Tasmanian
Audit Office

Report of the Auditor-General No. 1 of 2016-17

Ambulance emergency services

September 2016

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THE ROLE OF THE AUDITOR-GENERAL

The Auditor-General's roles and responsibilities, and therefore of the Tasmanian Audit Office, are set out in the *Audit Act 2008* (Audit Act).

Our primary responsibility is to conduct financial or 'attest' audits of the annual financial reports of State entities. State entities are defined in the Interpretation section of the Audit Act. We also audit those elements of the Treasurer's Annual Financial Report reporting on financial transactions in the Public Account, the General Government Sector and the Total State Sector.

Audits of financial reports are designed to add credibility to assertions made by accountable authorities in preparing their financial reports, enhancing their value to end users.

Following financial audits, we issue a variety of reports to State entities and we report periodically to the Parliament.

We also conduct performance audits and compliance audits. Performance audits examine whether a State entity is carrying out its activities effectively and doing so economically and efficiently. Audits may cover all or part of a State entity's operations, or consider particular issues across a number of State entities.

Compliance audits are aimed at ensuring compliance by State entities with directives, regulations and appropriate internal control procedures. Audits focus on selected systems (including information technology systems), account balances or projects.

We can also carry out investigations but only relating to public money or to public property. In addition, the Auditor-General is now responsible for state service employer investigations.

Performance and compliance audits are reported separately and at different times of the year, whereas outcomes from financial statement audits are included in one of the regular volumes of the Auditor-General's reports to the Parliament normally tabled in May and November each year.

Where relevant, the Treasurer, a Minister or Ministers, other interested parties and accountable authorities are provided with opportunity to comment on any matters reported. Where they choose to do so, their responses, or summaries thereof, are detailed within the reports.

The Auditor-General's Relationship with the Parliament and State Entities

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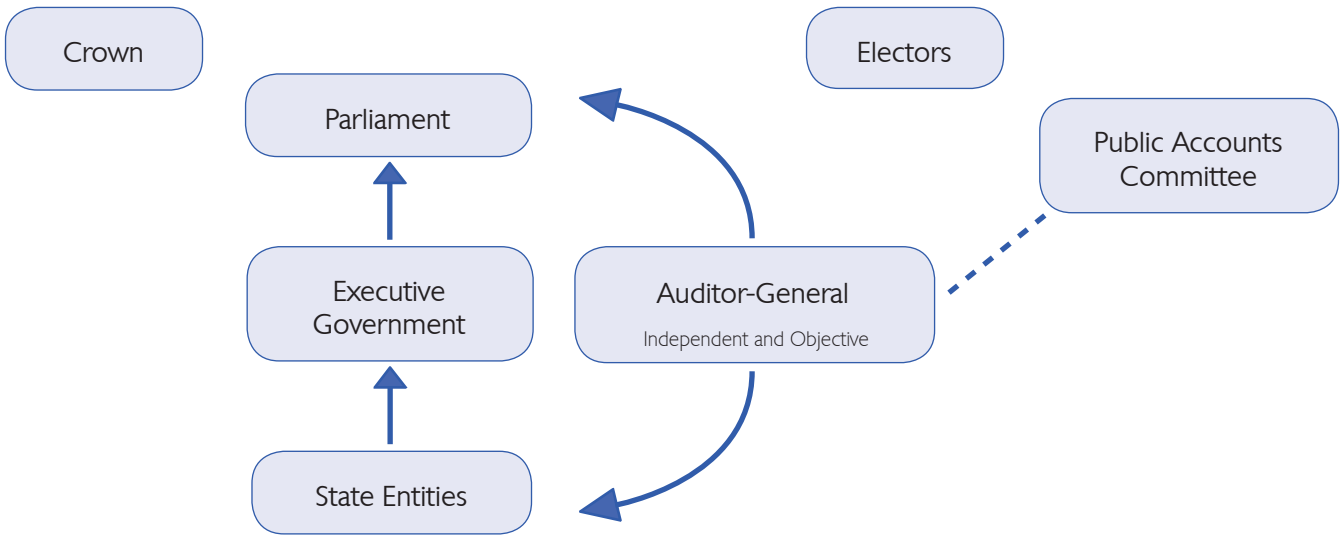

2016 No. 17

2016

PARLIAMENT OF TASMANIA

REPORT OF THE AUDITOR-GENERAL No. 1 of 2016–17

Ambulance emergency services

September 2016

Presented to both Houses of Parliament in accordance with the provisions of the Audit Act 2008

This report, and other Auditor-General reports, can be accessed via our home page (http://www.audit.tas.gov.au).

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This report is printed on FSC Mix Paper from responsible sources.

ISBN: 978-0-9944284-4-8

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22 September 2016

President
Legislative Council
HOBART

Speaker
House of Assembly
HOBART

Dear Mr President
Dear Madam Speaker

REPORT OF THE AUDITOR-GENERAL
No.1 of 2016–17: Ambulance emergency services

This report has been prepared consequent to examinations conducted under section 23 of *the Audit Act 2008*. The objective of the audit was to form an opinion on the effectiveness and efficiency of Ambulance Tasmania's provision of emergency and urgent responses.

Yours sincerely

Rod Whitehead
AUDITOR-GENERAL

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Foreword

Ambulance services are an integral part of the Tasmanian health system. They provide integrated pre-hospital emergency and medical care, health transport and medical retrieval services to the Tasmanian community. The effectiveness of emergency ambulance services directly impacts on patient outcomes. The timeliness and quality of clinical care administered by paramedics and ambulance officers and the speed with which a patient reaches hospital can affect a patient's chances of recovery. Accordingly, ambulance service performance is measured by response times, by how well paramedics follow clinical protocols and the results for patients.

To assess the effectiveness and efficiency of Ambulance Tasmania we examined its performance over the past five years and also compared it to ambulance services in other Australian states and territories. Our audit focused on ambulance responsiveness, particularly response times to Code 1 incidents (potentially time-critical emergencies where ambulance lights and sirens are used to reduce travel time). It also measured clinical outcomes, such as cardiac arrest survival, pain management, levels of patient satisfaction, and cost-effective measures, including the Ambulance Tasmania cost per capita and expenditure per emergency response.

This audit does not include an examination of ambulance turnaround time at hospitals. This topic is included in a future audit examining emergency medicine in our public hospitals — see topic 5 in our *Annual Plan of Work 2016*–17, p.22.

I hope this report will increase awareness of the performance of Ambulance Tasmania over time and in comparison to ambulance services in other Australian states and territories.

Rod Whitehead

Auditor-General

22 September 2016

List of acronyms and abbreviations

AT	Ambulance Tasmania
CAGR	Compound annual growth rate
DHHS	Department of Health and Human Services
Response times	Emergency response times, Code 1 (lights and sirens)
ROGS	Report on Government Services
TAO	Tasmanian Audit Office

Executive summary

Executive summary

Background

The primary objective of an ambulance service, from a clinical perspective, is to provide optimal clinical outcomes for patients, including survival, cardiac arrest management, pain reduction and other appropriate care services within an appropriate response time. Aspects involved in doing so include following prescribed clinical practices and responding promptly, both of which are examined in this Report.

Emergency response times[1] (response times) are one of the main performance measures for ambulance services throughout Australia and internationally. The standard used by a number of Australian jurisdictions is to respond to 90 per cent of Code 1 calls within 15 minutes.

Ambulance Tasmania's (AT's) responsiveness is dependent on a number of factors including the location of stations, availability of paramedics and volunteers, number of ambulance vehicles, quality of equipment and the health and ageing demographic profile of Tasmanians.

The challenge for AT is to manage service delivery targets in an environment of increasing demand for more ambulance services as our population continues to age.

Audit objective

The audit objective was to form an opinion on the effectiveness and efficiency of AT's provision of emergency and urgent responses.

Audit scope

The audit was limited to AT, which is organisationally part of the Department of Health and Human Services.

Our approach involved assessing processes in providing emergency and urgent responses, assessing outcomes from

[1] Response times is defined as the time taken between the arrival of the first responding ambulance resource at the scene of an emergency in Code 1 incidents and the initial receipt of the call for an emergency ambulance at the communications centre. State-wide response times are response times applied for state-wide ambulance service responses. Productivity Commission, *Report on Government Services 2016, Volume D; Emergency management, Data quality information — Fire and ambulance services, Chapter 9,* PC, Canberra, p.56.

clinical interventions and treatments and assessing the efficiency of AT.

The audit concentrated on the five-year period 1 July 2010 to 30 June 2015. More recent data was used where available.

Audit criteria

We developed a number of audit criteria, namely:

- Were AT's clinical outcomes effective?
- Were AT's response times for Code 1[2] emergency incidents[3] effective compared with previous periods and compared with other jurisdictions?
- Were AT's emergency services cost effective over time and compared with other jurisdictions?
- Were AT's strategic management processes effective?

Detailed audit conclusions

Was Ambulance Tasmania effective in terms of clinical outcomes?

Based on the criteria assessed, AT was effective regarding clinical outcomes. In particular, there was reasonable evidence the level of AT's clinical outcomes were maintained over time and were similar and in some areas better than clinical outcomes of other Australian jurisdictions.

Limited data was available to assess clinical outcomes on a regional basis. However, relatively consistent pain reduction rates and high statewide patient satisfaction ratings suggested that clinical outcomes were reasonably consistent for all regions.

Results from our testing of AT reviews of clinical procedures indicated AT's compliance with established clinical practice guidelines.

[2] Code 1 incident — an incident requiring at least one immediate response under lights and sirens. Ibid.

[3] An incident is an event that results in a demand for an ambulance resource to respond. Op.cit. *ROGS 2016, p.9.32.*

Was Ambulance Tasmania effective in terms of response times?

AT had been reasonably effective in terms of response times with consistent response times over the past five years, despite a rise of 16 per cent in emergency responses over that period.

Response times were slower than other jurisdictions, but this can be attributed to Tasmania's greater number of emergency responses per person and lower level of urbanisation.

