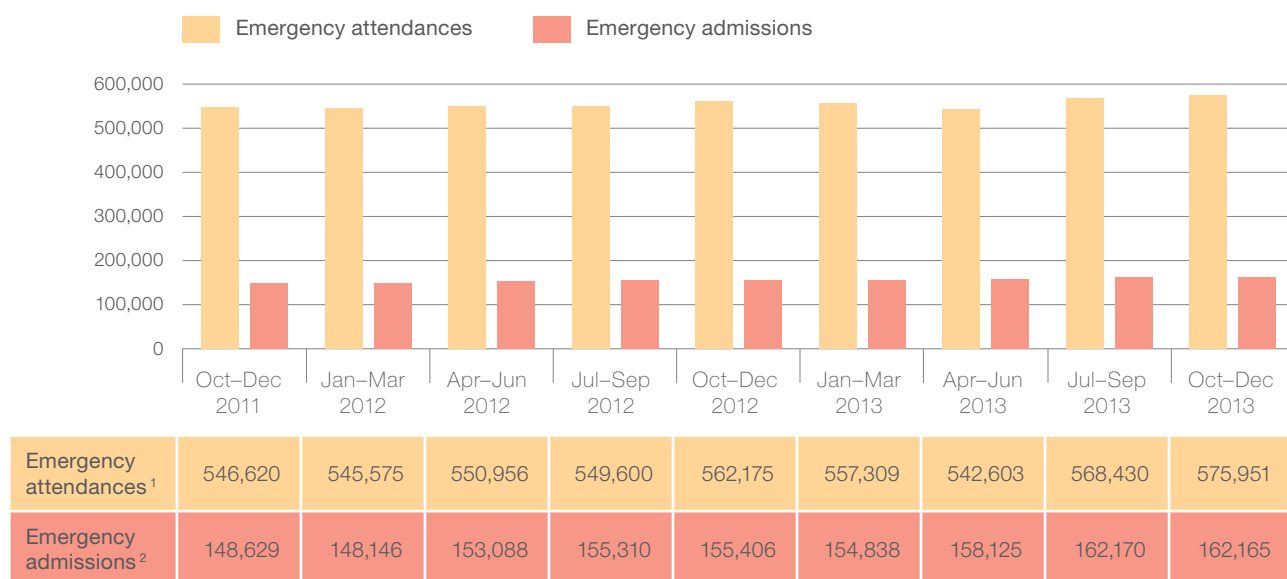
Over the same time, the number of emergency admissions from EDs has been increasing.

This quarter there were 162,165 admissions.

This is four per cent higher than the same quarter one year ago (155,406).

The number of ED attendances is the highest it's been for two years.

Figure 2: Emergency attendances and admissions from NSW emergency departments, October 2011 to December 2013



1. Emergency attendances are ED visits for emergencies, unplanned return visits or disaster.

2. Admissions refers to emergency attendances that were admitted through the emergency department.

**Note:** Attendance and admission counts in this table are based on increasing numbers of EDs over time, so changes in trend in this table over time should be interpreted with caution. For more information, see the Bureau of Health Information's *Technical Supplement: Emergency department measures, October to December 2012*.

**Note:** The emergency department activity reported here includes only the 96 facilities for which electronic data are reported. These facilities cover approximately 87% of NSW emergency department activity.

**Note:** Numbers may differ from those previously reported due to differences in when data were extracted from the emergency department information system and in definitions of patient cohorts.

**Source:** NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

# Arriving at the emergency department

## Emergency attendances this quarter

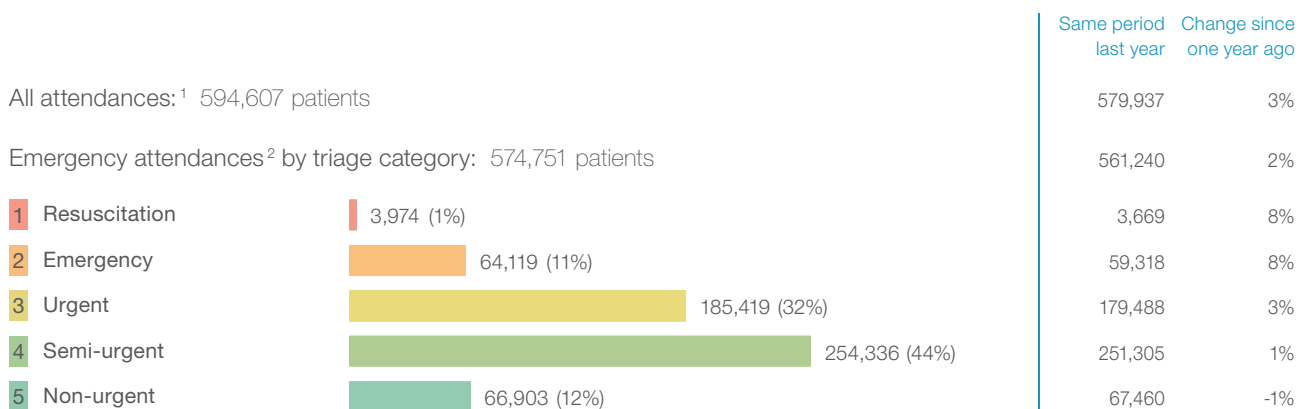
There were more than half a million attendances at NSW EDs during October to December 2013 (Figure 3).

While almost all (97%) of these visits were considered '*emergency attendances*', 19,856 (3%) patients attended for non-emergency reasons, such as planned return visits, attending some type of outpatient clinics or prearranged admissions to hospital. The percentage of patients attending NSW EDs for non-emergency reasons is similar to the same quarter last year.

A breakdown of emergency attendance figures shows that patients in the resuscitation category (triage 1) accounted for 1% of all people triaged in NSW EDs, 11% were triaged in the emergency category (triage 2), 32% were categorised as urgent (triage 3) 44% were semi-urgent (triage 4) and 12% were non-urgent (triage 5).

In this quarter there was an increase in triage 1, 2, 3 and 4 attendances and a slight decrease in triage 5 compared to the same quarter 12 months ago.

Figure 3: Attendances at NSW emergency departments, October to December 2013



- All emergency and non-emergency attendances at the emergency department (ED).
  - All attendances that have a triage category and are coded as emergency presentations or unplanned return visits or disaster.
- Note: All percentages rounded to whole numbers and therefore percentages may not add to 100%.
- Note: Emergency department activity include 96 facilities for which electronic data are reported. This covers approximately 87% of NSW emergency department activity.
- Source: NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

# Transfer of care from ambulance to emergency department

In October to December 2013 there were 122,385 people who arrived at the ED by ambulance. This is 21% of all ED attendances and an increase of 5% over the same quarter last year.

For patients who arrive at the ED by ambulance, the time it takes for responsibility for their care to be transferred from ambulance paramedics to ED clinicians is measured and called transfer of care time.

Transfer of care time can only be determined when the ambulance service records the patient's time of arrival at the ED and this record can be matched to records held by the ED that show the time at which the patient's care was transferred to the ED staff. We are reporting transfer of care for matched records only.

Results for hospitals that have more than 30% of records unmatched should be interpreted with caution and are identified in Appendix tables 1a and 1b. Hospitals with fewer than 50 ambulance arrivals have had their results suppressed but are included in the state totals.

In NSW there is a target of 30 minutes within which 90% of ambulance arrivals should have their care transferred to ED clinicians. In this quarter, 87% of patients arriving at NSW EDs by ambulance had their care transferred within 30 minutes.

The median transfer of care time has improved by one minute (from 13 minutes in October to December 2012 to 12 minutes in this quarter).

Off stretcher time measures the length of time from the ambulance's arrival at the emergency department to the paramedics returning to their vehicle and having completed a range of tasks to prepare the ambulance for the next assignment. In this quarter, the median off-stretcher time was unchanged from the same time last year (26 minutes).

This quarter showed the highest per cent of ambulance arrivals with a transfer of care time within 30 mins since October to December 2012.

Figure 4: Measures relating to ambulance arrivals at ED, October 2012 to December 2013

	Oct-Dec 2012	Jan-Mar 2013	Apr-Jun 2013	Jul-Sep 2013	Oct-Dec 2013
Ambulance Arrivals with transfer of care time <sup>1</sup>	116,912	114,259	115,861	122,003	122,385
Per cent of arrivals with transfer of care within 30 mins <sup>1</sup>	83%	84%	83%	80%	87%
Median transfer of care time <sup>1</sup> (minutes)	13	13	13	14	12
Median off stretcher time <sup>1</sup> (minutes)	26	26	27	27	26

1. Calculated for records that can be matched.  
Source: Data provided by Ministry of Health on 28 January 2014.

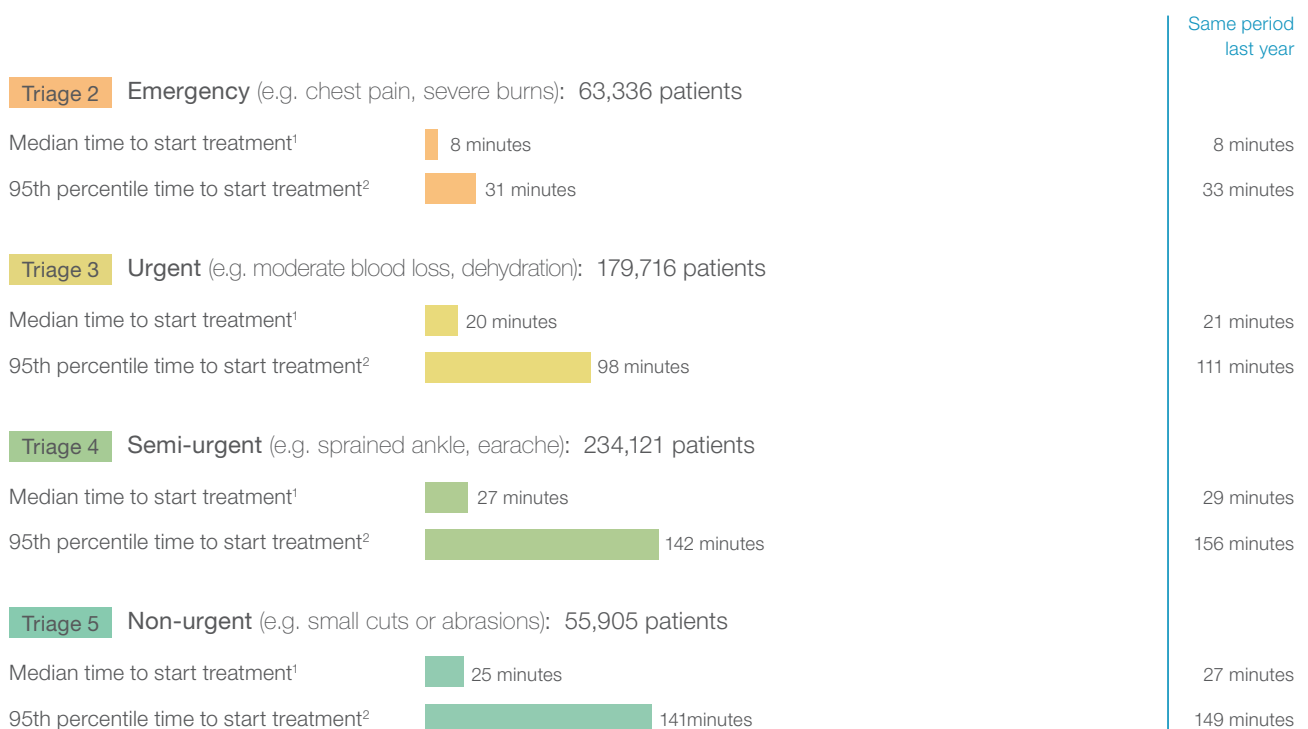
# Time to treatment performance

In October to December 2013, the median times to start treatment were unchanged or slightly shorter compared with the same quarter in 2012 (Figure 5). The median time to start treatment for the emergency category (triage 2) remains unchanged at eight minutes, the urgent category (triage 3) one minute less at 20 minutes, the semi-urgent category (triage 4) two minutes less at 27 minutes and the non-urgent category (triage 5) two minutes less at 25 minutes.

The 95th percentile times to start treatment were lower in each triage category. This quarter, 95% of patients began treatment within:

- 31 minutes, two minutes shorter than one year ago (triage 2)
- 98 minutes, 13 minutes shorter than one year ago (triage 3)
- 142 minutes, 14 minutes shorter than one year ago (triage 4)
- 141 minutes, eight minutes shorter than one year ago (triage 5).

Figure 5: Waiting times for treatment in NSW emergency departments, October to December 2013



1. The median is the time by which half of patients started treatment. The other half of patients took equal to or longer than this time.
2. The 95th percentile is the time by which 95% of patients started treatment. The final 5% of patients took equal to or longer than this time.

**Note:** Treatment time is the earliest time recorded when a healthcare professional gives medical care for the patient's presenting problems.

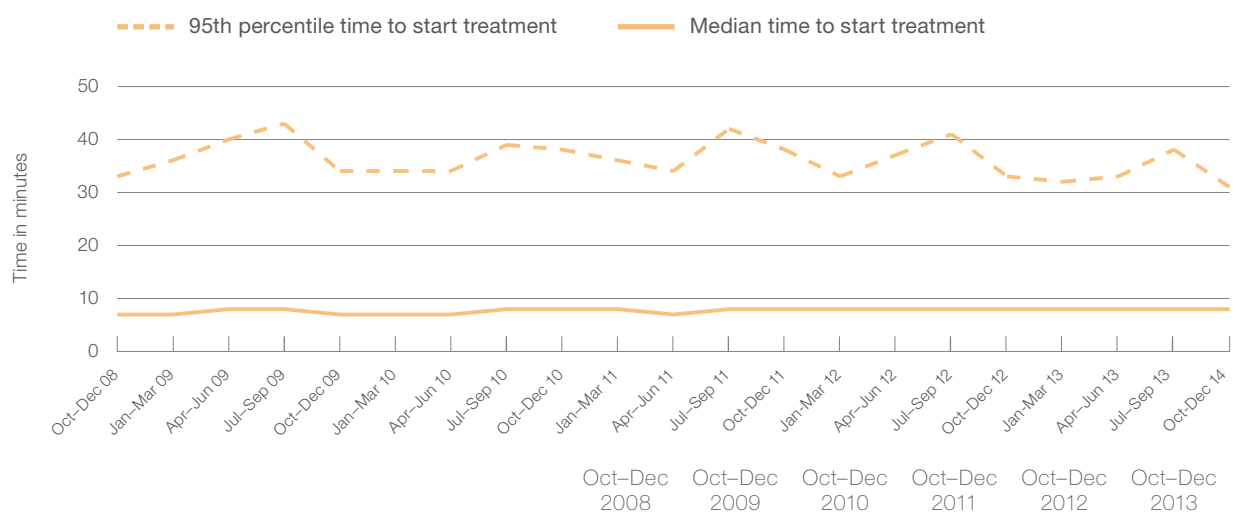
**Source:** NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

# Time to treatment: patterns over time

The time from presentation until treatment fluctuates throughout the year. **Figures 6a–d** show for triage categories 2–5, the median and 95th percentile times to start treatment. The Bureau does not report time to treatment for patients with conditions triaged as resuscitation (triage 1).

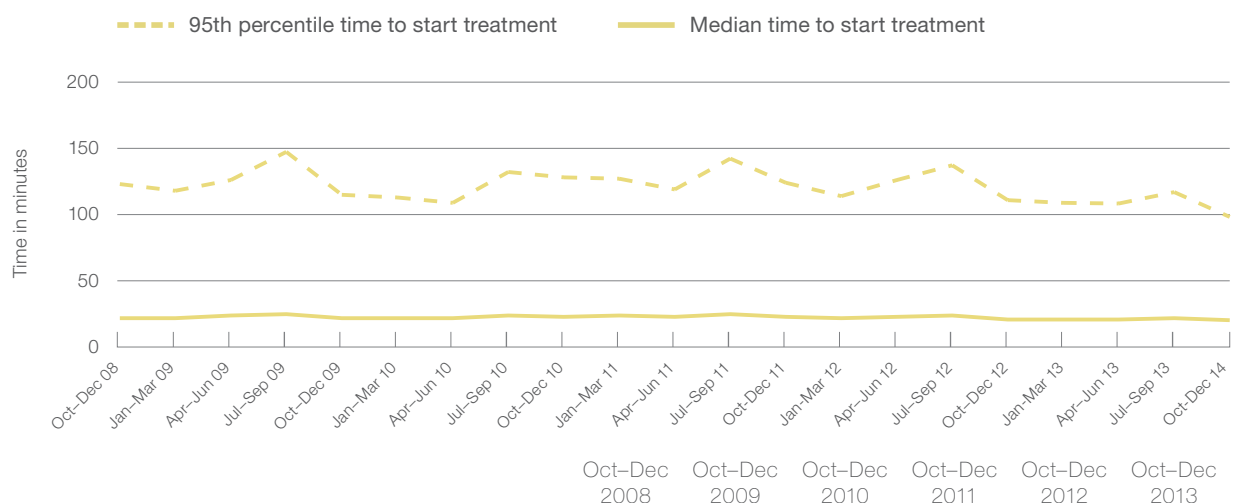
The 95th percentile treatment times are the shortest they have been in the October to December quarter over the past five years across all triage categories.

