# bureau of health information

# Healthcare Quarterly

# Ambulance

## Activity and performance

January to March 2018

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# In the January to March 2018 quarter...

## Ambulance

There were **279,390** ambulance responses

**UP 0.8%**

2,172 more than same quarter last year

**94.6%** of priority 1 cases had a call to ambulance arrival time of 30 minutes or less
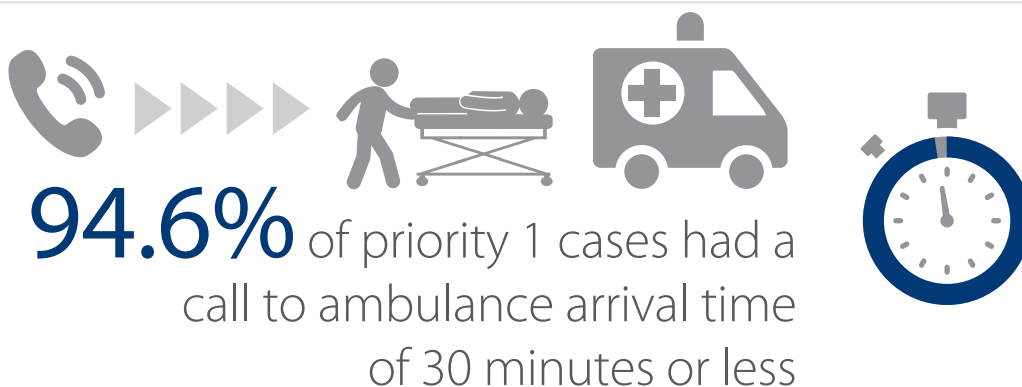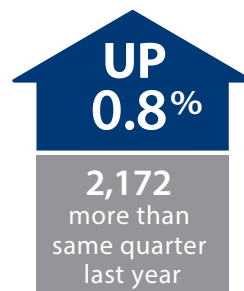
| Ambulance activity | | January to March 2018 | January to March 2017 | Difference | % change |
|---|---|---|---|---|---|
| Calls | | 284,412 | 281,668 | 2,744 | 1.0% |
| Responses | | 279,390 | 277,218 | 2,172 | 0.8% |
| Priority category | P1: Emergency | 123,150 | 121,162 | 1,988 | 1.6% |
| | P1A: Highest priority | 5,374 | 5,141 | 233 | 4.5% |
| | P2: Urgent | 134,018 | 122,958 | 11,060 | 9.0% |
| | P3: Time-critical | 14,010 | 23,769 | -9,759 | -41.1%* |
| | P4–9: Non-emergency | 8,212 | 9,329 | -1,117 | -12.0% |
| Incidents | | 222,065 | 220,174 | 1,891 | 0.9% |
| Patient transports | | 167,896 | 163,265 | 4,631 | 2.8% |

| Ambulance performance | | January to March 2018 | January to March 2017 | Difference |
|---|---|---|---|---|
| Call to ambulance arrival time | | | | |
| Percentage of P1 call to arrival within 15 minutes | | 62.6% | 63.2% | -0.6 percentage points |
| Percentage of P1 call to arrival within 30 minutes | | 94.6% | 94.7% | -0.1 percentage points |
| Local response areas meeting 90% threshold (arrival within 30 minutes) | | 109 (of 150) | 115 (of 150) | |
| Percentage of P2 call to arrival within 30 minutes | | 73.2% | 75.6% | -2.4 percentage points |
| Percentage of P2 call to arrival within 60 minutes | | 94.4% | 95.0% | -0.6 percentage points |
| Local response areas meeting 90% threshold (arrival within 60 minutes) | | 147 (of 150) | 150 (of 150) | |
| Mobilisation time | | | | |
| P1: Emergency | Median | 2.4m | 2.4m | unchanged |
| | 90th percentile | 6.0m | 6.2m | -0.2m |
| | Percentage P1 within 3 minutes | 63.1% | 62.5% | 0.6 percentage points |
| P2: Urgent | Median | 4.1m | 4.0m | 0.1m |
| | 90th percentile | 20.8m | 19.8m | 1.0m |
| Ambulance response time | | | | |
| P1: Emergency | Median | 11.1m | 11.1m | unchanged |
| | 90th percentile | 22.9m | 22.8m | 0.1m |
| P1A: Highest priority | Median | 7.4m | 7.5m | -0.1m |
| | 90th percentile | 15.6m | 15.0m | 0.6m |
| P2: Urgent | Median | 18.2m | 17.3m | 0.9m |
| | 90th percentile | 46.1m | 43.8m | 2.3m |
| Percentage of P1A responses within 10 minutes | | 73.1% | 71.9% | 1.2 percentage points |
| Number of days median priority 1A response time > 10 minutes | | 1 day | 3 days | -2 days |
| Turnaround time | | | | |
| P1: Emergency | Median | 36.6m | 35.9m | 0.7m |
| | 90th percentile | 59.2m | 58.5m | 0.7m |
| | Percentage within 45 minutes | 70.3% | 71.7% | -1.4 percentage points |
| P2: Urgent | Median | 34.5m | 33.2m | 1.3m |
| | 90th percentile | 56.1m | 55.1m | 1.0m |
| | Percentage within 45 minutes | 75.1% | 77.1% | -2.0 percentage points |

\* In September 2017, a change in protocol was introduced when triaging patients for inter-facility transport. Some of these responses remain as priority 3 while others require a higher priority response.

Notes: Data drawn from the Computer Aided Dispatch system on 13 April 2018. Ambulance activity data do not include outage estimates.

# About this module

Data for this module are drawn from the NSW Ambulance Computer Aided Dispatch (CAD) system, which is used to manage and record ambulance activity and service time points.

Detailed data specifications and analytic methods used in this module are described in the technical supplements section of the Bureau of Health Information (BHI) website at **bhi.nsw.gov.au**

## About the measures

Activity is measured as the number of ambulance calls, incidents, responses and transports during the quarter. Timeliness is measured using four key measures: call to ambulance arrival time, mobilisation time, response time and turnaround time. These measures cover different combinations of time points captured in the electronic data system (Figure 1).

Results are reported at NSW and zone levels. Results for local response areas (or stations) have been shown to be subject to random variation and impacted by non-modifiable factors and so are not reported on a nominal (named) basis.

More detailed state and zone level information is available from the BHI interactive data portal, Healthcare Observer at **bhi.nsw.gov.au/healthcare_observer**

## Background

A triple zero call generally initiates ambulance activity. An **incident** is an event that results in a response by one or more ambulances. A **response** is the dispatch of an ambulance from a local response area. Not all triple zero calls result in an ambulance response. Responses are prioritised according to the urgency of the case, based on the information provided by the caller.

Depending on the seriousness of an incident, or the number of people involved, multiple responses (vehicles) may be required for a single incident. Most incidents have one vehicle assigned. Around two in 10 incidents have multiple vehicles assigned. Some vehicles are cancelled en route.

Incidents involve one or multiple patients. Once an ambulance arrives at the scene, patients are either treated and transported, or treated at the scene only. About six in 10 responses result in patient transport.

Descriptions of ambulance indicator development, validation and sensitivity testing, are provided in the supplementary report, *Spotlight on Measurement: Measuring and reporting performance of NSW ambulance services*.

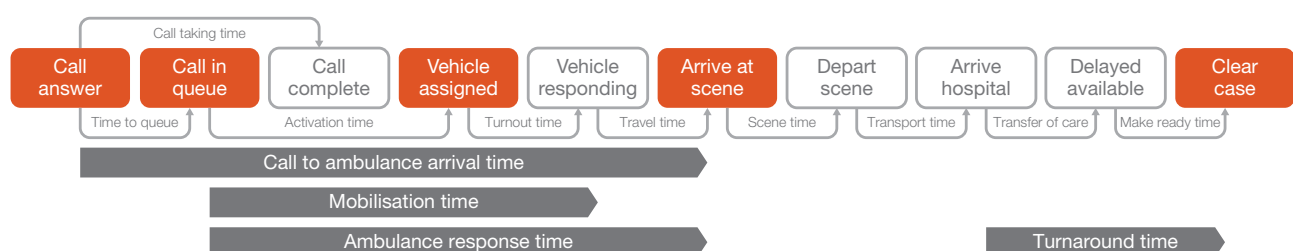Figure 1    Ambulance service time points and timeliness measures

### Table 1      Incident and response priority codes

| Code | Priority | Description | Example | Response required |
|---|---|---|---|---|
| 1 | **1A Emergency** | Highest priority – life-threatening case | Cardiac or respiratory arrest, unconscious, ineffective breathing | Immediate response – median within 10 minutes – under 'lights and sirens' |
| | **1B Emergency** | High priority | Unconscious | Emergency response – under 'lights and sirens' |
| | **1C Emergency** | Priority | Breathing problems, chest or neck injury, serious haemorrhage | Emergency response – under 'lights and sirens' |
| 2 | **Urgent** | Urgent | Abdominal pain | Urgent response without 'lights and sirens' within specified timeframes |
| 3 | **Time-critical** | Time-critical | Medical responses requested by medical practitioners often pre-booked | Undelayed response within specified timeframes |
| 4-9 | **Non-emergency** | Non-emergency | Routine transport | Routine |

### Table 2      Ambulance local response area typology

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

# Ambulance activity and performance

# Ambulance activity

In the January to March 2018 quarter, there were 284,412 calls and 279,390 ambulance responses; up 1.0% and 0.8% over the same quarter last year, respectively (Figure 2). Most responses were categorised as emergency (priority 1; 44.1%) or urgent (priority 2; 48.0%). Of priority 1 responses, 5,374 (4.4%) were categorised as highest priority (1A) (Figure 2).

Since 2015, there has been a gradual increase in activity. Compared with the same quarter in 2015, there was a 2.4% and 2.6% rise in the number of incidents and responses, respectively (Figure 3).

The number of priority 1 responses in the January to March 2018 quarter had the widest daily range that varied by 802 responses (Figure 4).

Figure 2    Ambulance calls, incidents and responses by priority, January to March 2018

|  |  | This quarter | Same quarter last year | Change since one year ago |
|---|---|---|---|---|
| Calls |  | 284,412 | 281,668 | 1.0% |
| Incidents |  | 222,065 | 220,174 | 0.9% |
| All responses |  | 279,390 | 277,218 | 0.8% |
| P1: Emergency | 44.1% | 123,150 | 121,162 | 1.6% |
| P1A: Highest priority | 4.4% | 5,374 | 5,141 | 4.5% |
| P2: Urgent | 48.0% | 134,018 | 122,958 | 9.0% |
| P3: Time-critical | 5.0% | 14,010 | 23,769 | -41.1% |
| P4–9: Non-emergency | 2.9% | 8,212 | 9,329 | -12.0% |
| Patient transports |  | 167,896 | 163,265 | 2.8% |

\* In September 2017, a change in protocol was introduced when triaging patients for inter-facility transport. Some of these responses remain as priority 3 while others require a higher priority response.

