

# Review of Ambulance Tasmania Clinical and Operational Service Final Report

May 2017







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# Executive Summary

Ambulance Tasmania (AT) provides emergency and non-emergency services to people requiring medical assistance and/or transportation. Apparent demand for ambulance services in Tasmania is growing at unsustainable rates. Over the past seven years, the utilisation of ambulance services has grown 14 times faster than Tasmania's population. Left unchecked, this growth will have significant implications for Ambulance Tasmania's ongoing resource requirements and/or for ambulance response times. Unconstrained growth will also continue to have a negative impact on public emergency departments; which are already facing significant demand pressures.

Ambulance Tasmania's service model is well suited to responding to the needs of patients that require emergency care, stabilisation and transport to an emergency department. Increasingly, however, the caseload for Ambulance Tasmania involves responding to unexpected primary health care needs of patients. These patients may need urgent care, but unless their condition is life-threatening, they do not require the acute capabilities of an emergency department.

The best outcome for patients and the health system is to deliver efficient services that meet the need of patients. Often this means transporting a patient to an emergency department, but increasingly, the best option is found either through treatment at home or by primary or community health services. In some areas of Tasmania, over 40 per cent of all transported patients are categorised as non-acute. Statewide, only two per cent of patients are categorised as acute and time-critical once assessed by a paramedic.

Without reform, the emergency-focused service model of Ambulance Tasmania will continue to direct patients towards emergency services that exceed the needs of the patient or, in some instances, cannot meet that need. This results in inefficient utilisation of health resources and is likely to deliver poor outcomes in terms of the patient's experience of the health system due to long wait times for both an ambulance, and treatment in an emergency department.

The review has identified a range of reforms that will deliver increased efficiency in terms of the utilisation of Ambulance Tasmania resources and reduce demand on emergency services. Initiatives that should be pursued in the short term include:

1. Development of a secondary triage model for Tasmania (Recommendation 2)
2. Establishment of formalised referral and patient management partnerships between Ambulance Tasmania, healthdirect and other key primary and community health services (Recommendations 3 and 4)
3. Expansion of the current model for Extended Care Paramedics (ECP) into urban fringe and/or rural communities based on a spatial analysis of need, and improvement of the ECP coordination capacity (Recommendations 5 and 6)
4. Clear role delineation, as far as is reasonably practicable, of ECPs, First Intervention Vehicles and Intensive Care Paramedics (ICP) (Recommendations 7 and 8)

5. Development of a plan for Ambulance Tasmania to partner with a tertiary education institution to support the ongoing development of ICP and ECP models in Tasmania (Recommendation 10)
6. Development of patient management plans for frequent users of ambulance services (Recommendation 11)
7. Further development of a joint Ambulance Tasmania, Tasmanian Health Service and private emergency department approach to improve the management of risk associated with the flow of patients into emergency departments (Recommendations 12 to 14).

Re-profiling the service model of Ambulance Tasmania to include both acute and primary care pathways for patients will deliver better outcomes for patients and lower response times for patients requiring critical care. While it is not a solution to current pressures on emergency departments on its own, it will have a positive impact on demand for these services.

There is clear evidence that the strategies outlined in this review will reduce demand for emergency ambulance services and, in turn, emergency departments. The results, however, will take some time to be delivered and will not immediately address current demand pressures on Ambulance Tasmania.

While outside of the Terms of Reference for this review, it is recommended that the Government consider its capacity to support an increase in the supply of emergency ambulance services in the short term. This will allow Ambulance Tasmania to address its immediate operational challenges and create 'space' to implement longer terms strategies to reduce demand and improve services.

Advice from Ambulance Tasmania suggests that there is a particular need to address demand pressures in Launceston and Hobart (Recommendation 1).



In addition, there are a range of initiatives that should be explored further to ensure that the medium to long term direction for Ambulance Tasmania is sustainable and will deliver the best outcomes for the Tasmanian community. These include:

1. Continuing to build a robust and transparent regulatory framework for non-emergency patient transport services that:
  - a. Secures consistent, high quality services for non-emergency patients
  - b. Provides a robust and transparent regulatory environment for major events
  - c. Allows non-emergency patient transport providers to be considered for services with an expanded scope of practice where it is safe and clinically appropriate (Recommendations 15 and 16).
2. Monitoring the outcomes from the introduction of Urgent Care Centres in Western Australia in terms of reducing demand for emergency department services (Recommendation 9).
3. Refining the organisational structure of Ambulance Tasmania to improve operational coordination, supervision and professional development for operational staff (Recommendation 17 and 18).

The long term future for Tasmanian ambulance services is to transform the service model from an emergency responder to all needs to becoming a coordinator of patient access to urgent care for an unexpected health event. This will require a complete system redesign; a transition from a system that focuses on the question *'why do you need an ambulance and how urgently?'* to a system that is capable of asking the question *'what service do you need?'* and to facilitate the delivery of that service to the patient.

