University of South Australia | Ehrenberg-Bass Institute for Marketing Science

# Council of Ambulance Authorities
# National Patient Satisfaction Survey 2016


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**Date of Issue:** 7th September 2016

# EXECUTIVE SUMMARY

This report details the results of the Council of Ambulance Authorities Annual National Patient Satisfaction Survey. The data was collected by the Council of Ambulance Authorities and analysed and interpreted by the Ehrenberg-Bass Institute. This research investigated the service quality and satisfaction ratings of ambulance services across Australia (states/territories based). The purpose of this research was to measure the quality of ambulance services, as perceived by its customers (patients or carers). The ratings were compared over time as this study has been running since 2002 in Australia and since 2012 for Wellington Free Ambulance in New Zealand. In the beginning of 2016 Wellington Free Ambulance changed survey questions, hence its results are not comparable to the results of the Australian survey and not reported here.

Respondents were asked to evaluate their experience of using ambulance services on a number of dimensions: timeliness, telephone assistance, treatment received, paramedics' care, journey quality and the overall satisfaction using the ambulance service. The key findings are illustrated below.

## Australian states/territories

Eight Australian states/territories were investigated: Australian Capital Territory (n=465), New South Wales (n=425), Northern Territory (n=132), Queensland (n=421), South Australia (n=417), Tasmania (n=541), Western Australia (n=335) and Victoria (n=430).

Overall, the majority of patients were *satisfied or very satisfied* with all service dimensions investigated, with only minor statistically significant variations between years and states/territories. Below is a summary of the key changes in scores from 2015 to 2016.

- The previous year trend for increased homogeneity across all service dimensions and all emergency services continued. Any differences became indistinguishable - all states and territories performed equally well.
- Northern Territory had large advancements in some service dimensions and decrease in other, comparing to the previous year. These changes were statistically significant even despite a small sample size.
- Queensland achieved a perfect score of 100% for *Overall satisfaction*. While indicating an excellent performance of the Queensland Ambulance Service, this fact also emphasises the importance of a review of the scoring system employed by the Council of Ambulance Authorities Annual National Patient Satisfaction Survey to mitigate the ceiling effect, as was suggested by the Ehrenberg-Bass institute.

# Australia overall

There were 3,166 respondents in Australia in 2016. The overall Australian results were weighted to match the total road and air patient population in 2014/2015 of each state/territory.

Table 1 shows Australia's results across all the service dimensions measured. The results are ordered by the service dimension rank and presented as the proportion of customers who, in 2016, were: *very dissatisfied or dissatisfied* (column 3), *neither satisfied nor dissatisfied* (column 4), and *satisfied or very satisfied* (column 5). The table shows a comparison with the proportion of *satisfied or very satisfied* customers in 2015 (column 5) and indicates over time statistically significant changes (at $p<0.05$) (column 6). This five-point scale is the preferred method of data collection by the Council of Ambulance Authorities. In the dataset for New South Wales there were no responses for question Q10 Overall satisfaction, hence results for Australia in total (Table 1) did not include New South Wales for this question.

**Table 1: Service dimensions – Australia**

| Service dimensions | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| Communication staff assistance | 1 | 0 | 1 | 99 | 98 | ↑ |
| Call response time | 2 | 1 | 1 | 98 | 98 | ←→ |
| Overall satisfaction* | 2 | 1 | 1 | 98 | 98 | ←→ |
| Paramedics care | 2 | 1 | 1 | 98 | 98 | ←→ |
| Treatment satisfaction | 2 | 1 | 1 | 98 | 98 | ←→ |
| Ambulance paramedics | 3 | 2 | 2 | 96# | 96 | ←→ |
| Trip/ride satisfaction | 4 | 2 | 3 | 95# | 94 | ←→ |
| Ambulance response time | 5 | 3 | 3 | 94# | 95 | ↓ |

***# - Indicate service dimensions that differ from others, based on the proportion of satisfied or very satisfied customers in 2016 (statistically significant p<0.05).***

***(1), (2), (3), etc - These signs indicate the rank each service dimension achieved according to its performance in 2016 (statistically significant at p<0.05).***

***↑ ↓ ←→ - These signs indicate change in the results for satisfied or very satisfied customers from 2015 to 2016 (statistically significant at p<0.05).***

In general, the overall satisfaction scores across Australia were high and consistent over time. The *Overall satisfaction* score was 98%, which was similar to previous years. There were no statistically significant changes for *satisfied or very satisfied* scores between 2015 and 2016 across all service dimensions except two:

- Satisfaction score with Communication staff assistance increased from 98% in 2015 to 99% to become the highest among all service dimensions.
- Satisfaction score with Ambulance response time decreased from 95% in 2015 to 94% and become the lowest among all service dimensions.

The change in Trip/ride satisfaction was not statistically significant, so we could not conclude with 95% confidence level that there were real improvements.

Similar to scores in previous years, *Ambulance paramedics, Trip/ride satisfaction* and *Ambulance response time* satisfaction scores (96%, 95% and 94%, respectively) were lower than other service dimensions. These differences were statistically significant at the 5% significance level.

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# RESEARCH OBJECTIVES & METHODOLOGY

The key purpose of the Patient Satisfaction Survey was to track perceived service quality and satisfaction across patient segments in Australian states and territories. Previous studies, conducted annually in Australia since 2002, provided benchmarks for comparison with the 2016 results.