**Figure 6a: Triage 2—Median and 95th percentile times to start treatment (minutes) in NSW emergency departments, October 2008 to December 2013**



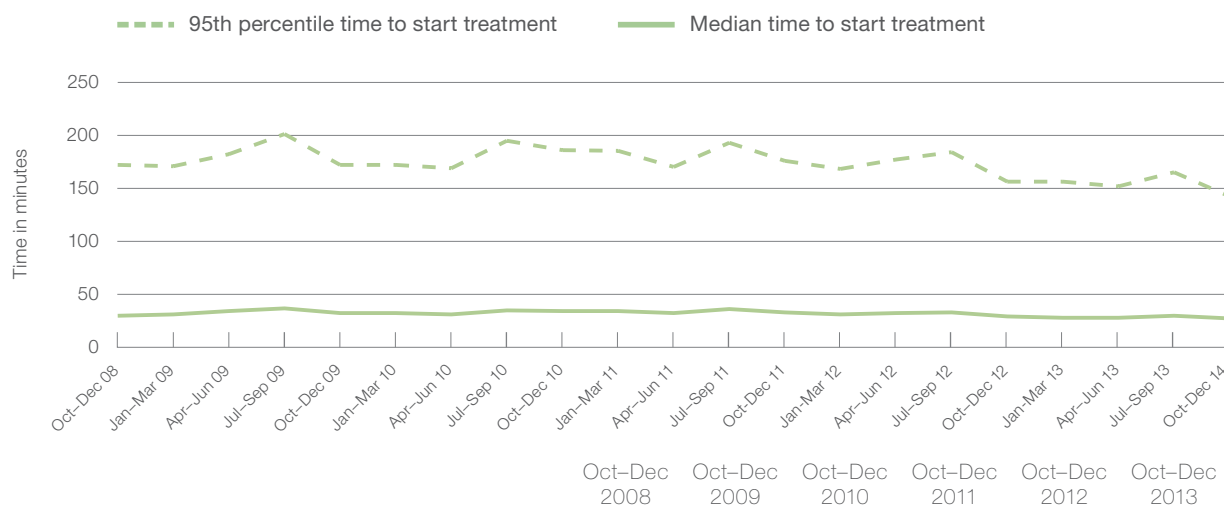
Median time to start treatment <sup>1</sup> (minutes)	7	7	8	8	8	8
95th percentile time to start treatment <sup>2</sup> (minutes)	33	34	38	38	33	31

**Figure 6b: Triage 3—Median and 95th percentile times to start treatment (minutes) in NSW emergency departments, October 2008 to December 2013**



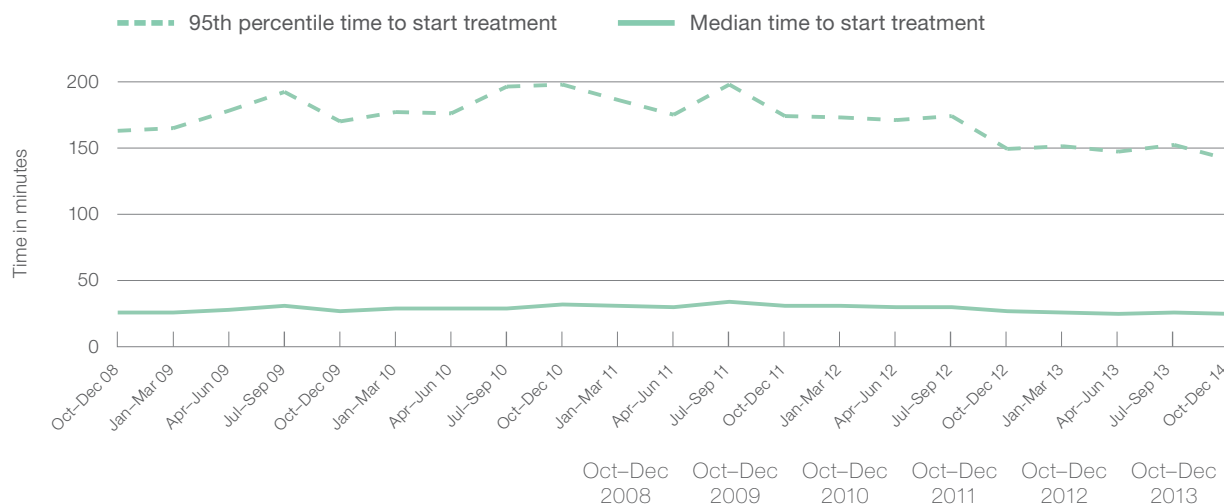
Median time to start treatment <sup>1</sup> (minutes)	22	22	23	23	21	20
95th percentile time to start treatment <sup>2</sup> (minutes)	123	115	128	124	111	98

Figure 6c: **Triage 4**–Median and 95th percentile times to start treatment (minutes) in NSW emergency departments, October 2008 to December 2013



Median time to start treatment <sup>1</sup> (minutes)	30	32	34	33	29	27
95th percentile time to start treatment <sup>2</sup> (minutes)	172	172	186	176	156	142

Figure 6d: **Triage 5**–Median and 95th percentile times to start treatment (minutes) in NSW emergency departments, October 2008 to December 2013



Median time to start treatment <sup>1</sup> (minutes)	26	27	32	31	27	25
95th percentile time to start treatment <sup>2</sup> (minutes)	163	170	198	174	149	141

1. The median is the time by which half of patients started treatment. The other half of patients took equal to or longer than this time.
2. The 95th percentile is the time by which 95% of patients started treatment. The final 5% of patients took equal to or longer than this time.

**Note:** Hospitals transitioning to one of the major information systems are excluded from this data during the quarter(s) of implementation (For more information see *Hospital Quarterly Background Paper: Approaches to reporting time measures of emergency department performance, Addendum June 2012*).

**Source:** NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.



# Leaving the emergency department

## Time from presentation until leaving the ED this quarter

In the October to December 2013 quarter, the median time to leaving the ED was two hours and 54 minutes after presentation. The 95th percentile time to leaving the ED was nine hours and 57 minutes after presentation (Figure 7). Both are improvements from the same quarter last year.

There are different ways that a patient can leave the ED. The majority of patients leave after their

treatment is complete or when they are admitted to hospital. Some patients choose not to wait to begin or complete treatment or are transferred to other hospitals. The way a patient leaves the ED is referred to as the mode of separation.

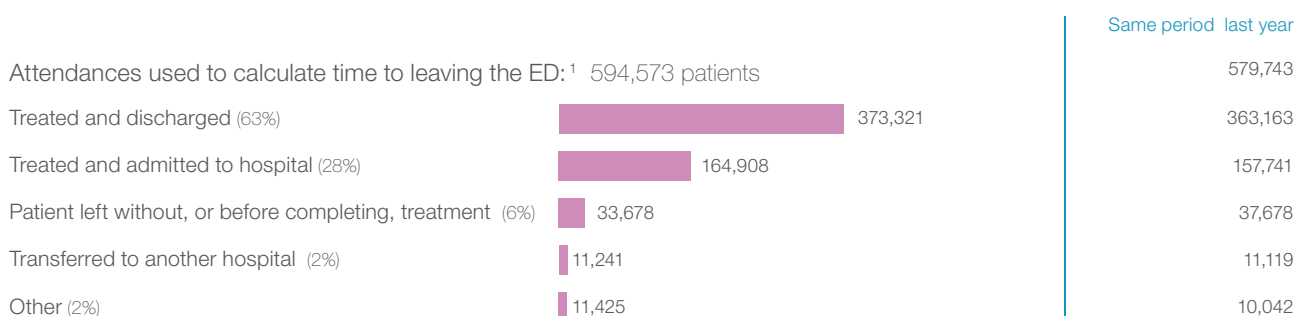
The number of patients who left without treatment or before treatment started, decreased from the same period last year.

Figure 7: Time from presentation until leaving the emergency department, October to December 2013



1. All emergency and non-emergency attendances at the emergency department (ED).
  2. All attendances that have a departure time.
  3. The median is the time by which half of patients left the ED. The other half of patients took equal to or longer than this time.
  4. The 95th percentile is the time by which 95% of patients left the ED. The final 5% of patients took equal to or longer than this time.
- Source: NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

Figure 8: Leaving the emergency department by mode of separation, October to December 2013

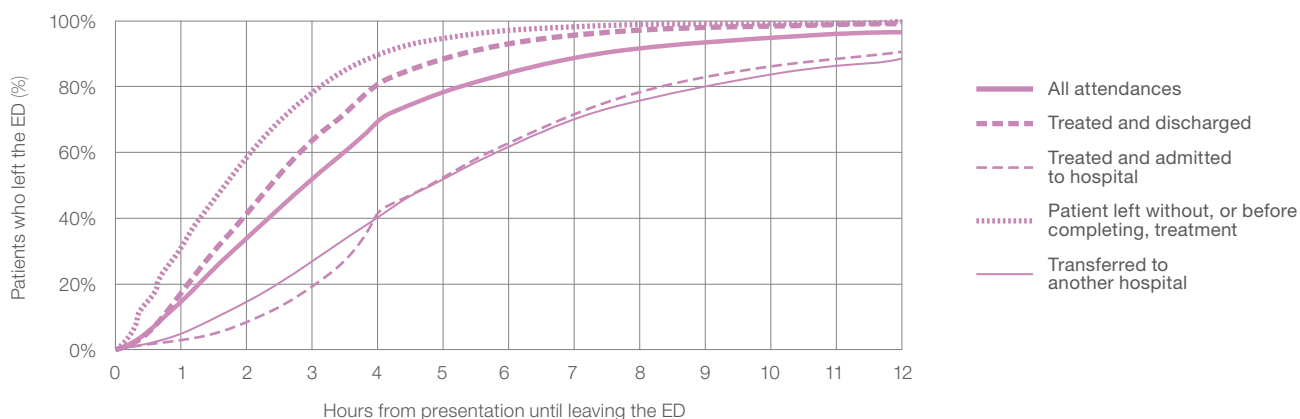


1. All attendances that have a departure time.
- Note: All percentages rounded to whole numbers and therefore percentages may not add to 100%.
- Source: NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

In the October to December 2013 quarter:

- 63% of patients received treatment in the ED and were discharged home (Figure 8). On average, these patients spent less time in the ED than patients who were admitted or transferred.
- 28% of patients received treatment in the ED and were subsequently admitted to a ward, a critical care unit or via an operating suite in the hospital (Figure 8). On average, these patients spent the most time in the ED (Figure 9).
- A small group of patients (2%) received treatment in the ED and were transferred to another hospital (Figure 8). On average, these patients spent longer in the ED than patients who were discharged (Figure 9).
- Some patients (6%) left the ED without, or before, completing treatment (Figure 8). On average, these patients spent the shortest time in the ED (Figure 9).

Figure 9: Percentage of patients who left the emergency department, by time and mode of separation, October to December 2013



1 hour    2 hours    3 hours    4 hours    6 hours    8 hours    10 hours    12 hours

Treated and discharged	17%	42%	63%	81%	93%	97%	99%	99%
Treated and admitted to hospital	3%	8%	19%	42%	63%	78%	86%	91%
Patient left without, or before completing treatment	31%	59%	78%	90%	97%	99%	100%	100%
Transferred to another hospital	5%	15%	27%	41%	62%	76%	84%	89%
All attendances	15%	34%	52%	70%	85%	92%	95%	97%

Note: Time from presentation to the emergency department (ED) until recorded as leaving the ED.

Source: NSW Health, Health Information Exchange. Data extracted on 28 January 2014.

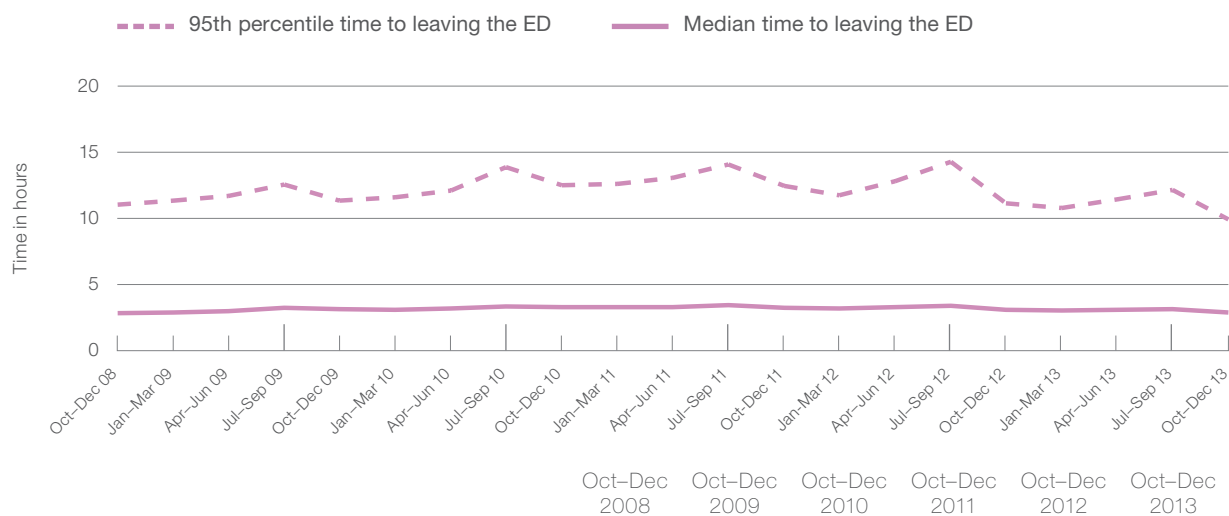
## Time from presentation until leaving the ED: trends over time

Figure 10 shows the median and 95th percentile time from presentation until leaving the ED by quarter over five years. During October to December 2013, the median time to leaving the ED was two hours and 54 minutes from presentation. This is shorter than the previous three quarters.

During the October to December 2013 quarter, the 95th percentile time to leaving the ED was nine hours and 57 minutes after arriving in the ED. This is shorter than the same quarter in 2012 when the 95th percentile time to leaving the ED was 11 hours and nine minutes.

The time by which 95% of patients leave the ED following their arrival is the lowest recorded over the last five years.

Figure 10: Time from presentation until leaving the emergency department by quarter, October 2008 to December 2013



Median time to leaving the ED <sup>1</sup> (hours, minutes)	2h 50m	3h 9m	3h 18m	3h 16m	3h 6m	2h 54m
95th percentile time to leaving the ED <sup>2</sup> (hours, minutes)	11h 2m	11h 21m	12h 30m	12h 28m	11h 9m	9h 57m

1. The median is the time by which half of patients left the emergency department (ED). The other half of patients took equal to or longer than this time.
2. The 95th percentile is the time by which 95% of patients left the ED. The final 5% of patients took equal to or longer than this time.

**Note:** Time from presentation to the ED until recorded as leaving the ED.

**Note:** Hospitals transitioning to one of the major information systems are excluded from this data during the quarter(s) of implementation.

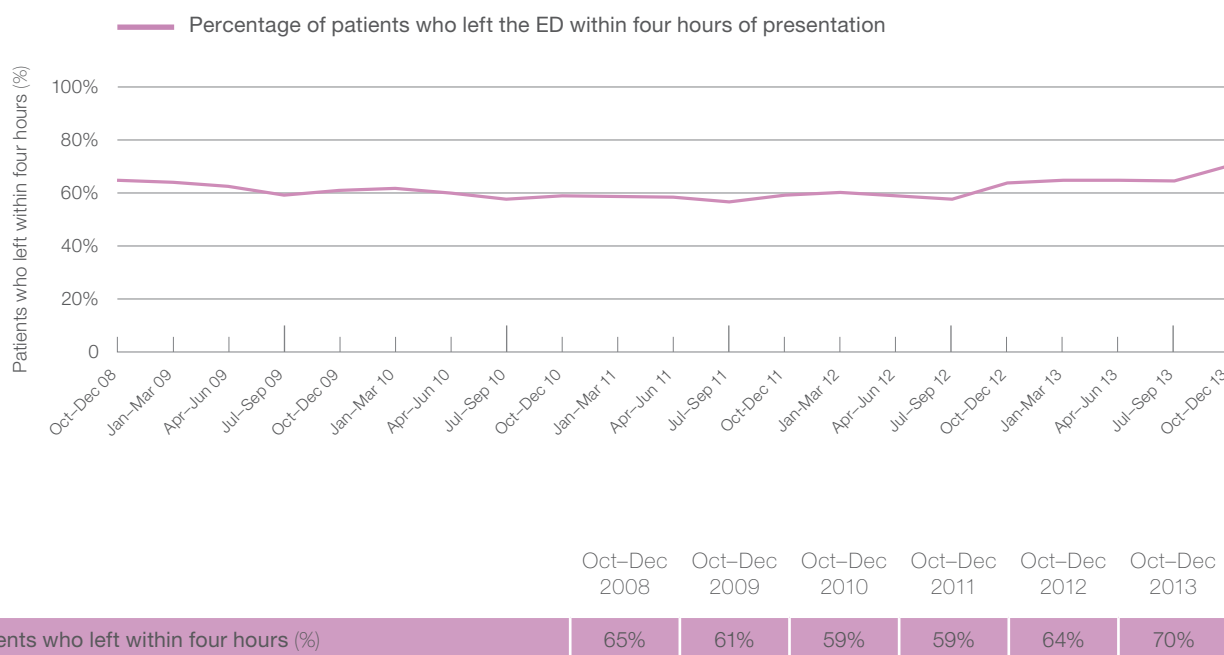
**Source:** NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

## Leaving the ED within four hours

In the October to December 2013 quarter, 70% of patients left the ED within four hours of presentation (Figure 11). This is higher than both the last quarter (65%) and the same quarter last year (64%) (Figure 11).

The October to December 2013 quarter showed the highest percentage leaving the ED within four hours over the past five years.

Figure 11: Percentage of patients who left the emergency department within four hours of presentation, by quarter, October 2008 to December 2013



**Note:** Time from presentation to the ED until recorded as leaving the ED.

**Note:** Hospitals transitioning to one of the major information systems are excluded from this data during the quarter(s) of implementation.

**Note:** This measure is based on the National Emergency Access Target, however data presented here may not be directly comparable to the figures reported by the Commonwealth due to slight differences in timing, methods of calculation and the number of hospitals included.