However:

- there was disparity in overall response times noted across the three regions and variations in the regional deployment of resources and use of volunteers may have contributed to this disparity
- our testing identified that although AT response time outliers were being identified and examined, remedial action had not been evidenced in nine per cent of instances where a response time outlier had occurred
- AT's location of stations and branches were not entirely optimal based on a consultant's 2010 report.

Were Ambulance Tasmania's emergency services cost effective?

AT emergency services were reasonably cost effective compared with other jurisdictions in terms of cost per emergency response and cost per capita. There had also been a significant reduction in real cost per response over the past nine years.

Were Ambulance Tasmania's strategic management processes effective?

We concluded that AT's strategic management processes had been generally effective. In particular, AT was trying to improve its performance through trialling a raft of innovative strategies, such as use of first intervention vehicles and its defibrillation program.

On the other hand, it appeared that KPIs were not sufficiently well-defined, lacking in benchmarks or targets to be useful in driving efficiencies.

Recommendations made

The Report contains the following recommendations:

Rec	Section	We recommend that ...
1	1.4	... AT collects data (aligned with ROGS data) to allow regular and meaningful comparison of clinical outcomes at the regional level, to better allocate resources and to rapidly identify problems.
2	1.5	... regional summary reports of clinical reviews be standardised to facilitate review and comparison across regions.
3	2.3	... AT develop strategies to improve response times to those of other jurisdictions and undertake cost benefit analysis of those strategies before deciding on implementation.
4	2.4	... AT investigate whether the additional resources in the North and North West regions were effective in reducing average response times.
5	2.4	... AT investigate whether higher proportions of volunteers were impacting on mobilisation times in the North.
6	2.5	... AT reinforce the requirement to record factors contributing to response time outliers and the remedial action undertaken to address the contributing factors.
7	3.2	... AT regularly reviews its emergency and urgent determinants methodology to ensure that it continues to be best practice and in accordance with requirements of the National Academy of Emergency Medical Dispatch.
8	3.2	... AT investigate why the level of multiple responses had increased.
9	4.4	... AT outline what KPIs are measured and provide targets or benchmarks to define what is good or poor performance.

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Audit Act 2008 section 30 — Submissions and comments received

Audit Act 2008 section 30 — Submissions and comments received

Introduction

In accordance with section 30(2) of the *Audit Act 2008* (the Act), a copy of this Report was provided to the Department of Health and Human Services.

A summary of findings, with a request for submissions or comments, was also provided to the Minister for Health and the Treasurer.

Submissions and comments that we receive are not subject to the audit nor the evidentiary standards required in reaching an audit conclusion. Responsibility for the accuracy, fairness and balance of these comments rests solely with those who provided the response. However, views were considered in reaching audit conclusions.

Section 30(3) of the Act requires that this Report include any submissions or comments made under section 30(2) or a fair summary of them. Submissions received are included in full below.

Minister for Health

Thank you for the opportunity to comment on the Performance Audit: *Report of the Auditor-General No. 1 of 2016–17 — Ambulance emergency services* (the Report).

The Tasmanian Government welcomes the Report from the Tasmanian Audit Office. The Report confirms that Ambulance Tasmania's performance in key areas is consistent with other jurisdictions. This performance has been achieved whilst significantly reducing the cost per response over the past nine years.

As indicated in the Report, Ambulance Tasmania has explored a number of innovations aimed at improving service delivery to the Tasmanian community. Following a trial of one of these innovations, the Tasmanian Government has funded Extended Care Paramedic programs in Launceston and Hobart. As you may be aware, the Tasmanian Government has also recently commissioned a Review of Ambulance Tasmania, which is aimed at further improvement and innovation.

The Tasmanian Government is committed to improving the provision of a safe, sustainable and high quality ambulance

service. The Report will assist Ambulance Tasmania to further improve service delivery to the Tasmanian community into the future.

Thank you once again for the opportunity to provide comment on this matter.

The Hon Michael Ferguson MP
Minister for Health

Department of Health and Human Services

Thank you for providing the Performance Audit: *Report of the Auditor-General No. 1 of 2016–17 — Ambulance emergency services* (the Report).

The Department of Health and Human Services (the Department) welcomes the Report from the Tasmanian Audit Office.

The Department is leading a Review of the operation of AT, with the objective of identifying any changes that can be made to improve the role the service plays in delivering safe, sustainable and high quality services in the State's hospitals.

The Review has recently commenced and will report to the Minister for Health by 31 January 2017. The Report will assist with the Review, ensuring that AT continues to improve service delivery to the Tasmanian community into the future.

Michael Pervan
Secretary

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Introduction

Introduction

Background

In the event of an emergency situation, Tasmanians expect to be provided with high-quality safe care in a timely manner from our ambulance service.

The primary objective of an ambulance service, from a clinical perspective, is to provide optimal clinical outcomes for patients, including survival, cardiac arrest management, pain reduction and other appropriate care services within an appropriate response time. Aspects involved in doing so include following prescribed clinical practices and responding promptly, both of which are examined in this Report.

Emergency response times[4] (response times) are one of the main performance measures for ambulance services throughout Australia and internationally.

Ambulance service organisations prioritise incidents as:

- emergency — immediate response under lights and sirens required (Code 1)
- urgent — undelayed response required without lights and sirens (Code 2)
- non-emergency — non-urgent response required (Codes 3, 4)
- casualty room attendance[5].

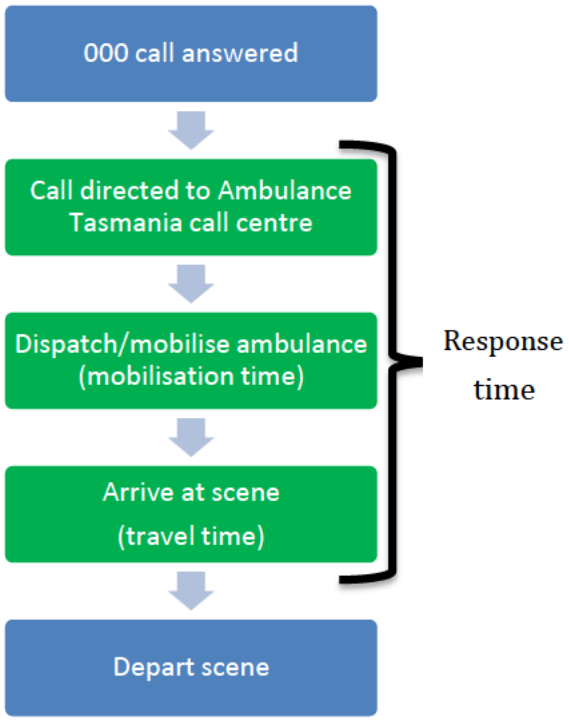
The standard used by a number of Australian jurisdictions is to respond to 90 per cent of Code 1 calls within 15 minutes.

Response time, as provided by the Report on Government Services (ROGS), is inclusive of separate components of the response as shown in Figure 1.

[4] Response times is defined as the time taken between the arrival of the first responding ambulance resource at the scene of an emergency in Code 1 incidents and the initial receipt of the call for an emergency ambulance at the communications centre. State-wide response times are response times applied for state-wide ambulance service responses. Productivity Commission, *Report on Government Services 2016, Volume D: Emergency management, Data quality information — Fire and ambulance services, Chapter 9*, PC, Canberra, p.56.

[5] Ibid, pp. 9.35–36.

Figure 1: Ambulance response time chart



Source: Tasmanian Audit Office (TAO), based on ROGS 2016, Box 9.18

Ambulance Tasmania's (AT's) responsiveness is dependent on a number of factors including location of stations, availability of paramedics and volunteers, number of ambulance vehicles, quality of equipment, and the health and ageing demographic profile of Tasmanians.

The challenge for AT is to manage service delivery targets in an environment of increasing demand for more ambulance services as our population continues to age. The consequential effect of our aging population living at home means there is more likelihood our senior citizens will acquire chronic conditions requiring more trips to hospital as their conditions become more serious putting further stress on the system.

Audit objective

The audit objective was to form an opinion on the effectiveness and efficiency of AT's provision of emergency and urgent responses.

Audit scope

The audit was limited to AT, which is organisationally part of the Department of Health and Human Services.

Our approach involved assessing processes in providing emergency and urgent responses, assessing outcomes from

clinical interventions and treatments and assessing the efficiency of AT.

The audit concentrated on the five-year period 1 July 2010 to 30 June 2015. More recent data was used where available.

Audit criteria

We developed a number of audit criteria, namely:

- Were AT's clinical outcomes effective?
- Were AT's response times for Code 1[6] emergency incidents[7] effective compared with previous periods and compared with other jurisdictions?
- Were AT's emergency services cost effective over time and compared with other jurisdictions?
- Were AT's strategic management processes effective?

Audit approach

The audit:

- assessed AT's performance against its objectives, monitoring and reporting requirements, targets and outcomes for response times
- compared AT's performance against other jurisdictions in terms of response times and cost effective service delivery using ROGS
- used other available data to examine regional comparisons, strategies and other initiatives implemented by AT that impact on response times
- performed testing and analysis of ROGS and other available data to verify management processes, monitoring and reporting.

[6] Code 1 incident — an incident requiring at least one immediate response under lights and sirens. Ibid.

[7] An incident is an event that results in a demand for an ambulance resource to respond. Op.cit. *ROGS 2016, p.9.32*

We assessed AT's emergency services based on an expectation, or standard, where we would expect to see similar results across regions, jurisdictions and time.

We excluded ramping from this Report as it is included in a future audit examining emergency medicine in our public hospitals — see topic 5 in our *Annual Plan of Work 2016–17, p.22*.

Timing

Planning for this audit began in February 2016 with fieldwork undertaken until August 2016. The report was finalised in September 2016.

Resources

The audit plan recommended 928 hours and a budget, excluding production costs, of $146 979. Total hours were 927 and actual costs, excluding production, were $140 392, which was within our budget.