## The sample

In 2016, eight Australian states/territories based patient segments were investigated and the overall result for Australia was incorporated. Therefore, the nine segments were:

1. Australian Capital Territory
2. New South Wales
3. Northern Territory
4. Queensland
5. South Australia
6. Tasmania
7. Western Australia
8. Victoria
9. Australia overall

The data was collected by each ambulance service, using the same core questionnaire. Each state/territory was responsible for the mailing, collection and data entry of its patient survey. The individual service providers sent the data to the Council of Ambulance Authorities. The results were combined and reported by the Ehrenberg-Bass Institute. The Institute, as an independent research body, analysed the data and drew this report, including statistically significant differences between patient segments as well as comparisons with previous year's results.

A randomly selected sample of 1300 (Code 1 & 2) patients who were transported within two months of the sampling date was used in this study. Code 1 relates to an emergency event requiring one or more immediate ambulance responses under light and sirens where the incident is potentially life threatening. Code 2 relates to urgent incidents requiring an undelayed response by one or more ambulances without warning devices, with arrival desirably within thirty minutes.

## The instrument

The Council of Ambulance Authorities, in consultation with the Ehrenberg-Bass Institute, developed a universal service quality and satisfaction measurement instrument.

Across all patient segments, three service and five satisfaction ratings were obtained, as well as four patient demographic profile questions. All service quality rating questions used a five-point Likert scale, where a higher number indicates better-perceived performance. A full version of the questionnaire is included in the Appendix section.

# Approach to analysis

The data was collected, entered and cleaned by each patient segment and then pooled and converted to R, software used for analysis by the Ehrenberg-Bass Institute. For each patient segment, descriptive statistics were used to uncover the proportion of people who were *very dissatisfied or dissatisfied*, *neither satisfied nor dissatisfied*, and *satisfied or very satisfied* for the various satisfaction and service quality attributes. *Unsure* and *not applicable* responses were not included in the analysis due to the very low incidence and low managerial implications from them.

To better represent the total road and air patient population in 2015/2016 of each state/territory, the analysis included weighting for the Australian result overall. In order to do so, the results of some states/territories were weighted up and others weighted down to match the population in the analysed period. This was the same process as employed in previous reports. The following example explains the process:

> ***Population:*** *The 2015/2016 road and air population for New South Wales was 697,717. This corresponded to 25% of the total road and air population in Australia.*
> ***Sample:*** *In 2016, there were 425 respondents in the sample from New South Wales. This accounted for 13% of the total sample in Australia.*
> ***Weighting:*** *Therefore, to match up the sample with the population, New South Wales responses were weighted up in the combined Australian result. In doing that the results are based on the population figure instead of the sample size.*

In all tables, state/territory ambulance services were listed in a descending order according to the proportion of patients who said that they were *satisfied or very satisfied* with a certain element or service. In some cases, differences in scores between states/territories were not statistically significant (i.e. arose from random sampling fluctuations), which means that, regardless of the order, all states/territories can be considered equal in performance.

Additional analysis was conducted to test whether variations between states/territories were statistically significant (at 5% significance level, that is p-value<0.05). Where there were differences, the score was marked with the sign #. In front of each state/territory there is a rank that the ambulance service achieved according to its performance in 2016. Emergency service with rank (2) indicates a lower satisfaction rating than at least some services in (1), (3) is lower than (2) and so on.

Comparison to 2015 results was provided for all patient segments based on the percentage of respondents who were *satisfied or very satisfied* with each service dimension. The last column in each table indicates changes over time (statistically significant at p<0.05). The symbol ↔ shows a stable result, ↑ shows a statistically significant increase and ↓ shows a statistically significant decrease. In some cases, while no statistically significant differences were observed on state/territory level (due to restricted sample sizes), the overall score produced statistically significant differences, as the aggregated sample had higher statistical power.

Also, differences in performance may be attributable to demographic biases rather than real differences between two equivalent populations. For example, in 2016 compared to other states/territories, Northern Territory had a greater proportion of patients among respondents. Patients

tend to provide higher evaluations than carers. This could provide a partial explanation for the large improvements in performance of the state in dimensions related to patients transporting.

# Response rate

The overall 2015/2016 road and air patient population for the different patient segments was:

New South Wales= 697,717

Victoria = 666,142

Queensland = 811,764

Western Australia = 231,687

South Australia = 222,970

Tasmania = 60,779

Northern Territory = 37,066

Australian Capital Territory = 33,031

Total Australia = 2,761,156

Table 2 shows the response rates for each ambulance service, calculated based on the number of surveys sent and received.

**Table 2: Response rates**

| Ambulance services | Sent | Received | Response rate % |
|---|---|---|---|
| TAS | 1,300 | 541 | 42 |
| ACT | 1,300 | 465 | 36 |
| VIC | 1,300 | 430 | 33 |
| NSW | 1,300 | 425 | 33 |
| QLD | 1,300 | 421 | 32 |
| SA | 1,300 | 417 | 32 |
| WA | 1,300 | 335 | 26 |
| NT | 1,300 | 132 | 10 |
| **AUS** | **10,400** | **3,166** | **30** |

In 2016, the response rate achieved in Australia was 30%, which was almost the same as in 2015 (31%). Similarly to the previous year, Northern Territory had the lowest response rate among all states/territories at 10% (14% in 2015). Such a low response rate meant that the Northern Territory results had a higher error margin, meaning some of the seemingly substantial differences were statistically insignificant, unless indicated otherwise. This was consistent with the results from previous surveys. A low response rate leads to the likelihood of non-response bias in their results and less accuracy when comparing with the other states/territories and over different time periods.

# FINDINGS

## Call response time

Table 3 shows the respondents' satisfaction with the time taken to answer their emergency call.