Further work is required to deliver the reforms outlined in this report. It is recommended that the review team work with Ambulance Tasmania and key stakeholders across the health system to:

- Clearly articulate the plan for the implementation of immediate priorities
- Further consider and provide advice to Government on the medium to long term plan for Ambulance Tasmania, including the direction for those issues identified as medium term priorities
- Articulate the medium to long term strategic plan for Ambulance Tasmania.

# Recommendations

## Short Term Demand Pressures

1. That the capacity of emergency ambulance services is increased, particularly in Launceston and Hobart, to allow for AT to develop and implement strategies to reduce demand, increase the sustainability of ambulance services and deliver better outcomes for both patients and the health system.

## Secondary Triage and Partnerships

2. That AT develops, as a priority and with collaboration and support from Ambulance Victoria, a secondary triaging service.
3. That AT commences discussions with healthdirect to identify an appropriate model for supporting secondary triage and guiding patients along pathways to care outside of the acute health system.
4. That AT engages with primary and community health services to build strong relationships and support alternative pathways to care.

## Extended Care Paramedics and Urgent Care Centres

5. That AT continues to expand the use of ECPs, focussing on urban fringe and rural communities based on a spatial analysis of need.
6. That AT investigates opportunities to include an ECP in dispatch to direct ECP resources to appropriate patients and provide broader operational support for paramedics and volunteers.

7. That AT clearly delineates the role of ECPs, First Intervention Vehicles and Intensive Care Paramedics and separates the functions as far as is reasonably possible from an operational and resourcing perspective.
8. That AT further considers the appointment of ECPs based on skills and experience relevant to the position as opposed to requiring an ECP applicant to be a qualified ICP.
9. The State monitors the impact of urgent care centres in Western Australia on demand for emergency departments.

## Extended Care Paramedic and Intensive Care Paramedic Training

10. That AT develops a plan to partner with an appropriate professional training body (potentially an appropriate tertiary institution) for ECP and ICP training.

## Patient Management Plans

11. That AT works with acute, primary and community health services to develop patient management plans for frequent users of ambulance services.

## Ambulance Tasmania and Emergency Department Interface

12. That Ambulance Arrivals Boards are introduced into emergency departments and Hospital Patient Tracking Boards into Ambulance dispatch.
13. That AT and the Tasmania Health System work to identify a threshold of unacceptable risk associated with ambulances being held at emergency departments.





14. That AT considers requiring paramedics to take blood samples prior to the arrival at the emergency department and provides ECPs with in-field blood diagnostic tools.

### **Non-Emergency Patient Transport Service**

15. That a protocol for the referral of patients to NEPT services for transport be developed by AT.
16. That the Department continues to build on the existing regulatory framework for Non-emergency Patient Transport Services, including considering further:
  - a. Targeted regulation of services provided for major events
  - b. Once paramedic registration is introduced, the merits of allowing any NEPT services to apply for a broader scope of practice based on approved clinical governance, clinical practice guidelines and training/skills maintenance arrangements.
  - c. Support in case of a disaster, emergency events or excessive demand.

### **AT Organisation Structure**

17. That AT reviews its organisation structure, particularly in relation to frontline tactical and clinical management, to include greater depth and shared accountability for operational coordination, clinical governance and professional development of operational staff.
18. That DHHS (including AT) identify an appropriate model for corporate support services to reduce single person dependencies in AT.



# Scope and Structure

## Background and Terms of Reference

The Department of Health and Human Services is undergoing a comprehensive organisational review of all functions to clarify and reinforce its role as a system manager. This will deliver a leaner, more efficient service with an emphasis on eliminating duplication. Ambulance Tasmania is the last major component of the State's public health system to be reviewed through this process. Significant reforms to other areas of the health system include:

- Creating the Tasmania Health Service as the single provider of acute health services, with significant ongoing reform to clinical services outlined in the *White Paper on Safe and Sustainable Clinical Services*.
- Implementation of a range of initiative to improve the operation of public emergency departments through the *Patient First Initiatives*.
- Refocusing of the Department of Health and Human Services as system manager through an organisational restructure and corporate consolidation process.
- Ongoing review of preventative health through the *Healthy Tasmania Five Year Strategic Plan*.

In April 2016, the State Government released Patients First; a range of actions focussed on ensuring that patients get more timely care in emergency departments at the Royal Hobart Hospital and Launceston General Hospital. One of those actions was to “*examine enhancing the scope of practice for paramedics to enable them to manage pre-hospital and potential emergency department demand including reviewing the potential for secondary triage and referral to alternative services*”.

This review delivers on this commitment. It focuses on the critical ‘gateway’ role of Ambulance Tasmania in facilitating access to health services and considers opportunities to reduce the demand for public emergency departments. The review also considers whether the organisational structure of Ambulance Tasmania is appropriate having regard to the balance between operational and non-operational resources.