Why this project was selected

This audit was in our *Annual Plan of Work 2015–16* as the population in Tasmania continues to age, there is a risk that our demand for ambulance services may outstrip supply. AT's responsiveness may decline or be compromised to a point where the patients are no longer guaranteed they will be cared for within the benchmark of 15 minutes for Code 1 incidents.

In the event of an emergency situation, Tasmanians expect to be provided with high-quality safe care in a timely manner from our ambulance service.

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1 Was Ambulance Tasmania effective in terms of clinical outcomes?

1 Was Ambulance Tasmania effective in terms of clinical outcomes?

1.1 Background

Clinical outcomes are a key measure to determine the effectiveness of the ambulance service. Across Australian jurisdictions, standard indicators of clinical outcomes used by ROGS include:

- cardiac survival rates
- pain reduction
- patient satisfaction.

The above measures are useful indicators but have limitations.

- Heart attacks are only a small proportion of emergency indicators.
- While pain reduction and satisfaction provide better coverage of the full range of emergency indicators they rely on the patient's subjective assessments, which are not necessarily an accurate assessment of clinical outcomes.

Nonetheless, the measures had the advantage of availability for all jurisdictions and prior periods and hence comparability.

In addition, AT's internal procedures require it to perform and document clinical audit reviews to ensure compliance with clinical guidelines and standard operating procedures. While equivalent testing was not available for other states, we regarded it as a useful supplement to the ROGS data.

This Chapter examines AT's clinical outcomes:

- compared to previous periods (Section 1.2)
- compared to other jurisdictions (Section 1.3)
- by region (Section 1.4)
- using AT's reviews of its compliance with clinical guidelines (Section 1.5).

1.2 Were AT's clinical outcomes being maintained over time?

Our expectation was AT's clinical outcomes (cardiac survival, pain reduction and patient satisfaction), as reported in ROGS should be similar (not deteriorating) over time.

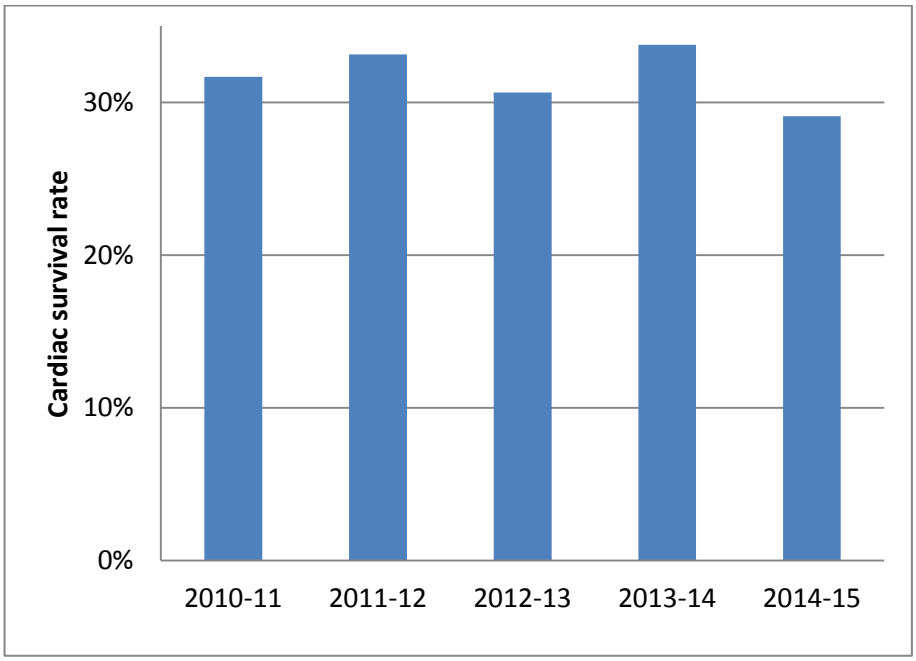
1.2.1 Cardiac survival

Cardiac survival rating reflects the rate of survival from patients suffering a heart attack. ROGS data provides separate categories for arrests witnessed by paramedics and those not witnessed. However, our view was that the number of incidents in the witnessed category[8] were too low for meaningful comparison. Instead, we combined the categories to obtain an overall measure.

The cardiac survival measure had the disadvantage that survival rates are determined not just by the timeliness and quality of the ambulance response but also by other factors such as population health. Nonetheless, we accepted that cardiac survival is a goal of ambulance services and at least an indicator of AT's performance.

Combined ROGS cardiac survival rates over time for Tasmania are presented in Figure 2.

Figure 2: AT's cardiac survival rates over time



Source: Tasmanian Audit Office (TAO), based on data from ROGS 2016 Table 9A.41

Figure 2 shows a small fall in cardiac survival rate from 2013–14 (32 per cent) to 2014–15 (29 per cent). However, the

[8] Witnessed category applies to cardiac arrests treated immediately by the paramedic and have a better likelihood of survival due to immediate and rapid intervention.

number of cardiac incidents was relatively small, being less than 500 patients, in each reported year. It was not possible to discern a trend, although AT should be alert to a continuing decline in further years.

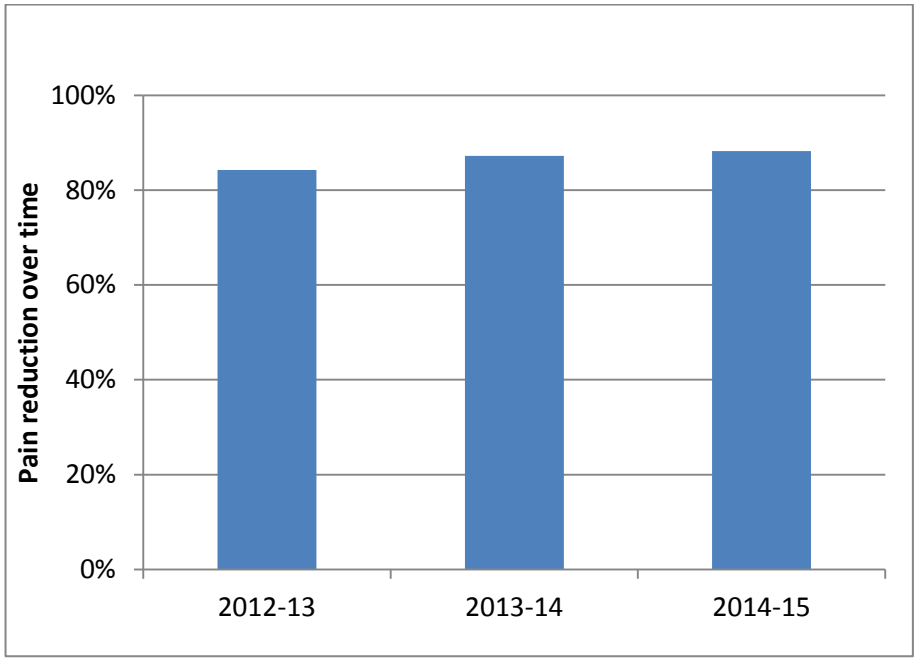
1.2.2 Pain reduction

Pain reduction is another measure used by ROGS to assess clinical outcomes, but it is:

- subjective and may at times be misleading. An example given by AT was of a patient who slept for most the journey to hospital (the best outcome) but woke up in pain and rated AT poorly for the few seconds awake
- not always the primary goal of paramedic activities.

Nonetheless, we accepted that pain reduction was generally a goal of ambulance services and an indicator of effective clinical outcomes. Figure 3 shows pain reduction over time, based on ROGS data.

Figure 3: Patients reporting meaningful pain reduction 2013–15



Source: TAO, based on data from ROGS 2016 Table 9A.42

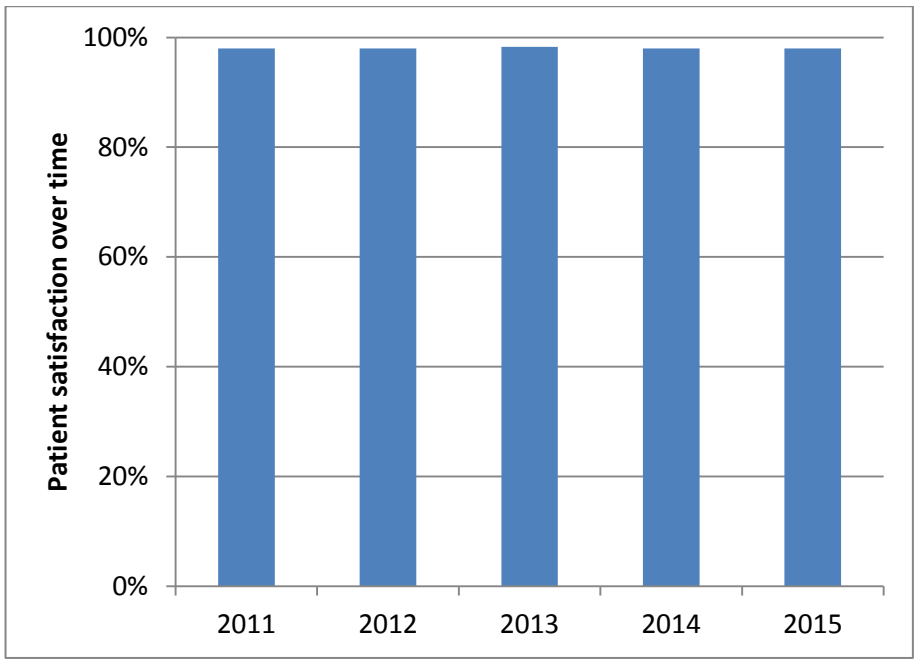
Figure 3 is based on a three-year trend, in the absence of other available years of ROGS data. It shows an improving rate of pain reduction.

1.2.3 Patient satisfaction

Patient satisfaction rating with the ambulance service is another subjective measure used by ROGS and collated from patient

surveys[9]. Despite the subjectivity, we accepted that patient satisfaction was an indicator of effective clinical outcomes. Figure 4 shows patients' satisfaction with clinical treatment over time.