**Table 3: Call response time satisfaction ratings (Q2)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| ACT | 1 | 0 | 1 | 99 | 99 | ↔ |
| QLD | 1 | 1 | 0 | 99 | 99 | ↔ |
| WA | 1 | 1 | 0 | 99 | 98 | ↔ |
| SA | 2 | 0 | 2 | 98 | 98 | ↔ |
| NSW | 2 | 1 | 1 | 98 | 97 | ↔ |
| TAS | 2 | 1 | 1 | 98 | 99 | ↔ |
| VIC | 2 | 1 | 1 | 98 | 97 | ↔ |
| NT | 3 | 2 | 1 | 97 | 97 | ↔ |
| **AUS** | | **1** | **1** | **98** | **98** | ↔ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

Results for all Australian states/territories were consistent with 2015. There were no statistically significant changes between 2015 and 2016. All states/territories performed equally well for *Call response time*. Like in the previous year, there were no exceptions – no ambulance services achieved a result which was statistically different to other services. In total, 98% of the respondents were *satisfied or very satisfied* with the time taken to answer their call in Australia. This was consistent with 2015.

**Respondents were overwhelmingly satisfied with the call response times.**

*The pattern is consistent between the States/Territories and between 2015 & 2016.*

# Communication staff assistance

Respondents were then asked about their level of satisfaction with the operator they spoke to when their emergency phone call was answered. Results are presented in Table 4.

**Table 4: Communication staff assistance satisfaction ratings (Q3)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| QLD | 1 | 0 | 1 | 99 | 99 | ↔ |
| TAS | 1 | 0 | 1 | 99 | 99 | ↔ |
| VIC | 1 | 0 | 1 | 99 | 97 | ↑ |
| WA | 1 | 0 | 1 | 99 | 99 | ↔ |
| ACT | 2 | 1 | 1 | 98 | 98 | ↔ |
| NSW | 2 | 1 | 1 | 98 | 97 | ↔ |
| NT | 3 | 1 | 2 | 97 | 97 | ↔ |
| SA | 3 | 2 | 1 | 97# | 98 | ↔ |
| **AUS** | | **0** | **1** | **99** | **98** | ↑ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

Results for all states/territories were high and mostly consistent with 2015. The only statistically significant change between 2015 and 2016 was in Victoria. Satisfaction with *Communication staff assistance* improved from 97% in 2015, when Victoria was at the bottom of the list, to 99% in 2016.

The majority of states/territories performed equally well for *Communication staff assistance*. The only minor exception was South Australia. While the reduction in performance between 2015 and 2016 was not statistically significant, South Australia happened to be the only state achieved a statistically significant lower result than ambulance services leading in terms of communication staff assistance satisfaction - Queensland, Tasmania, Victoria and Western Australia. At the same time, there were no statistically significant differences between South Australia and other states and territories.

Across Australia, the overall score of respondents who were *satisfied or very satisfied* with the operator they spoke to when their emergency phone call was answered was extremely high at 99% and that was a statistically significant improvement from 98% in the previous year.

**Respondents were satisfied with the communication staff assistance.**

*There were no managerially significant changes between the two years.*

# Ambulance response time

Respondents were asked to rate their satisfaction with the time the ambulance took to arrive. Results are presented in Table 5.

**Table 5: Ambulance response time satisfaction ratings (Q4)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| WA | 1 | 0 | 2 | 98 | 97 | ↔ |
| ACT | 2 | 2 | 2 | 96 | 96 | ↔ |
| NSW | 3 | 3 | 3 | 94 | 97 | ↔ |
| SA | 3 | 3 | 3 | 94# | 96 | ↔ |
| TAS | 3 | 3 | 3 | 94# | 91 | ↔ |
| VIC | 3 | 3 | 3 | 94# | 93 | ↔ |
| QLD | 4 | 3 | 4 | 93# | 95 | ↔ |
| NT | 5 | 6 | 7 | 87# | 95 | ↓ |
| **AUS** | | **3** | **3** | **94** | **95** | ↓ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

Most states/territories performed equally well and consistent with previous years for *Ambulance response time*. While there were a bit higher results (Western Australia, Tasmania and Victoria) or a bit lower (New South Wales, South Australia and Queensland) comparing to the previous year, all these difference were not statistically significant.

However, Northern Territory demonstrated an 8% decrease in satisfaction score for *Ambulance response time*, which resulted in dropping out from the list of top performing emergency services in 2015 to the bottom of the list in 2016. This decrease was statistically significant even despite lower sample size of Northern Territory respondents in 2016 and, as a result, a high error margin. A decrease in the proportion of *satisfied* and *very satisfied* respondents arose from an equal increase in the proportions *of dissatisfied* or *very dissatisfied* and *neither satisfied or dissatisfied* respondents from 2% and 3% in 2015 to 6% and 7% in 2016 respectively.

Similarly to the previous year, Australian Capital Territory and New South Wales were the only two states that did not have statistically significant difference with the leader in terms of in the satisfaction level – Western Australia; results for all other states/territories were lower than for Western Australia. The overall Australian proportion of respondents who were *satisfied or very satisfied* with the *Ambulance response time* significantly decreased compared to 2015 from 95% to 94%.

**Respondents were satisfied with the ambulance response times.**

*A number of states / territories had statistically significant reductions in satisfaction with the response times of ambulances.*

# Paramedics' care

Respondents were asked to rate their satisfaction with the care the ambulance paramedics took when attending them. Results are presented in Table 6.