Figure 3    Ambulance calls, incidents, responses and patient transports, January 2013 to March 2018
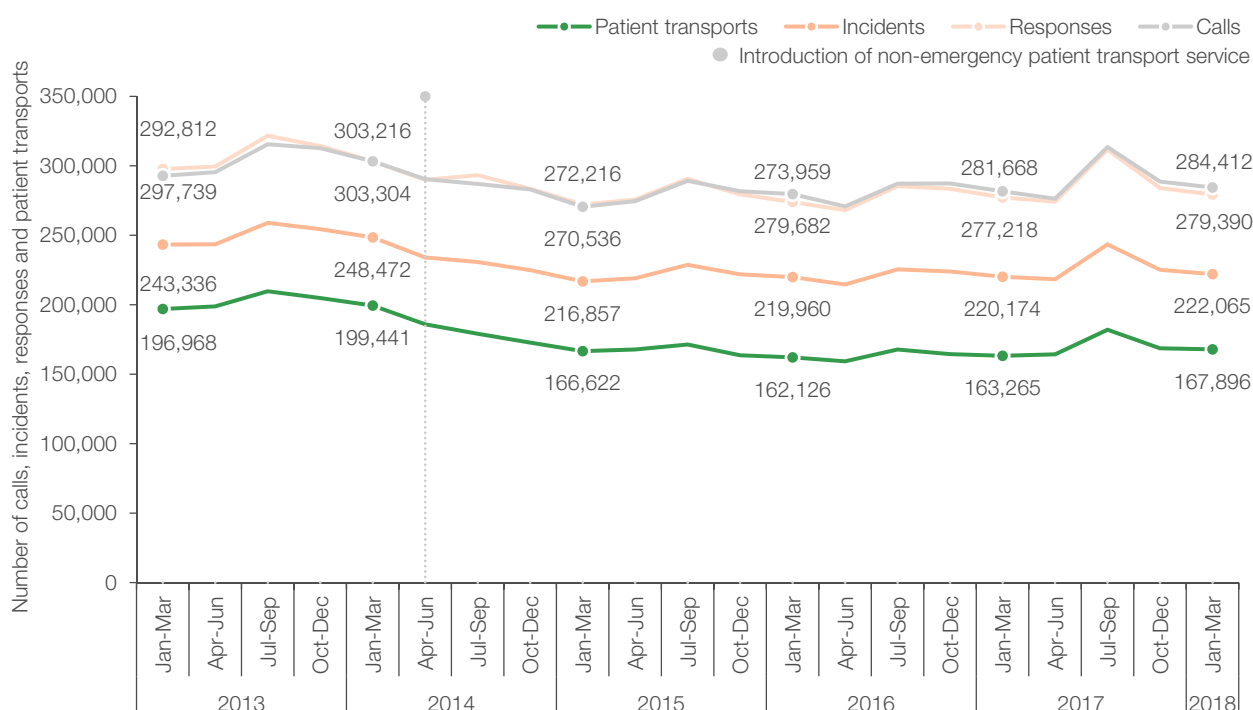
Changes in urgency categorisation resulted in an apparent increase in the number of priority 2 responses and a corresponding decrease in the number of priority 1 responses between 2013 and 2016 (Figure 5).

## Daily number of priority 1, 2 and 3 responses, January to March 2018



■ Weekend  ■ Weekday
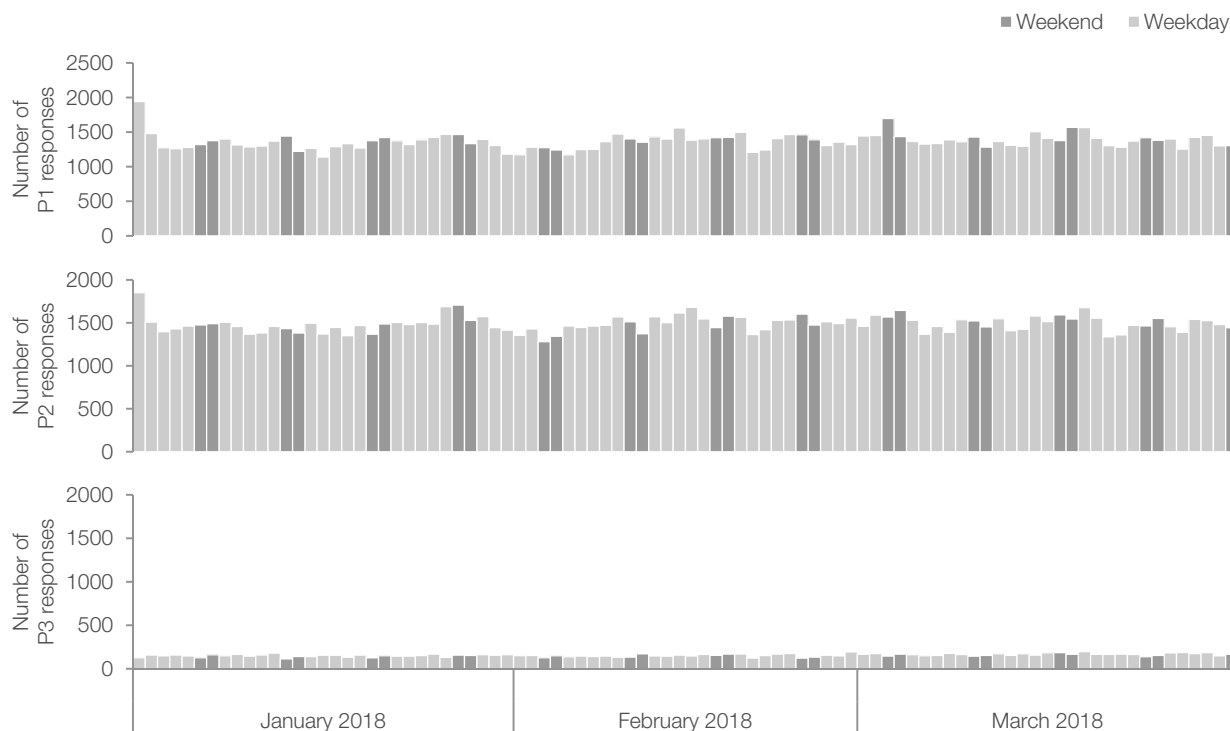
## Ambulance responses by priority, January 2013 to March 2018



● Introduction of non-emergency patient transport service
○ Changes to ambulance protocols resulting in the re-allocation of responses among priority categories

Responses — P1: Emergency — P2: Urgent — P3: Time-critical — P4–9: Non-emergency

Ambulance activity and performance
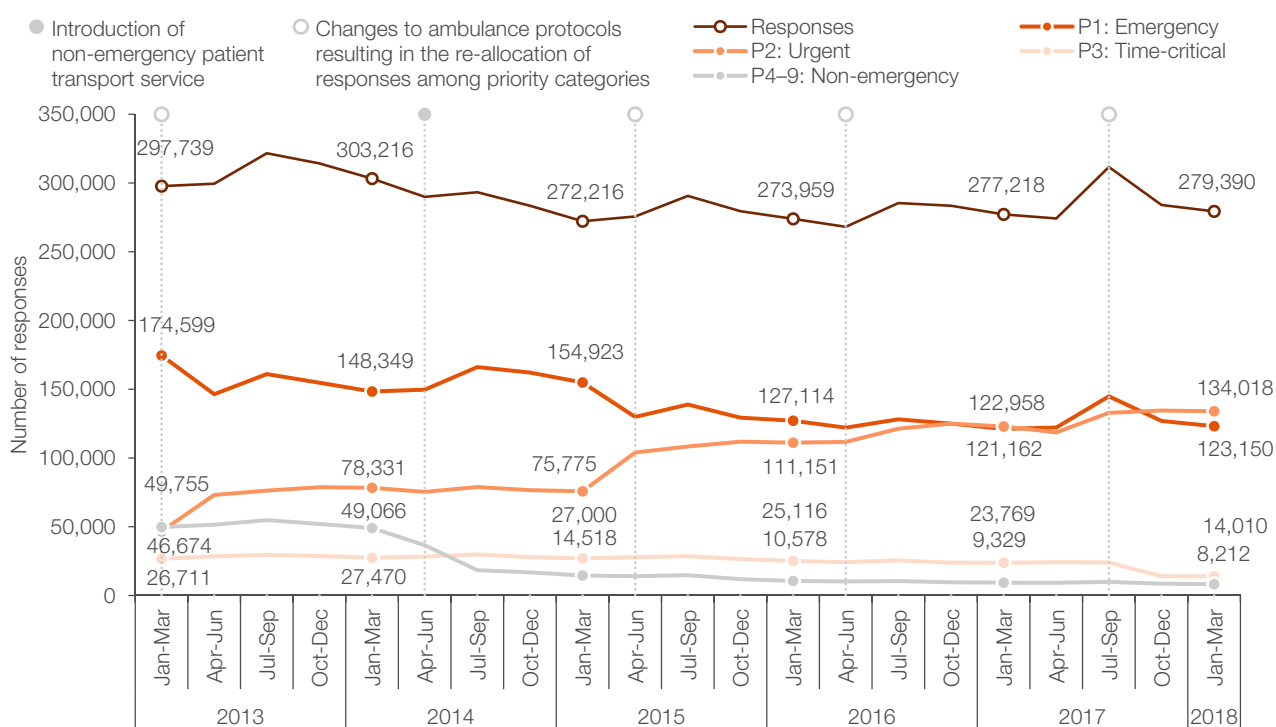
# Call to ambulance arrival time
## – NSW and zone performance

Call to ambulance arrival time reflects patients' experiences, spanning the time from when a call is first answered in the ambulance control centre (phone pick-up), to the time the first ambulance arrives at the scene (Figure 6).

In the January to March 2018 quarter, 62.6% of priority 1 call to ambulance arrival times were within 15 minutes and 94.6% were within 30 minutes – down 0.6 and 0.1 percentage points, respectively, compared with the same quarter last year. For priority 2 call to ambulance arrival times, 73.2% were within 30 minutes and 94.4% were within 60 minutes – down 2.4 and 0.6 percentage points, respectively, compared with the same quarter last year (Figure 7).

Call to ambulance arrival time percentages within 15 minutes for priority 1 and 30 minutes for priority 2 fluctuated over a five year period. Compared with the same quarter five years ago, the percentage of priority 1 cases within 15 minutes was 62.6% (down 1.6 percentage points). For priority 2 cases in 30 minutes, the percentage was 73.2% (up 4.0 percentage points) (Figure 8).

Less than 90% of priority 1 cases in Mid North Coast, Northern Rivers and Southern NSW zones had call to ambulance arrival times within 30 minutes. For priority 2 cases, the percentage of call to ambulance arrival times within 60 minutes ranged from 91.5% in Northern Rivers to 98.5% in New England (Figure 9).