**Source:** NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

## Some reasons for variation by hospital in patients leaving the ED within four hours

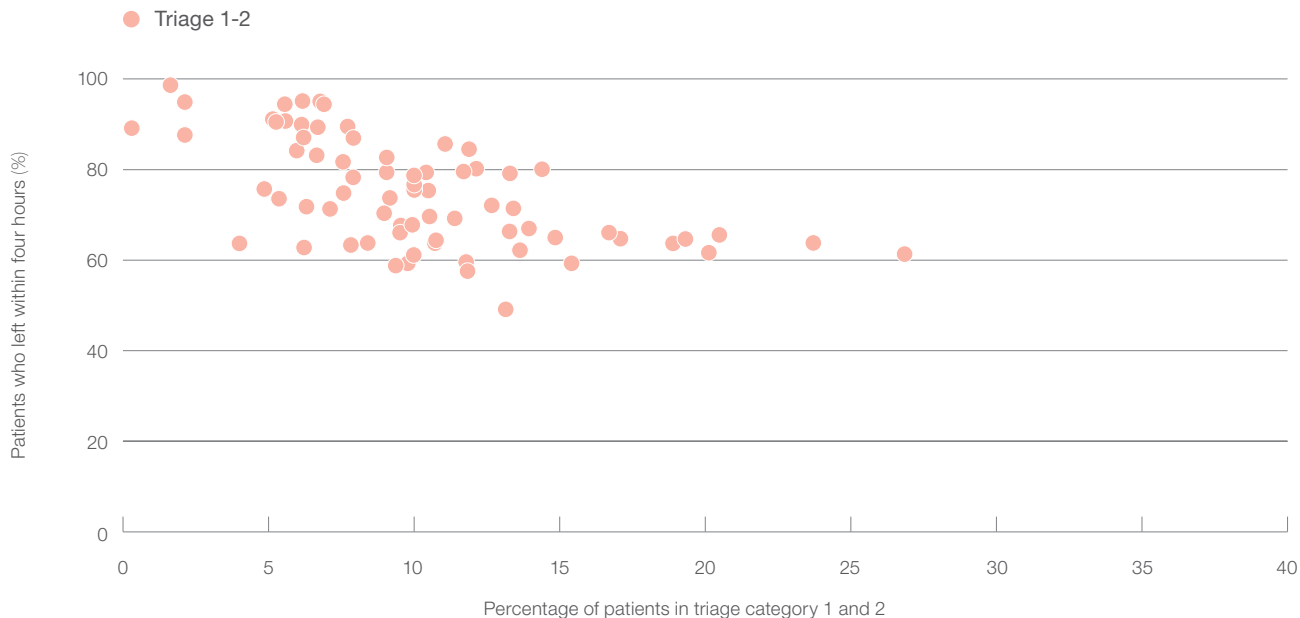
A higher proportion of urgent cases is a challenge for emergency departments

Not all EDs are the same, some will receive a particularly high proportion of urgent cases that require quick assessment, complex care and stabilisation in the ED, others will receive higher proportions of non-urgent cases. **Figure 12** presents the correlation between patients leaving the ED within four hours<sup>1</sup> and the proportion of urgent patients.

In **Figure 12** the percentage of urgent cases in a hospital (triage 1 and 2) is represented by a dot.

Hospitals that have a higher proportion of non-urgent cases are more likely to have a higher percentage of patients leave the ED within four hours.

**Figure 12:** Percentage of patients who left the emergency department within four hours, by percentage of patients in triage 1 and 2, October to December 2013.



Note: Time from presentation to the ED until recorded as leaving the ED.

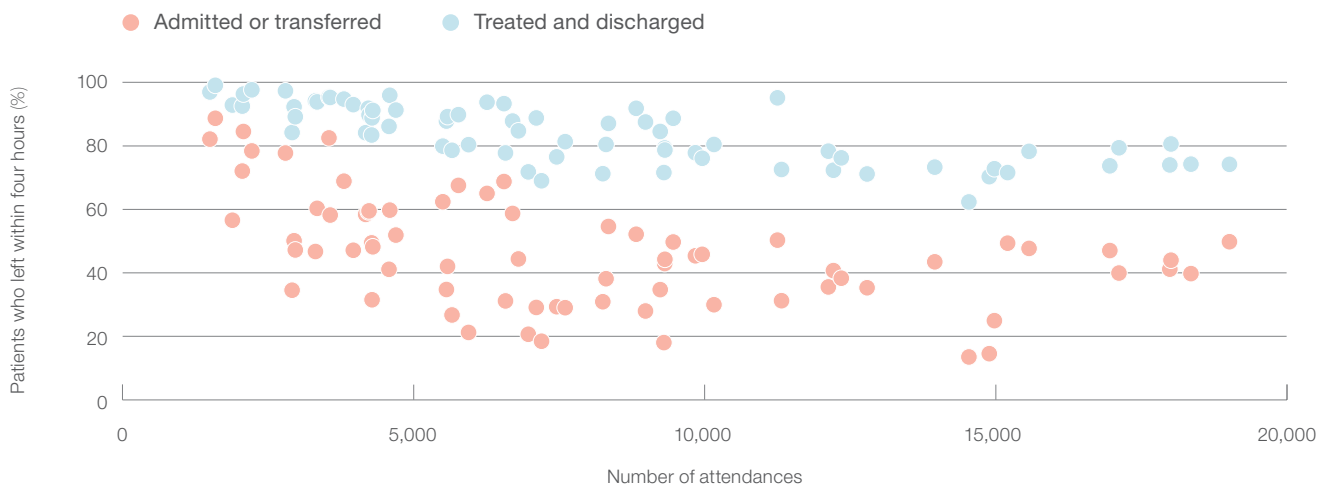
Source: NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

## Associations between the number of ED attendances and patients admitted or transferred

Figure 13 presents the correlation between the percentage of patients leaving the ED within four hours and the number of patients presenting at the ED by mode of separation. Mode of separation refers to the patient journey after presentation at the ED. Patients can either leave without or before completing treatment, be transferred to another hospital, treated and admitted to hospital or treated and discharged.

Each hospital in Figure 13 is represented by a blue and a red dot. The red dot represents the percentage of patients who were admitted or transferred within four hours and the blue dot represents the percentage of patients who were treated and discharged within four hours for the same hospital. Figure 13 highlights that the per cent of patients leaving within four hours decreases with increasing numbers of patients in EDs and is lower for admitted or transferred patients than for treated and discharged patients across all hospitals.

Figure 13: Percentage of patients who left the emergency department within four hours by total attendances, by grouped mode of separation October to December 2013



Note: Time from presentation to the ED until recorded as leaving the ED.

Source: NSW Health, Health Information Exchange. Data extracted on 28 January 2014.

## More urgent cases are more likely to be admitted or transferred

Figure 14 shows the percentage of patients in each mode of separation by triage category. Patients who are in triage categories 1 and 2 (more urgent) are more likely to be admitted or transferred than patients whose treatment is less urgent. Over 70% of patients in the less urgent triage categories 4 and 5 are treated and discharged.

EDs in peer group A1 treat a higher proportion of patients in triage categories 1 and 2 than EDs in peer groups C1 and C2 (Figure 15).

Hospitals with more urgent cases have a higher percentage of patients who are admitted or transferred.

Figure 14: Percentage of ED patients in mode of separation group by triage category, October to December 2013

	Triage 1	Triage 2	Triage 3	Triage 4	Triage 5	All Triage Categories
Treated and discharged	9%	34%	53%	75%	84%	64%
Treated and admitted to hospital	81%	60%	41%	17%	6%	28%
Patient left without, or before completing treatment	1%	1%	3%	7%	10%	6%
Transferred to another hospital	9%	4%	3%	1%	0%	2%
Other	0%	0%	0%	0%	1%	0%

Figure 15: Percentage of ED patients in triage category by peer group, October to December 2013

	Peer group A1	Peer group B	Peer group C1	Peer group C2	All
Triage category 1 Resuscitation	1.2%	0.6%	0.3%	0.3%	0.7%
Triage category 2 Emergency	14.6%	11.1%	8.5%	7.4%	11.0%
Triage category 3 Urgent	37.3%	32.8%	30.7%	25.2%	31.8%
Triage category 4 Semi-urgent	39.1%	42.7%	47.0%	48.7%	43.6%
Triage category 5 Non-urgent	7.8%	12.8%	13.5%	18.4%	12.9%

## The volume of patients admitted to hospital from ED affects the per cent of patients leaving within four hours

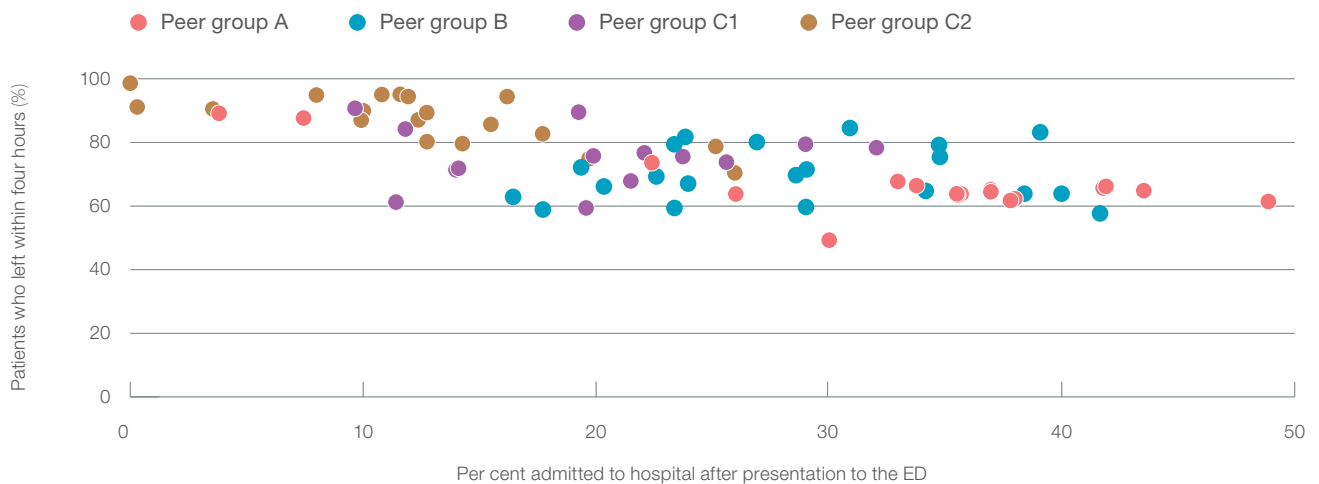
Figure 16 presents the correlation between the percentage of patients leaving the ED within four hours and the proportion of patients that are admitted to hospital, by peer group. This figure reaffirms the Bureau's finding that as more patients are admitted, fewer patients leave the ED within four hours.

It also shows that the time it takes for patients to depart the ED is related to peer group. The figure shows that hospitals from peer group A (usually large metropolitan hospitals) have higher percentages of admitted patients and lower

percentages of patients leaving the ED within four hours compared with hospitals in the C2 peer group (usually small and usually rural hospitals). Hospitals in the C2 peer group have a lower proportion of admission and better achievement in the percentage of patients who leave the ED within four hours.

Hospitals from peer group A (usually large metropolitan hospitals) have a higher percentage of admitted patients and are less likely to have patients leave the ED within four hours compared with hospitals in the C2 peer group (usually small and usually rural hospitals).

Figure 16: Percentage of patients who left the emergency department within four hours by percentage of ED patients admitted to hospital, October to December 2013



Note: Time from presentation to the ED until recorded as leaving the ED.

Source: NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.



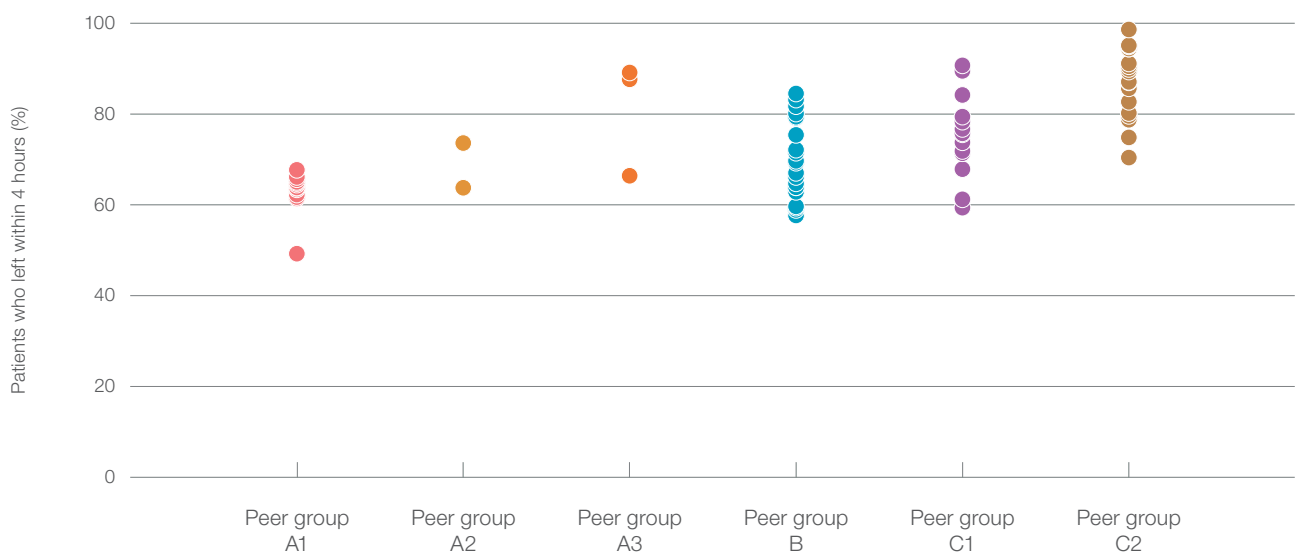
## There are differences between peer groups in the percentage of patients who leave the ED within four hours

Figure 17 shows the percentage of patients leaving the ED within four hours of arrival at the hospital level and within peer groups.

This figure shows that C2 peer group hospitals generally have more patients leaving the ED within four hours compared to other peer groups. In contrast, hospitals belonging to peer group A1 hospitals have fewer patients leaving the ED within four hours compared to other peer groups.

During the quarter, 55 hospitals out of the 72 reported individually improved on the percentage of their patients who left the ED within four hours compared to the same quarter last year. However, 17 hospitals showed a reduction in the percentage of patients leaving the ED within four hours. In the A1 peer group, 12 out of 13 hospitals showed an increase in the percentage of patients who left the ED within four hours.

Figure 17: Percentage of patients who left the ED within four hours of presentation, by peer group, October to December 2013



Note: Time from presentation to the ED until recorded as leaving the ED.

Source: NSW Health, *Health Information Exchange*. Data extracted on 28 January 2014.

# Conclusion of analysis

Whether hospitals have patients leaving the ED within four hours is affected by:

- Urgency of cases
- Number of patients admitted or transferred to another hospital
- Volume of patient visits

## Case mix or urgency of patients

Hospitals with a high percentage of urgent cases and a low percentage of non-urgent cases had poorer performance.

As [Figure 12](#) shows, the greater the percentage of patients in the more urgent triage categories 1 and 2 the less likely it is that this hospital will have patients leaving the ED within four hours.

## Number of patients admitted or transferred to another hospital

[Figure 13](#) shows that most hospitals have patients leaving the ED within four hours for their treated and discharged patients but were unable to meet this target for their admitted or transferred patients.

It is also important to note that more urgent cases are more likely to be admitted or transferred and therefore affect the percentage of patients leaving the ED within four hours. For example [Figure 14](#) shows 90% of triage 1 patients and 64% of triage 2 patients were admitted or transferred to another hospital.

## Volume of patients

Our analysis shows that the percentage of patients leaving ED within four hours is also affected by volume of patients. Hospitals from peer group A (usually large metropolitan hospitals) have lower performance when compared with C peer group (smaller and usually rural hospitals) ([Appendix Table 2b](#)).

High volume hospitals such as those in peer group A1 also have a higher percentage of more urgent cases than those in peer group C1 and 2 ([Figure 15](#)) and urgent cases are much more likely to be admitted or transferred to another hospital.

## Peer group matters

The fairest way to compare hospital performance in regards to the percentage of patients leaving the ED within four hours is within peer group. This is because hospitals in the same peer group are likely to have similar factors such as volume and patient type.

# Differences in performance between hospitals

## Time to treatment in NSW EDs

Appendix tables 1a and 2a present the median and 95th percentile times to start treatment for patients in each triage category (categories 2, 3, 4 and 5) for individual EDs by LHD (local health district (table 1a)) and peer group (2a).

There is variation between hospitals when comparing time to treatment by triage category. For example, among principal referral and major hospitals (Peer groups A1 and B), the range of results for the most urgent category (triage 2) and the category with the most amount of patients (triage 4) in the October to December 2013 quarter are summarised below:

- The median time to start treatment for all patients with conditions triaged as **emergency** (triage 2) ranged from four minutes at St Vincent's Hospital, to 13 minutes at Royal Prince Alfred Hospital
- The 95th percentile time to start treatment for patients with conditions triaged as **emergency** (triage 2) ranged from 10 minutes at Blacktown and Hornsby Ku-ring-gai Hospitals to 54 minutes at Wyong Hospital
- The median time to start treatment for all patients with conditions triaged as **semi-urgent** (triage 4) ranged from 14 minutes at the Tweed Hospital to 46 minutes at Maitland Hospital
- The 95th percentile time to start treatment for patients with conditions triaged as **semi-urgent** (triage 4) ranged from 74 minutes at the Tweed Hospital to 210 minutes at Shoalhaven and District Memorial Hospitals.

## Time to leaving the ED

Appendix tables 1b and 2b present number of attendances, the median and 95th percentile times to leaving the ED. Tables 1b and 2b also show the percentage of patients that left the ED within four hours, for individual EDs by LHD (table 1b) and by peer group (table 2b).