Figure 4: Patient satisfaction over time



Source: TAO, based on data from ROGS 2016 Table 9A.43

Overall patient satisfaction with treatment remains high with a consistent 98 per cent rating over the past five years.

Section 1.2 conclusion

Based on the three ROGS indicators, there was reasonable evidence that the level of AT's clinical outcomes was at least maintained over time.

1.3 Were AT's clinical outcomes comparable with other jurisdictions?

Our expectation was that AT's clinical outcomes (cardiac survival, pain reduction and patient satisfaction), as reported in ROGS, should be similar (not deteriorating) with clinical outcomes of other Australian jurisdictions.

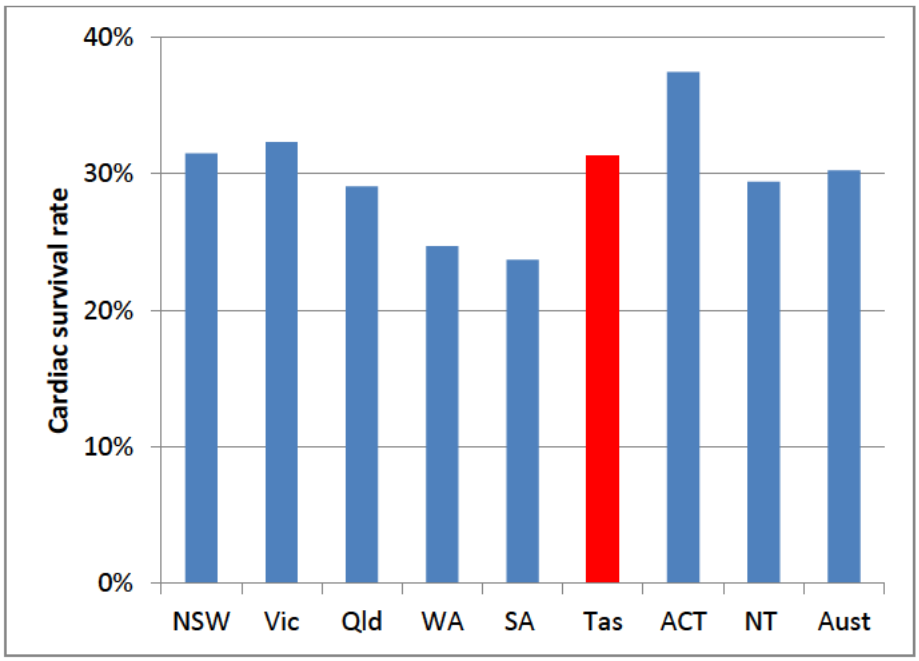
[9] The Council of Ambulance Authorities requires all Australian statutory ambulances services to annually circulate patient surveys. A minimum of 1300 patients are surveyed, with approximately 500 to 600 useable responses received back.

1.3.1 Cardiac survival

As with Section 1.2, we combined the separate categories of ROGS data (arrests witnessed by paramedics and those not witnessed) into a single measure. We also combined 2014–15 data and 2013–14 data because of concern the relatively low numbers for a single year, for some states and territories, did not allow for meaningful comparison.

Our combined cardiac survival rates over time are presented in Figure 5.

Figure 5: Cardiac survival rates by jurisdiction for 2013–14 and 2014–15 combined[10]



Source: TAO, based on data from ROGS 2016 Table 9A.41

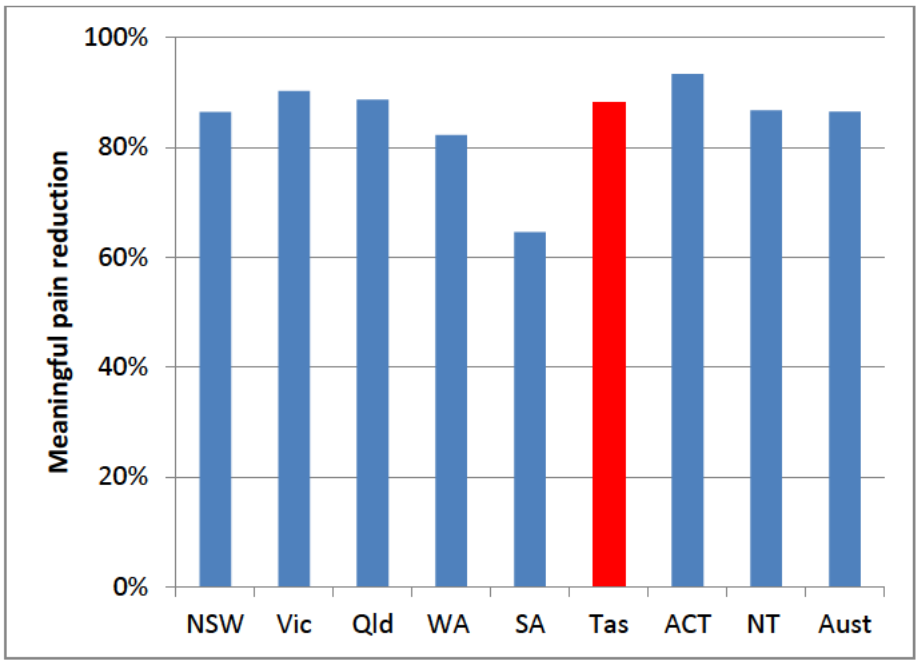
Figure 5 indicates Tasmania compared well with the Australian average and with the majority of other jurisdictions. Tasmania's relatively good cardiac survival rate was an indicator that AT's services were effective in responding to cardiac-related emergencies.

1.3.2 Pain reduction

Figure 6 shows pain reduction rates by jurisdiction for the 2014–15 financial year, based on ROGS data.

[10] Years 2013–15 were combined due to New South Wales and Victoria not having data available for earlier years, which precluded a three or more year comparison.

Figure 6: Pain reduction rates by jurisdiction in 2014–15



Source: TAO, based on data from ROGS 2016 Table 9A.42

Figure 6 shows Tasmania had similar results to other jurisdictions.

1.3.3 Patient satisfaction rating

Using 2014–15 ROGS data, we found that all Australian jurisdictions, including Tasmania (98 per cent), had a high proportion of patients satisfied with paramedic treatment and services.

Section 1.3 conclusion

AT's clinical outcomes had been similar and in some areas better than those of other jurisdictions in cardiac survival, pain reduction and satisfaction ratings.

1.4 Were AT's regional clinical outcomes similar for all regions?

Our expectation was that all regions would have similar clinical outcomes and that data would be available to make that assessment.

AT provided us with pain reduction data but was unable to provide us with regional cardiac survival and patient satisfaction data.

We found that pain reduction rates for 2014–15 were similar across the three regions (North: 90 per cent, South: 88 per cent and North West: 85 per cent).

We also noted that although regional patient satisfaction data was not available, the statewide rate of 98 per cent was sufficiently high to indicate rates were high for all regions.

Section 1.4 conclusion

Limited data was available to assess clinical outcomes on a regional basis. However, relatively consistent pain reduction rates and high statewide patient satisfaction ratings suggested that clinical outcomes were reasonably consistent for all regions.

Recommendation 1

We recommend that AT collects data (aligned with ROGS data) to allow regular and meaningful comparison of clinical outcomes at the regional level, to better allocate resources and to rapidly identify problems.

1.5 Did AT comply with clinical guidelines?

Our expectation was for AT to perform regular reviews to ensure compliance by paramedics of its clinical practice guidelines. In addition, the reviews should demonstrate high levels of compliance and appropriate responses to any identified deficiencies.

We found that:

- a manual existed with specific procedures to be followed for every type of emergency (clinical practice guidelines)[11]
- AT policy required AT to perform and document monthly reviews of clinical compliance for 15 per cent of incidents, using consistent methodology
- our testing showed that AT's reviews of clinical compliance were undertaken in accordance with AT policy.

We also noted that AT provided regional summary reports of clinical reviews to a quality review committee. The style and presentation of the monthly reports differed considerably between the three regions, which to some extent limited

[11] Our audit did not assess the adequacy or appropriateness of the internal treatment guidelines.

comparability and hence usefulness. A related recommendation is included below.

Section 1.5 conclusion

Our testing of AT's monthly review of clinical compliance indicated AT complied with its internal clinical practice guidelines and AT had a comprehensive clinical review process to ensure ongoing compliance.

Recommendation 2

We recommend that regional summary reports of clinical reviews be standardised to facilitate review and comparison across regions.

1.6 Conclusion

Based on the criteria assessed, AT was effective regarding clinical outcomes. In particular, there was reasonable evidence the level of AT's clinical outcomes were maintained over time and were similar and in some areas better than clinical outcomes of other Australian jurisdictions.

Limited data was available to assess clinical outcomes on a regional basis. However, relatively consistent pain reduction rates and high statewide patient satisfaction ratings suggested that clinical outcomes were reasonably consistent for all regions.

Results from our testing of AT reviews of clinical procedures indicated AT's compliance with established clinical practice guidelines.

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2 Was Ambulance Tasmania effective in terms of response times?

2 Was Ambulance Tasmania effective in terms of response times?

2.1 Background

Response times are a key indicator of the effectiveness of ambulance services because of the importance of prompt treatment for emergency incidents (Code 1) and better outcomes for patients. Response times at the 50th[12] percentile (median) and 90th[13] percentile are published in ROGS for emergency incidents for all Australian jurisdictions.

An ambulance emergency Code 1 response is a time-critical incident, which requires an immediate response with the use of lights and sirens. An example is a cardiac arrest or serious traffic accident.

Total response times only partially reflect performance of ambulance services because of factors outside the control of the ambulance service. This is discussed further for two separate components of the response time; mobilisation time and travel time (refer Figure 1):

- Mobilisation times include:
  - receiving and understanding the request for assistance
  - determining what assistance is needed
  - relaying that message to paramedic teams
  - teams leaving the station to respond

  Accordingly, mobilisation time is a good measure of responsiveness, with key factors including availability and location of paramedic teams and time taken to ensure necessary equipment is on board.