**Table 6: Paramedics' care satisfaction ratings (Q5)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| QLD | 1 | 0 | 1 | 99 | 98 | ↔ |
| SA | 1 | 1 | 0 | 99 | 99 | ↔ |
| WA | 1 | 1 | 0 | 99 | 97 | ↔ |
| ACT | 2 | 1 | 1 | 98 | 98 | ↔ |
| TAS | 2 | 1 | 1 | 98 | 98 | ↔ |
| VIC | 2 | 1 | 1 | 98 | 98 | ↔ |
| NT | 2 | 2 | 0 | 98 | 97 | ↔ |
| NSW | 3 | 2 | 1 | 97 | 98 | ↔ |
| **AUS** | | **1** | **1** | **98** | **98** | ↔ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

All states/territories performed equally well for *Paramedics' care*. There were no statistically significant differences between states/territories. Also, compared to 2015, there were no statistically significant changes over time.

Across Australia, the overall score of respondents who were *satisfied or very satisfied* with the care the ambulance paramedics provided when attending to the patients was high at 98%, which was consistent with 2015.

**Respondents were very satisfied with the paramedics care.**

*The satisfaction levels remained similar between 2015 and 2016.*

# Treatment satisfaction

Respondents were asked about their satisfaction with the standard of treatment they received from the ambulance paramedics. Results are presented in Table 7.

**Table 7: Treatment satisfaction ratings (Q6)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| ACT | 1 | 1 | 0 | 99 | 98 | ↔ |
| QLD | 1 | 1 | 0 | 99 | 98 | ↔ |
| WA | 1 | 1 | 0 | 99 | 97 | ↔ |
| NT | 2 | 1 | 1 | 98 | 97 | ↔ |
| SA | 2 | 1 | 1 | 98 | 98 | ↔ |
| TAS | 2 | 1 | 1 | 98 | 99 | ↔ |
| VIC | 2 | 1 | 1 | 98 | 98 | ↔ |
| NSW | 2 | 2 | 0 | 98 | 99 | ↔ |
| **AUS** | | **1** | **1** | **98** | **98** | ↔ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

All states/territories performed equally well for *Treatment satisfaction*. Similar to *Paramedics' care* there were no statistically significant differences between states/territories in terms of *Treatment satisfaction*. Also, compared to 2015, there were no statistically significant changes over time for any state or territory.

Across Australia, the overall score of respondents who were *satisfied or very satisfied* with the treatment received from the ambulance paramedics was high at 98%.

**Respondents were very satisfied with the treatment they received.**

*The satisfaction levels were consistent between 2015 and 2016.*

# Ambulance paramedics

Respondents were asked how satisfied they were with explanations given by the ambulance paramedics about what was happening to them and why. Results are presented in Table 8.

**Table 8: Ambulance paramedics satisfaction ratings (Q7)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| NT | 1 | 1 | 1 | 98 | 93 | ↔ |
| ACT | 2 | 1 | 2 | 97 | 95 | ↔ |
| QLD | 2 | 1 | 2 | 97 | 96 | ↔ |
| TAS | 2 | 1 | 2 | 97 | 97 | ↔ |
| SA | 3 | 1 | 3 | 96 | 97 | ↔ |
| VIC | 3 | 1 | 3 | 96 | 96 | ↔ |
| WA | 3 | 1 | 3 | 96 | 95 | ↔ |
| NSW | 3 | 2 | 2 | 96 | 96 | ↔ |
| **AUS** | | **2** | **2** | **96** | **96** | ↔ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

All states/territories performed equally well for *Ambulance paramedics*. There were no statistically insignificant changes over time or between states/territories. Results for all states/territories were stable and consistent with 2015.

Seemingly large change in satisfaction with *Ambulance paramedics* service in Northern Territory from 93% in 2015 to 98% in 2016 was not statistically significant due to a low sample size, hence we could not conclude with 95% confidence that there were positive improvements in Northern Territory ambulance service. At the same time, this result might be considered in conjunction with the next question (*Trip/ride satisfaction*) where the score improvement was statistically significant.

Across Australia, the overall score of respondents who were *satisfied or very satisfied* with the explanation given to them by the ambulance paramedics was 96% which was consistent with 2015.

**Respondents were very satisfied with the ambulance paramedics.**

*The Northern Territory increased from 93% (2015) to 98% (2016).*

# Trip/ride satisfaction

Respondents were also asked about their satisfaction with the conditions of the trip when being transported by an ambulance. Results are presented in Table 9.

**Table 9: Trip/ride satisfaction ratings (Q8)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| NT | 1 | 0 | 1 | 99 | 95 | ↑ |
| WA | 2 | 1 | 2 | 97 | 97 | ↔ |
| ACT | 3 | 1 | 3 | 96 | 96 | ↔ |
| NSW | 3 | 2 | 2 | 96 | 94 | ↔ |
| VIC | 4 | 1 | 4 | 95# | 92 | ↔ |
| QLD | 4 | 3 | 2 | 95# | 93 | ↔ |
| SA | 4 | 3 | 2 | 95# | 94 | ↔ |
| TAS | 5 | 1 | 5 | 94# | 94 | ↔ |
| **AUS** | | **2** | **3** | **95** | **94** | ↔ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

Most states/territories performed equally well for *Trip/ride satisfaction*. Results for Northern Territory were statistically significant higher than for Victoria, Queensland, South Australia and Tasmania. At the same time there were no statistically significant differences between other states.

Results for most emergency services were stable across 2015-2016 with one exception – Northern Territory. This ambulance service achieved statistically significant higher satisfaction scores comparing to its 2015 scores, even despite a smaller sample size and, as a result, a high error margin.

Some other states (Victoria, South Australia, Queensland and New South Wales) had results a bit higher than in 2015, however these differences were not statistically significant.

While all changes combined contributed to an increase in the overall score across Australia from 94% to 95% that change was not statistically significant, hence we could not conclude with 95% confidence that there were any improvements in Australia overall.