Figure 6     Intervals covering call to ambulance arrival time, NSW



Figure 7     Call to ambulance arrival time, by priority category, January to March 2018

| Priority category | | This quarter | Same quarter last year | Change since one year ago |
|---|---|---|---|---|
| P1 responses | 91,632 | | | |
|   Within 15 minutes | | 62.6% | 63.2% | -0.6 percentage points |
|   Within 30 minutes | | 94.6% | 94.7% | -0.1 percentage points |
| Local response areas meeting 90% threshold (arrival within 30 minutes) | | 109 (of 150) | 115 (of 150) | |
| P2 responses | 103,479 | | | |
|   Within 30 minutes | | 73.2% | 75.6% | -2.4 percentage points |
|   Within 60 minutes | | 94.4% | 95.0% | -0.6 percentage points |
| Local response areas meeting 90% threshold (arrival within 60 minutes) | | 147 (of 150) | 150 (of 150) | |

**Figure 8**     Percentage of call to ambulance arrival times, by priority category, January 2013 to March 2018



● Introduction of non-emergency patient transport service   ○ Changes to ambulance protocols resulting in the re-allocation of responses among priority categories

- ●━ P1 (within 15 minutes)
- ●━ P1 (within 30 minutes)
- ●··· P2 (within 30 minutes)
- ●··· P2 (within 60 minutes)
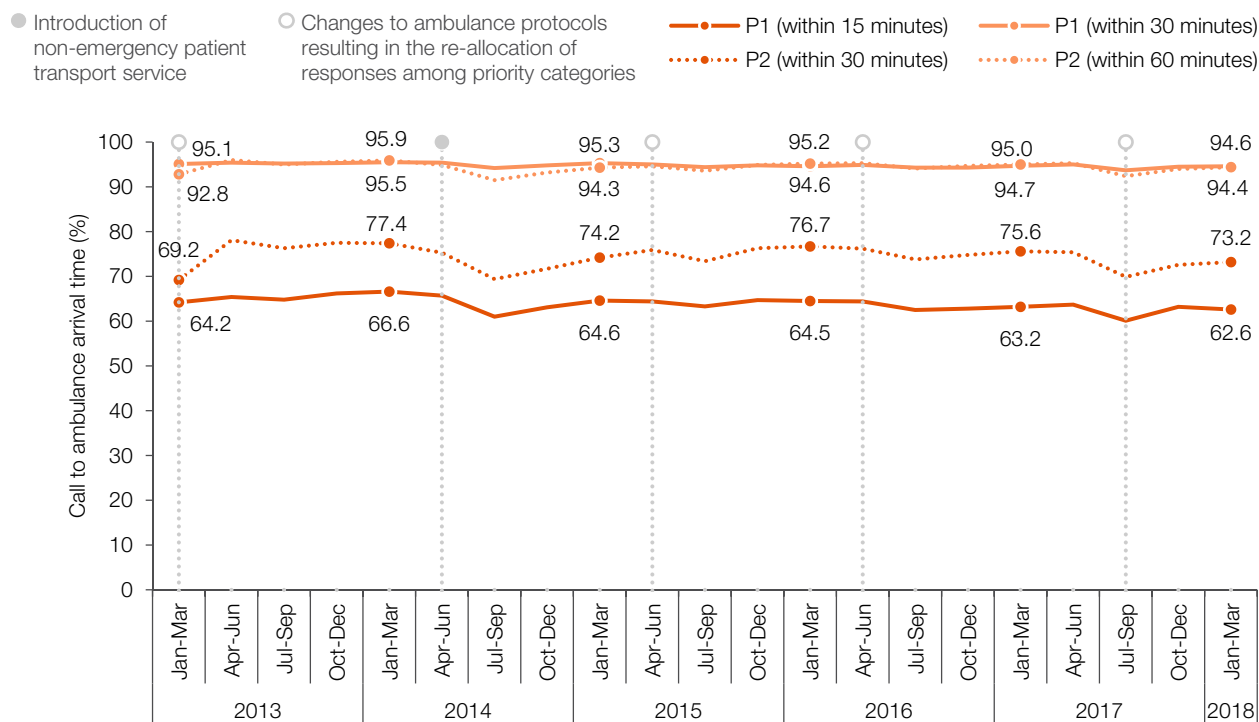
**Figure 9**     Percentage of call to ambulance arrival times, by zone, relative to NSW, January to March 2018



Difference from NSW (percentage points)

■ Difference from NSW   ■ Less than 90% within defined time

Priority category 1: % in 30 minutes

NSW result 94.6%

Priority category 2: % in 60 minutes

NSW result 94.4%
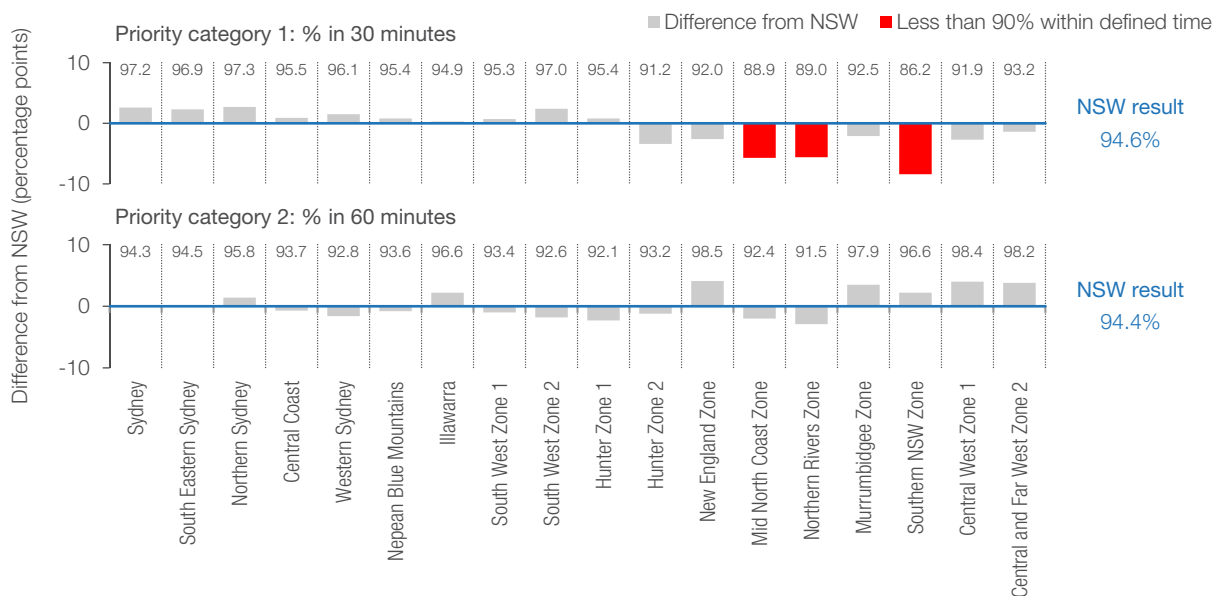
# Call to ambulance arrival time – variation

For priority 1 responses in the January to March 2018 quarter, 109 of 150 local response areas (LRAs) achieved 90% of call to ambulance arrival times within 30 minutes (Figure 10). For priority 2 responses, 147 of 150 LRAs achieved 90% of call to ambulance arrival times within 60 minutes (Figure 12). As a percentage of the total number of NSW priority 1 and 2 responses, Figures 11

Figure 10    Percentage of priority 1 call to ambulance arrival times within 30 minutes, by zone and local response area type, January to March 2018

| | Number | Total LRAs | | LRAs achieving 90% in 30 minutes 2018 | LRAs achieving 90% in 30 minutes 2017 |
|---|---|---|---|---|---|
| Sydney | 9,565 | 8 | | 8 | 8 |
| South Eastern Sydney | 6,782 | 8 | | 8 | 8 |
| Northern Sydney | 6,594 | 9 | | 9 | 9 |
| Central Coast | 5,510 | 9 | | 7 | 7 |
| Western Sydney | 8,636 | 5 | | 5 | 5 |
| Nepean Blue Mountains | 5,728 | 6 | | 6 | 6 |
| Illawarra | 5,996 | 10 | | 8 | 10 |
| South West Zone 1 | 4,952 | 5 | | 4 | 4 |
| South West Zone 2 | 7,115 | 4 | | 4 | 4 |
| Hunter Zone 1 | 5,390 | 9 | | 7 | 8 |
| Hunter Zone 2 | 3,334 | 8 | | 6 | 7 |
| New England Zone | 2,318 | 8 | | 5 | 5 |
| Mid North Coast Zone | 4,737 | 11 | | 5 | 7 |
| Northern Rivers Zone | 4,183 | 11 | | 5 | 6 |
| Murrumbidgee Zone | 3,341 | 9 | | 5 | 4 |
| Southern NSW Zone | 3,135 | 11 | | 6 | 5 |
| Central West Zone 1 | 2,542 | 13 | | 7 | 8 |
| Central and Far West Zone 2 | 1,743 | 6 | | 4 | 4 |
| **Total** | | **150** | | **109** | **115** |

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

% within 30 minutes



Figure 11    Percentage of priority 1 cases and call to ambulance arrival times outside 30 minutes, by zone, January to March 2018

Legend: ■ % of P1 cases   ■ % of P1 cases over 30 minutes
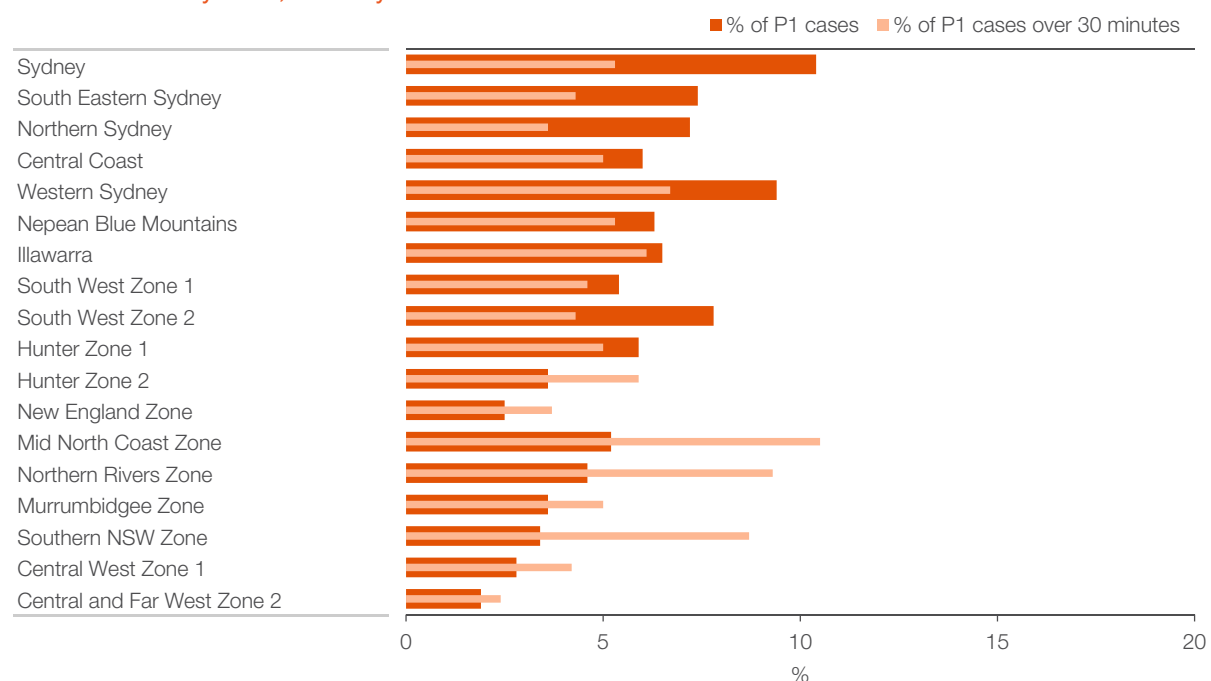
and 13 compare each zone's share of responses that were over 30 or 60 minutes, respectively. Mid North Coast crews met 5.2% of NSW priority 1 responses, but had 10.5% of the call to ambulance arrival times over 30 minutes in NSW (Figure 11). Discrepancies were less pronounced for the percentage of priority 2 call to ambulance arrival times within 60 minutes (Figure 13).