There is variation between hospitals when comparing the time to leaving the ED. For example, among principal referral and major hospitals (Peer groups A1 and B), the highest and lowest times in the October to December 2013 quarter are summarised below:

- The median time to leaving the ED ranged from two hours and 30 minutes at Mona Vale and District Hospitals to four hours and four minutes at Gosford Hospital
- The 95th percentile time to leaving the ED ranged from six hours and 10 minutes at Manning Base Hospital to 18 hours and 57 minutes at Campbelltown Hospital
- The percentage of patients who left the ED within four hours from presentation ranged from 49% at Gosford Hospital to 85% at Manly District Hospital.

For more detailed emergency department performance information about each public hospital see the **Appendices** section of this report on page 21.

## Appendix: ED time performance measures

### Download

ED time performance measures by  
*'local health district'* in a PDF file

### Download

ED time performance measures by  
*'peer group'* in a PDF file

### Download

ED time performance measures by  
*'local health district'* in an Excel file

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The suite of products includes:

- Three core modules titled *Admitted Patients, Elective Surgery and Emergency Departments*
- Appendix tables showing key results by peer group and LHD
- Activity and performance profiles about emergency department care and elective surgery for more than 80 hospitals and NSW as a whole



## About the Bureau

The Bureau of Health Information provides the community, healthcare professionals and the NSW Parliament with timely, accurate and comparable information on the performance of the NSW public health system. The work of the Bureau helps to improve and enhance accountability in the NSW health system and assists in ensuring the system benefits the people of NSW.

The Bureau is an independent, board-governed statutory health corporation. The conclusions in this report are those of the Bureau 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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# Admitted Patients

## Hospital Quarterly:

Performance of  
NSW public hospitals

### October to December 2013

Admitted patients are people who are accepted into hospital to receive care for reasons such as surgery, illness or childbirth. When a person is admitted into hospital they begin what is termed an 'episode of care'. This covers a single type of care such as acute care (typically a short-term admission for immediate care), rehabilitation or palliative care. Sometimes, a change in the medical needs of a person requires that they start a second or third episode during the same period of stay in hospital.

Although most episodes of care correspond to the length of time a patient spends in hospital,

sometimes a patient will stay in hospital over more than one episode. Examples include a patient who is transferred from acute care to rehabilitation, or a patient who is transferred from one hospital to another.

Information on the number, type and length of episodes allows healthcare professionals to better understand hospital needs. To enhance this information, the Bureau presents new analysis in this edition as outlined on [page 2](#).

In the October to December 2013 quarter there were 452,330 admitted patient episodes of care completed, 3% (12,574) more than the same quarter in the previous year.

Same day episodes have increased more than overnight episodes.

The average length of stay (ALOS) has not changed since the same period last year, but compared to five years ago has decreased for acute episodes including overnight acute episodes.

During the quarter	Oct-Dec 2012	Oct-Dec 2013	The difference
All admitted patient episodes	439,756 episodes	452,330 episodes	12,574 (3%)
All acute	423,618 episodes	435,382 episodes	11,764 (3%)
Overnight	231,291 episodes	235,348 episodes	4,057 (2%)
Sameday	192,327 episodes	200,034 episodes	7,707 (4%)
Newborn	18,202 episodes	17,824 episodes	-378 (-2%)
<b>Average length of stay</b>			
Acute	3.1	3.1	0.0 (0%)
Non-acute	15.3	15.3	0.0 (0%)

# What's new in this module

In this issue of Hospital Quarterly, the Bureau has revised how it reports admitted patient data to provide a more comprehensive picture of NSW hospital utilisation and performance.

As in previous reports this edition includes information on the volume and average length of stay associated with admitted patient acute episodes that were completed within the reference period. The number of babies born is also reported.

New analyses presented in this edition include:

- The volume, average length of stay and bed days for non-acute episodes of patient care

- Trends in the ALOS and bed days
- A graphic representation of the variation in ALOS for acute overnight episodes of care for each hospital peer group
- Calculations of the percentages of same day and overnight episodes that are planned and unplanned

The Bureau is committed to providing clarity on health service performance and anticipates this new information will enable better assessment of admitted patient demand and service activity within NSW hospitals.

## Which patients are included in this report

The group of patients reported in the admitted patient module includes individuals admitted to:

- Public hospitals
- Privately managed hospitals contracted to supply services for public patients
- Public multi-purpose services
- Public psychiatric hospitals

Excluded from this module are:

- Non-admitted patients, including community residential care and residential aged care covered by Commonwealth block funding
- Organ donors – posthumously admitted
- A hospital boarder who is not admitted, such as a relative of a patient
- When reporting episodes, bed days, patient episodes and length of stay, newborn babies who are 9 days or less at the time of admission and who only require newborn care and/or accommodation are excluded

# How many patients are admitted to hospitals

Of the 452,330 episodes of care completed in the October to December 2013 quarter, 96% (435,382) were recorded as acute care.

The remaining 16,948 episodes were for patients admitted for non-acute care. Non-acute care includes rehabilitation, palliative care and “other” non-acute care.

The number of acute care episodes increased by 3% compared to the same quarter in the previous year. Non-acute episodes increased by 5%.

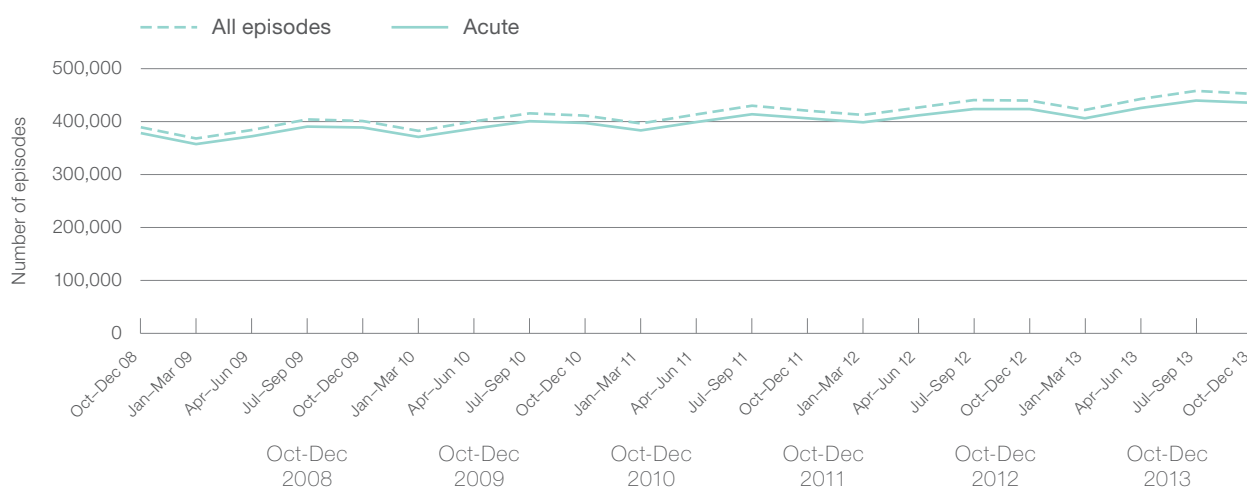
Looking over five years, although there are seasonal fluctuations in the number of patient episodes each year, there has been a gradual increase of episodes over time.

The number of babies born in the quarter was 17,824. This number has fluctuated over the five-year period, and is lower than the same quarter last year but similar to the same time five years ago.

Figure 1: Number of acute and non-acute episodes completed October to December 2013



Figure 2: Number of total and acute episodes completed October 2008 to December 2013



Total episodes	389,345	401,201	411,010	420,736	439,756	452,330
Acute episodes	378,213	388,606	397,100	406,011	423,618	435,382
Babies born	17,764	17,677	17,316	17,507	18,202	17,824

Note: Non-acute episodes involve patients hospitalised for rehabilitation, palliative care and ‘other’ non-acute reasons such as hostel accommodation, and geriatric evaluation and maintenance. Sometimes referred to as sub-acute care.

Source: NSW Health, Health Information Exchange, Admitted Patient Data Collection. Data extracted on 20 February 2014.



# How many acute episodes are same day and overnight

Admitted patient episodes can be either 'planned' (arranged in advance) or 'unplanned/other' (which include emergency admissions or unplanned surgical patients). During the quarter, the number of acute care episodes that were planned was 186,535. This accounted for 43% of all acute episodes. The number of acute episodes that were unplanned was 248,847, accounting for 57% of all acute episodes.

When looking at types of stays, overnight patient episodes accounted for 54% (235,348) of stays. The number of same day episodes was 200,034, accounting for 46% of all acute episodes.

Figure 4 shows that the majority of same day episodes were planned. Conversely the majority of overnight episodes were unplanned.

Figure 5 shows that the number of same day and overnight episodes have increased over the five year period.

The number of same day episodes has increased at a greater rate (21%) than overnight episodes (11%) over the five year period.

Figure 4: All acute episodes by same day and overnight, by number and percentage planned and unplanned, October to December 2013

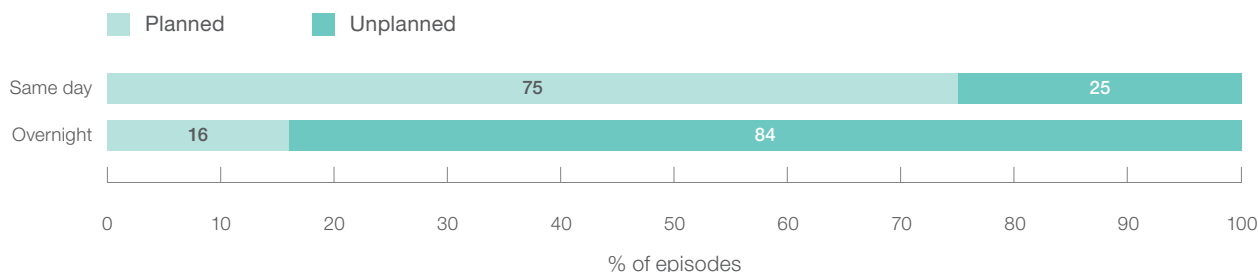
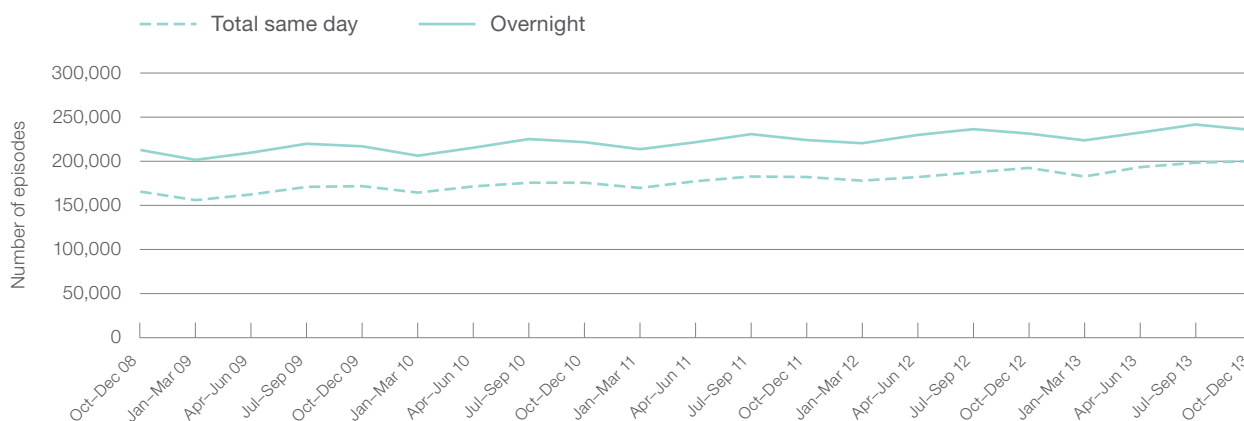


Figure 5: Total same day and overnight patient episodes completed each quarter October 2008 to December 2013



Source: NSW Health, Health Information Exchange, Admitted Patient Data Collection. Data extracted on 20 February 2014.

# How long did people spend in hospital

The length of time a patient stays in hospital is a reflection of both the treatment needs of a patient and the efficiency and effectiveness of the treatment provided.

The average length of stay for a patient varies depending on whether the episode is for acute or non-acute care. This is because acute episodes tend to be for an immediate treatment or surgery that is usually completed in a short period of time. A non-acute episode usually involves treatment or care over a longer term. A typical non-acute episode might involve rehabilitation for a fracture such as a broken neck

of femur. Another example might be palliative care for patients with a terminal illness.

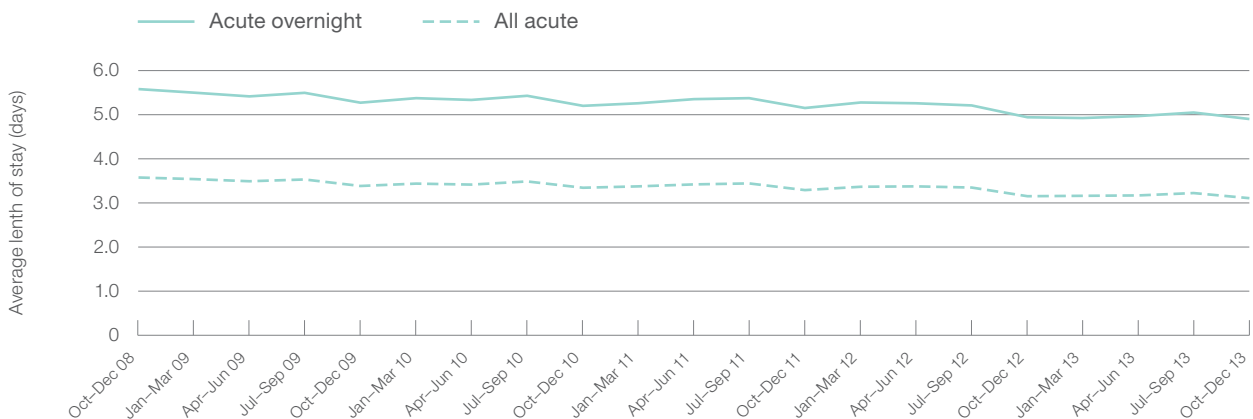
The average length of stay (ALOS) for all patient episodes completed during the quarter was 3.6. Over the five year period ALOS for all acute and overnight acute episodes have decreased by 0.5 days and 0.7 days respectively.

The average length of stay for an acute patient episode of care has decreased over the previous five years.

Figure 7: Average length of stay for acute, overnight acute and non-acute episodes completed, October to December 2013



Figure 8: Average length of stay for all acute and acute overnight episodes completed, January 2009 to December 2013



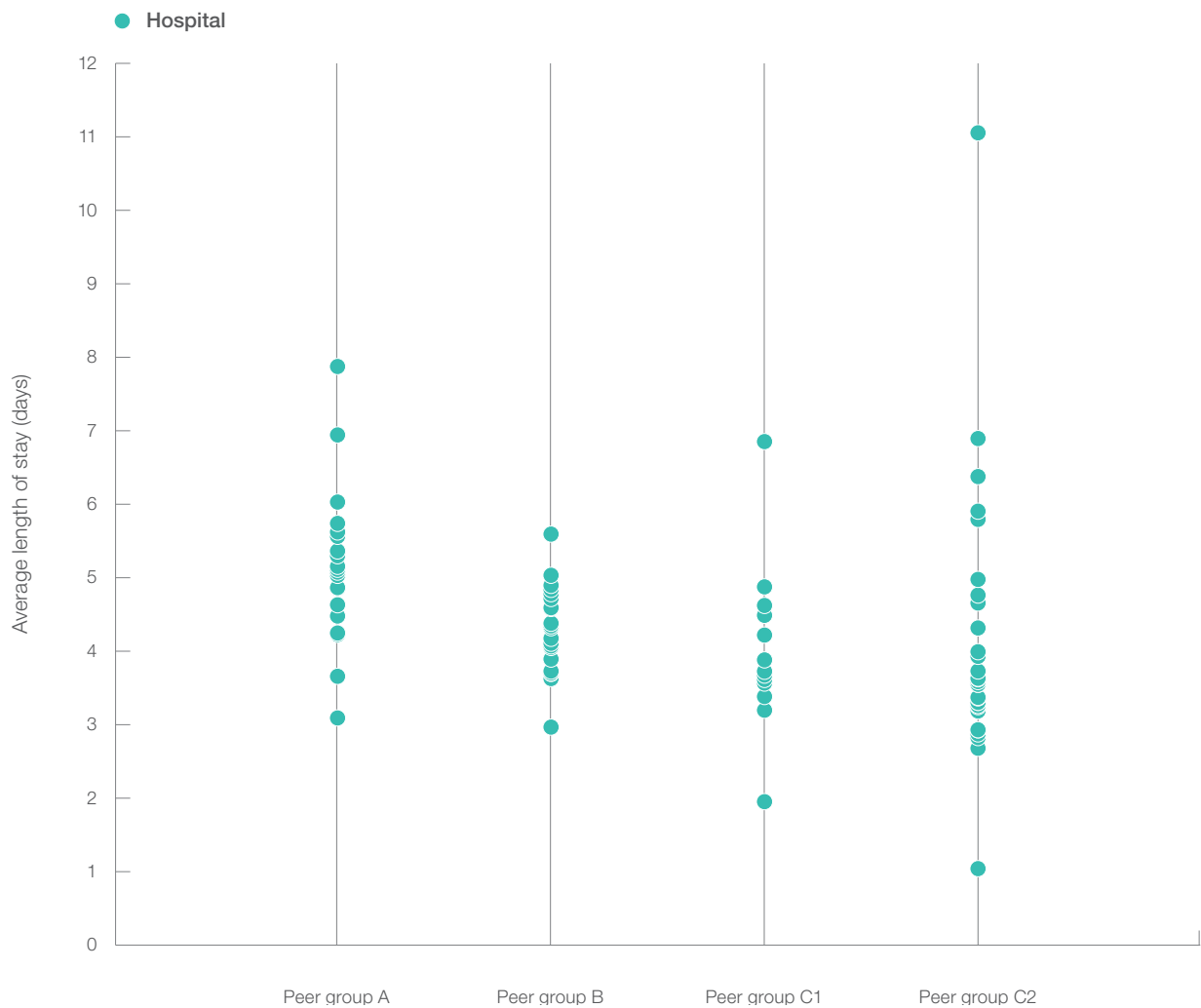
Source: NSW Health, Health Information Exchange, Admitted Patient Data Collection. Data extracted on 20 February 2014.