[12] The 50th percentile (or median) — the time (in minutes) within which 50 per cent of the first responding ambulance resources arrive at the scene of an emergency, op.cit. *ROGS 2016*, p.56.

[13] The 90th percentile — the time (in minutes) within which 90 per cent of the first responding ambulances resources arrive at the scene of an emergency. Ibid.

- Travel time to an incident depends mainly on factors largely unrelated to ambulance performance, such as travel distance, road condition and traffic, although there are some factors relevant to ambulance performance such as use of sirens, location of ambulance stations and experience of drivers.

Separate mobilisation and travel time data was not available. Nonetheless, the total response time data contained in ROGS had the advantage that it was available for all jurisdictions and previous time periods.

We also used AT regional data (including mobilisation times), AT reviews of outliers and an AT consultant's review of ambulance locations.

In summary, we reviewed AT response times:

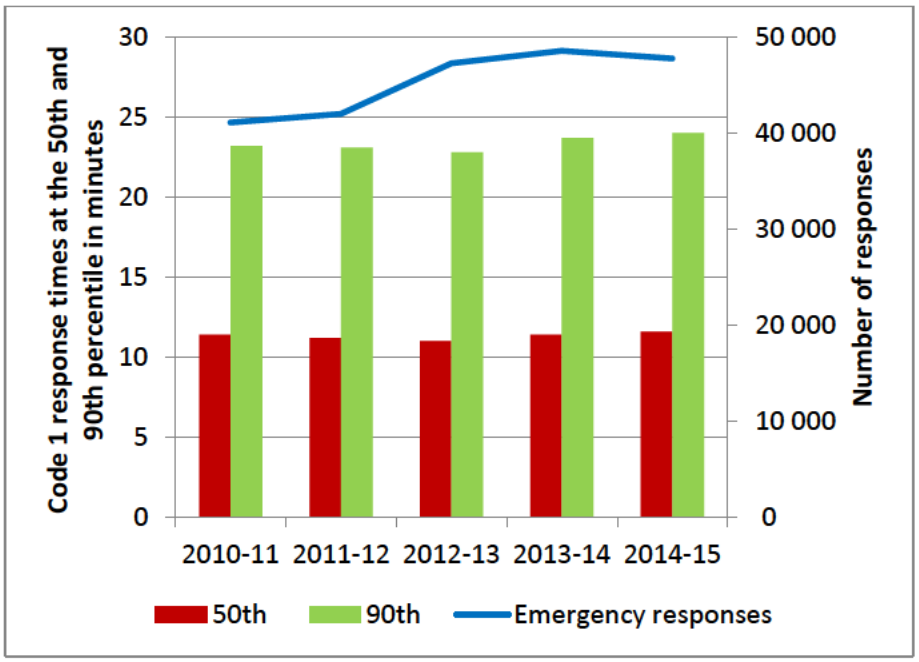
- compared to previous periods (Section 2.2)
- compared to other jurisdictions (Section 2.3)
- by Tasmanian region (Section 2.4)
- for outliers (Section 2.5)
- by ambulance locations (Section 2.6).

2.2 Were AT's response times being maintained over time?

Our expectation was that AT's emergency response times as reported in ROGS should be consistent or improving over time.

Figure 7 shows emergency responses times for AT for the periods 2010–11 to 2014–15.

Figure 7: Statewide ambulance emergency responses and times at the 50th and 90th percentile over time



Source: TAO, based on data from ROGS 2016 Table 9A.44 and Table 9A.33

Figure 7 shows AT emergency response times had remained virtually unchanged over the past five-year period (two and three per cent increases in the 50th and 90th percentile respectively), despite a significant rise in emergency responses (16 per cent increase from 2010–11 to 2014–15).

Section 2.2 conclusion

AT's response times had virtually remained unchanged over the five-year period examined, despite a rise of 16 per cent in emergency responses from 2010–11 to 2014–15.

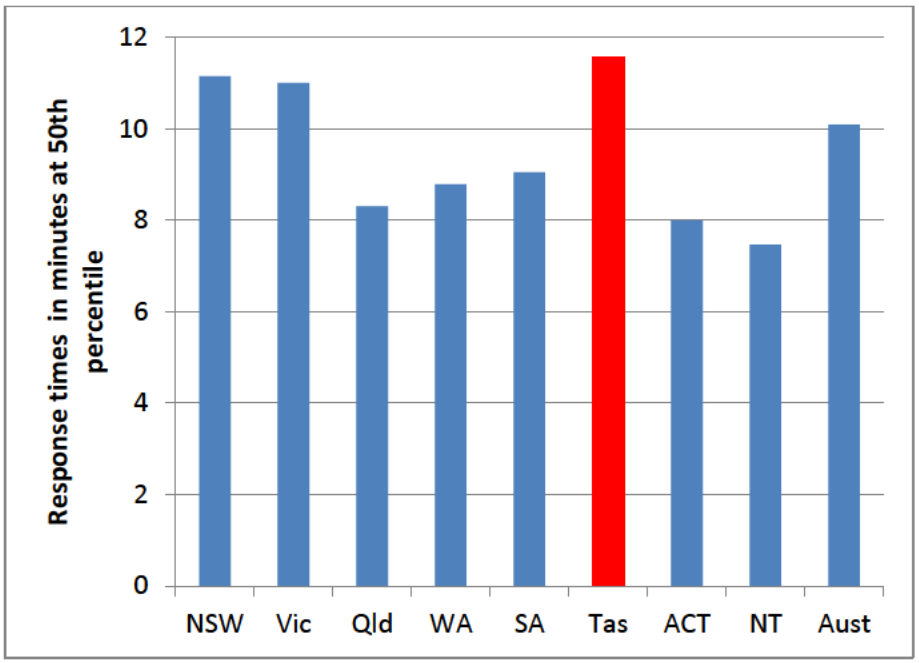
2.3 *Were AT's response times comparable with other jurisdictions?*

AT notes on its website the importance of every minute, by stating that when someone suffers a cardiac arrest, each passing minute reduces the probability of survival by between seven and ten per cent. Therefore, AT needs to ensure its response times are at optimal levels.

Our expectation was that AT's emergency response times at the 50th and 90th percentile, as reported in ROGS, should be similar to response times of other Australian jurisdictions.

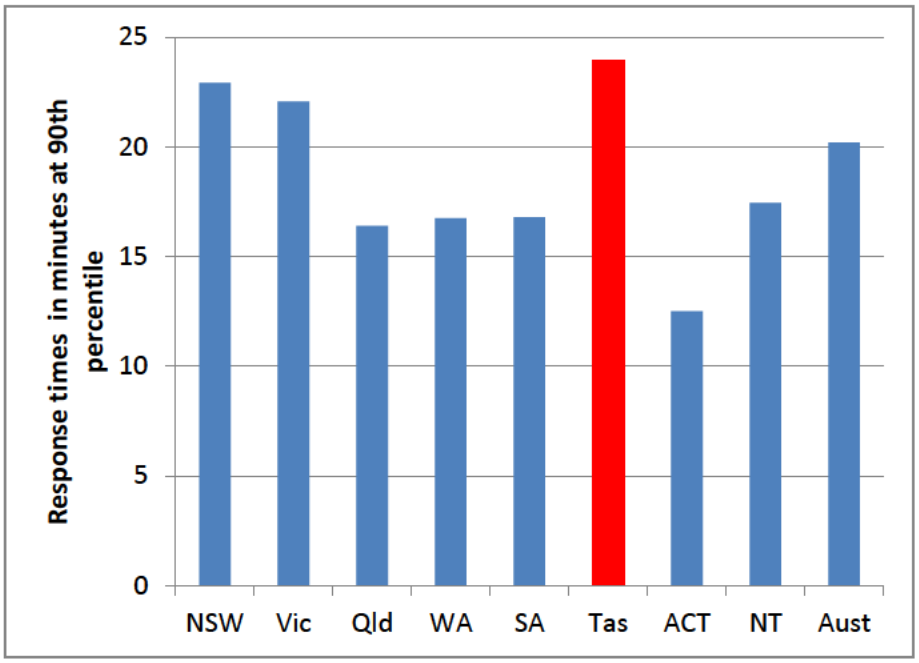
Figure 8 and 9 show response times at the 50th and 90th percentile across jurisdictions in 2014–15.

Figure 8: State-wide response times at 50th percentile across jurisdictions 2014–15



Source: TAO, based on data from ROGS 2016 Table 9A.44

Figure 9: State-wide response times at 90th percentile across jurisdictions 2014–15



Source: TAO, based on data from ROGS 2016 Table 9A.44

Tasmania had the slowest response time (11.6 minutes) at the 50th percentile (median). The Australian median in that year was 10.1 minutes.

Similarly at the 90th percentile Tasmanian response time (24.0 minutes) was worse than the average of other jurisdictions (20.2 minutes).

However, there were two significant mitigating factors:

- Tasmania had 13 per cent more emergency responses per head of population than the Australian average. This was largely outside the control of AT.
- Tasmania is 23 per cent less urbanised than Australia[14] and emergency response times for capital cities in other jurisdictions at the 50th and 90th percentile, as reported in ROGS[15], are generally lower than state-wide percentiles.

We also noted in Section 1.3, that Tasmania's cardiac survival rate and other measures of clinical outcomes compared well with other jurisdictions.

[14] We calculated an index from Australian Bureau of Statistics, *Regional Population Growth, Australia, 2012–13,* ABS, Canberra, 2012. Our index was calculated as a weighted average with urbanisation rated at 100per cent for major cities, 75 per cent for inner-regional areas, 50 per cent for outer regional areas, 25 per cent for remote areas and zero per cent for very remote areas.