The review considered the following:

- The merit associated with modifying the scope of practice of paramedics and other employees of Ambulance Tasmania to:
  - Increase the number of patients that can receive treatment in their home/community where clinically appropriate
  - Improve the flow of patients into the acute hospital system, including through the consideration of enhanced triaging of patients by paramedics prior to arrival at emergency departments and options for secondary triage.
- Opportunities for collaborative clinical governance across services in Ambulance Tasmania and the Tasmanian Health Service to enhance the integration of clinical services across the two organisations.
- The role of commercial non-emergency patient transport services in assisting with patient flow into and out of acute hospitals.
- Opportunities for increased partnerships between Ambulance Tasmania and community and primary care services.

- Whether existing arrangements appropriately balance existing resources toward the core business of the ambulance service, being frontline ambulance responses to the community.

## Review Design

The review was designed along three parallel streams:

1. A literature review of national and international initiatives to identify services that have been proven to deliver positive outcomes for patients and the health system
2. Analysis of data from both Ambulance Tasmania and emergency departments in the Tasmanian Health Service to provide an empirical basis for conclusions and recommendations
3. Consultation with stakeholders, staff within Ambulance Tasmania and other jurisdictions regarding current pressures and opportunities for reform.

The Queensland University of Technology was engaged to complete a literature review of strategies that have been implemented nationally or internationally to reduce the transfer of patients by Ambulance to the emergency departments.

KP Health was engaged to analyse data from Ambulance Tasmania's information system, VACIS (Victorian Ambulance Clinical Information System) and the Tasmanian Health Service's Emergency Department Information System (EDIS) and to provide advice on the merit of options for reform.

The review team conducted an extensive program of consultation that included meetings with key stakeholders, workshops with Ambulance Tasmania staff in the Southern, Northern and North Western regions, and consultation with ambulance services in Queensland, New South Wales (NSW), Victoria, South Australia and Western Australia.

## Structure of the Report

The structure of the report will cover the five areas of the scope:

- Evolving Role of Paramedicine
- Reforming Ambulance Tasmania's Service Model
- Improving the Interface between Ambulance Tasmania and Emergency Departments
- Engaging Non-Emergency Patient Transport Services
- Balancing Operational and Non-Operational Resources.

The report will provide conclusions and options to be considered to deliver a more effective and efficient emergency ambulance service.

# Review Context – Evolving Role of Paramedicine

Ambulance services were traditionally established around two core capabilities; well-trained volunteers who can provide an emergency response in rural communities (with limited scope of practice), and a skilled paramedic workforce that provides both a response in urban areas, and support for volunteer crews.

## Acute Care

Over the past few decades, ambulance services nationally and internationally have increasingly recognised the need to engage higher acuity paramedics, with an increased scope of practice in terms of both the range of interventions (eg. Endotracheal Intubation) and the range and dosage of drugs that can be administered (eg. Midazolam and Ketamine for pain relief).

All jurisdictions now employ an intensive care paramedic (ICP) or equivalent (eg. Critical Care Paramedic in Queensland and Mobile Intensive Care Ambulances, or MICA in Victoria). How they are used, their scope of practice and their level of training varies and was the subject of extensive discussion during the consultation process.

Advanced level paramedics were introduced in Tasmania as early as 1978. Since introduction, their role and scope of practice has evolved into what is now known as ICP, and their numbers have grown significantly. Currently, 21 per cent of operational paramedic positions in the South, 22 per cent in the North West and 41 per cent in the North are ICPs. In addition, a number of management and supervisory positions, such as Clinic Support Officers, are ICP qualified and sometimes perform on-road duties.

The role of ICPs in Tasmania is only marginally relevant to the Terms of Reference for this Review as changes to the role or scope of practice of ICPs have limited impact on demand for emergency departments. Given the level of interest, however, it is considered prudent to consider these issues and potentially provide direction for further analysis outside of this Review.

## Non-Acute Care

Of particular relevance to this review is the more recent introduction of Extended Care Paramedics (ECPs) to the paramedic workforce in a number of services across Australia. For example, South Australia introduced ECPs in 2008. *Defining the Road Ahead – Service Delivery Model* (SA Ambulance Service 2012) identified that ECPs would be engaged “for flexible deployment to provide out-of-hospital intervention aimed at reducing ambulance delivery into hospital emergency departments”. NSW and Queensland have introduced ECPs (or equivalent positions) for similar reasons.

ECP scope of practice varies across jurisdictions. In general, however, the extended scope of practice includes interventions such as wound care and catheterisation, and additional medication such as antibiotics and pain relief.

Research regarding the effectiveness of ECPs (or community paramedicine generally) is limited, but programs in the United Kingdom, Australia and Canada are perceived to be promising. The limited research available shows that paramedics can safely practice with an expanded scope and improve system performance and patient outcomes.



All jurisdictions that have employed ECPs report that the intervention has successfully reduced the number of ambulance patients that are transported to emergency departments. For example, NSW Ambulance reports that the Non-Transport Rate for patients treated by an ECP is around 70 per cent.

The South Australian Ambulance Service advised that one of the most important functions of an ECP is to find alternative pathways to care that reduce the rate at which patients are transported into EDs; and the rate of hospital admissions that could have been prevented by using alternative services. This is considered particularly important for elderly patients, who have been shown to deteriorate at a greater rate if removed from their home environment.