# What is the variation in length of stay among hospitals

Figure 10 shows the variation in the ALOS related to acute overnight episodes of care for NSW hospitals within peer groups A, B, C1 and C2. Among peer group A (tertiary referral) hospitals the ALOS varies between 3.1 and 7.9 days. The ALOS among peer group B (major hospitals)

hospitals varies between 3.0 and 5.6 days. Peer group C1 hospitals show variations in their ALOS of between 1.9 and 6.8 days.

Figure 10: Average length of stay for all completed acute overnight episodes by peer group October 2011 to December 2013



Source: NSW Health, Health Information Exchange, Admitted Patient Data Collection. Data extracted on 20 February 2014.  
 Note: ALOS is calculated by using the total bed days for all episodes with an end data in the quarter. The service mix varies between hospitals which in turn can influence the ALOS of a hospital

# How many beds are utilised

Bed days<sup>1</sup> describe the number of days during which a person is confined to a bed in a hospital during a specified time period. This is an important measure of hospital utilisation, patient demand and service provision.

Among patient episodes completed during October to December 2013 there was a total of 1,612,087 hospital bed days, a 2% increase on the number in the same quarter in the previous year (1,580,604).

The number of acute bed days was 1,352,801, an increase of 1% from the same quarter in the previous year (1,334,389). The number of non-acute bed days was 259,286, an increase of 5% from the same quarter in the previous year (246,215).

Over the five year period the number of bed days for acute episodes fluctuates seasonally but has remained relatively unchanged. However the number of non-acute bed days has increased by 33% over this period.

Figure 11: Total number of hospital bed days for October to December 2013

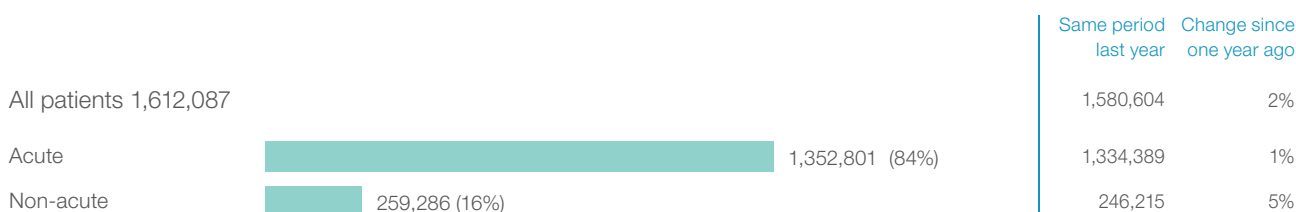
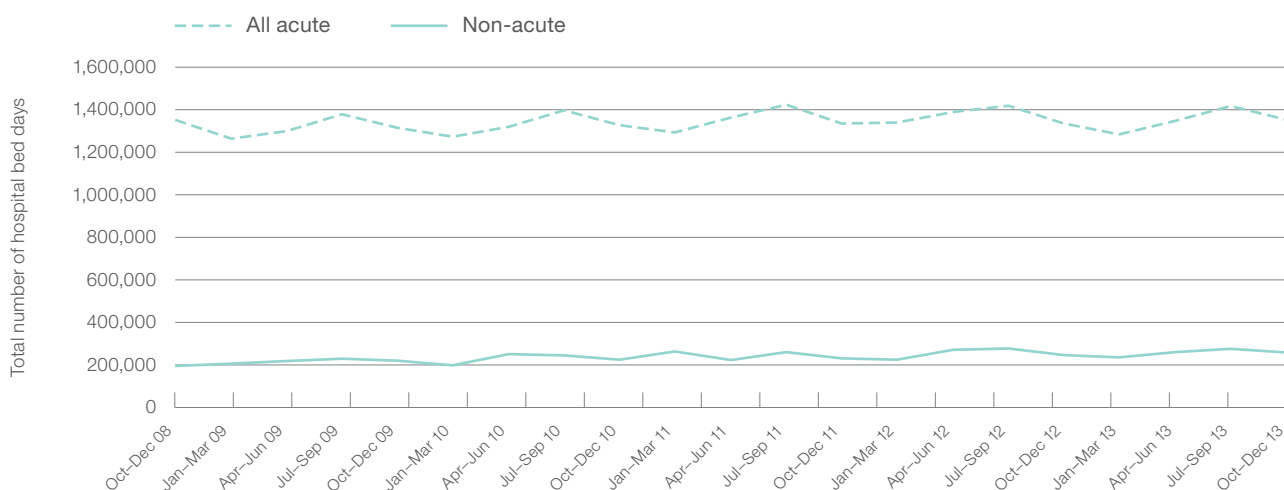


Figure 12: Total number of bed days for each quarter, January 2009 to December 2013



1. Bed days are calculated for all episodes completed during the reference period

Source: NSW Health, Health Information Exchange, Admitted Patient Data Collection. Data extracted on 20 February 2014

## Appendix table 1a: activity by hospital and local health district

Appendix table 1a presents the admitted patient episode activity for public hospitals in NSW. Data are presented by local health district for all principal referral, paediatric specialist, ungrouped acute – tertiary referral, major and district groups 1 and 2 hospitals. Information from smaller hospitals is presented for each local health district under the *'other'* category.

[Download Appendix 1](#) information by *'local health district'* in a PDF file

[Download Appendix 1](#) information by *'local health district'* in an Excel file

## Appendix table 2a: activity by hospital and peer group

Appendix table 2a presents the admitted patient episode activity for public hospitals in NSW. Data are presented by peer group for all principal referral, paediatric specialist, ungrouped acute – tertiary referral, major and district groups 1 and 2 hospitals. Information from smaller hospitals is presented under the *'other'* category.

[Download Appendix 2](#) information by *'peer group'* in a PDF file

[Download Appendix 2](#) information by *'peer group'* in an Excel file

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# Elective Surgery

## Hospital Quarterly: Performance of NSW public hospitals

### October to December 2013

Elective surgery, often called planned surgery, is surgery that a doctor considers necessary but can be delayed by at least 24 hours. Common examples of elective surgery include hip replacements, cataract extraction and ligament repairs. There are three categories of elective surgery: non-urgent, semi-urgent and urgent (see page 2 for a description of these categories).

There were 54,366 elective surgical procedures performed in October to December 2013, 1% more than the number conducted in the same quarter one year ago.

Compared with the same quarter last year, the volume of non-urgent surgery stayed the same, semi-urgent increased by 5% and urgent decreased by 1%.

Most patients (97%) received their surgery on time in NSW. This is unchanged from the previous quarter (July–September 2013), but an improvement of four percentage points from the same quarter last year. The percentage point increase in patients receiving surgery by category is shown in the table below.

This edition again includes analyses of the differences between NSW hospitals in terms of important factors that can influence a patient's time spent on the waiting list in each category.

This is one of three *Hospital Quarterly* modules. For the Emergency Departments and Admitted Patients modules visit [www.bhi.nsw.gov.au](http://www.bhi.nsw.gov.au)

During the quarter	Oct–Dec 2012	Oct–Dec 2013	The difference
Elective surgical procedures performed	53,728 procedures	54,366 procedures	638 procedures (+1%)
Elective surgery patients treated on time	93% on time	97% on time	+4 percentage points
Urgent elective surgery patients treated on time	96% on time	99% on time	+3 percentage points
Semi-urgent elective surgery patients treated on time	92% on time	97% on time	+5 percentage points
Non-urgent elective surgery patients treated on time	91% on time	95% on time	+4 percentage points

# Our approach to elective surgery reporting

If a person and their surgeon agree surgery is required but can be delayed by at least 24 hours, the surgeon will recommend the patient is placed on the waiting list for the procedure and assigns them to one of three urgency categories. Each category has its own target, which specifies the desired maximum time (in days) the patient should wait for their procedure. These are outlined in the box below.

Urgency categories: Elective surgery guidelines	
<b>Category 1</b> Urgent (eg, heart valve replacement, amputation of limb)	Admission <b>within 30 days</b> desirable for a condition that has the potential to deteriorate quickly and become an emergency
<b>Category 2</b> Semi-urgent (eg, colposcopy, amputation of digit)	Admission <b>within 90 days</b> desirable for a condition not likely to deteriorate quickly
<b>Category 3</b> Non-urgent (eg, septoplasty)	Admission <b>within 365 days</b> acceptable for a condition not likely to deteriorate quickly

## Explaining staged surgery

There are times when surgery is deemed necessary but should not, or cannot, take place until a period of time has passed. This time is determined by a clinician and is necessary for the surgery to be effective. This is called staged surgery and is an essential concept in managing elective surgery. It allows surgeons to place patients on the waiting list but prevents them from being admitted to hospital before it is clinically appropriate. Surgeons use clinical judgement to decide whether a procedure should be categorised as staged or not. One example of a staged procedure is waiting for

a broken bone to heal before removing pins or plates. The Bureau excludes staged and non-urgent cystoscopy procedures from performance measures.

## Reporting waiting times

To provide a comprehensive picture of the variation in times that patients waited for surgery, the Bureau reports the 90th percentile time and the median wait time by urgency category. The median waiting time for patients who received surgery is also presented by the specialty of the surgeon and by common procedures.

The Bureau also reports on patients who are currently on the waiting list to have their surgery. For these patients, the Bureau reports by urgency category, specialty of the surgeon and most common procedures. The number of patients who have been waiting for more than 12 months is reported for each hospital and by the specialty of the surgeon for NSW.

The Bureau is committed to providing clarity on surgical waiting times in NSW. Further detail on our methods can be found in the Bureau's *Hospital Quarterly Technical Supplement: Elective surgery measures, October to December 2013* available on the Bureau's website at [www.bhi.nsw.gov.au](http://www.bhi.nsw.gov.au)

See the **Appendices** section of this report (pages 22 to 23) for more detailed performance information about each public hospital providing elective surgery in NSW. This includes Hawkesbury Private Hospital, which is contracted to supply surgery for public patients.



## In this Report

The Bureau of Health Information's *Hospital Quarterly* provides a detailed assessment of waiting times to receive elective surgery and achievement of the target of all patients receiving their elective surgery within the recommended timeframe.

As in the previous issue of *Hospital Quarterly*, the Bureau presents analyses of the differences between NSW hospitals by considering important factors that can influence a patient's time spent on the waiting list for urgent, semi-urgent and non-urgent surgery.

These analyses are for patients who received their surgery in the October to December 2013 quarter.

Factors considered in this section are:

- the urgency of the surgery received (i.e. urgent, semi-urgent, non-urgent)
- the number of elective surgery procedures performed in each hospital
- the peer group of the hospital

Hospitals are grouped by hospital type or 'peer groups'. A definition of each peer group is listed below.

### Peer groups

NSW hospitals vary in size and the types and complexity of clinical services that they provide. To enable valid comparisons to be made between hospitals, it is important to compare similar or like hospitals together. To do this, the Bureau uses a NSW Health classification system called '*peer group*'. The hospital peer groups included in this report are described below.

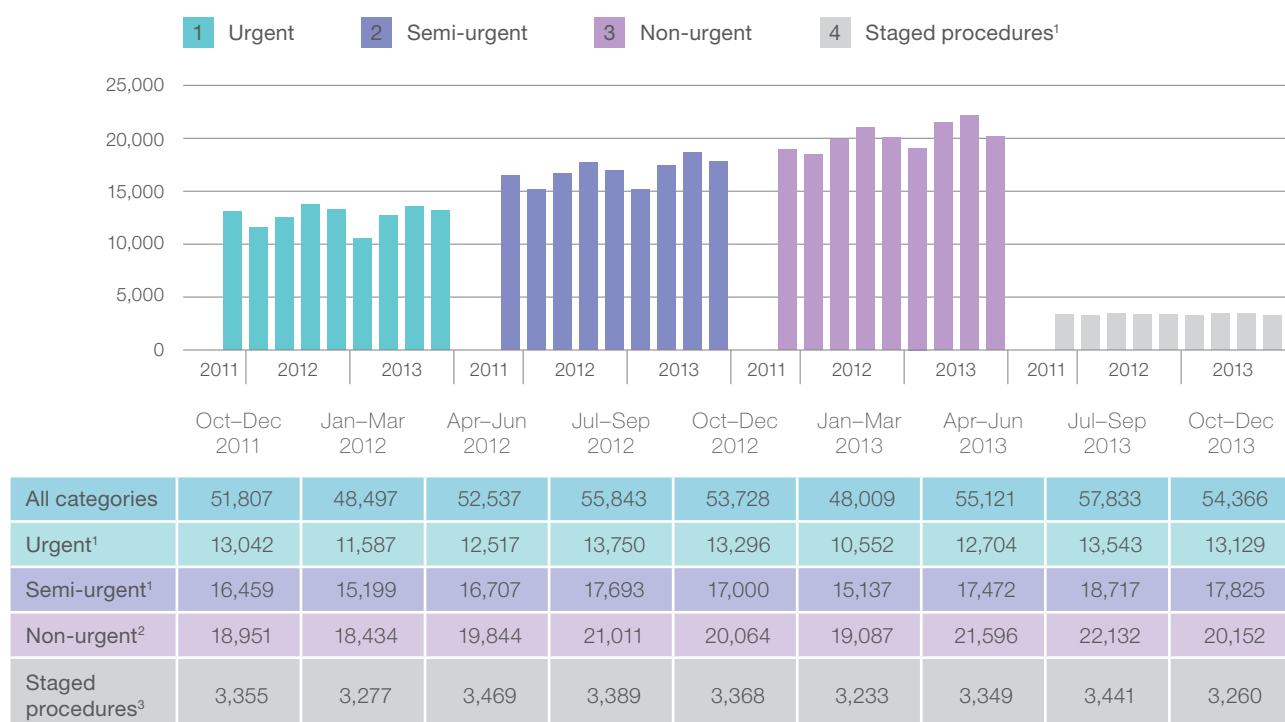
Group	Name	Description
A1	Principal referral	Very large hospitals providing a broad range of services, including specialised units at a state or national level.
A2	Paediatric specialist	Specialist hospitals for children and young people.
A3	Ungrouped acute – tertiary referral	Major specialist hospitals that are not similar enough to any other peer group to be classified with them.
B	Major	Large metropolitan and non-metropolitan hospitals.
C1	District group 1	Medium sized hospitals treating between 5,000–10,000 patients each year.
C2	District group 2	Smaller hospitals, typically in rural locations.

# Number of elective surgery procedures performed

During October to December 2013, the Waiting List Collection On-line System (WLCOS) recorded that 54,366 patients were admitted from the waiting list to receive an elective surgery procedure in NSW public hospitals or facilities

contracted by NSW hospitals. This is 6% lower than the number conducted in the previous quarter and 1% higher than the 53,728 surgical procedures completed in the same quarter last year (Figure 1).

Figure 1: Total number of elective surgery procedures conducted, by urgency category, October 2011 to December 2013



1. Including non-urgent cystoscopy.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

# Composition of surgery

**Urgent surgery:** There were 13,129 procedures completed, down 1% compared with one year ago. Urgent procedures made up 24% of all completed elective surgery.

**Semi-urgent surgery:** There were 17,825 procedures completed, up 5% compared with one year ago. Semi-urgent procedures made up 33% of all completed elective surgery.

**Non-urgent surgery:** There were 20,152 procedures completed, similar to one year ago. Non-urgent procedures made up 37% of all completed elective surgery.

**Staged surgery:** There were 3,260 procedures, down 3% compared with one year ago. Staged procedures made up 6% of all completed elective surgery.

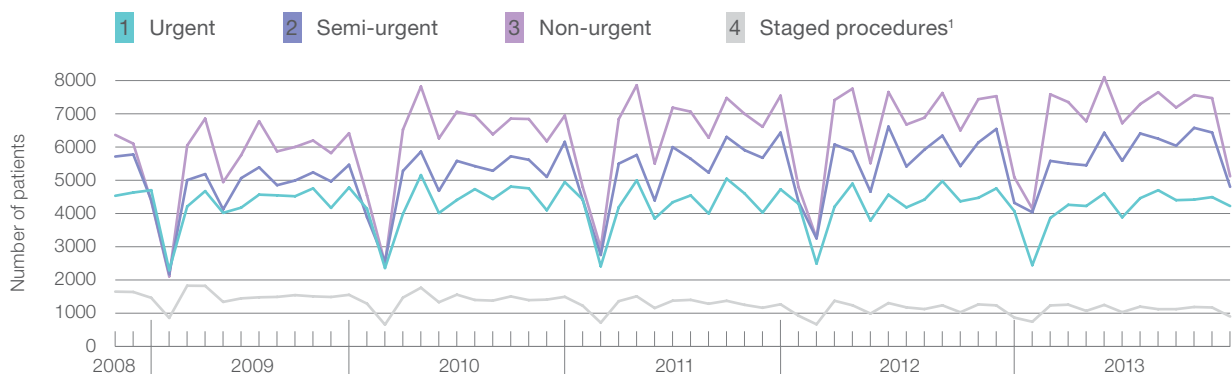
## Change over five years

The composition of surgical procedures completed by urgency category has changed over the past five years (Figure 2), with this change mainly driven by the number of semi-urgent and non-urgent surgeries.

During the past five years there has been an overall increase in the number of procedures performed. Proportionally, there has been a downward trend in procedures in the urgent category and an upward trend in the semi and non-urgent categories.