Population (million)	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Major Cities	5.50	4.39	2.89	1.93	1.23	0.00	0.38	0.00	16.32
Inner Regional	1.43	1.10	0.94	0.23	0.18	0.34	0.00	0.00	4.22
Outer Regional	0.44	0.25	0.68	0.19	0.20	0.17	0.00	0.14	2.07
Remote	0.03	0.00	0.08	0.10	0.05	0.01	0.00	0.05	0.32
Very Remote	0.01	0.00	0.06	0.07	0.01	0.00	0.00	0.05	0.21
Total population	7.41	5.74	4.66	2.52	1.67	0.51	0.38	0.24	23.13
Urbanisation index	**92%**	**93%**	**85%**	**88%**	**88%**	**66%**	**100%**	**33%**	**89%**

[15] ROGS 2016, op.cit., Table 9A.44.

Section 2.3 conclusion

AT's response times were higher at both the 50th and 90th percentile compared to other jurisdictions. Factors contributing to higher response times included AT's higher level of emergency responses than for other jurisdictions and Tasmania being less urbanised than other jurisdictions.

Recommendation 3

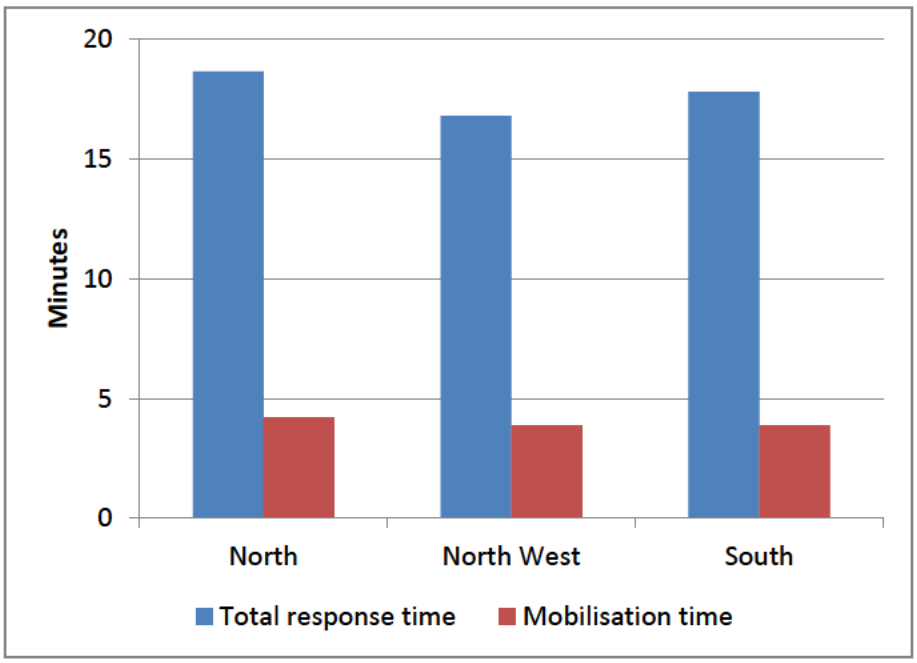
We recommend that AT develop strategies to improve response times to those of other jurisdictions and undertake cost benefit analysis of those strategies before deciding on implementation.

2.4 *Were AT's regional response times similar for all regions?*

Our expectation was that all regions would have similar emergency response times.

Using regional data provided by AT, we calculated average response times and mobilisation times as shown in Figure 10.

Figure 10: Response times and mobilisation times by region 2014–15



Source: TAO from AT, state totals matched to ROGS data[16].

[16] Regional data from AT totalled and then matched to ROGS state data to ensure comparability.

We found a 10.7 per cent disparity in response times when comparing the North West (16.8 minutes) to the North (18.6 minutes).

We also noted a disparity in the number of ambulance officers and ambulances per 1000 responses across the regions, as shown in Table 1.

Table 1: Ambulance and ambulance officers by region as at May 2016

Region	Ambulance officers per 1000 responses	Ambulances per 1000 responses
North	231	40
North West	247	46
South	172	31

Source: TAO table based on AT data.

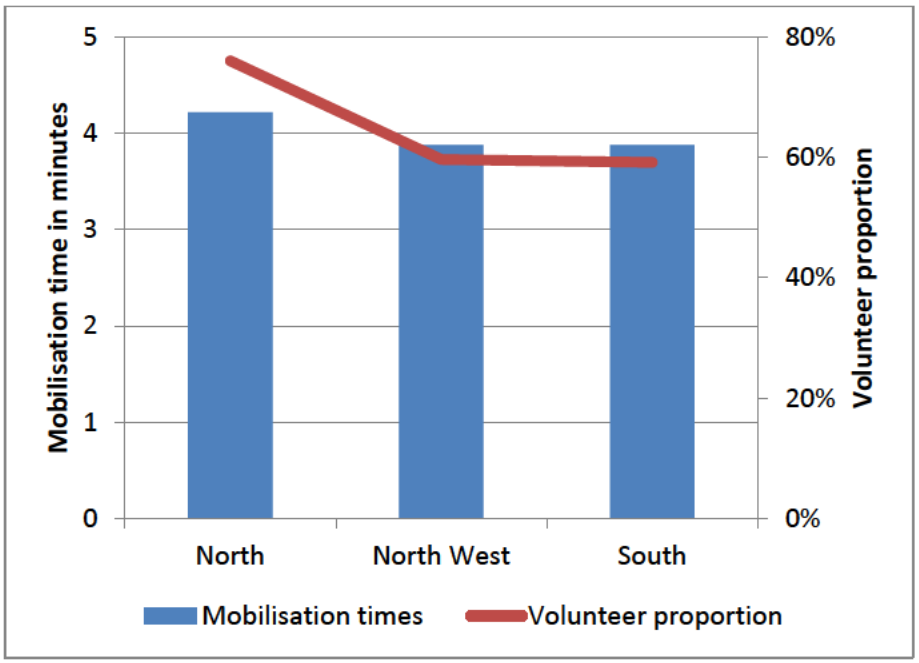
Table 1 shows that the North West and Northern regions had significantly more ambulances and ambulance officers per response than the Southern region. Possible interpretations are:

1. The higher level of urbanisation in the South made it relatively efficient to provide the same service compared to the North and North West. The deployment of additional resources in the two northern regions had been used to correct an imbalance in response times, which might otherwise have occurred.
2. Alternatively, where ambulance officers had a greater work load, they tend to have reduced mobilisation times since they are more often in their vehicle or close to it. Therefore, a greater deployment of resources to the northern regions might be making little contribution to shortening response times and may be an inefficiency.

We had insufficient data to conclude either way and we will recommend that AT investigate whether the additional resources were effective in reducing average response times.

A further point made to us was the high proportion of volunteers could be leading to excessive turnout times as they were less often at ambulance stations, ready to respond to an emergency. Figure 11 compares mobilisation times with proportion of volunteers.

Figure 11: Mobilisation time vs. proportion of volunteers by region



Source: TAO based on AT employee data as at 4 May 2016 and response times July 2014 to April 2016

Figure 11 provides some support for the argument that higher proportions of volunteers can lead to slower mobilisation times. A more definite conclusion would require consideration of other factors that impact.

Section 2.4 conclusion

There was disparity in overall response times noted across the three regions. However, variations in the regional deployment of resources and use of volunteers may have contributed to this disparity.

Recommendation 4

We recommend that AT investigate whether the additional resources in the North and North West regions were effective in reducing average response times.

Recommendation 5

We recommend that AT investigate whether higher proportions of volunteers were impacting on mobilisation times in the North.

2.5 Were emergency response outliers effectively managed?

Our expectation was that response times outside established benchmarks (outliers) would be identified, reviewed and remedial action taken so as to reduce the chance of recurrence.

We were advised that duty managers for all regions prepared daily shift reports, which included response time outliers. We examined shift reports for two months (September 2015 and March 2016) and found:

- daily shift reports had been prepared
- of 78 reports that disclosed response time outliers, 71 bore evidence of action taken, generally in response to contributing factors e.g., crewing, ramping or mechanical issues
- seven response time outliers had no evidence of what actions, if any, had been taken. Five of the response time outliers related to mechanical and electrical issues with ambulance vehicles. It seemed likely from the type of issues identified and lack of recurrence in later days the issues had been satisfactorily dealt with despite the lack of documentation.

Section 2.5 conclusion

AT response time outliers were being identified and examined. However, remedial action had not been evidenced in nine per cent of instances where a response time outlier occurred.

Recommendation 6

We recommend AT reinforce the requirement to record factors contributing to response time outliers and the remedial action undertaken to address the contributing factors.

2.6 Were AT's ambulance stations and branches at optimum locations?

Our expectation was that the location and size of ambulance stations and branches would be re-assessed at least every ten years, using modelling aimed at minimising emergency response times. We also expected that AT would have responded to any such modelling by developing a strategic response to recommendations arising from such modelling.

We noted that:

- A consultant had performed a review in 2010, taking into account where incidents had occurred, how long the

responses had taken for each location and using proprietary modelling to determine optimum locations for stations.

- The review had recommended new stations at Hobart, Launceston and Longford, as well as relocations and upgrades.
- The changes were expected to significantly reduce response times. The consultant's report indicated that 70 per cent of responses had been within a recommended 15-minute response target, but only 36 per cent were within a ten-minute timeframe. The ten-minute target was considered critical when responding to a cardiac arrest.

The Department of Health and Human Services (DHHS) subsequently advised that in response to the recommendations:

- Small scale AT capital investment had occurred since 2010.
- In 2012–13, DHHS had submitted bids for strategic capital investment in ambulance stations, including new ambulance stations in Hobart, Launceston and Longford.
- The Department of Treasury and Finance had requested that the proposals be resubmitted in the next round of capital submissions to take into account an ongoing review of emergency services.

From the available evidence, we concluded the stations and branches were not all in optimum locations, but that processes were in place to address the consultant's recommendations.

Section 2.6 conclusion

AT's location of stations and branches were not entirely optimal based on a consultant's 2010 report.

2.7 Conclusion

AT had been reasonably effective in terms of response times with consistent response times over the past five years, despite a rise of 16 per cent in emergency responses over that period.