Figure 12    Percentage of priority 2 call to ambulance arrival times within 60 minutes, by zone and local response area type, January to March 2018
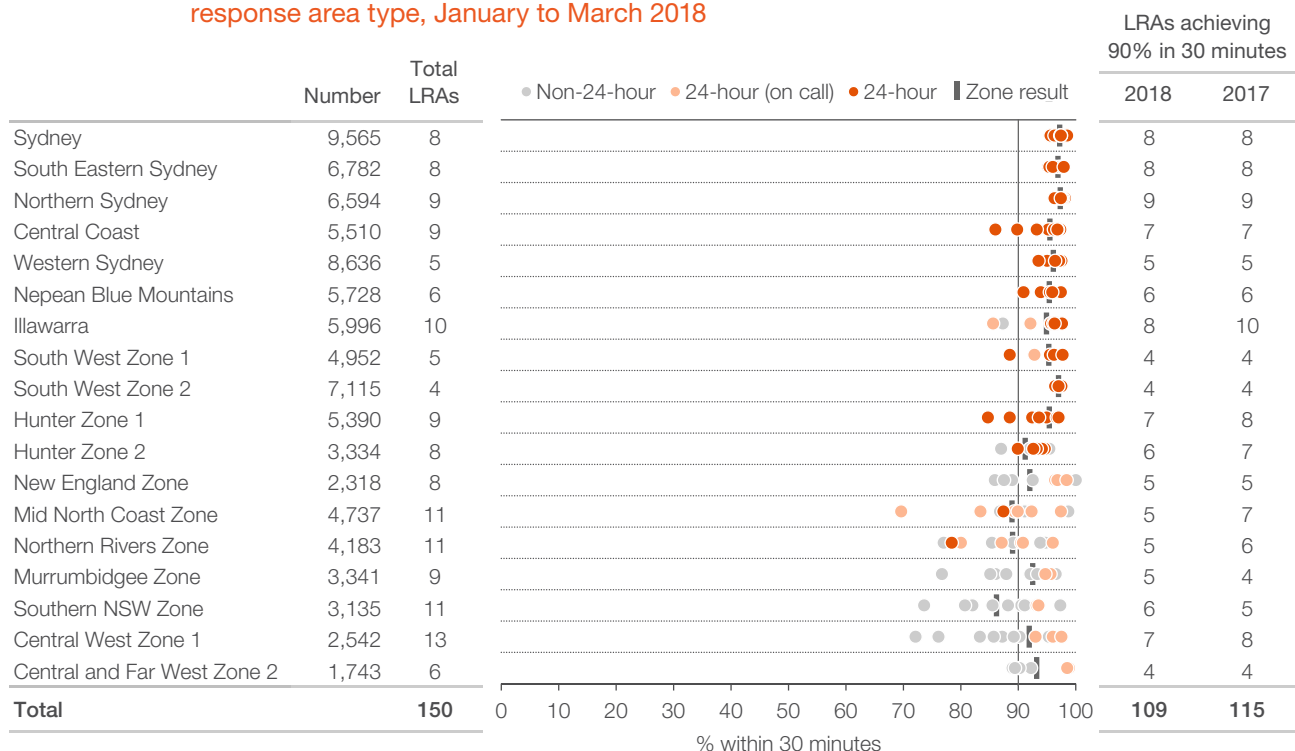


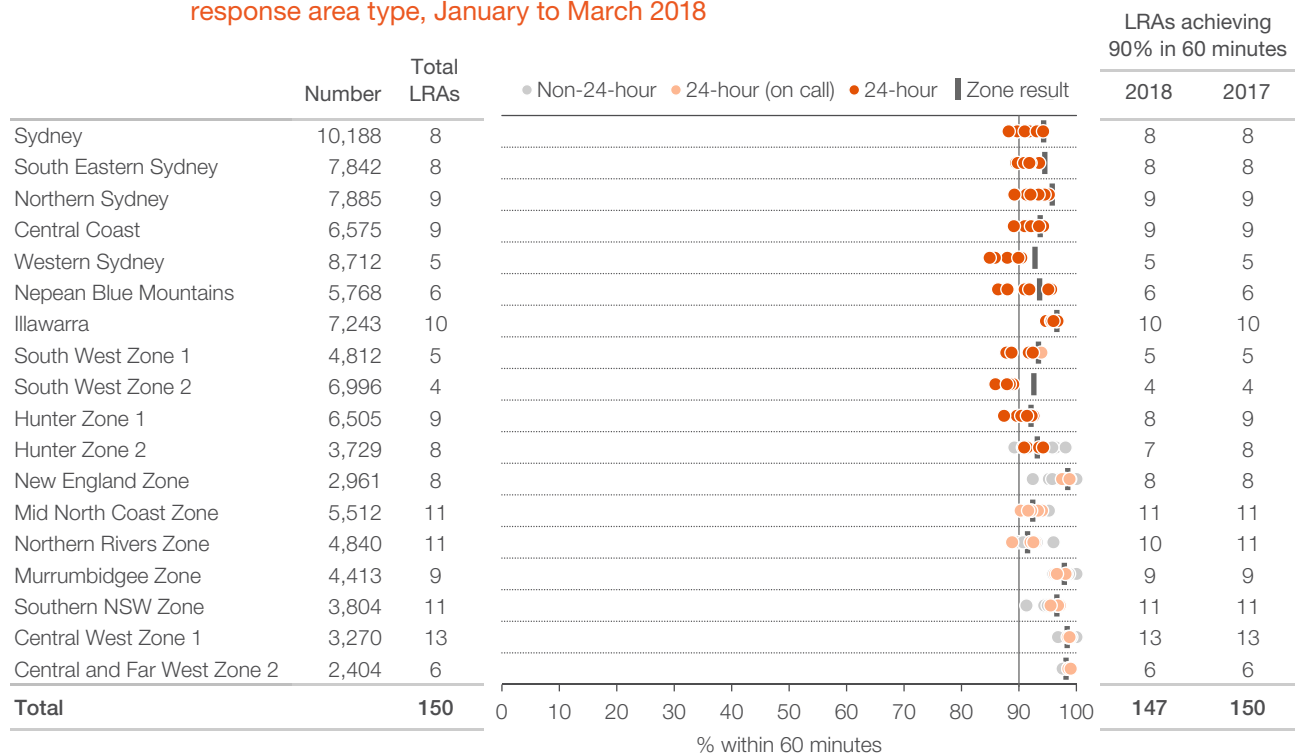| | Number | Total LRAs | | LRAs achieving 90% in 60 minutes | |
| --- | --- | --- | --- | --- | --- |
| | | | | 2018 | 2017 |
| Sydney | 10,188 | 8 | | 8 | 8 |
| South Eastern Sydney | 7,842 | 8 | | 8 | 8 |
| Northern Sydney | 7,885 | 9 | | 9 | 9 |
| Central Coast | 6,575 | 9 | | 9 | 9 |
| Western Sydney | 8,712 | 5 | | 5 | 5 |
| Nepean Blue Mountains | 5,768 | 6 | | 6 | 6 |
| Illawarra | 7,243 | 10 | | 10 | 10 |
| South West Zone 1 | 4,812 | 5 | | 5 | 5 |
| South West Zone 2 | 6,996 | 4 | | 4 | 4 |
| Hunter Zone 1 | 6,505 | 9 | | 8 | 9 |
| Hunter Zone 2 | 3,729 | 8 | | 7 | 8 |
| New England Zone | 2,961 | 8 | | 8 | 8 |
| Mid North Coast Zone | 5,512 | 11 | | 11 | 11 |
| Northern Rivers Zone | 4,840 | 11 | | 10 | 11 |
| Murrumbidgee Zone | 4,413 | 9 | | 9 | 9 |
| Southern NSW Zone | 3,804 | 11 | | 11 | 11 |
| Central West Zone 1 | 3,270 | 13 | | 13 | 13 |
| Central and Far West Zone 2 | 2,404 | 6 | | 6 | 6 |
| Total | | 150 | | 147 | 150 |

Figure 13    Percentage of priority 2 cases and call to ambulance arrival times outside 60 minutes, by zone, January to March 2018

Ambulance activity and performance
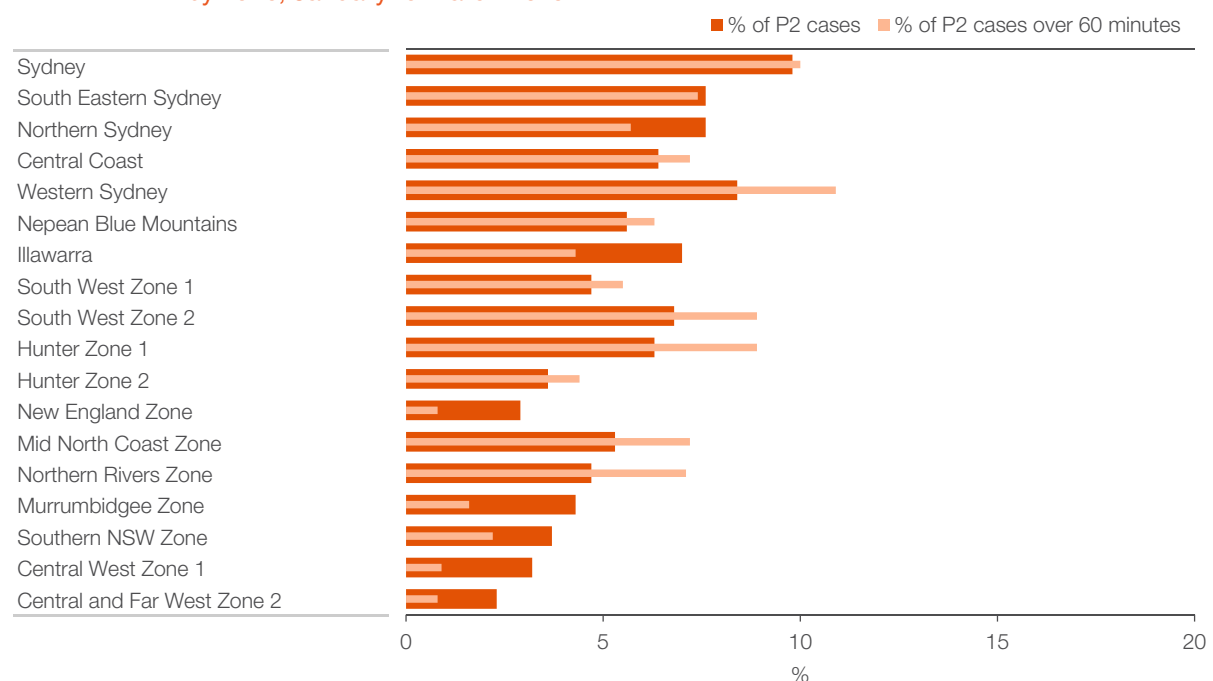
# Mobilisation time – NSW performance

Once a call has been placed 'in queue' for vehicle dispatch, there is typically a short period of time before crews begin driving to the scene (Figure 14).