So, across Australia, the overall score of respondents who were *satisfied or very satisfied* with the trip/ride service received was high at 95%. This result was consistent with 2015.

**Respondents were very satisfied with the ambulance trip/ride.**

*The Northern Territory increased from 95% (2015) to 99% (2016).*

# Overall satisfaction

Table 10 shows the respondents' overall satisfaction using the ambulance service.

**Table 10: Overall satisfaction ratings (Q10)**

| Ambulance services | Service dimension rank | Dissatisfied or very dissatisfied % | Neither satisfied nor dissatisfied % | Satisfied or very satisfied | | Statistically significant change 2015-2016 |
|---|---|---|---|---|---|---|
| | | | | 2016 % | 2015 % | |
| QLD | 1 | 0 | 0 | 100 | 98 | ↔ |
| ACT | 2 | 1 | 1 | 98# | 98 | ↔ |
| SA | 2 | 1 | 1 | 98# | 98 | ↔ |
| TAS | 2 | 1 | 1 | 98 | 98 | ↔ |
| VIC | 3 | 1 | 2 | 97# | 97 | ↔ |
| WA | 3 | 2 | 1 | 97# | 97 | ↔ |
| NT | 4 | 2 | 2 | 96# | 97 | ↔ |
| NSW* | NA | NA | NA | NA | 99 | ↔ |
| **AUS** | | **1** | **1** | **98** | **98** | ↔ |

***# - Indicate states/territories that differ from others, based on the proportion of satisfied or very satisfied customers (statistically significant at p<0.05).***

New South Wales did not have a response for *Overall satisfaction* in the 2016 survey, hence Table 10 does not show results for New South Wales and performance across Australia does not include New South Wales.

All ambulance services achieved very high *Overall satisfaction* scores. There were no statistically significant differences over time for all states/territories, results were mostly stable across 2015-2016.

In 2015 there were no obvious leaders in terms satisfaction scores, in 2016 Queensland ambulance service achieved 100% satisfaction score. While the difference between 98% in 2015 and 100% in 2016 was not statistically significant, it pushed Queensland service to the top of the list and the majority of other states and territories (except Tasmania) demonstrated satisfaction scores statistically significantly lower than Queensland.

Similar to previous years, in 2016 the *Overall satisfaction* score for Australia remained high at 98%.

**Respondents were very satisfied with the overall ambulance service.**

*The satisfaction scores remained consistent between 2015 and 2016.*

Table 11 shows error margins for *Overall satisfaction*. It was calculated based on the overall patient population (total road and air) for each ambulance service at 95% confidence level. This reports the estimation errors given the sample size and proportion of *satisfied or very satisfied* respondents for each state/territory. It can be seen that differences in the *Overall satisfaction* between states and territories were within error margins, hence we had to accept that all scores were the same.

**Table 11: Error margins for "Overall satisfaction" ratings at 95% confidence level**

| Ambulance services | Error margin for 95% confidence level | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| ACT | 1.3 | 1.6 | 1.9 | 1.6 | 1.2 | 1.4 | 1.3 | 1.3 |
| NSW | 1.4 | 1.1 | 1.1 | 1.2 | 1.0 | 1.8 | 1.1 | NA |
| NT | 2.4 | 2.4 | 1.9 | 2.0 | 2.9 | 3.0 | 2.6 | 3.3 |
| QLD | 1.2 | 1.3 | 1.4 | 1.6 | 2.0 | 0.9 | 1.3 | 0.7 |
| SA | 1.0 | 0.9 | 1.0 | 1.4 | 1.0 | 1.2 | 1.3 | 1.5 |
| TAS | 1.1 | 1.1 | 1.0 | 1.1 | 1.0 | 1.0 | 1.3 | 1.1 |
| VIC | 0.9 | 0.9 | 0.9 | 1.0 | 1.3 | 1.6 | 1.4 | 1.6 |
| WA | 1.8 | 1.3 | 1.4 | 1.4 | 1.2 | 1.0 | 1.7 | 1.8 |
| **AUS** | **0.5** | **0.4** | **0.4** | **0.5** | **0.5** | **0.5** | **0.5** | **0.5** |

# Reasonable time for emergency ambulance arrival

Respondents were asked what they expected to be a reasonable time for an ambulance to arrive in an emergency situation. This was an open-ended question, providing respondents with the opportunity to answer the exact timing in minutes. Table 12 illustrates the following indicators for point locations:

- mean (average value),
- minimum (lowest answer),
- first quartile Q1 (a point where 25% the answers are below this point and 75% above),
- median or second quartile (a mid-point where half the answers are below this point and half above),
- third quartile Q3 (a point where 75% the answers are below this point and 25% above),
- maximum (highest answer);

and indicators for degree of dispersion:

- standard deviation (a square root of an average of squared deviations from the mean),
- range (range between the lowest and the highest answers),
- interquartile range IQR (a range between first and third quartiles).