The scope of practice of ECPs in Tasmania is relatively limited as the capability has only recently been introduced. The scope is likely to grow over time.

## Non-Emergency Patient Transport

AT's Patient Transport Service is available for transporting patients between health facilities where no clinical assistance is required. This is an example of a non-emergency patient transport (NEPT) service. NEPT services are provided by AT and a number of private providers. The public service is focussed predominantly on 'in-hours' services with some after-hours call-back capacity. Private services supplement public service during the day and provide most of the out-of-hours service.

There is currently no capability to dispatch patient transport services to clinically appropriate cases, and no formal protocol for a paramedic to hand-over to a patient transport service after a patient has been assessed.

The role of NEPT services is relevant to this review in the context of understanding how ambulance and NEPT services can work together to best meet the needs of patients and improve the ability of Ambulance Tasmania to respond to needs of high-acuity patients. NEPT services are also critical, at times, to moderate the flow of patients into and out of hospital.

## Aeromedical Retrieval Services

Some AT staff are involved in aeromedical retrieval of patients using fixed wing planes or helicopters. Patients of this services are often high acuity and critically ill. Patients may be transferred to another health care facility to receive specialised care, or retrieved from non-hospital environments.

In AT, medical retrieval paramedics are ICP qualified with additional specific training to enable them to operate in planes or helicopters as required. In other jurisdictions, flight and/or retrieval paramedics are regarded as a specific speciality.

The role of Retrieval Transport Services is beyond the scope of this review. Helicopter aeromedical services will be the subject of a companion review.

# Demand Analysis

Analysis of AT and Tasmanian Health Service (THS) data shows that demand for ambulance and Emergency Department (ED) services is growing unsustainably and at rates that far exceed the rate of population growth.

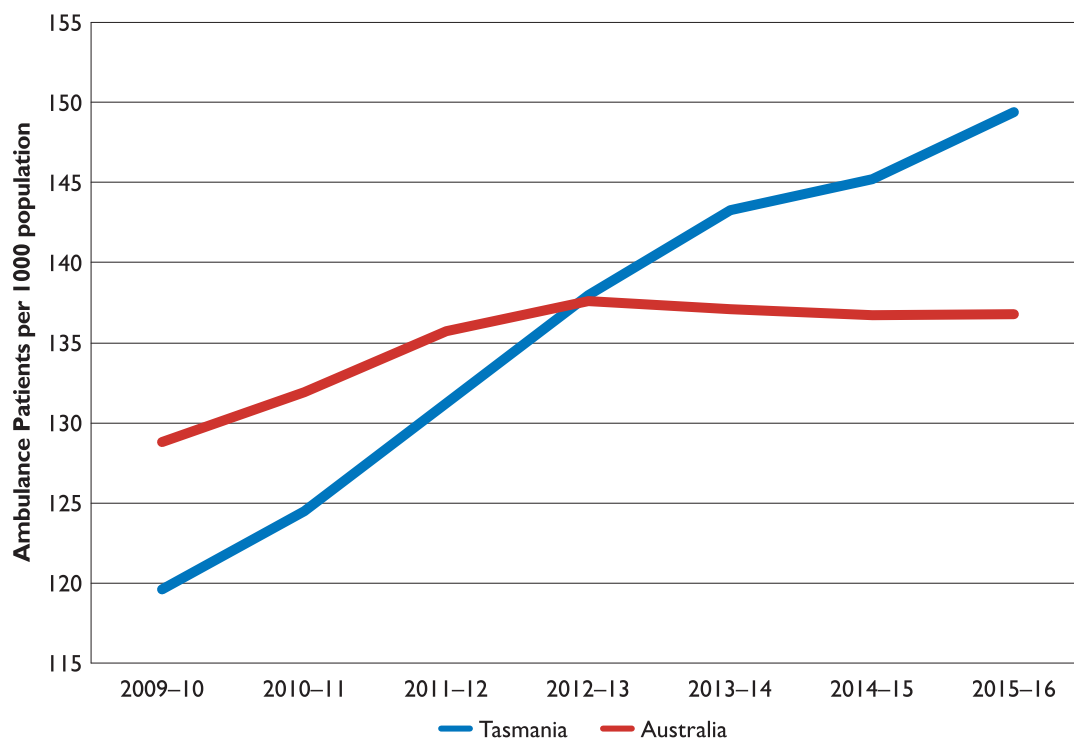
## Ambulance Services

Between 2009–10 and 2015–16, demand for ambulance services has grown by almost 28 per cent with an average annual growth rate of over 5.5 per cent. This is significantly higher than the growth in demand for ambulance services nationally (at around 3.6 per cent per annum) and 14 times the rate of population growth in Tasmania over the same period.