The proportion of non-urgent surgery over the past five years has increased. This reflects both the increase in non-urgent surgery and the decrease in urgent surgery.

Figure 2: Patients who received elective surgery, by urgency category, by month, October 2008 to December 2013



1. Including non-urgent cystoscopy.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

# Patients admitted on time for elective surgery

Of all patients who were admitted to a public hospital for elective surgery, 97% were admitted within the timeframe recommended by their surgeon (Figure 3). This remains unchanged from the preceding quarter and up four percentage points from the same quarter in 2012 (93%).

Figure 3 presents the percentage of patients in each urgency category who received their surgery on time for the most recent nine quarters.

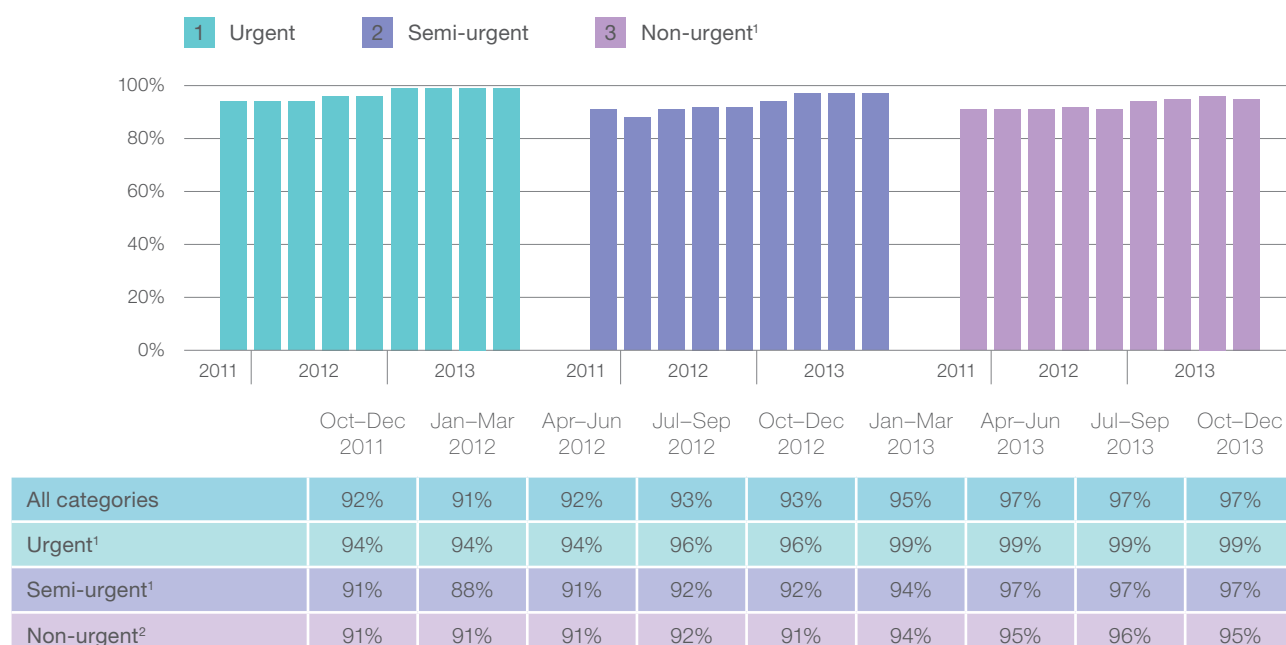
**Urgent surgery:** 99% of patients were admitted within the recommended 30 days, unchanged from last quarter and up three percentage points compared with the same quarter in 2012.

**Semi-urgent surgery:** 97% of patients were admitted within 90 days, unchanged from last quarter and up five percentage points compared with the same quarter in 2012.

**Non-urgent surgery:** 95% of patients were admitted within 365 days, a decrease of one percentage point from last quarter and an increase of four percentage points compared with the same quarter in 2012.

There has been a noticeable increase in the proportion of surgeries completed on time across all urgency categories over the past two years.

Figure 3: Percentage of elective surgery patients treated within recommended waiting time, by urgency category, October 2011 to December 2013



1. Excluding non-urgent cystoscopy.

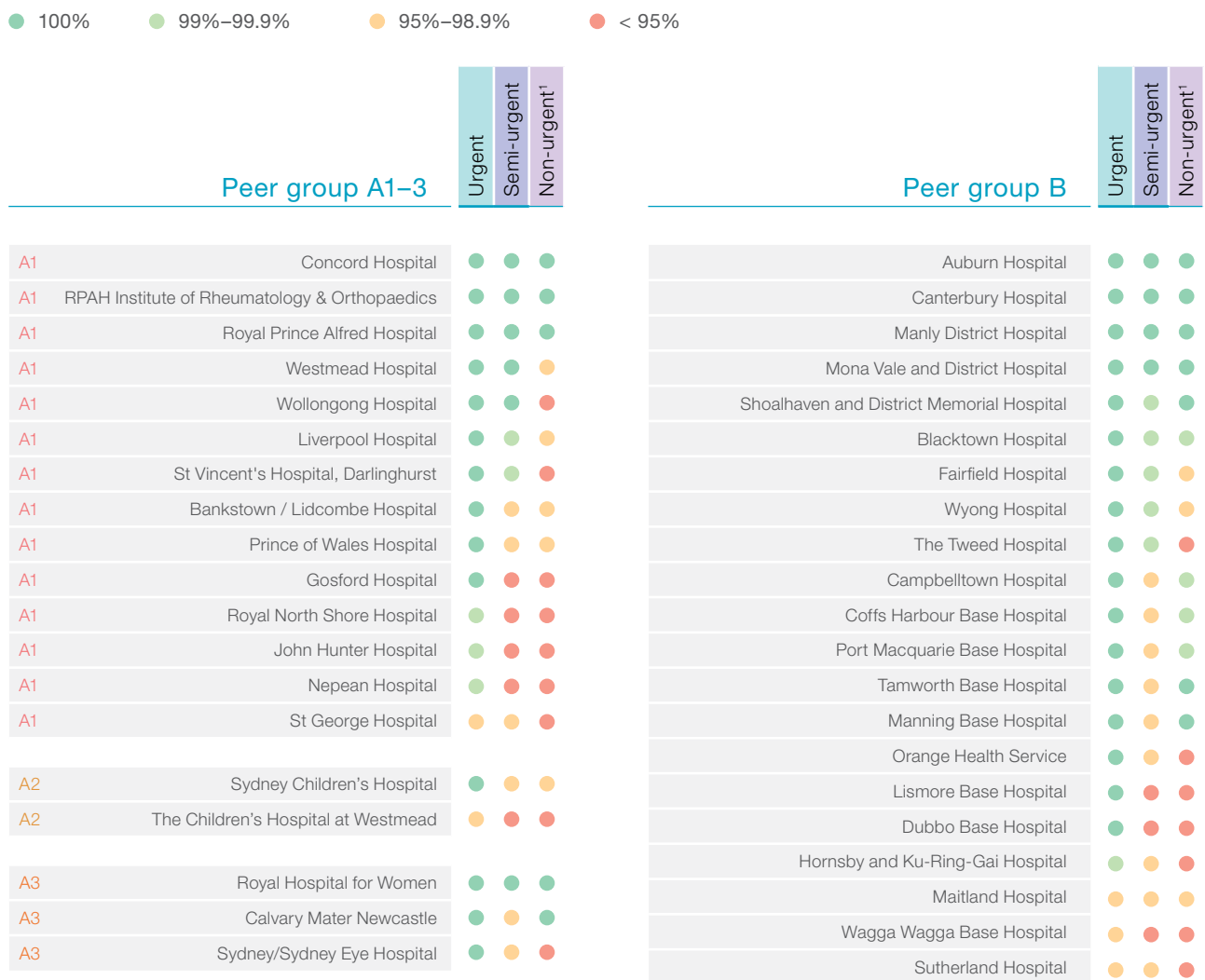
Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

# Some hospitals are achieving the recommended time across all urgency categories

The rows in Figure 4 present the proportion of patients receiving their elective surgery within the recommended time frame for specific hospitals and are sorted by peer group. They highlight differences in the per cent of elective surgery that is completed on time and show some hospitals achieve 100% of surgeries on time across all categories and others complete less than 95% of surgeries on time in one or more categories.

Eight hospitals from peer group C2 are treating all of their patients within the recommended waiting times across all urgency categories.

Figure 4: Percentage of elective surgery patients treated within recommended waiting time, by urgency category and peer group October to December 2013.

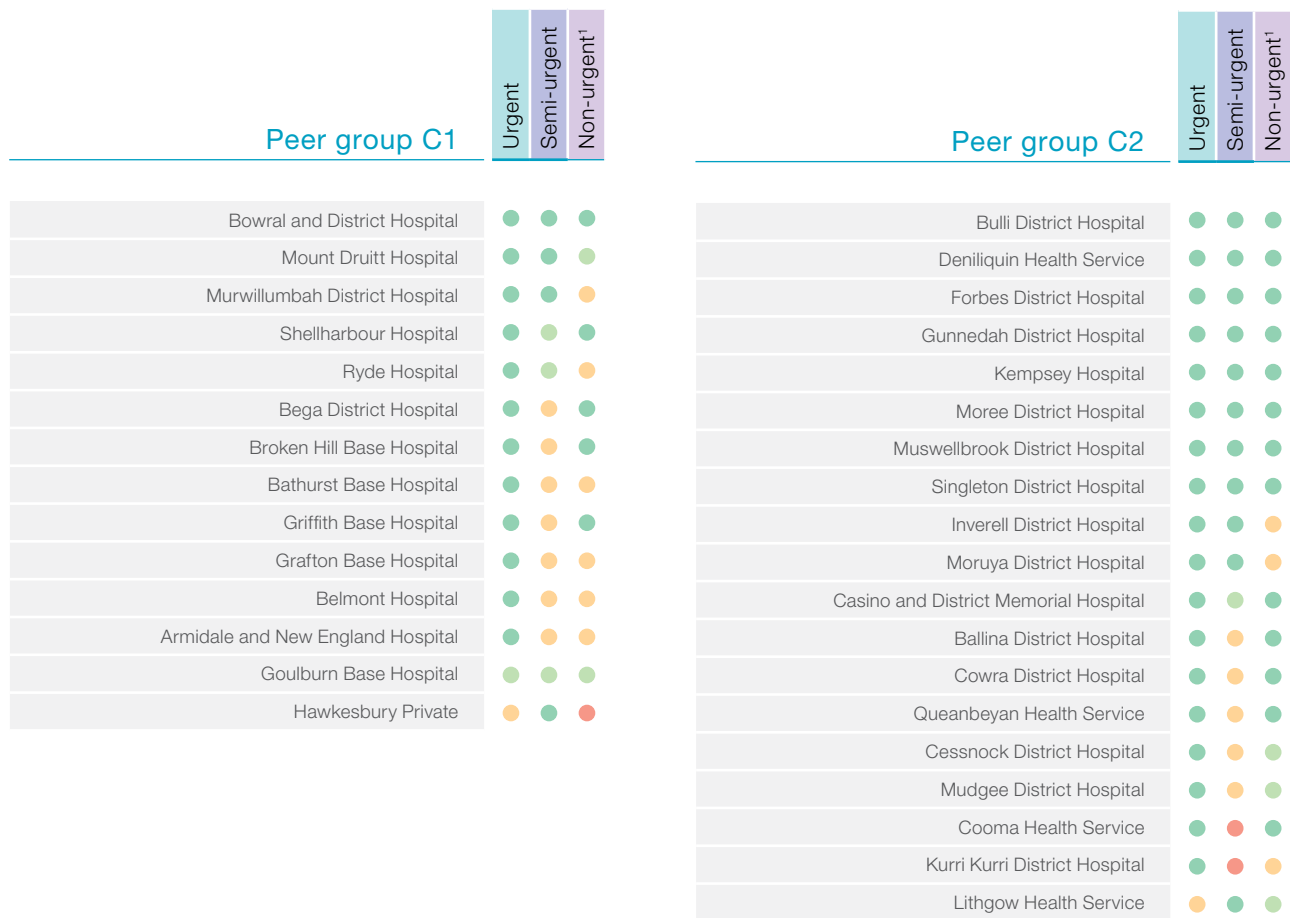


1. Excluding non-urgent cystoscopy.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014.

Figure 4: Percentage of elective surgery patients treated within recommended waiting time, by urgency category and peer group October to December 2013.

● 100% ● 99%–99.9% ● 95%–98.9% ● < 95%



1. Excluding non-urgent cystoscopy.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014.

# Median waiting times for elective surgery

Median wait time is the number of days by which exactly half the number of patients received surgery. **Figure 5** shows median wait times in the semi-urgent category and the non-urgent category remain the lowest they have been for two years.

**Urgent surgery:** The median wait was 10 days – largely unchanged over the past two years.

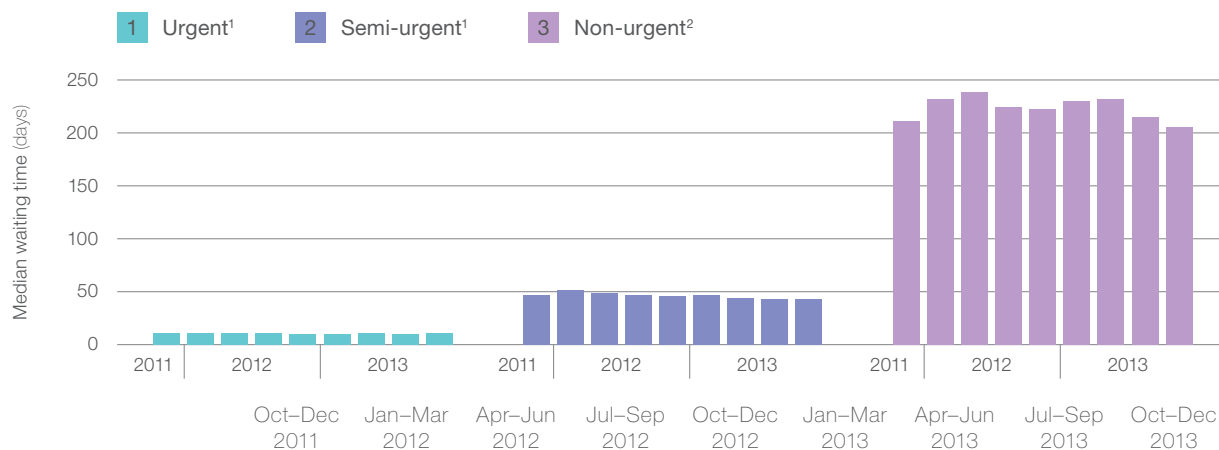
**Semi-urgent surgery:** The median wait time for this category was 43 days, three days less than the same quarter in 2012 (46 days) and four days less than the same quarter in 2011 (47 days).

**Non-urgent surgery:** The median wait time for this category was 205 days, 17 days less than the same quarter in 2012 (222 days).

Non-urgent median waiting times are the most variable of the three urgency categories. Over the past nine quarters, non-urgent procedure wait times have ranged from 205 days this quarter to 238 in April to June 2012.

Median waiting times for semi-urgent and non-urgent elective surgery are among the lowest they have been for two years.

**Figure 5:** NSW elective surgery median waiting time (days), by urgency category, October 2011 to December 2013



Urgency Category	Oct-Dec 2011	Jan-Mar 2012	Apr-Jun 2012	Jul-Sep 2012	Oct-Dec 2012	Jan-Mar 2013	Apr-Jun 2013	Jul-Sep 2013	Oct-Dec 2013
Urgent <sup>1</sup>	11	11	11	11	10	10	11	10	10
Semi-urgent <sup>1</sup>	47	51	49	47	46	47	44	43	43
Non-urgent <sup>2</sup>	211	232	238	224	222	230	232	215	205

1. Excluding staged procedures.

2. Excluding staged procedures and non-urgent cystoscopy.

**Note:** Because of changes in methods and reporting, numbers of surgical procedures by urgency category will differ from those reported in previous NSW Ministry of Health's *Quarterly Hospital Performance Reports* and Bureau of Health Information *Hospital Quarterly reports* published prior to May 2011.

**Source:** NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

# Waiting time performance is not affected by number of procedures or by the mix of patients

Figures 6 a, b and c present the median waiting times at hospitals by total number of procedures and stratified by peer group.

It can be seen that smaller hospitals (peer groups C1 and C2) perform a lower number of procedures, and therefore cluster closer to the origin of the x axis.

Peer group A hospitals generally perform a higher number of procedures and so are more dispersed towards the right hand side of the graph. Figures 6 a, b and c show variation in waiting times within peer groups. There is little or no evident relationship between number of procedures and median waiting times within urgency groups.

The Bureau also found that having a higher or lower percentage of urgent or less urgent cases was not associated with any increase or decrease in surgery completed on time (data not shown).

In addition, the Bureau investigated associations of urgency mix between the 90th percentile wait times and found no association (data not shown).

This analysis reveals there is no clear relationship between the volume of surgery performed in a hospital and the median waiting times for patients in all urgency categories: long and short waiting times are seen in hospitals performing both very low or very high numbers of surgical procedures.



Figure 6a: Urgent: NSW elective surgery median waiting time by peer group, October to December 2013.