**Table 12: Reasonable time (in minutes) for emergency ambulance arrival (Q9)**

| Ambulance services | Mean | St.Dev | Min | Q1 | Median | Q3 | Max | Range | IQR |
|---|---|---|---|---|---|---|---|---|---|
| NSW | 15 | 9 | 2 | 10 | 15 | 20 | 90 | 88 | 10 |
| TAS | 16 | 9 | 4 | 10 | 15 | 20 | 90 | 86 | 10 |
| QLD | 14 | 7 | 1 | 10 | 10 | 15 | 60 | 59 | 5 |
| VIC | 15 | 8 | 1 | 10 | 15 | 18 | 60 | 59 | 8 |
| ACT | 13 | 7 | 2 | 10 | 10 | 15 | 60 | 58 | 5 |
| SA | 13 | 6 | 3 | 10 | 10 | 15 | 60 | 57 | 5 |
| NT | 15 | 8 | 5 | 10 | 15 | 20 | 60 | 55 | 10 |
| WA | 14 | 7 | 1 | 10 | 15 | 15 | 50 | 49 | 5 |
| **AUS** | **14** | **8** | **1** | **10** | **15** | **15** | **90** | **89** | **5** |

***States/territories are listed in descending order based on the mean and alphabetically if there is a tie.***

The average results were largely consistent with the previous surveys in terms of numbers as well as position in the table. The reasonable time for emergency ambulance arrival was, on average, 14 minutes for Australia overall. Median was 15, which meant that 50% of respondents expected that an ambulance should arrive in 15 minutes or less.

In Australia 25% of respondents (third quartile) accepted an arrival time longer than 15 minutes (20 minutes for New South Wales, Tasmania and Northern Territory) as a reasonable time. The other 25% of respondents expected that arrival time should be under 10 minutes, sometimes as low as 2-3 minutes only.

New South Wales and Tasmania demonstrated the highest level of dispersion in the reasonable times for emergency ambulance arrival (measured by standard deviation, range or IQR). This could be explained by the higher proportions of rural respondents in New South Wales and Tasmania which realistically assessed their remote locations and accepted a longer time for an emergency ambulance arrival.

**Table 13: Most common times expected for emergency ambulance arrival**

| | Australia % |
|---|---|
| 5 minutes | 7 |
| 10 minutes | 30 |
| 15 minutes | 26 |
| 20 minutes | 13 |
| 30 minutes | 7 |

Table 13 shows the most common times named for emergency ambulance arrival by respondents in Australia. Results for 2016 were very close to previous years. The most common times expected for emergency ambulance arrival were: 5 minutes (7%), 10 minutes (30%), 15 minutes (26%), 20 minutes (13%) and 30 minutes (7%).

**Table 14: Level of acceptance of different times for emergency ambulance arrival**

| Ready to wait up to... | Australia overall % |
|---|---|
| 5 minutes | 90 |
| 10 minutes | 77 |
| 15 minutes | 46 |
| 20 minutes | 21 |
| 25 minutes | 9 |
| 30 minutes | 7 |

In general, 90% of respondents in Australia would be happy if an ambulance arrived in 5 minutes; 77% found waiting for up to 10 minutes as reasonable; an ambulance arrival time above 30 minutes was acceptable for 7% of the respondents in Australia.

# RESPONDENTS' PROFILE

This section reports on the demographic characteristics of respondents who were part of the 2016 study. These characteristics are important as they influence respondents' answers and were used to interpret and explain results for the core questions of the study throughout this report.

## Who completed the survey

Respondents were asked: *'Is the person completing this survey… the patient that was transported, or a relative, or carer of the patient?'*. Results are presented in Table 15.

**Table 15: Proportions of patients and carers who completed the survey (Q1)**

| | Ranking | Patient | | Carer/relative |
|---|---|---|---|---|
| | | % in 2016 | % in 2015 | % |
| NT | 1 | 88 | 78 | 12 |
| SA | 2 | 79# | 74 | 21 |
| TAS | 2 | 78# | 77 | 22 |
| NSW | 2 | 76# | 70 | 24 |
| QLD | 2 | 76# | 82 | 24 |
| VIC | 2 | 73# | 81 | 27 |
| WA | 2 | 73# | 76 | 27 |
| ACT | 3 | 71# | 80 | 29 |
| **AUS** | | **76** | **77** | **24** |

***States/territories are listed in descending order according to the proportion of patients in 2016.***

***# - Indicate states/territories that differ from others, based on the proportion of respondents that were patients (statistically significant at p<0.05).***

Across all ambulance services the majority of the respondents were patients. Overall, patients comprised 76% of the sample in Australia. This result was consistent with 2015.

In 2016 Northern Territory had the highest proportion of patients answering the survey (88%), while in 2015 it had an average proportion (78%). On a contrary, Australian Capital Territory, which used to have quite a high proportion of patients (80% in 2015), had the lowest proportion in 2016 - 71% only.

As patients tend to be less critical in their evaluations than carers, these changes in the proportions of patients and carers might explain some changes between 2015 and 2016 in the satisfaction of service dimensions for Northern Territory. At the same time there were no noticeable differences for Australian Capital Territory.

# Gender

Table 16 shows the gender split of the patients transported in Australia.

**Table 16: Proportions of male and female patients who have been transported (Q11)**

| Ambulance services | Male<br>% | Female<br>% |
|---|---|---|
| TAS | 50 | 50 |
| NSW | 48 | 52 |
| QLD | 47 | 53 |
| SA | 46 | 54 |
| ACT | 45 | 55 |
| NT | 45 | 55 |
| WA | 45 | 55 |
| VIC | 44 | 56 |
| **AUS** | **47** | **53** |

***States/territories are listed in descending order by the proportion of males, then alphabetically if there is a tie.***

***# - Indicate states/territories that differ from others, based on the proportion of respondents that were males (statistically significant at p<0.05).***

In total, the composition of patients transported in Australia was 47% males and 53% females. This was consistent with 2015.

This year, all states/territories achieved similar proportions of male patients transported (approximately 45% to 55% males/females split). The proportion of males and females from 2015 to 2016 was stable for all ambulance services.

# Age groups

Respondents were asked about the age of the patient transported. The survey used eighteen age groups in alignment with the Australian Bureau of Statistics quotas, starting from 0-4 years old up to 85 years old and over. Results are presented in Table 17.