This period – the mobilisation time – is a measure of preparedness and system responsiveness. For operational purposes, NSW Ambulance monitors the percentage of priority 1 mobilisation times within three minutes.

In the January to March 2018 quarter, the median mobilisation time was 2.4 minutes for priority 1 and 4.1 minutes for priority 2 responses. For priority 1 responses, 63.1% were within three minutes (Figure 15).

Figure 14    Intervals covering mobilisation time, NSW

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

Figure 15    Mobilisation time, by priority category, January to March 2018

| | Volume | | This quarter | Same quarter last year | Change since one year ago |
|---|---|---|---|---|---|
| P1 | 91,519 | | | | |
| Median | | | 2.4m | 2.4m | unchanged |
| 90th percentile | | | 6.0m | 6.2m | -0.2m |
| Percentage P1 within 3 minutes | | | 63.1% | 62.5% | 0.6 percentage points |
| P2 | 103,427 | | | | |
| Median | | | 4.1m | 4.0m | 0.1m |
| 90th percentile | | | 20.8m | 19.8m | 1.0m |

For January to March quarters between 2013 and 2018, priority 1 median mobilisation time has remained relatively stable (Figure 16).

Figure 16    **Median mobilisation time, by priority category, January 2013 to March 2018**



● Introduction of non-emergency patient transport service    ○ Changes to ambulance protocols resulting in the re-allocation of responses among priority categories    P1    P2
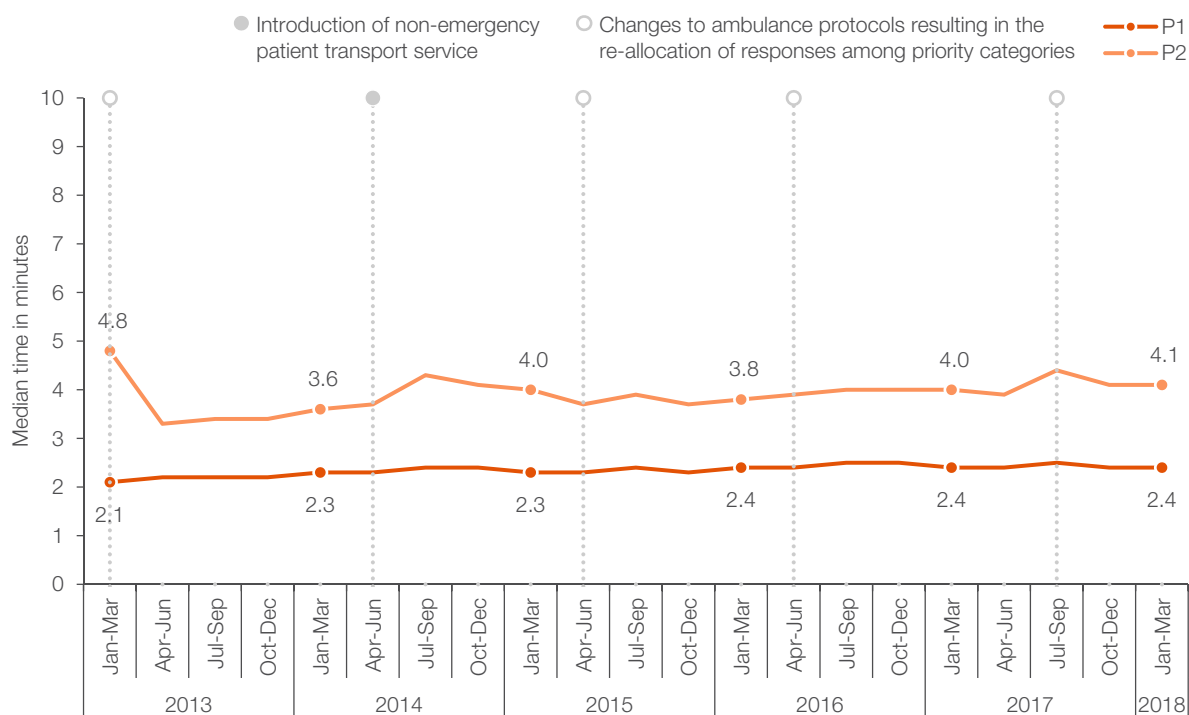
# Mobilisation time – variation

The NSW priority 1 median mobilisation time for January to March 2018 was 2.4 minutes. Across zones, median times ranged from 2.1 minutes in the Sydney zone, and South West Zones 1 and 2 to 3.5 minutes in Southern NSW (a 1.4 minute range) (Figure 17).

The NSW priority 2 median mobilisation time was 4.1 minutes and ranged across zones from 3.5 minutes in Northern Sydney to 5.1 minutes in Northern Rivers (a 1.6 minute range). In general, zones in non-metropolitan areas had longer mobilisation times for both priority 1 and priority 2 responses (Figure 17).

Within zones, median mobilisation times for individual LRAs were more variable in non-metropolitan zones (Figures 18 and 19).

This may reflect differences in the distribution of LRA types across zones. Metropolitan zones primarily have 24-hour LRAs while non-metropolitan zones mostly have non-24 hour and 24-hour (on-call) LRAs, which rely on staff that are not always based at the ambulance station.

The degree of variation seen within metropolitan zones was smaller for priority 1 compared with priority 2 responses (Figures 18 and 19).

Figure 17    Median mobilisation time, by zone, relative to NSW, January to March 2018
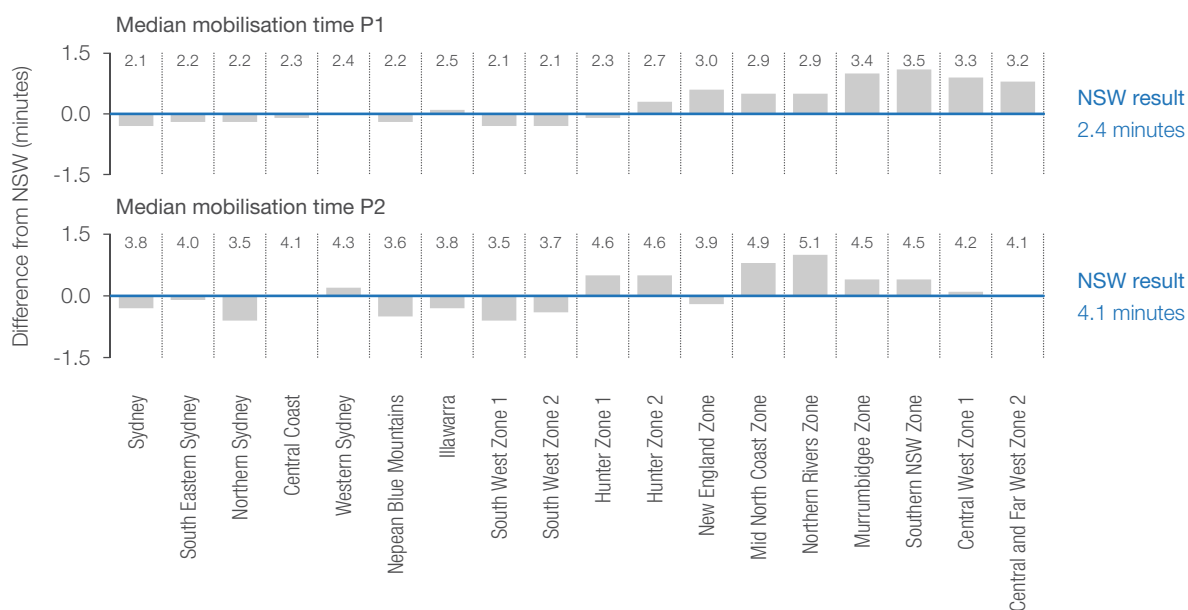
Figure 18    Median priority 1 mobilisation time, by zone and local response area type,
             January to March 2018

| | Number |
|---|---|
| Sydney | 9,554 |
| South Eastern Sydney | 6,771 |
| Northern Sydney | 6,592 |
| Central Coast | 5,502 |
| Western Sydney | 8,633 |
| Nepean Blue Mountains | 5,725 |
| Illawarra | 5,978 |
| South West Zone 1 | 4,946 |
| South West Zone 2 | 7,108 |
| Hunter Zone 1 | 5,377 |
| Hunter Zone 2 | 3,332 |
| New England Zone | 2,316 |
| Mid North Coast Zone | 4,730 |
| Northern Rivers Zone | 4,176 |
| Murrumbidgee Zone | 3,336 |
| Southern NSW Zone | 3,131 |
| Central West Zone 1 | 2,540 |
| Central and Far West Zone 2 | 1,741 |

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

P1 median mobilisation time (minutes)

Figure 19    Median priority 2 mobilisation time, by zone and local response area type,
             January to March 2018

| | Number |
|---|---|
| Sydney | 10,186 |
| South Eastern Sydney | 7,841 |
| Northern Sydney | 7,885 |
| Central Coast | 6,573 |
| Western Sydney | 8,711 |
| Nepean Blue Mountains | 5,766 |
| Illawarra | 7,229 |
| South West Zone 1 | 4,810 |
| South West Zone 2 | 6,994 |
| Hunter Zone 1 | 6,498 |
| Hunter Zone 2 | 3,728 |
| New England Zone | 2,961 |
| Mid North Coast Zone | 5,510 |
| Northern Rivers Zone | 4,837 |
| Murrumbidgee Zone | 4,408 |
| Southern NSW Zone | 3,800 |
| Central West Zone 1 | 3,266 |
| Central and Far West Zone 2 | 2,404 |

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

P2 median mobilisation time (minutes)

# Response time – NSW performance

Ambulance response time is measured from when a call for an ambulance is placed 'in queue' for vehicle dispatch by the ambulance control centre to the time the first vehicle arrives at the scene (Figure 20).

In the January to March 2018 quarter, median response times were 11.1 minutes for priority 1, 7.4 minutes for priority 1A and 18.2 minutes for priority 2 (Figure 21).

In the January to March 2018 quarter, 73.1% of priority 1A response times were within 10 minutes; 1.2 percentage points higher than the same quarter last year.

The median response time for priority 1A cases exceeded 10 minutes on one day during the January to March 2018 quarter; down by two days compared with the same quarter last year.