Historically, Tasmania has had an ambulance utilisation rate lower than the national rate (see Figure 1). Since 2012–13, however, the utilisation rate has exceeded the national rate and the gap continues to widen. In 2015–16 the utilisation rate for ambulance services in Tasmania was 149.4 patients per 1 000 people, compared to 136.8 patients for 1 000 people nationally.

**Figure 1 – Utilisation rates of ambulance services nationally and in Tasmania**

(Source: Productivity Commission)



Ambulance response times can be used as an indicator of service quality. Ambulance Tasmania response times have been slowly, but steadily increasing. Response to Code 1 patients (emergency cases) at the 50th percentile increased from 11.3 minutes in 2006–07 to 12.9 minutes in 2015–16. Response times for capital cities were slightly better but have still increased from 10.8 minutes in 2008–09 to 11.9 minutes in 2015–16.



Analysis was conducted on over 210 000 Ambulance Tasmania responses over three years (2014–16). Of these:

- 20.4 per cent of patients who received an ambulance visit were not transported to hospital
- 47 per cent of patients requesting ambulance assistance were categorised by dispatch as acute non time critical or non-acute. The number of patients in these categories increased to 98 per cent, however, once the patient was reviewed by a paramedic. Only two per cent of patients remained in the acute time-critical category during transport to an ED
- The main reasons recorded for transport of patients were abdominal pain, followed by chest infection, undifferentiated illness ('unknown problem'), back pain and acute coronary illness.
- The most common diagnoses that paramedics encountered (regardless of whether they were transported) were: minor wounds and lacerations (including minor closed fractures), soft tissue injuries and burns, and mental health issues. For patients who were transported, back pain also comprised a significant number of treatable service encounters.

Table 1 shows the destination of patients who were transported by ambulance. The regional distribution of patients transferred to public hospitals is broadly as expected given the population distribution in Tasmania. Only five per cent of patients are transported to a private ED even though around 45 per cent of Tasmanians are privately insured. 15 per cent of patients were reported as being transported to a destination other than a hospital.

**Table 1 – Destination for Patients Transport by Ambulance Tasmania from 2014 to 2016**

Destination	Number	Percentage
Royal Hobart Hospital	62 985	38%
Launceston General Hospital	36 281	22%
North-West Regional Hospital	18 349	11%
Mersey Community Hospital	14 066	8%
Calvary Healthcare (Lenah Valley)	5 266	3%
Hobart Private Hospital	3 076	2%
Repatriation Hospital	2 770	2%
Other	24 796	15%

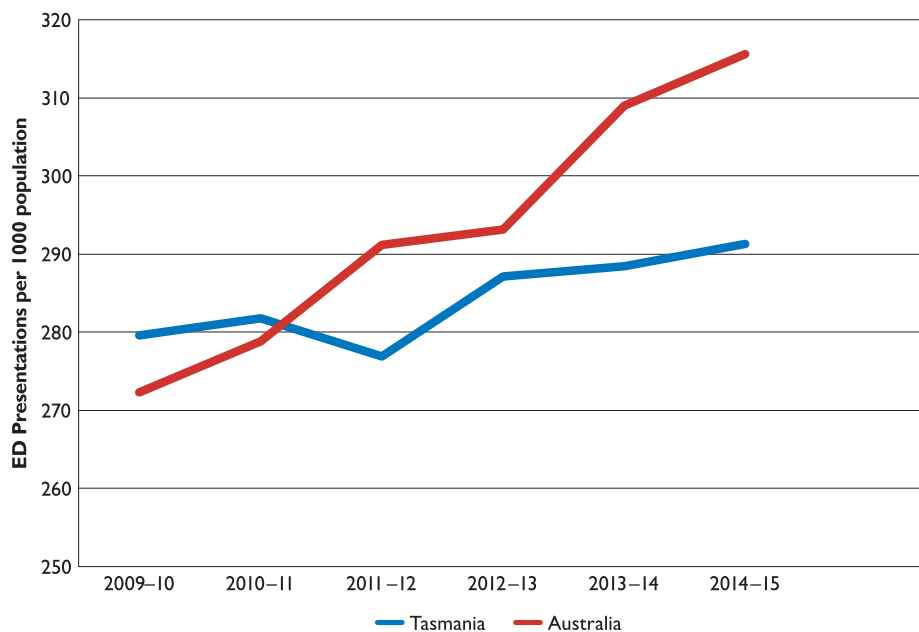
## Emergency Departments

Demand for the services of an ED in Tasmania is also increasing at a rate significantly higher than population growth (see Figure 2). Between 2009–10 and 2014–15 the utilisation rate (presentations per 1 000 people) grew by over 4 per cent, with 8 500 additional presentations to EDs. The growth in the ED utilisation rate is lower than the national trend.