**Table 17: Age of the patients (Q12)**

| Age Groups | ACT % | NSW % | NT % | QLD % | SA % | TAS % | VIC % | WA % | AUS % |
|---|---|---|---|---|---|---|---|---|---|
| 0-4 | 3 | 0 | 1 | 3 | 0 | 1 | 1 | 2 | **1** |
| 5-9 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | **1** |
| 10-14 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | **1** |
| 15-19 | 2 | 1 | 0 | 2 | 0 | 2 | 2 | 1 | **1** |
| 20-24 | 0 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | **1** |
| 25-29 | 0 | 1 | 4 | 1 | 1 | 2 | 2 | 1 | **1** |
| 30-34 | 2 | 1 | 3 | 1 | 1 | 1 | 2 | 1 | **1** |
| 35-39 | 1 | 2 | 7 | 3 | 1 | 1 | 5 | 1 | **2** |
| 40-44 | 2 | 3 | 5 | 4 | 3 | 3 | 1 | 2 | **3** |
| 45-49 | 3 | 3 | 5 | 5 | 3 | 3 | 3 | 4 | **4** |
| 50-54 | 2 | 5 | 15 | 6 | 7 | 4 | 5 | 4 | **5** |
| 55-59 | 4 | 6 | 12 | 8 | 4 | 7 | 7 | 4 | **6** |
| 60-64 | 7 | 6 | 12 | 7 | 8 | 7 | 11 | 5 | **7** |
| 65-69 | 10 | 8 | 13 | 12 | 11 | 11 | 11 | 10 | **11** |
| 70-74 | 12 | 13 | 11 | 9 | 13 | 13 | 15 | 10 | **12** |
| 75-79 | 17 | 15 | 4 | 14 | 14 | 14 | 13 | 17 | **14** |
| 80-84 | 15 | 14 | 5 | 10 | 16 | 16 | 19 | 14 | **15** |
| 85+ | 20 | 20 | 2 | 12 | 16 | 12 | 0 | 21 | **14** |

Three main age groups were created to assist in determining statistically significant differences in the ratings. These were 0-24, 25-49 and 50+ years old as presented in Table 18.

**Table 18: Patients' main age groups (Q12)**

| Ambulance services | Rank of patients transported once | 0-24 years % | 25-49 years % | 50+ years % |
|---|---|---|---|---|
| SA | 1 | 2 | 9 | 89 |
| NSW | 1 | 3 | 9 | 88 |
| WA | 1 | 5 | 9 | 86 |
| ACT | 1 | 6 | 8 | 86 |
| TAS | 2 | 7 | 11 | 82# |
| VIC | 2 | 6 | 13 | 81# |
| QLD | 2 | 9 | 14 | 77# |
| NT | 3 | 2 | 24 | 74## |
| **AUS** | | **5** | **11** | **84** |

***States/territories are listed in descending order according to the proportion of 50+ years old, then by the proportion of 25-49 years and then alphabetically.***

***#, ## - Indicate states/territories that differ from others, based on the proportion of respondents that were 50+ years old (statistically significant at p<0.05).***

Overall, 84% of the respondents in Australia were 50 years old or over. This was the same in 2015.

Compared to the other states/territories, Northern Territory had the ambulance service with the lowest proportion of older patients (50 years old or older) – 74% only. This was consistent with previous years.

Northern Territory was followed by the group of ambulance services in Queensland and Victoria demonstrated respectively 7% and 5% decrease of older patients comparing to the previous year. Other states/territories did not differ much compared to 2015.

In the previous year New South Wales had a dramatic increase in the proportion of older patients (50 years or older) from 73% in 2014 to 92% in 2015. New data confirmed a high level of aged patients in New South Wales with 88% in 2016.

# Usage of ambulance service

Respondents were asked to identify how many times the patient transported used the ambulance service in the twelve months prior to responding the survey. Results are presented in Table 19: Usage of ambulance service in the last twelve months (Q13)

**Table 19: Usage of ambulance service in the last twelve months (Q13)**

| Ambulance services | Proportion of patients transported once ranking | Once % | Between 2 and 5 times% | More than 5 times % |
|---|---|---|---|---|
| NT | 1 | 67 | 30 | 3 |
| ACT | 2 | 48# | 46 | 6 |
| TAS | 2 | 48# | 45 | 7 |
| VIC | 2 | 46# | 48 | 6 |
| WA | 2 | 45# | 46 | 9 |
| SA | 2 | 44# | 47 | 9 |
| QLD | 3 | 40## | 49 | 11 |
| NSW | 3 | 39## | 51 | 10 |
| **AUS** | | **45** | **47** | **8** |

***States/territories are listed in descending order according to the proportion of patients transported once.***

***#, ## - Indicate states/territories that differ from others, based on the proportion of patients transported once (statistically significant at p<0.05).***

The results for usage of ambulance service in the last twelve months were mostly stable in Australia. However, there was a declining trend in the number of patients being transported once only (45%, compared to 48% in 2015 and 50% in 2014). On the state level that decrease was even more dramatic, e.g. Australian Capital Territory had a drop of patients transported only once from 70% in 2015 to 48% in 2016.

Similar to the previous year, Northern Territory was the ambulance services with highest incidence of patients transported only once in the last twelve months.

In 2016 the New South Wales ambulance service had the lowest proportion of patients transported only once – 39%. This result confirmed the previous year data demonstrated that the state moved from the top of the table in 2014 (63%) to the very bottom in 2015 (39%) and was consistent with patients' age group analysis in table 19: aged patients had higher propensity of more frequent use of ambulance services, hence the increase in the proportion of aged patients resulted in the decrease of the proportion of patients being transported only once.