Figure 20    Intervals covering response time, NSW

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

Figure 21    Ambulance response time, by priority category, January to March 2018

| | | This quarter | Same quarter last year | Change since one year ago |
|---|---|---|---|---|
| **P1: emergency (91,632 responses)** | | | | |
| Median response time | | 11.1m | 11.1m | unchanged |
| 90th percentile response time | | 22.9m | 22.8m | 0.1m |
| **P1A: Highest priority (2,021 responses)** | | | | |
| Median response time | | 7.4m | 7.5m | -0.1m |
| 90th percentile response time | | 15.6m | 15.0m | 0.6m |
| **P2: urgent (103,479 responses)** | | | | |
| Median response time | | 18.2m | 17.3m | 0.9m |
| 90th percentile response time | | 46.1m | 43.8m | 2.3m |
| Percentage P1A responses within 10 minutes | | 73.1% | 71.9% | 1.2 percentage points |
| Number of days P1A median response time exceeded 10 minutes | | 1 day | 3 days | -2 days |

There has been little change in median priority 1 and 1A response times since 2013 (Figure 22). Median priority 2 response times showed more variation. This quarter saw the highest median priority 2 response time for a January to March quarter since 2014 (18.2 minutes; up 1.6 minutes) (Figure 22).

Figure 22    Median ambulance response time, by priority category, January 2013 to March 2018
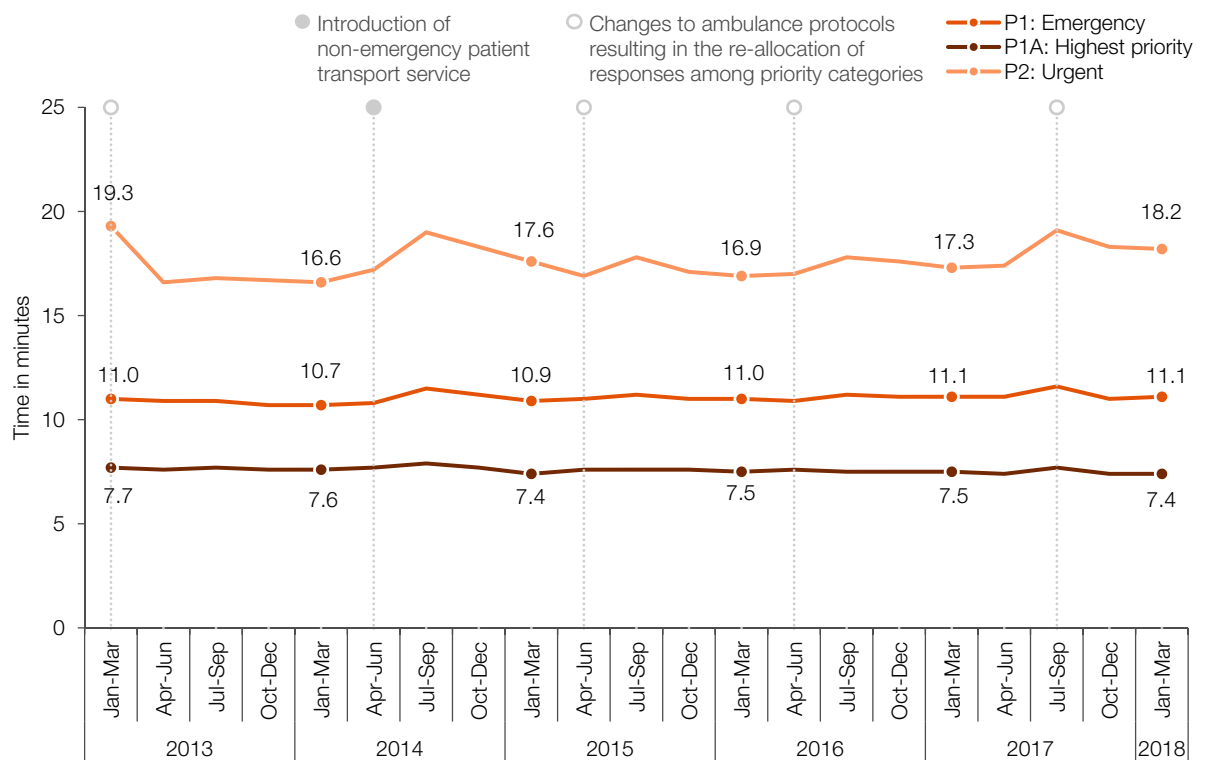
# Response time – variation

The NSW priority 1A median response time was 7.4 minutes in the January to March 2018 quarter. Across zones, priority 1A median response times ranged from 6.2 minutes in the Sydney zone to 9.8 minutes in Mid North Coast (a 3.6 minute range) (Figure 23).

The statewide priority 1 median response time was 11.1 minutes in the January to March 2018 quarter. Across zones, median response times ranged from 9.0 minutes in Central and Far West Zone 2 to 13.1 minutes in Hunter Zone 2 (a 4.1 minute range) (Figure 23).

The median priority 2 response time for NSW was 18.2 minutes this quarter. Across zones, median response times ranged from 10.8 minutes in Central and Far West Zone 2 to 22.2 minutes in Western Sydney (a 11.4 minute range) (Figure 23).

Within zones, the median response times of constituent LRAs varied more widely in non-metropolitan settings. Within-zone variation was more marked for priority 2 responses than for priority 1 responses (Figures 24 and 25).

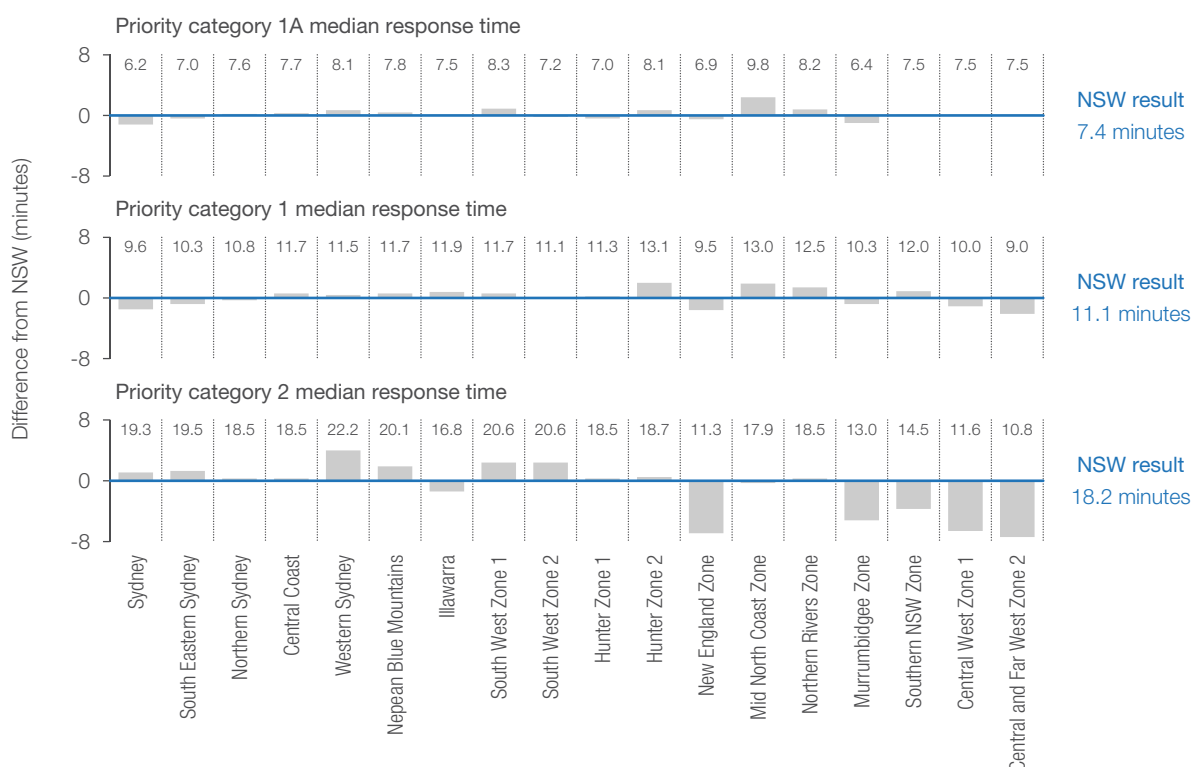Figure 23    Median ambulance response time, by zone, relative to NSW, January to March 2018



Priority category 1A median response time

| 6.2 | 7.0 | 7.6 | 7.7 | 8.1 | 7.8 | 7.5 | 8.3 | 7.2 | 7.0 | 8.1 | 6.9 | 9.8 | 8.2 | 6.4 | 7.5 | 7.5 | 7.5 |

NSW result
7.4 minutes

Priority category 1 median response time

| 9.6 | 10.3 | 10.8 | 11.7 | 11.5 | 11.7 | 11.9 | 11.7 | 11.1 | 11.3 | 13.1 | 9.5 | 13.0 | 12.5 | 10.3 | 12.0 | 10.0 | 9.0 |

NSW result
11.1 minutes

Priority category 2 median response time

| 19.3 | 19.5 | 18.5 | 18.5 | 22.2 | 20.1 | 16.8 | 20.6 | 20.6 | 18.5 | 18.7 | 11.3 | 17.9 | 18.5 | 13.0 | 14.5 | 11.6 | 10.8 |

NSW result
18.2 minutes

Difference from NSW (minutes)

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

**Figure 24**     Median priority category 1 ambulance response time, by zone and local response area type, January to March 2018
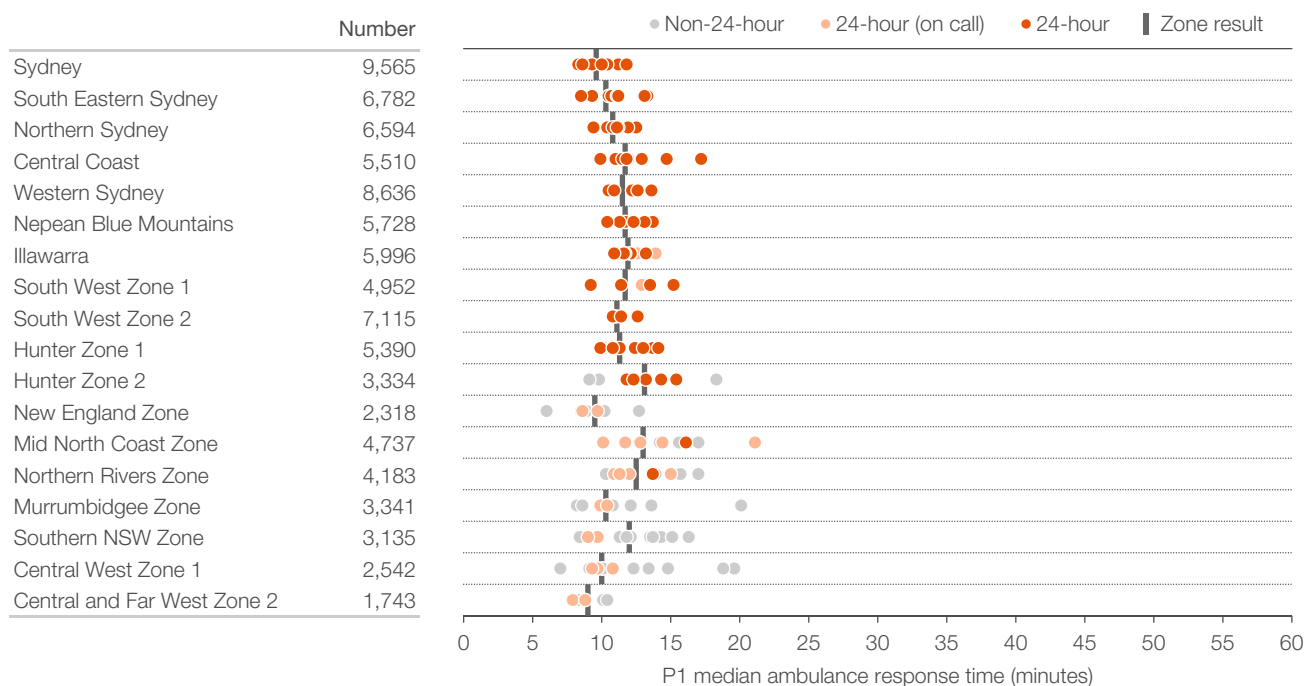