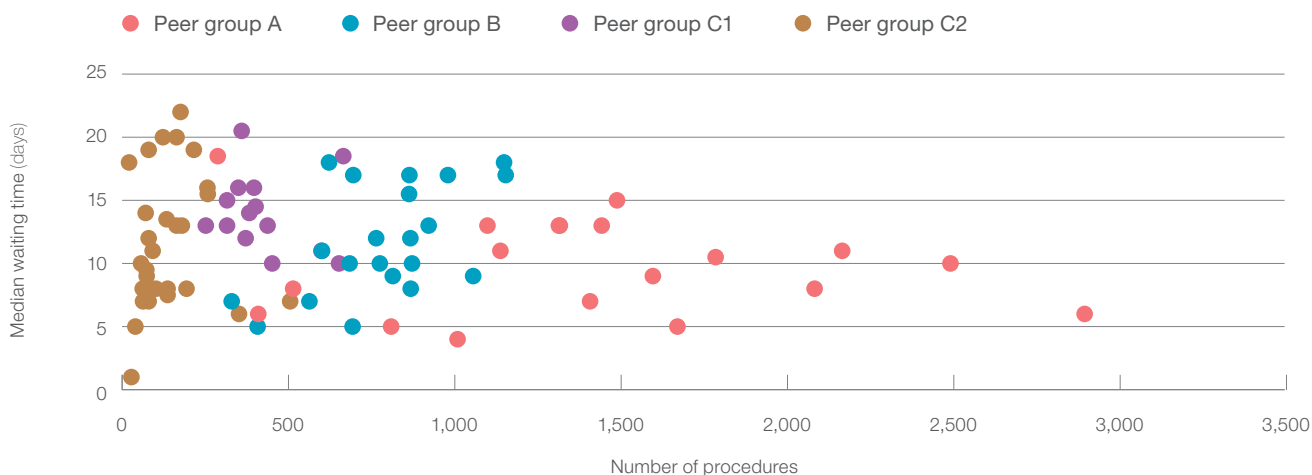


Figure 6b: Semi-urgent: NSW elective surgery median waiting time by peer group, October to December 2013.

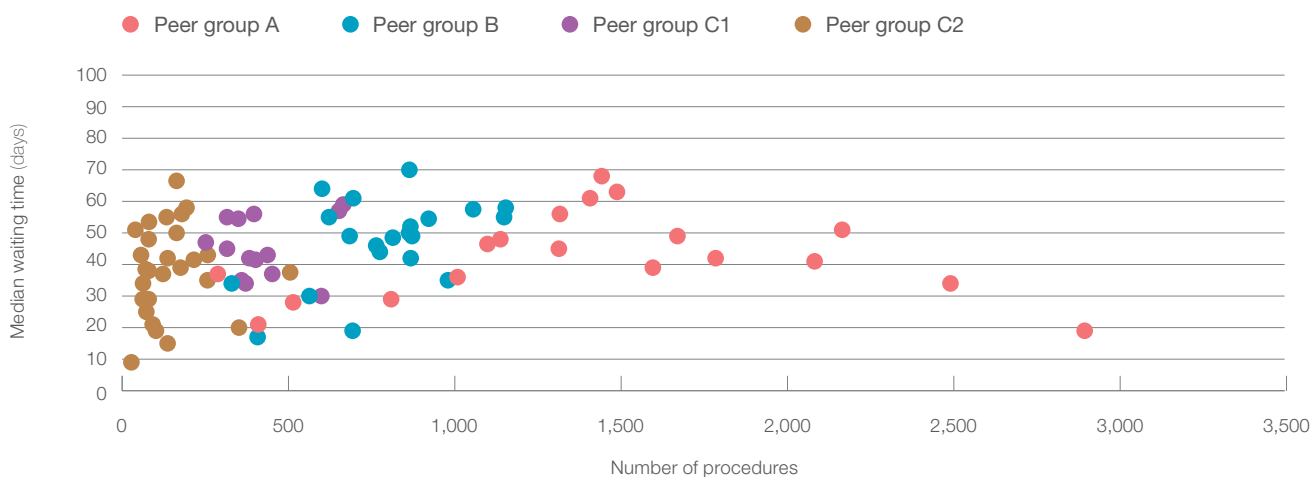
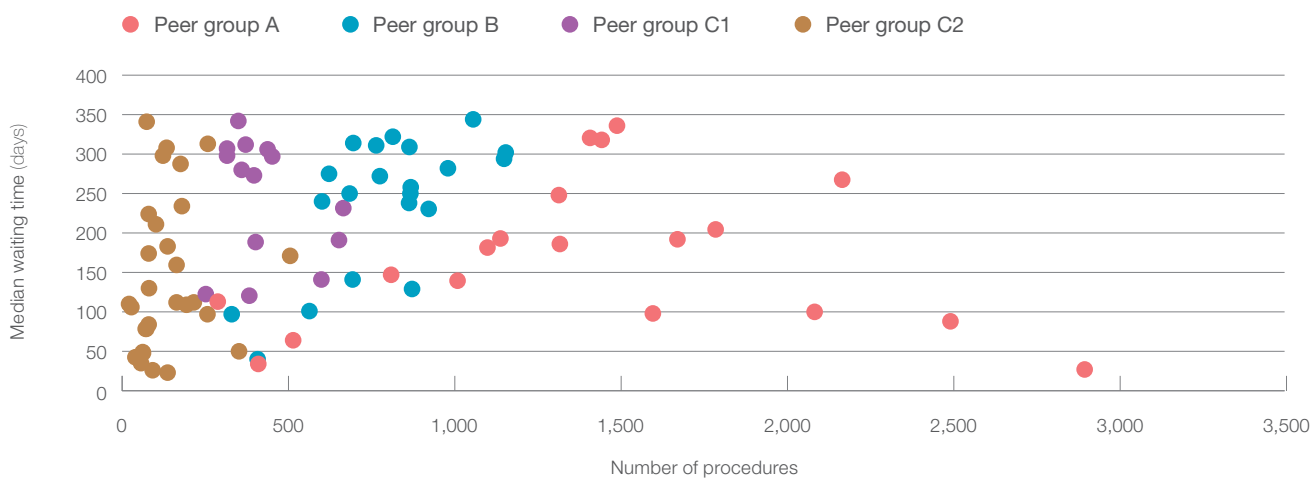


Figure 6c: Non-urgent: NSW elective surgery median waiting time by peer group, October to December 2013.



1. Excluding non-urgent cystoscopy.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014.

# 90th percentile waiting times for elective surgery

The 90th percentile wait time is the number of days by which 90% of patients received surgery. The final 10% took equal to or longer than this time.

Figure 7 presents the 90th percentile wait time to be admitted for surgery for the last nine quarters. These results exclude staged patients and non-urgent cystoscopy procedures.

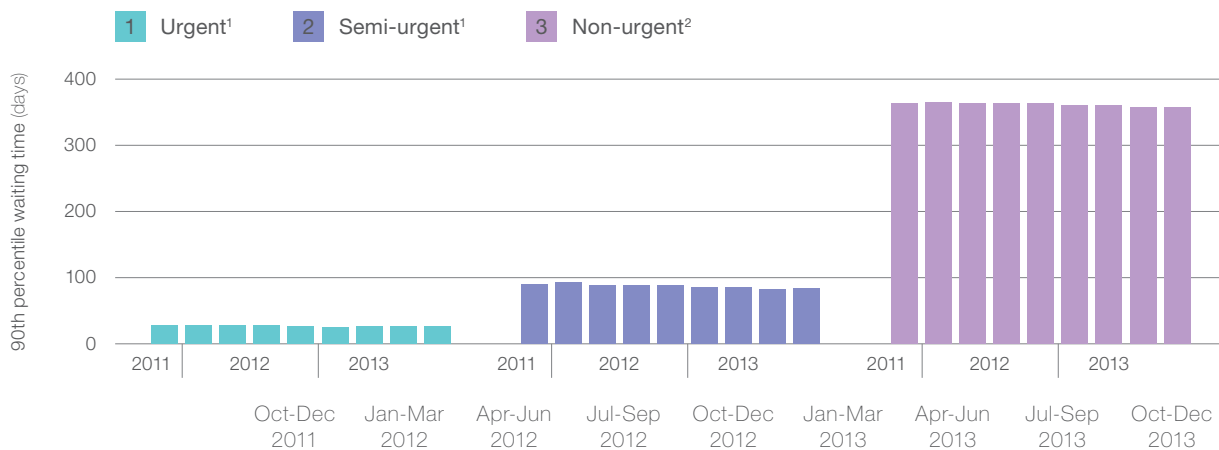
**Urgent surgery:** The 90th percentile wait was 26 days, one and two days less than the same quarters in 2012 and 2011 respectively.

**Semi-urgent surgery:** The 90th percentile wait time for this category was 84 days, four days less than the same quarter in 2012 (88 days) and six days less than the same quarter in 2011 (90 days).

**Non-urgent surgery:** The 90th percentile wait time for this category was 357 days, seven days less than the same quarter in 2011 and 2012.

The time by which almost all patients (90%) have received their surgery is the lowest for the October–December 2013 quarter, in all three categories.

Figure 7: NSW elective surgery 90th percentile waiting time (days), by urgency category, October 2011 to December 2013



Urgency Category	Oct-Dec 2011	Jan-Mar 2012	Apr-Jun 2012	Jul-Sep 2012	Oct-Dec 2012	Jan-Mar 2013	Apr-Jun 2013	Jul-Sep 2013	Oct-Dec 2013
Urgent <sup>1</sup>	28	28	28	28	27	25	26	26	26
Semi-urgent <sup>1</sup>	90	93	89	88	88	86	82	83	84
Non-urgent <sup>2</sup>	364	365	364	363	364	361	359	357	357

1. Excluding staged procedures.
2. Excluding staged procedures and non-urgent cystoscopy.

**Note:** Because of changes in methods and reporting, numbers of surgical procedures by urgency category will differ from those reported in previous NSW Ministry of Health's *Quarterly Hospital Performance Reports* and Bureau of Health Information *Hospital Quarterly reports* published prior to May 2011.

**Source:** NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

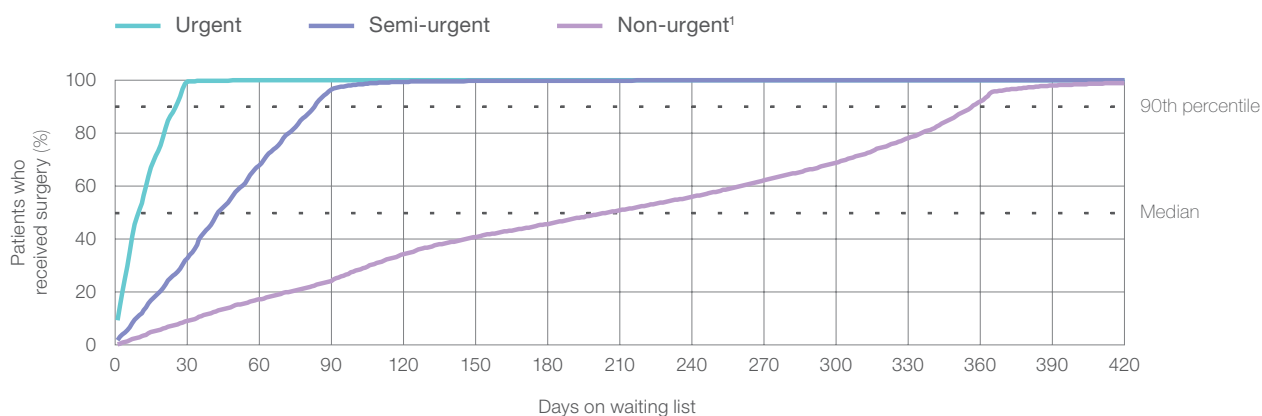
## Cumulative wait time

The cumulative percentage of patients who received elective surgery by times presented in **Figure 8** indicate the rate at which patients were admitted for surgery. A steep slope indicates a high rate of completion of patients' surgery over

the period shown. A flat slope shows a lower rate of completion of patients' surgery over the period.

Urgent patients are admitted more rapidly with almost all patients admitted for surgery within 30 days. Non-urgent patients are admitted less rapidly with almost all patients admitted within 420 days.

**Figure 8:** Cumulative percentage of patients who received elective surgery, by waiting time (days), October to December 2013



1. Excluding non-urgent cystoscopy.

**Note:** Excludes the total number of days the patient was coded as 'not ready for care'.

**Source:** NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014.

## Small number suppression

Some hospitals conduct very few surgical procedures. Publishing these small numbers could lead to some cases being recognised and can also affect the accuracy of the data. The Bureau suppresses information based on very few patients. If there are fewer than five patients in any group, patient numbers are displayed as <5. For measures reported by urgency category, counts have been pooled with another urgency group. Because the staged procedure category is excluded from performance measure calculations, low counts in this group are not suppressed (**Appendix table 1a, 2a**). If there are fewer than 10 patients in any group, on time performance and median waiting times are suppressed (**Appendix tables 1b,1c and 2b,2c**). If there are fewer than 100 patients in any group, the 90th percentile is suppressed (**Appendix table 1c and 2c**).

## Variation between hospitals within a peer group

Figure 9 presents the 90th percentile waiting time to receive elective surgery for each of the three urgency categories by peer group. The coloured lines across the graph represent the recommended time to receive surgery in each urgency category: 30 days for urgent, 90 days for semi-urgent and 365 days for non-urgent.

There is a considerable range in the 90th percentiles in each peer group, and every peer group has hospitals with short or long waiting times.

For example for non-urgent surgery, the 90th percentile waiting times ranged from:

- 92 to 410 days for peer group A
- 233 to 375 days for peer group B
- 195 to 365 days for peer group C1
- 76 to 361 days for peer group C2.

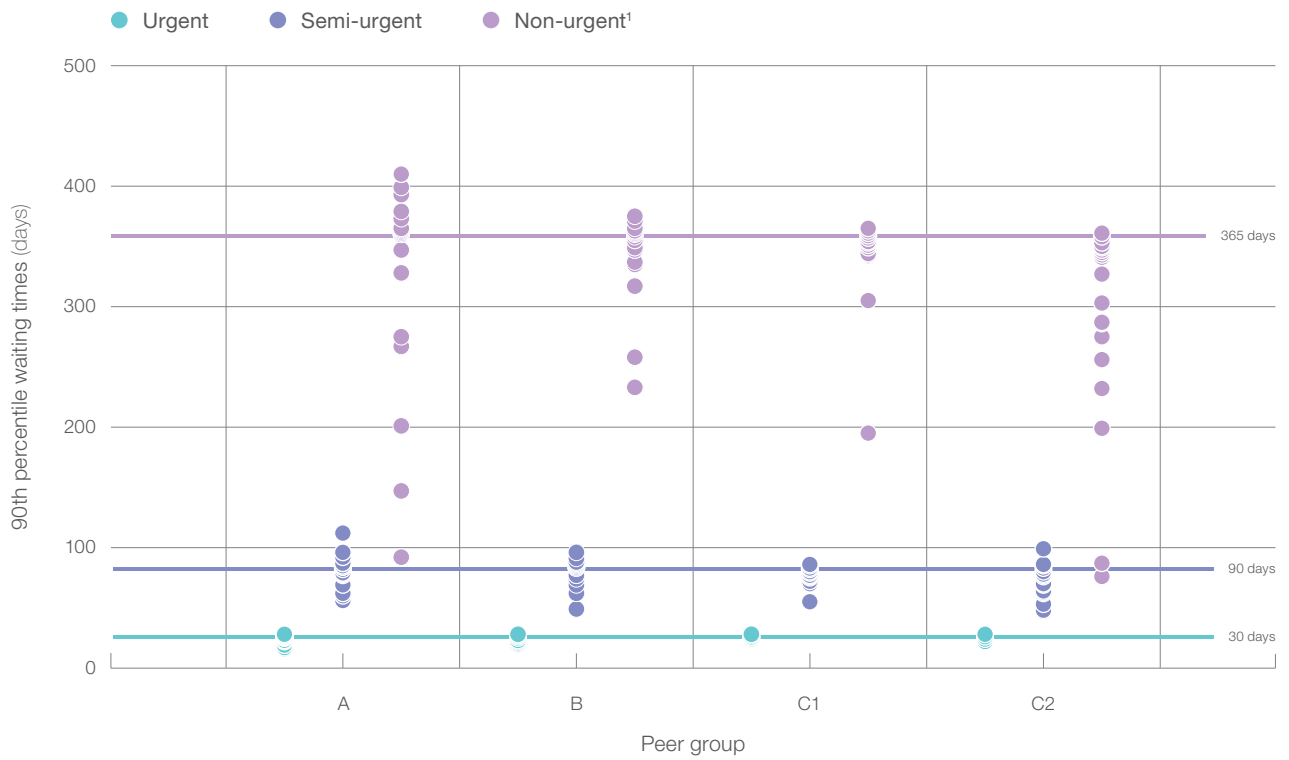
The longest 90th percentile waiting times for non-urgent were in the A peer group, and the shortest 90th percentile were in the C1 and C2 groups.

Eleven hospitals had 90th percentiles greater than the recommended maximum waiting time of one year. These were across all peer groups.

There is a wide range of 90th percentile waiting times for elective surgery. More hospitals in the A and B peer groups had 90th percentile greater than the maximum recommended waiting times, matching the fact that fewer hospitals in these groups reached 100% on time surgery. However, there are hospitals with shorter or longer waiting times in each peer group.

While most hospitals in each peer group have similar 90th percentiles times for non-urgent elective surgery, each peer group has some hospitals showing particularly low waiting times.

Figure 9: NSW elective surgery 90th percentile waiting time (days) by peer group and urgency category, October to December 2013



1. Excluding non-urgent cystoscopy.

Note: 90th percentile not shown for hospitals with less than 30 patients.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014.

## Median waiting times by specialty

Figure 10 presents the number of patients and median waiting times for patients who received elective surgery, by the specialty of the surgeon. The specialty of the surgeon describes the area of clinical expertise held by the doctor who performed the surgery.

The median waiting time does not include the time waited for the initial appointment with the specialist.