Response times were slower than other jurisdictions, but this can be attributed to Tasmania's greater number of emergency responses per person and lower level of urbanisation.

However:

- there was disparity in overall response times noted across the three regions and variations in the regional deployment of resources and use of volunteers may have contributed to this disparity
- our testing identified that although AT response time outliers were being identified and examined, remedial action had not been evidenced in nine per cent of instances where a response time outlier had occurred
- AT's location of stations and branches were not entirely optimal based on a consultant's 2010 report.

3 Were Ambulance Tasmania's emergency services cost effective?

3 Were Ambulance Tasmania's emergency services cost effective?

3.1 Background

This Chapter assesses AT's efficiency, based on cost per emergency response and cost per capita with previous years and with other jurisdictions. We focused on emergency responses rather than all responses because a significant proportion of AT's costs are fixed and capacity had to be primarily based on meeting emergency demand.

Cost differences were also analysed at resource level (e.g. ambulance officers, ambulances, support staff).

Specifically, we looked at:

- Were AT's emergency services cost effective over time? (Section 3.2)
- Were AT's emergency services cost effective compared with other jurisdictions? (Section 3.3)

3.2 Were AT's emergency services cost effective over time?

Our expectation was that real[17] cost per capita and real cost per emergency response would be steady or improving over time.

3.2.1 Real cost per capita

Real cost per capita was calculated for a nine-year period to 2014–15 using ROGS data. We found that real cost per capita had increased 26 per cent from $101 to $127, over the nine-year period. This represented a compound annual growth rate (CAGR) of 2.7 per cent. The increase in expenditure was almost entirely due to a 47 per cent increase in numbers of ambulance officers per capita and 63 per cent increase in number of support staff per capita over the corresponding time period.

3.2.2 Real cost per emergency response

Real cost per emergency response had reduced by 12 per cent over nine years from $1561 to $1371. This was attributed to the 52 per cent (CAGR 4.7 per cent) increase in emergency responses over that period (explaining the increase in staff in the paragraph above) as real expenditure had increased at a

[17] Real = Consumer Price Index adjusted

lower rate, 33 per cent (CAGR 3.6 per cent), over the nine years. It follows there had been a productivity gain over the past nine years.

In examining the increase in emergency responses over the nine-year period, we identified two aspects of the increase that warranted further analysis.

3.2.3 Incidents classified as emergencies

There had been a 3.8 per cent increase in the proportion of incidents classified as emergency. We also noted that Tasmania had a nine per cent greater proportion of incidents classified as emergency than the average for other Australian jurisdictions.

We saw the increase in the proportion of incidents classified as emergency as having the potential to increase the cost of providing ambulance services, without adding value.

AT advised that it had recently reviewed its emergency and urgent determinants methodology, in accordance with the National Academy of Emergency Medical Dispatch. This change was expected to reduce the proportion of calls classified as emergency.

3.2.4 Responses per emergency incident

One aspect of the increase in the number of emergency responses was a 12 per cent increase in the number of responses per emergency incident over the nine-year period.

AT advised that multiple responses can occur in the following situations:

- Cardiac arrest protocols require a crew of three people, hence two ambulances.
- An ambulance from a remote area transfers a patient to an ambulance from another area, typically to take a patient to the Royal Hobart Hospital.
- An ambulance is dispatched, but subsequently another closer ambulance becomes available.

While the explanations appeared reasonable, it was unclear why the level of multiple responses had increased over the decade.

Section 3.2 conclusion

AT's real cost per emergency response had improved significantly over the past nine years, despite an increase in cost per capita. Real cost per capita had increased, but for reasons largely unrelated to AT, such as a 36 per cent increase in the number of reported incidents.

Recommendation 7

We recommend that AT regularly reviews its emergency and urgent determinants methodology to ensure that it continues to be best practice and in accordance with requirements of the National Academy of Emergency Medical Dispatch.

Recommendation 8

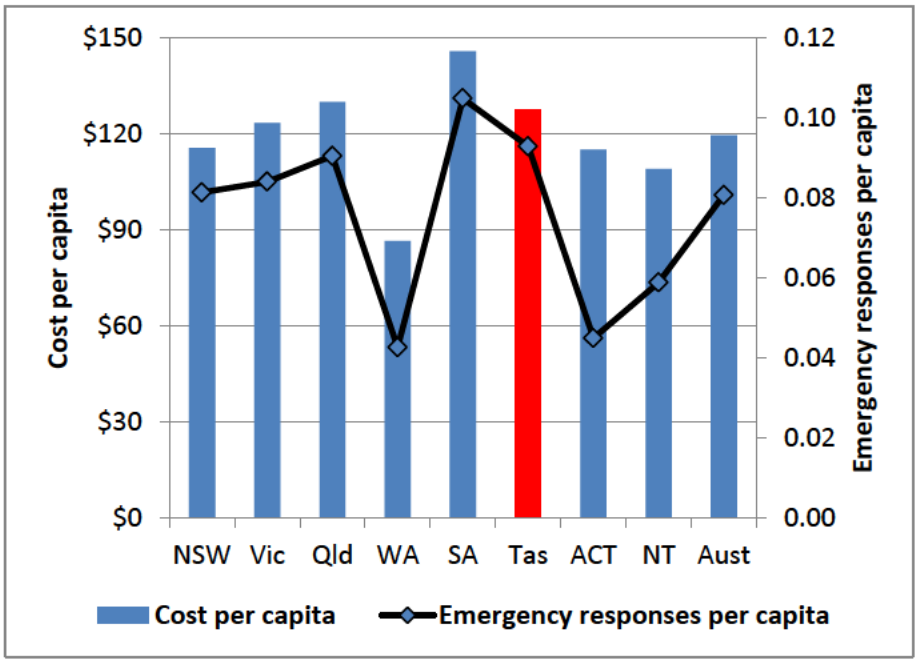
We recommend that AT investigate why the level of multiple responses had increased.

3.3 *Were AT's emergency services cost effective compared with other jurisdictions?*

Our expectation was that AT's emergency services cost effectiveness would be comparable with other jurisdictions regarding cost per emergency response and cost per capita.

Figure 12 shows cost per capita for Australian jurisdictions as well as the number of emergency responses per capita.

Figure 12: Cost and emergency responses per capita for 2014–15, by jurisdiction



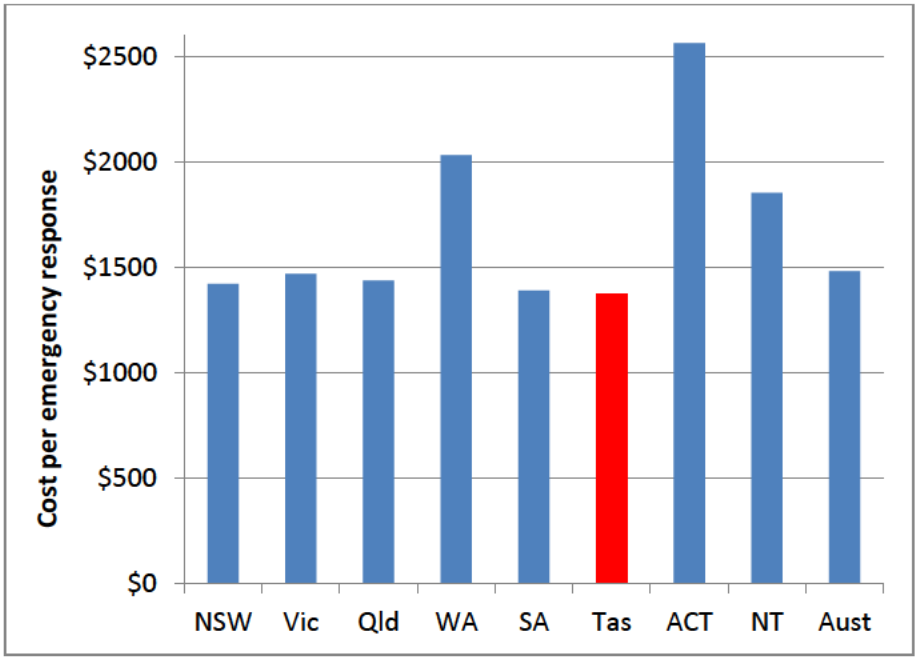
Source: TAO, data based on ROGS 2016

Tasmania's cost per capita was comparable to jurisdictions with similar emergency responses per capita (being NSW, Vic, Qld and SA) and was only three per cent above the average of these combined jurisdictions. The result was favourable given Tasmania is far less urbanised, which we would expect to create a need for more stations per capita and diseconomies of scale (for instance, Tasmania had twice as many stations per capita as the average of NSW, Vic, Qld and SA). We also noted that the cost per capita closely mirrored the number of emergency responses per person for these jurisdictions.

Emergency responses per capita were low for Western Australia, Australian Capital Territory and Northern Territory, compared to other jurisdictions and further analysis would need to be undertaken to understand the factors influencing these results before being able to make comparisons of their cost per capita.

We also compared AT's cost per emergency response with other jurisdictions in Figure 13.

Figure 13: Cost per emergency response for 2014–15, by jurisdiction



Source: TAO, based on ROGS 2016

Tasmania had the lowest cost per emergency response, and seven per cent less than the Australian average.

Section 3.3 conclusion

AT's emergency services were reasonably cost effective in terms of cost per capita compared with other jurisdictions with similar emergency responses per capita and the most cost effective regarding cost per emergency response compared to all Australian jurisdictions.

3.4 Conclusion

AT emergency services were reasonably cost effective compared with other jurisdictions in terms of cost per emergency response and cost per capita. There had also been a significant reduction in real cost per response over the past nine years.

4 Were Ambulance Tasmania's strategic management processes effective?

4 Were Ambulance Tasmania's strategic management processes effective?

4.1 Background

Strategic planning is the process by which organisations plan to achieve their goals, improve their performance and manage their risks.