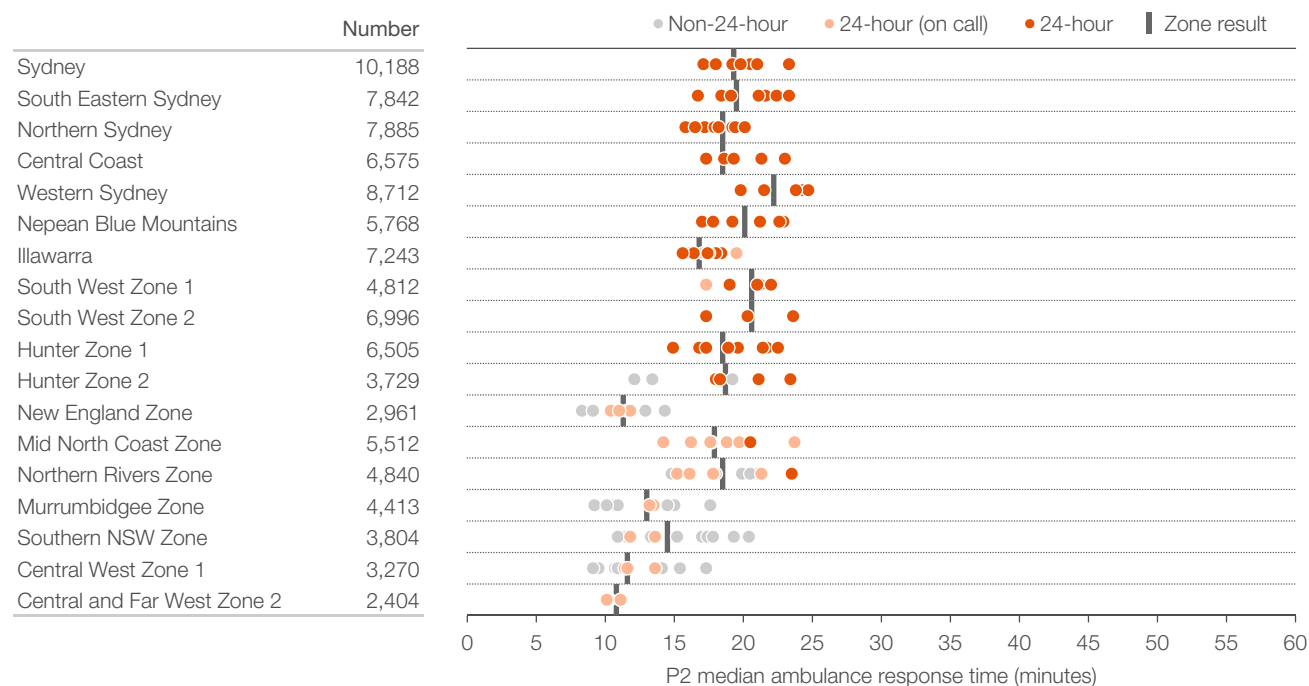| | Number |
| --- | --- |
| Sydney | 9,565 |
| South Eastern Sydney | 6,782 |
| Northern Sydney | 6,594 |
| Central Coast | 5,510 |
| Western Sydney | 8,636 |
| Nepean Blue Mountains | 5,728 |
| Illawarra | 5,996 |
| South West Zone 1 | 4,952 |
| South West Zone 2 | 7,115 |
| Hunter Zone 1 | 5,390 |
| Hunter Zone 2 | 3,334 |
| New England Zone | 2,318 |
| Mid North Coast Zone | 4,737 |
| Northern Rivers Zone | 4,183 |
| Murrumbidgee Zone | 3,341 |
| Southern NSW Zone | 3,135 |
| Central West Zone 1 | 2,542 |
| Central and Far West Zone 2 | 1,743 |

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

P1 median ambulance response time (minutes)

**Figure 25**     Median priority category 2 ambulance response time, by zone and local response area type, January to March 2018



| | Number |
| --- | --- |
| Sydney | 10,188 |
| South Eastern Sydney | 7,842 |
| Northern Sydney | 7,885 |
| Central Coast | 6,575 |
| Western Sydney | 8,712 |
| Nepean Blue Mountains | 5,768 |
| Illawarra | 7,243 |
| South West Zone 1 | 4,812 |
| South West Zone 2 | 6,996 |
| Hunter Zone 1 | 6,505 |
| Hunter Zone 2 | 3,729 |
| New England Zone | 2,961 |
| Mid North Coast Zone | 5,512 |
| Northern Rivers Zone | 4,840 |
| Murrumbidgee Zone | 4,413 |
| Southern NSW Zone | 3,804 |
| Central West Zone 1 | 3,270 |
| Central and Far West Zone 2 | 2,404 |

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

P2 median ambulance response time (minutes)

# Turnaround time – NSW and zone performance

Turnaround time refers to the length of time paramedics spend at hospital emergency departments. It is measured from the time an ambulance arrives with a patient at a hospital until the time it is cleared and available to respond to another incident (Figure 26).

Turnaround time encapsulates transfer of care, off stretcher time and make ready time. In the January to March 2018 quarter, the number of patients transported to hospital rose by 12,636 (up 9.5%) over the same quarter last year. The percentage of turnaround times occurring within 45 minutes for priority 1 cases was 70.3% and 75.1% of priority 2 (down 1.4 and 2.0 percentage points from the same quarter last year, respectively) (Figure 27).

Amid some seasonal fluctuation, median turnaround time has fallen compared with the January to March 2013 quarter (Figure 28). Across zones, median turnaround times combining priorities 1 and 2 ranged from 22.2 minutes in Central and Far West Zone 2 to 42.1 minutes in South Eastern Sydney (a 19.9 minute range) (Figure 29). Non-metropolitan zones generally had lower turnaround times compared with the NSW result (Figure 29).

Figure 26        Intervals covering turnaround time, NSW

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

Figure 27        Turnaround time, by priority category, January to March 2018

|  | This quarter | Same quarter last year | Change since one year ago |
|---|---|---|---|
| Patients transported to hospital | 145,882 | 133,246 | 9.5% |
| P1: Emergency |  |  |  |
| Median | 36.6m | 35.9m | 0.7m |
| 90th percentile | 59.2m | 58.5m | 0.7m |
| Percentage P1 within 45 minutes | 70.3% | 71.7% | -1.4 percentage points |
| P2: Urgent |  |  |  |
| Median | 34.5m | 33.2m | 1.3m |
| 90th percentile | 56.1m | 55.1m | 1.0m |
| Percentage P2 within 45 minutes | 75.1% | 77.1% | -2.0 percentage points |

**Figure 28**     Median turnaround time, by priority category, January 2013 to March 2018

● Introduction of non-emergency patient transport service    ○ Changes to ambulance protocols resulting in the re-allocation of responses among priority categories    ●━● P1    ●━● P2
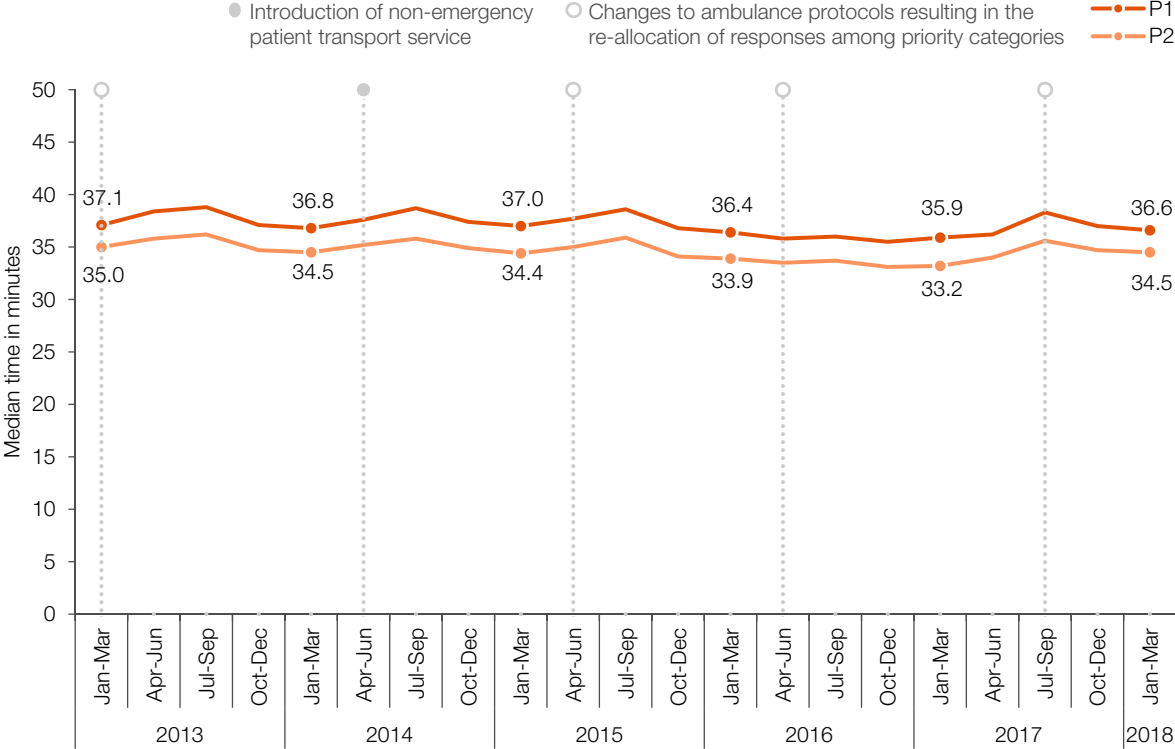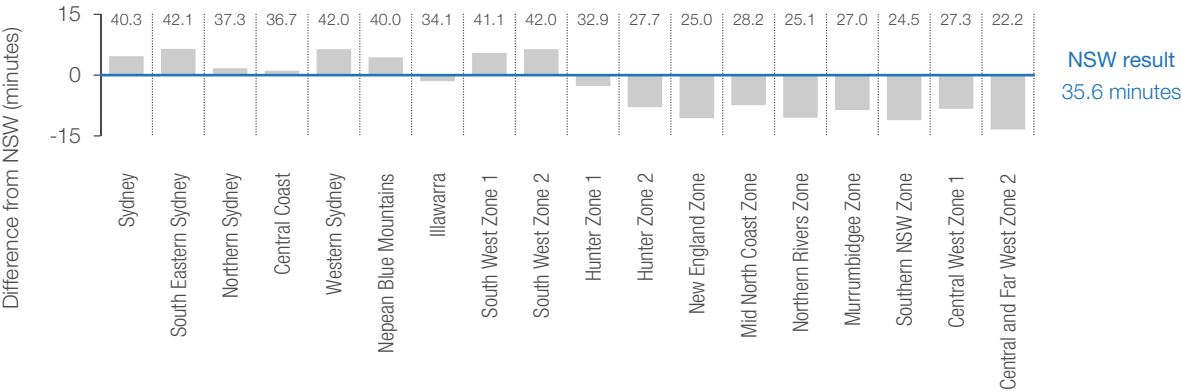


**Figure 29**     Median turnaround time, by zone, priority category 1 and 2, relative to NSW, January to March 2018

# Daily activity and performance

The daily demand for ambulance services varies and can be affected by a range of factors such as local events, adverse weather conditions and outbreaks of disease. Some of this variation occurs in predictable patterns, however there are days when demand is either much higher (surge days) or much lower (lull days) than historical patterns would predict on the basis of the day of the week, the week and month of the year, and public holidays (Figure 30).