## Figure 2 – Utilisation rates of emergency departments nationally and in Tasmania

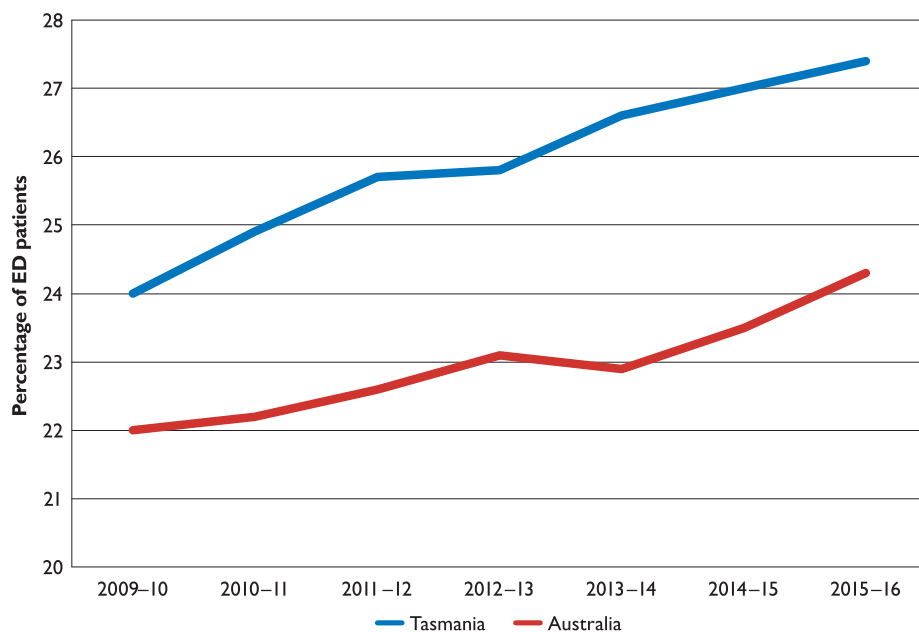
(Source: Productivity Commission)



The percentage of ED patients that arrive by ambulance is growing in Tasmania and is higher compared to the national rate (see Figure 3). In 2014-15, 27.4 per cent of ED patients in Tasmania arrived by ambulance, compared to 24.3 per cent nationally.

## Figure 3 – Proportion of ED patients that arrive by Ambulance

(Source: Productivity Commission)



## Drivers of Demand and Utilisation

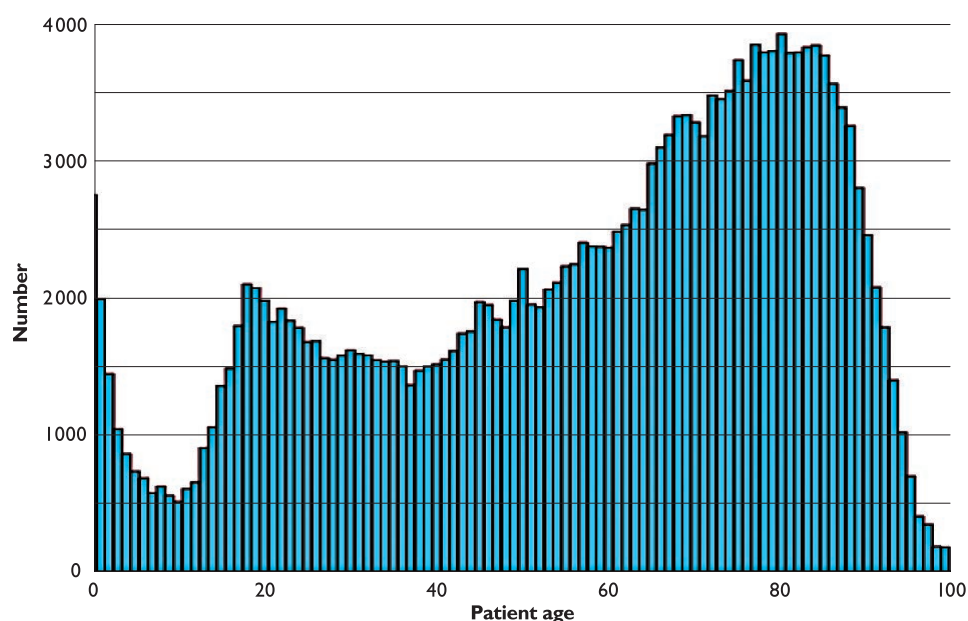
The reason for increasing demand for ambulance and emergency department services is not entirely clear, however, national research shows that there are three peaks in utilisation rates: infants, young adults and the elderly.

As the elderly are the heaviest users of these services, population ageing explains a proportion of the demand growth but not all of it. Demand for EDs and ambulance services nationally, however is increasing among high acuity patients and in injury and poisoning conditions, rather than the chronic diseases that are more prevalent in elderly patients (Fitzgerald, 2017).

Fitzgerald (2017) identifies a range of potential explanations for increasing demand for emergency departments and ambulance transport, including reduced access to General Practitioners (GPs), inappropriate attendance, chronic disease prevalence and population ageing. It is also suggested that any analysis of demand should be cognisant of factors such as higher rates of health literacy, access to on-line sources of health information, and an increasing emphasis on screening and self-assessment of potential indicators of ill health. Research shows that people without a regular relationship with a primary care provider such as a GP, and individuals without adequate social support have higher ED utilisation rates.