For AT, we examined the following elements of strategic planning:

- Had clear strategic goals been defined? (Section 4.2)
- Had strategies to maintain and improve service delivery been defined and implemented? (Section 4.3)
- Did AT have effective key performance indicators (KPIs)? (Section 4.4)

4.2 Did AT have a strategic plan with clear goals defined?

Our expectation was that AT would have a current high-level planning document clearly outlined what AT was attempting to achieve.

AT's high-level planning document was the *Ambulance Tasmania Business Plan 2013–2016* (business plan). Various goals and objectives were outlined, but the overarching goal was …

> … to provide integrated, high quality, pre-hospital emergency and medical care, health transport and medical retrieval services to the Tasmanian community.[18]

Supporting the main objective, were the supporting strategic priorities:

- promoting health and wellbeing and intervening early when needed
- planning and delivering services
- delivering the benefits of reform
- strengthening sustainability
- shaping the workforce.

[18] Ambulance Tasmania, *Ambulance Tasmania Business Plan 2013–2016*, AT, Hobart, 2013.

Conclusion 4.2

A strategic planning document existed, was current and clearly outlined AT's priorities.

4.3 Had AT outlined and implemented strategies to maintain and improve its performance?

Our expectation was that AT would have outlined strategies to ensure it met its goals and continued to improve its service delivery.

The strategic plan detailed lower-level objectives such as 'Identify innovative models of service delivery and clinical care that best meets the needs of patients'. These were supported by action plans that outlined numerous specific strategies that were clearly intended to achieve improvements in service delivery and outcomes. Particular initiatives that we examined included:

- First Intervention Vehicle Trial program, where the role of the first intervention vehicle was to be on the scene, before an ambulance, to provide emergency first aid.
- Extending Care Paramedic (ECP) trial program in Launceston. The program focused on alleviating pressure on the hospital system, emergency beds, doctors and ambulances, by promoting treatment of patients in their homes.
- Early Access to Defibrillation program involved approximately 600 registered automatic external defibrillator units across Tasmania used to improve the survival rates of patients having a cardiac arrest.
- Public education campaigns through community announcements, including campaigns such as 'Save 000 for Saving Lives'.

Results reported in the Department of Health and Human Service' annual report indicated that all programs were progressing and were producing improvements and efficiencies.

Conclusion 4.3

Strategies were being devised and implemented by AT to maintain and improve its service delivery.

4.4 Did AT have effective KPIs?

KPIs serve to motivate better performance, lead to improvements and provide evidence on the effectiveness of new initiatives.

The AT business plan defined KPIs for separate objectives and priorities. For example, KPIs for the priority: 'Provide best practice in out of hospital' were:

- patient satisfaction survey
- patient outcomes
- time to care.

While more detail would be useful, all of the KPIs appear to be relevant to their priority. On the other hand, in their current form the KPIs were deficient in that they do not:

- specify what the indicator actually is (e.g. what number is the source and measure for 'patient outcomes')
- set a target or benchmark to define good performance (e.g. what patient satisfaction rating would be considered good or poor performance).

Section 4.4 conclusion

The KPIs identified in the business plan were not effective for evaluating performance without more detail as to what was being measured and the setting of targets or benchmarks.

Recommendation 9

We recommend that AT outline what KPIs are measured and provide targets or benchmarks to define what is good or poor performance.

4.5 Conclusion

We concluded that AT's strategic management processes had been generally effective. In particular, AT was trying to improve its performance through trialling a raft of innovative strategies, such as use of first intervention vehicles and its defibrillation program.

On the other hand, it appeared that KPIs were not sufficiently well-defined, lacking in benchmarks or targets to be useful in driving efficiencies.

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Independent auditor's conclusion

Independent auditor's conclusion

This independent conclusion is addressed to the President of the Legislative Council and to the Speaker of the House of Assembly. It relates to my performance audit on the effectiveness and efficiency of Ambulance Tasmania (AT).

Audit objective

The audit objective was to form an opinion on the effectiveness and efficiency of AT's provision of emergency and urgent responses.

Audit scope

The audit was limited to AT, which is organisationally part of the Department of Health and Human Services.

Our approach involved assessing processes in providing emergency and urgent responses, assessing outcomes from clinical interventions and treatments and assessing the efficiency of AT.

The audit concentrated on the five-year period 1 July 2010 to 30 June 2015. More recent data was used where available.

Management responsibility

The Secretary for the Department of Health and Human Services was responsible for ensuring AT was effective and efficient in providing emergency and urgent responses.

Auditor-General's responsibility

In the context of this performance audit, my responsibility was to express a conclusion on effectiveness and efficiency of AT's provision of emergency and urgent responses.

I conducted my audit in accordance with Australian Auditing Standard ASAE 3500 *Performance Engagements*, which required me to comply with relevant ethical requirements relating to audit engagements. I planned and performed the audit to obtain reasonable assurance that AT was effectively and efficiently providing emergency and urgent responses.

My work involved obtaining evidence that AT's:

- clinical outcomes were effective
- response times for Code 1 emergency incidents were effective compared with previous periods and compared with other jurisdictions

- emergency services were cost effective over time and compared with other jurisdictions
- strategic management processes were effective.

Auditor-General's conclusion

Based on the audit objective and scope and for reasons outlined in this Report, it is my conclusion that:

- AT was effective regarding clinical outcomes with reasonable evidence AT was maintaining clinical outcomes over time that were similar or better compared to other Australian jurisdictions
- there was limited data available to assess clinical outcomes on a regional basis
- AT had been reasonably effective in terms of response times with consistent response times over the past five years
- while response times were slower than for other jurisdictions, this could be attributed to Tasmania's greater number of emergency responses per person and lower level of urbanisation. However:
    - the disparity in overall response times across the three regions and variations in the regional deployment of resources and use of volunteers may have contributed to this disparity
    - although AT's response time outliers were being identified and examined, remedial action had not occurred
- AT's location of stations and branches were not entirely optimal based on a consultant's 2010 report
- AT emergency services were reasonably cost effective compared with other jurisdictions in terms of cost per emergency response and cost per capita
- AT's strategic management processes had been generally effective

- it appeared KPIs were not sufficiently well-defined, lacking in benchmarks or targets to be useful in driving efficiencies.

Rod Whitehead

Auditor-General

22 September 2016

Recent reports

Recent reports

Tabled	No.	Title
May	No. 10 of 2014–15	Number of public primary schools
May	No. 11 of 2014–15	Road management in local government
June	No. 12 of 2014–15	Financial Statements of State entities, Volume 5 — State entities 30 June and 31 December 2014, findings relating to 2013–14 audits and other matters
July	No. 1 of 2015–16	Absenteeism in the State Service
August	No. 2 of 2015–16	Capital works programming and management
October	No. 3 of 2015–16	Vehicle fleet usage and management in other state entities
October	No. 4 of 2015–16	Follow up of four reports published since June 2011
November	No. 5 of 2015–16	Financial Statements of State entities, Volume 2 — Government Businesses 2014–15
November	No. 6 of 2015–16	Financial Statements of State entities, Volume 3 — Local Government Authorities and Tasmanian Water and Sewerage Corporation Pty Ltd 2014–15
December	No. 7 of 2015–16	Financial Statements of State entities, Volume 1 — Analysis of the Treasurer's Annual Financial Report, General Government Sector Entities and the Retirement Benefits Fund 2014–15
February	No. 8 of 2015–16	Provision of social housing
February	No. 9 of 2015–16	Funding of Common Ground Tasmania
May	No. 10 of 2015–16	Financial Statements of State entities, Volume 4 — State entities 30 June and 31 December 2015 findings relating to 2014–15 audits and other matters
June	No. 11 of 2015–16	Compliance with legislation

Current projects

Current projects

The table below contains details of performance and compliance audits that the Auditor-General is conducting and relates them to the *Annual Plan of Work 2016–17* that is available on our website.

Title	**Audit objective is to…**	***Annual Plan of Work* reference**
Tasmanian Forests Intergovernmental Agreement	… assess the effectiveness of the state's administration of projects listed for implementation by the Tasmanian Government, under the Tasmanian Forests Intergovernmental Agreement 2011 and 2013.	Page 19 Topic No. 1
Management of national parks	… form an opinion on how effectively the Parks and Wildlife Service manage the state's national parks by reference to the adequacy of planning processes and planning implementation.	Page 21 Topic No. 7
Government support for sporting and other events	… express an opinion on whether supported events are cost effective for Tasmania and funded in accordance with applicable government policy.	Page 21 Topic No. 1
Follow-up audit	… measure the extent to which audit clients implemented recommendations contained in four reports of the Auditor-General tabled between September 2011 and June 2014.	Page 24 Topic No. 9

AUDIT MANDATE AND STANDARDS APPLIED

Mandate

Section 17(1) of the *Audit Act 2008* states that:

> 'An accountable authority other than the Auditor-General, as soon as possible and within 45 days after the end of each financial year, is to prepare and forward to the Auditor-General a copy of the financial statements for that financial year which are complete in all material respects.'

Under the provisions of section 18, the Auditor-General:

'(1) is to audit the financial statements and any other information submitted by a State entity or an audited subsidiary of a State entity under section 17(1).'

Under the provisions of section 19, the Auditor-General:

'(1) is to prepare and sign an opinion on an audit carried out under section 18(1) in accordance with requirements determined by the Australian Auditing and Assurance Standards

(2) is to provide the opinion prepared and signed under subsection (1), and any formal communication of audit findings that is required to be prepared in accordance with the Australian Auditing and Assurance Standards, to the State entity's appropriate Minister and provide a copy to the relevant accountable authority.'

Standards Applied

Section 31 specifies that:

> 'The Auditor-General is to perform the audits required by this or any other Act in such a manner as the Auditor-General thinks fit having regard to –

(a) the character and effectiveness of the internal control and internal audit of the relevant State entity or audited subsidiary of a State entity; and

(b) the Australian Auditing and Assurance Standards.'

The auditing standards referred to are Australian Auditing Standards as issued by the Australian Auditing and Assurance Standards Board.

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