Most states/territories did not differ substantially compared to 2015. Minor change in the proportion of patients transported in Australia *only once* and *between 2 and 5 times* from 48% and 45% in 2015 to 45% and 47% in 2016 could not be attributed to usage results in any particular state/territory.

# CONCLUSION

Satisfaction scores in 2016 were very high and consistent with the results from previous years. Overall, 98% of patients in Australia were *satisfied or very satisfied* with the ambulance service they received.

The general trend across Australia for all service dimensions and states is towards similarity in satisfaction scores. Out of 8 service dimensions only 2 (*Communication staff assistance* and *Ambulance response time*) had statistically significant changes compared to the previous year. In most cases, the differences were between one or two best and worst performing services only.

The most notable exception was Northern Territory, which demonstrated a strong improving trend in satisfaction with *Ambulance paramedics* and *Trip/ride*. However, there was a large decrease in satisfaction with *Ambulance response time*. Most of these changes were statistically significant even despite a small sample size and, as a result, high error margin for Northern Territory. Partially, these results might be explained by the increase in the number of patients (vs carers) in the survey; patients tend to provide higher satisfaction scores.

Another change was in Victoria with an increase in satisfaction with *Communication staff assistance*. The ambulance service in Victoria moved from the bottom of the list in 2015 to equal first position with Queensland, Tasmania and Western Australia, again bringing states and territories closer together.

Queensland Ambulance Service achieved a score of 100% in the Overall satisfaction. This is a wonderful recognition of the great service offered to Queensland patients. Yet, the ceiling effect in the data would prevent identification of any further improvements.

### Recommendation:

Consistent with our advice in the previous years, we recommend changing the reporting style from focusing on amalgamated figure of *satisfied or very satisfied* patients, to reporting these two groups separately. In many dimensions the amalgamated score has reached almost 100%. While this indicates an excellent performance, from an analysis point of view, this result presents a statistical challenge known as the “ceiling effect”. This effect means that changes in scores are harder to identify when they vary by such a narrow margin at the top of the scale. Reporting separately the proportions of *satisfied* and *very satisfied* customers will allow for better sensitivity of the measurement instrument, providing better identification of the changes over time and between the states. Another suggestion is reporting mean results (average from one to five) rather than proportions of *satisfied or very satisfied* respondents. This would allow more meaningful comparisons across states/territories and over time.

# APPENDIX 1: QUESTIONNAIRE

**Patient Satisfaction Survey**
Please answer the questions below by placing a tick in the appropriate box. If you don't understand any questions, please use the 'don't know' option and move to the next question. If the question is not relevant to your experience, mark the 'NA' box and move on to the next question. Please note that your personal opinions will be kept confidential and that no information, which could identify you, will be released. Information obtained from you will be combined with the other responses and used for analytical purposes only.

**Q1 Is the person completing this survey?**

- ❑ 1 The patient that was transported
- ❑ 2 A relative, or carer of the patient

**Q2 When the ambulance was called, thinking about the time it took to be connected with an Ambulance Service call taker, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say
- ❑ 7 Not applicable

**Q3 How satisfied were you with the assistance provided by the Ambulance Service call taker, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say
- ❑ 7 Not applicable

**Q4 Thinking about the time the ambulance took to arrive, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say
- ❑ 7 Not applicable

**Q5 Thinking about how caring the ambulance paramedics that attended to you were, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say
- ❑ 7 Not applicable

**Q6 How satisfied were you with the standard of treatment provided by the ambulance paramedics, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say
- ❑ 7 Not applicable

**Q7 How satisfied were you with the ambulance paramedics' explanation about what was happening to you and why, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say
- ❑ 7 Not applicable

**Q8 Thinking about your journey in the ambulance, how satisfied were you with the quality of the ride i.e. smoothness of transport and quietness of the vehicle? Overall, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say
- ❑ 7 Not applicable

**Q9 All things considered, if you had an emergency in your home, what do you think is a reasonable time for an ambulance to arrive after calling one?**

No of mins _____

**Q10 How satisfied were you overall with your last experience using the Ambulance Service, were you?**

- ❑ 1 Very satisfied
- ❑ 2 Satisfied
- ❑ 3 Neither satisfied nor dissatisfied
- ❑ 4 Dissatisfied
- ❑ 5 Very dissatisfied
- ❑ 6 Don't know/Can't say

**Q11 Gender (of the patient)**

- ❑ 1 Male
- ❑ 2 Female

**Q12 Please indicate the age group that you (the patient) fall into.**

- ❑ 01 0-4
- ❑ 02 5-9
- ❑ 03 10-14
- ❑ 04 15-19
- ❑ 05 20-24
- ❑ 06 25-29
- ❑ 07 30-34
- ❑ 08 35-39
- ❑ 09 40-44
- ❑ 10 45-49
- ❑ 11 50-54
- ❑ 12 55-59
- ❑ 13 60-64
- ❑ 14 65-69
- ❑ 15 70-74
- ❑ 16 75-79
- ❑ 17 80-84
- ❑ 18 85 and over

**Q13 How many times have you (the patient) used the Ambulance Service (in the last 12 months)?**

- ❑ 1 Once
- ❑ 2 Between 2 and 5 times
- ❑ 3 More than 5 times

**Q14 What is your (the patient's) postcode?**

Postcode _____

**Q15 Include non-standard demographic questions (if required).**

Please add any additional comments you have regarding your experience of the Ambulance Service.

_____
_____
_____

The Ambulance Service respects your privacy and would like to thank you for taking the time to complete this questionnaire. Please place the completed questionnaire in the reply paid envelope provided and post.