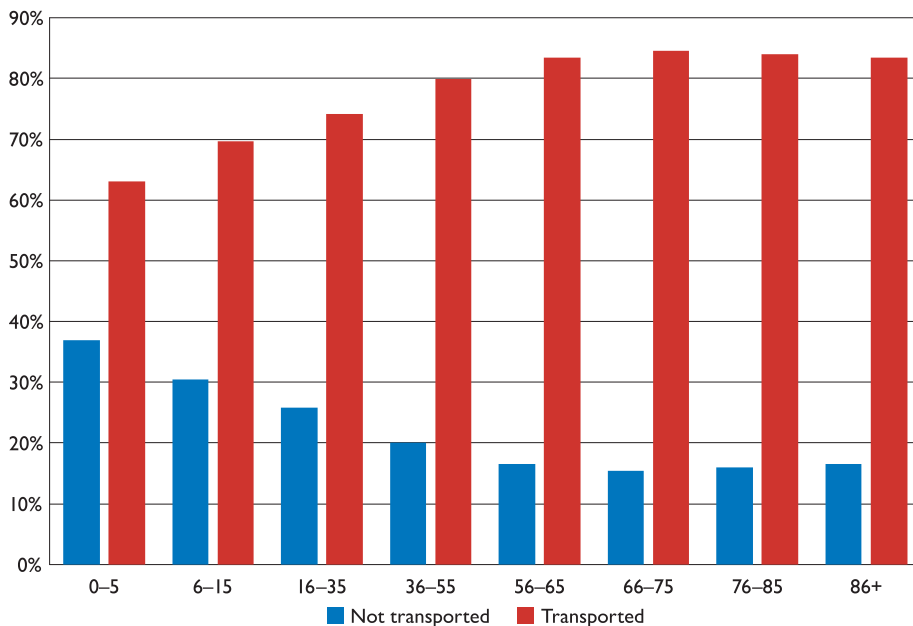
In Tasmania the mean age of patients attended by Ambulance Tasmania personnel is 56.5 years (See Figure 4). The age distribution of patients is skewed towards older age groups. The age profile of patients attended by Ambulance Tasmania is significant given that the elderly are more likely to be transported to an emergency department for non-acute or acute, non-time critical events. Younger patients are less likely to be transported to hospital than older patients, however the likelihood of time critical transport is higher at younger ages (see Figures 5 and 6).

**Figure 4 – Distribution of age of patients attended by Ambulance Tasmania, 2014–16**



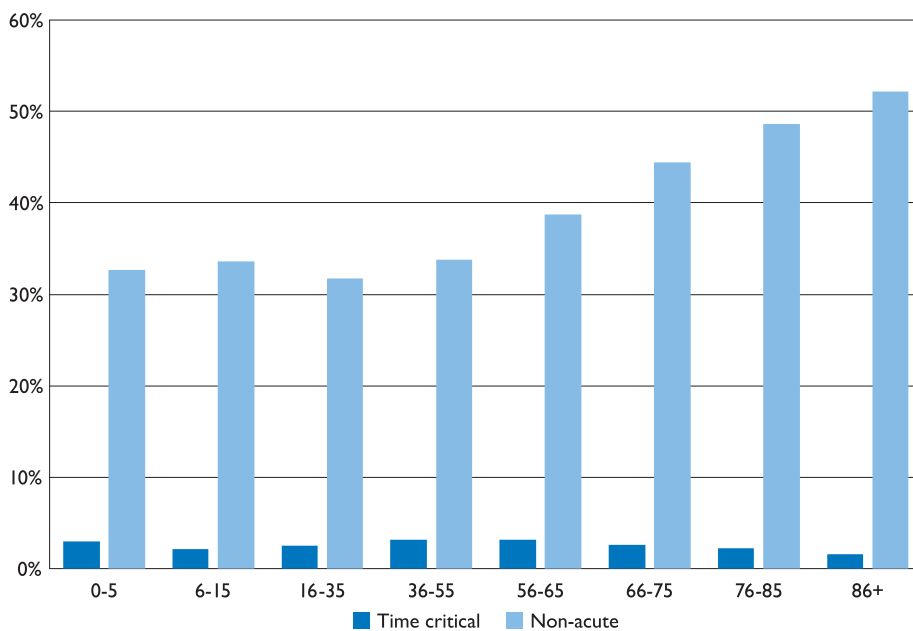
### Figure 5 – Transport Category by Age

(Source: KPH, 2017)



### Figure 6 – Transport Urgency by Age

(Source: KPH, 2017)





## Potential for Alternative Solutions

In commenting on potential strategies to moderate the growth in demand for EDs and ambulance services, Fitzgerald (2017) reasons that continued attention should be given to illness reduction through improved primary and secondary prevention and strategies to sustain patients in their homes. Importantly for this review, however, the literature review suggests that ED demand reduction may be achieved through diversion of patients to more cost effective services including Private EDs, out-patient clinics, integrated primary care services and community-based/mobile services.