The daily number of priority 1 to 3 responses ranged between 2,666 and 3,920 during the January to March 2018 quarter. Of the days falling outside the expected range, nine were above expected (surge days) and four were below expected (lull days) (Figure 30).

Looking at patterns of activity, identifying surge days and presenting this information alongside performance results can reflect on the system's resilience and preparedness. Days in the highest and lowest 10% of performance were flagged in red and green, respectively (Figure 31).

Figure 32 describes performance on surge days and busy days, as well as levels of activity on the days with the lowest performance levels.

Figure 30     Daily ambulance responses, observed and expected, January to March 2018
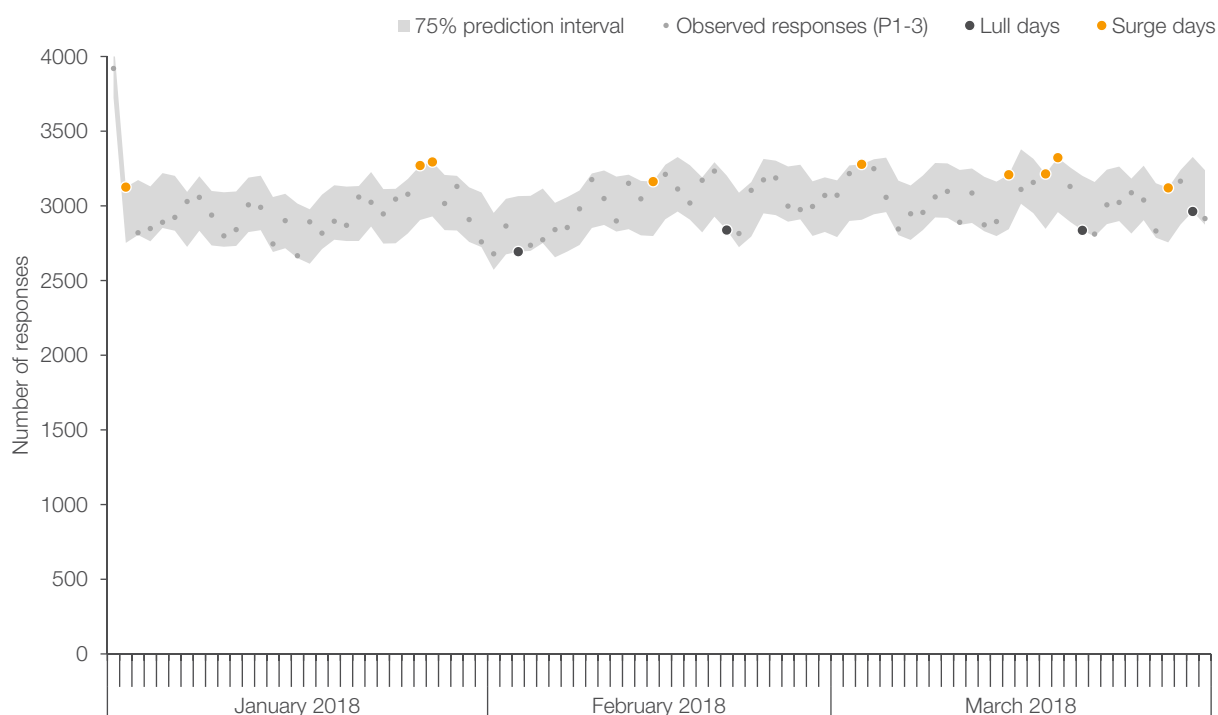
Figure 31

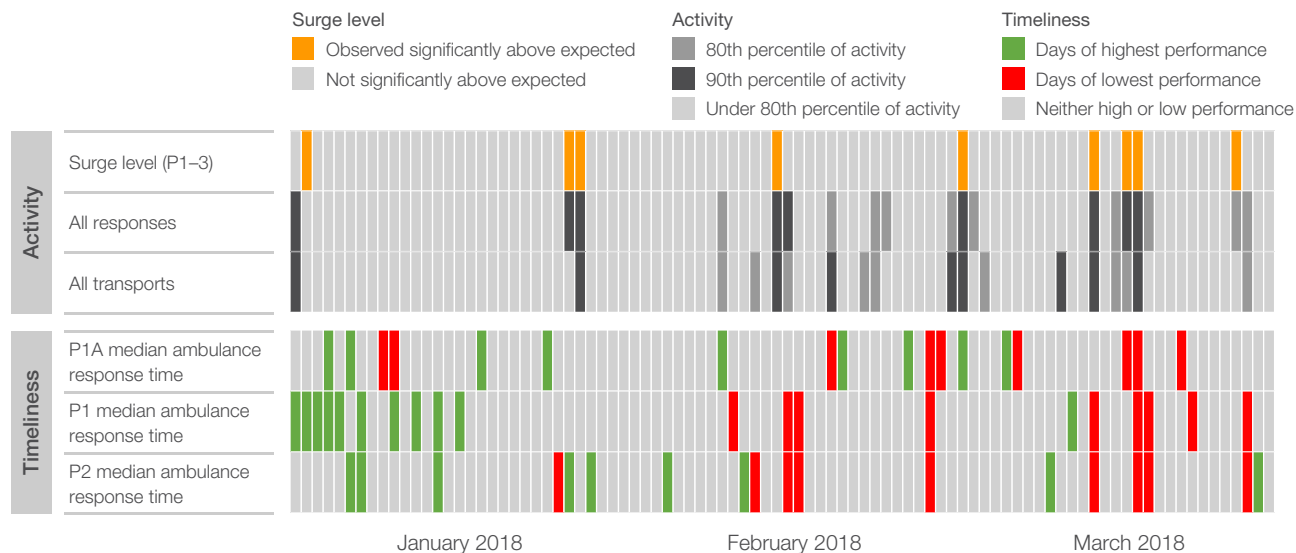## Daily activity and timeliness measures, January to March 2018



January 2018 — February 2018 — March 2018

Figure 32

## Summary of daily activity and timeliness measures, January to March 2018

| | Of the nine surge days this quarter, performance was: | | | | Of the nine busy days this quarter (all responses), performance was: | | | | Of the 10% of days this quarter with relatively poor performance: | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Relatively low | | Relatively high | | Relatively low | | Relatively high | | Normal days | Busy days | Surge days |
| P1A median ambulance response time | 2 | 6 | 1 | | 2 | 6 | 1 | | 7 | 2 | 2 |
| P1 median ambulance response time | 2 | 6 | 1 | | 3 | 5 | 1 | | 6 | 3 | 2 |
| P2 median ambulance response time | 2 | 6 | 1 | | 3 | 5 | 1 | | 6 | 3 | 2 |

Note: The range of daily median response times was: 5.4 minutes to 10.0 minutes for priority 1A, 10.1 minutes to 12.1 minutes for priority 1 and 15.7 minutes to 21.7 minutes for priority 2.

**Ambulance activity and performance**

# 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.
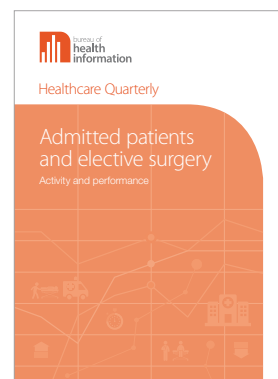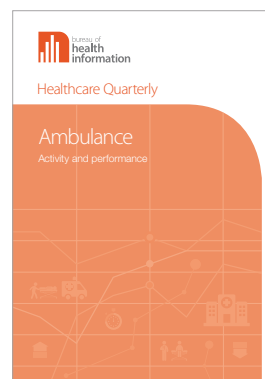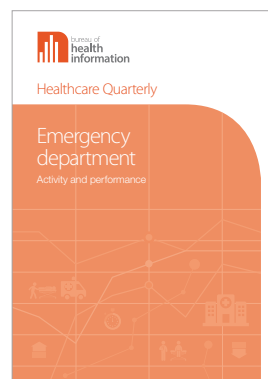


Additional information on local performance is available in our hospital profiles or from BHI's interactive portal Healthcare Observer, at **bhi.nsw.gov.au/healthcare_ observer**
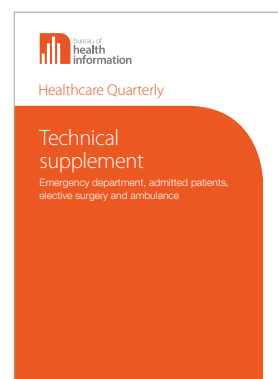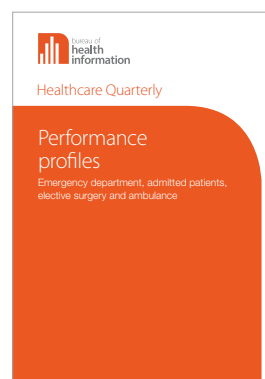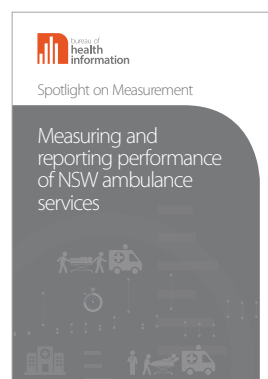


All reports and profiles are available at **bhi.nsw.gov.au**

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

# About the Bureau of Health Information

The Bureau of Health Information (BHI) is a board-governed organisation that provides independent information about the performance of the NSW public healthcare system.

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

BHI supports the accountability of the healthcare system by providing regular and detailed information to the community, government and healthcare professionals. This in turn supports quality improvement by highlighting how well the healthcare system is functioning and where there are opportunities to improve.

BHI manages the NSW Patient Survey Program, gathering information from patients about their experiences in public hospitals and other healthcare facilities.

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

- Accessibility – healthcare when and where needed

- Appropriateness – the right healthcare, the right way

- Effectiveness – making a difference for patients

- Efficiency – value for money

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

- Sustainability – caring for the future

BHI's work relies on the efforts of a wide range of healthcare, data and policy experts. All of our assessment efforts leverage the work of hospital coders, analysts, technicians and healthcare providers who gather, codify and report data. Our public reporting of performance information is enabled and enhanced by the infrastructure, expertise and stewardship provided by colleagues from NSW Health and its pillar organisations.

**bhi.nsw.gov.au**