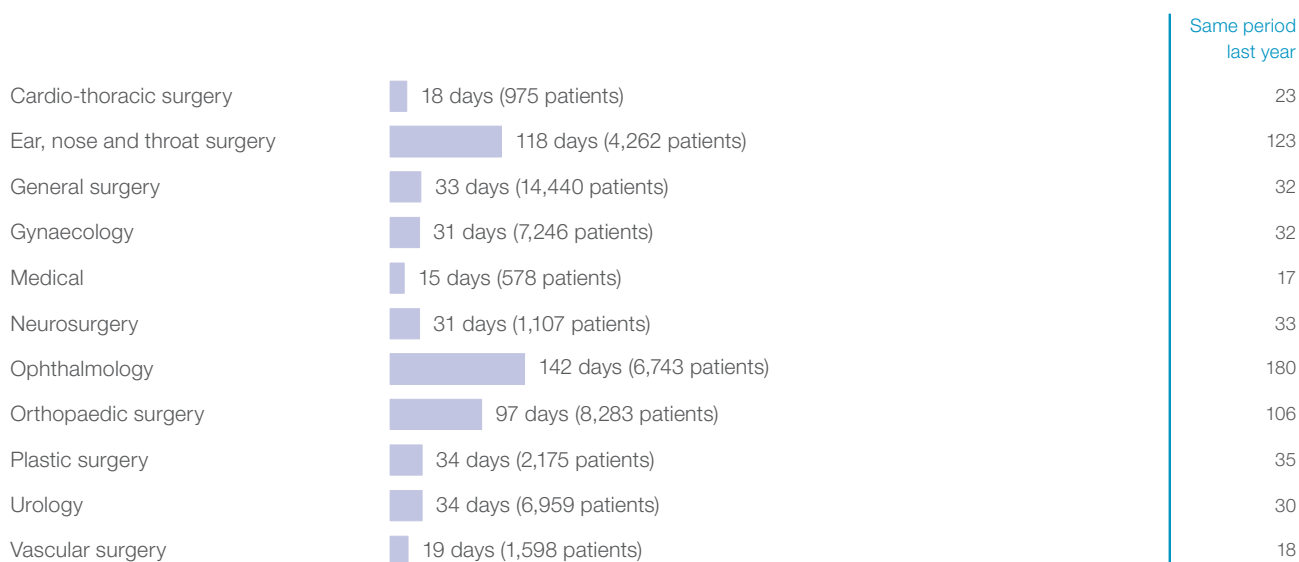
Ophthalmology (142 days), ear, nose and throat surgery (118 days) and orthopaedic surgery (97 days) were the surgical specialties with the longest median waiting times in October to December 2013. These specialties also had the longest median waiting times in the same quarter last year.

Cardio-thoracic surgery (18 days), vascular surgery (19 days) and medical <sup>2</sup> (15 days) had the shortest median waiting times. These specialties also had the shortest median waiting times in the same quarter last year.

General surgery (14,440 patients), orthopaedic surgery (8,283 patients) and gynaecology (7,246 patients) were the surgical specialties with the highest number of patients receiving elective surgery in the October to December 2013 quarter.

Cardio-thoracic surgery (975 patients) and medical <sup>2</sup> (578 patients) had the lowest number of patients receiving elective surgery.

Figure 10: Median<sup>1</sup> waiting time (days) for patients who received elective surgery, by specialty, October to December 2013



1. This is the number of days it took for half the patients who received elective surgery during the period to be admitted and receive their surgery. The other half took equal to or longer than the median to be admitted for surgery.
2. Medical refers to surgery performed by a non-specialist medical practitioner.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

# Median waiting times by common procedures

Figure 11 presents the median waiting times for patients who received common elective surgery procedures. The procedure is the treatment the patient receives when admitted to hospital for elective surgery.

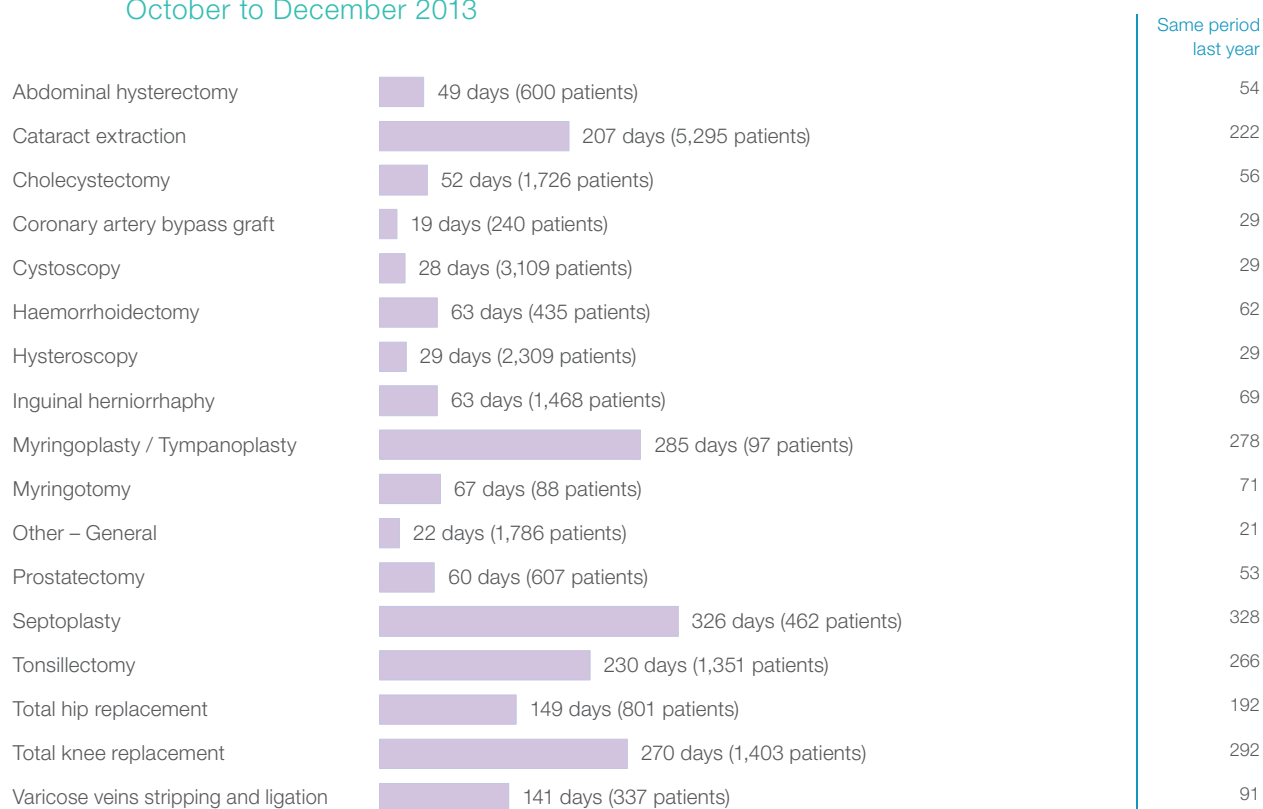
The procedures with the longest median waiting times in the October to December 2013 quarter were septoplasty (326 days), total knee replacement (270 days) and myringoplasty / tympanoplasty (285 days). The procedures with the shortest median waiting times were coronary artery bypass graft (19 days), other – general (22 days), cystoscopy (28 days) and hysteroscopy

(29 days). These procedures also had the longest and shortest median waiting times in the same quarter last year.

Cataract extraction was the most common procedure (5,295 patients) performed in the October to December 2013 quarter.

Different types of surgery typically have different waiting times, partly related to their relative urgency.

Figure 11: Median<sup>1</sup> waiting time (days) for patients who received elective surgery, by procedure,<sup>2</sup> October to December 2013



1. This is the number of days it took for half the patients who received elective surgery during the period to be admitted and receive their surgery. The other half took equal to or longer than the median to be admitted for surgery.

2. For a description of these procedures see *Elective Surgery Glossary of Common Procedures, December 2012*.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

# Elective surgery waiting list

The following three pages are about patients who are still on the elective surgery waiting list waiting for surgery.

During the quarter, patients were added to and removed from the waiting list. Patients are removed from the waiting list because they received the surgery they were waiting for, or for other reasons such as the surgeon or patient deeming that the surgery is no longer required.

At the end of the October to December 2013 quarter, there were 69,720 patients waiting for elective surgery, which is 3% more than the

same quarter last year (Figure 12). A breakdown of patients waiting for elective surgery by urgency category shows that 84% were assigned as non-urgent, 15% as semi-urgent and 1% as urgent.

The number of patients waiting for urgent surgery decreased by 13%, semi-urgent increased by 3% and non-urgent increased by 3% (Figure 13).

As at 31 December 2013, there were 12,621 patients not ready for surgery on the waiting list, up 2% compared with the same quarter last year (Figure 12).

Figure 12: Elective surgery waiting list, October to December 2013

	Same period one year ago	Change since last year
Patients ready for surgery on waiting list at start of quarter: 69,917 patients	69,128	1%
Patients ready for surgery on waiting list at end of quarter: 69,720 patients	67,842	3%
Patients not ready for surgery <sup>1</sup> on waiting list at end of quarter: 12,621 patients	12,354	2%

Figure 13: Elective surgery waiting list, as at 30 December 2013

Patients ready for surgery on waiting list by urgency category: 69,720 patients		Same period last year	Change since one year ago
1 Urgent <sup>2</sup> (1%)	826	947	-13%
2 Semi-urgent <sup>2</sup> (15%)	10,438	10,148	3%
3 Non-urgent <sup>3</sup> (84%)	58,456	56,747	3%

1. Includes staged procedures, non-urgent cystoscopy and patients currently not available for personal reasons.
2. Excluding staged procedures.
3. Excluding staged procedures and non-urgent cystoscopy.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.



## Elective surgery waiting list by specialty

Figure 14 presents the number of patients on the waiting list and those patients who have been waiting more than 12 months, by the specialty of the surgeon.

The time a patient waited for the initial appointment with the specialist is not included in the time the patient spent on the waiting list.

Orthopaedic surgery (17,685 patients) and ophthalmology (16,023 patients) were the surgical specialties with the highest number of patients waiting for surgery as at 31 December 2013.

Cardio-thoracic surgery (352 patients) and medical (207 patients) had the lowest number of patients waiting for elective surgery.

Orthopaedic surgery (108 patients) and ear, nose and throat surgery (92 patients) were the surgical specialties with the highest number of patients waiting more than 12 months as at 31 December 2013. Cardio-thoracic surgery, and medical<sup>1</sup> had no patients waiting in NSW more than 12 months.

The number of patients in this quarter waiting more than 12 months for surgery was 327, 4% less than the same quarter last year (342).

Figure 14: Patients waiting for elective surgery and patients waiting more than 12 months, by specialty, as at 31 December 2013

	Patients waiting	Patients waiting (same time last year)	Change since one year ago	Patients waiting more than 12 months	Patients waiting more than 12 months (same time last year)
<b>All specialties</b>	69,720	67,842	3%	327	342
Cardio-thoracic surgery	352	303	16%	0	< 5
Ear, nose and throat surgery	9,443	9,749	-3%	92	148
General surgery	12,588	11,888	6%	56	18
Gynaecology	5,816	5,386	8%	13	< 5
Medical <sup>1</sup>	207	210	-1%	0	< 5
Neurosurgery	1,146	1,117	3%	29	11
Ophthalmology	16,023	15,601	3%	16	7
Orthopaedic surgery	17,685	17,379	2%	108	130
Plastic surgery	2,147	2,291	-6%	< 5	12
Urology	3,424	3,148	9%	< 5	9
Vascular surgery	889	770	15%	8	< 5

1. Medical refers to surgery performed by a non-specialist medical practitioner.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

# Elective surgery waiting list by common procedures

Figure 15 presents the number of patients on the waiting list by common procedures. Cataract extraction was the most common procedure (14,098 patients) that patients were waiting for as at 31 December 2013.

The procedures that had the least number of patients waiting were coronary artery bypass graft (80 patients) and myringotomy (141 patients).

Figure 15: Patients waiting for elective surgery by procedure,<sup>1</sup> as at 31 December 2013

	Patients waiting	Patients waiting (same time last year)	Change since one year ago
Abdominal hysterectomy	702	717	-2%
Cataract extraction	14,098	13,674	3%
Cholecystectomy	1,735	1,688	3%
Coronary artery bypass graft	80	83	-4%
Cystoscopy	963	914	5%
Haemorrhoidectomy	440	336	31%
Hysteroscopy	1,243	1,147	8%
Inguinal herniorrhaphy	2,202	2,119	4%
Myringoplasty / Tympanoplasty	330	344	-4%
Myringotomy	141	184	-23%
Other – General	1,152	1,084	6%
Prostatectomy	638	574	11%
Septoplasty	1,464	1,529	-4%
Tonsillectomy	3,560	3,610	-1%
Total hip replacement	2,177	1,960	11%
Total knee replacement	4,896	4,768	3%
Varicose veins stripping and ligation	650	566	15%

1. The procedures included in this list are procedures which are high volume; some may be associated with long waiting periods. For a description of these procedures see *Elective Surgery Glossary of Common Procedures, December 2012*.

Source: NSW Health, *Waiting List Collection On-line System*. Data for October to December 2013 extracted on 28 January 2014. Data for October 2012 to June 2013 extracted on 16 December 2013. Data for all quarters from October 2011 to March 2013 extracted on 17 April 2013. Data for all previous quarters extracted on 15 October 2011.

## Conclusions of analysis

As in previous reports there is considerable variation in waiting times between similar hospitals. There is also variation between different peer groups.

Most NSW hospitals perform well in the urgent surgery category, with most hospitals having 95% of patients receiving their procedure within the recommended timeframe. However, performance varies more for patients in the less urgent categories and variation is greatest for patients in the non-urgent category.

The analysis in this issue of *Hospital Quarterly* shows that patients can expect to receive urgent surgery within 30 days at all hospitals, but waiting time for semi-urgent and non-urgent surgery varies across hospitals. These variations are not associated with the number of procedures performed in hospitals (Figure 6) nor are they related to the percentage of cases in each urgency category. Performance varies between peer groups, and there are high and low performers in each peer group but C1 and C2 hospitals are more likely to treat all their patients within the recommended waiting times across all urgency categories (Figure 4).

# Appendix 1: information by hospital and local health district

**Appendix table 1a** presents elective surgery activity for major hospitals in NSW. The table is ordered by local health district and includes all principal referral (A1), paediatric specialist (A2), ungrouped acute – tertiary referral (A3), major (B) and district groups 1 (C1) and 2 (C2) hospitals that conduct elective surgery. These hospitals account for 98% of all elective surgery recorded as complete in the NSW booking system. Surgery information from smaller hospitals is presented for each local health district under the *'other'* category.

[Download Appendix 1](#) information by *'local health district'* in a PDF file

[Download Appendix 1](#) information by *'local health district'* in an Excel file

**Appendix table 1b** presents the percentages of elective surgery admissions within the clinically recommended time for each urgency category for October to December 2013. The table is ordered by local health district and includes all principal referral (A1), paediatric specialist (A2), ungrouped acute – tertiary referral (A3), major (B) and district groups 1 (C1) and 2 (C2) hospitals that conduct elective surgery. Surgery information from smaller hospitals is presented for each local health district under the *'other'* category.

**Appendix table 1c** presents the median and 90th percentile waiting times (in days) of elective surgery admissions for each urgency category for this quarter. The table is ordered by local health district and includes all principal referral (A1), paediatric specialist (A2), ungrouped acute – tertiary referral (A3), major (B) and district groups 1 (C1) and 2 (C2) hospitals that conduct elective surgery. Surgery information from smaller hospitals is presented for each local health district under the *'other'* category.

## Appendix 2: information by hospital and peer group

**Appendix table 2a** presents elective surgery activity for major hospitals in NSW. The table is ordered by peer group and includes all principal referral (A1), paediatric specialist (A2), ungrouped acute – tertiary referral (A3), major (B) and district groups 1 (C1) and 2 (C2) hospitals that conduct elective surgery. These hospitals account for 98% of all elective surgery recorded as complete in the NSW booking system. Surgery information from smaller hospitals is presented for each peer group under the *'other'* category.

[Download Appendix 2 information by \*'peer group'\* in a PDF file](#)

[Download Appendix 2 information by \*'peer group'\* in an Excel file](#)

**Appendix table 2b** presents the percentages of elective surgery admissions within the clinically recommended time for each urgency category for October to December 2013. The table is ordered by peer group and includes all principal referral (A1), paediatric specialist (A2), ungrouped acute – tertiary referral (A3), major (B) and district groups 1 (C1) and 2 (C2) hospitals that conduct elective surgery. Surgery information from smaller hospitals is presented for each peer group under the *'other'* category.

**Appendix table 2c** presents the median and 90th percentile waiting times (in days) of elective surgery admissions for each urgency category for this quarter. The table is ordered by peer group and includes all principal referral (A1), paediatric specialist (A2), ungrouped acute – tertiary referral (A3), major (B) and district groups 1 (C1) and 2 (C2) hospitals that conduct elective surgery. Surgery information from smaller hospitals is presented for each peer group under the *'other'* category.

## Download our reports

The report, *Hospital Quarterly: Performance of NSW public hospitals, October to December 2013* and related reports are available at [www.bhi.nsw.gov.au](http://www.bhi.nsw.gov.au)

The suite of products includes:

- Three core modules titled *Admitted Patients*, *Elective Surgery* and *Emergency Departments*
- Appendix tables showing key results by peer group and LHD
- Activity and performance profiles about emergency department care and elective surgery for more than 80 hospitals and NSW as a whole



## About the Bureau

The Bureau of Health Information provides the community, healthcare professionals and the NSW Parliament with timely, accurate and comparable information on the performance of the NSW public health system. The work of the Bureau helps to improve and enhance accountability in the NSW health system and assists in ensuring the system benefits the people of NSW.

The Bureau is an independent, board-governed statutory health corporation. The conclusions in this report are those of the Bureau 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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Please note that there is the potential for minor revisions of data in this report. Please check the online version at [www.bhi.nsw.gov.au](http://www.bhi.nsw.gov.au) for any amendments.