An analysis of Ambulance Tasmania data identified that 14.5 per cent of patients transported to emergency departments had a diagnosis able to be managed by either a paramedic, a community nurse and/or a general practitioner. This may be a conservative estimate given the limitations associated with available data. An analysis of Emergency Department data showed that 18 per cent of presentations brought in by ambulance were 'potentially avoidable'. Table 2 and 3 outline the diagnosed condition and number of patients identified as being transported to the emergency department that could have been considered for treatment at home, or in alternate health services.

**Table 2 – Illnesses that can be managed by paramedics\***

	Transported	Not Transported
Minor allergic reaction, insect bite/sting	436	96
Boils and abscesses	12	10
Postoperative wound problems, dressing problems	83	33
Minor wounds and lacerations (including minor closed fractures), soft tissue injuries and burns	1 658	1 066
Epistaxis	182	107
Foreign body (ear, nose, and throat)	8	4
Sore throat, cold, and flu	52	88
Toothache	43	22
Seizure in known epileptics	476	212
Resolved hypoglycaemia in known IDDM	31	188
Back pain	1 284	292
Diarrhoea, constipation	410	215
Blocked urinary catheter	113	15
Emotional or hysterical reaction / other acute mental health	825	858
Alcohol / drug intoxication	688	351
Social problems	145	57
Fainting	595	247
Falls	99	402
<b>Total with diagnosis able to be managed according to the literature</b>	<b>7 140</b>	<b>4 263</b>
<b>Overall number transported / not transported</b>	<b>167 589</b>	<b>43 055</b>

\*Illnesses may also be appropriate for referral to GP / community nursing.

**Table 3 – Common problems for which other community providers deliver care\***

		Transported	Not Transported
Problem	No problem identified	2 174	431
	Unknown problem	287	1 019
Pain	Pain: muscular / soft tissue	342	2 041
	Pain: chest (excluding probable or confirmed cardiac)	147	831
	Pain: abdominal	153	2 718
	Pain: joints (excluding back)	46	1 081
Infection	Infection: Chest / respiratory tract	409	820
	Infection: Abdominal	123	132
	Infection: Urinary	57	485
	Febrile	154	570
Cardiovascular	Hypertension	80	452
	Hypotension	54	503
	Palpitations	38	594
	Cardiac failure	27	454
Respiratory	Cough	133	114
	Asthma	97	364
	Chronic obstructive pulmonary disease	62	501
Neurological	Headache / migraine	184	810
	Vertigo / dizziness	173	646
	Generalised weakness	60	301
	Mobility problem	49	163
	Closed head injury	38	422
Gastrointestinal / abdominal	Nausea	123	391
	Renal calculi / colic	19	284
	Gastroesophageal reflux	44	62
	PV bleeding	14	10
	Haematuria	5	23
Other	Dehydration	58	244
	Hyperglycaemia	45	265
	Rash	66	54
	Ear problems	63	92
	Cramps	35	25
	Eye injury / problem	58	170

\*GP = general practitioner; CN = community nurse.

# Reforming Ambulance Tasmania's Service Model

As noted previously, the role of Ambulance Tasmania has evolved from an emergency service to a service that is called upon to respond to a broad range of urgent or unexpected health needs. Only two per cent of patients are transported as acute, time critical. The remaining 98 per cent of patients are either acute, non-time critical or have non-acute health needs that are more closely related to conditions that can be managed in the community or primary health-care sectors.

Ambulance Tasmania is well structured to respond to acute, time-critical patients. Systems, equipment and training focus on this cohort of patients and capability has been developed and refined over many decades.

Ambulance Tasmania is not, however, well-structured to respond to the needs of patients with primary health care needs. Triage systems at the initial call-taking stage are necessarily risk averse and focus on the speed in which a patient requires an Ambulance, rather than what alternative service may be best to meet the needs of the patient. Ambulance Tasmania's primary relationship is with emergency departments, with almost no formal pathways for patients to access alternative primary or community health services. Individual paramedics may work with GPs and other service providers, but this is up to individuals and is not supported through formal partnerships and processes. There is very little training for paramedics in primary health, or conditions that could be diverted to alternative health-care providers outside of the hospital system.

Only two options are available to manage the growing utilisation rates for ambulance services: provide additional resources to grow the number of paramedic crews available to respond, or reconsider the ambulance service model to direct demand towards alternate services. The second option is considered to be the only viable option for providing a sustainable ambulance service over the medium to long-term.

Shifting the focus of Ambulance Tasmania from an emergency service, towards a health services gateway is a significant ideological shift for ambulance services. In essence, the move requires that the current question of dispatchers in Ambulance Tasmania of *"why do you need an Ambulance and how quickly do you need it?"* to be changed to a series of questions such as *"what is wrong, what services do you need and how can we help to either get the service to you, or to get you to the service?"*. This will require a very clear and robust strategy to build capability, manage patient risk and ensure that any changes are clinically appropriate and in the best interest of the patient.

The initiatives recommended in the following sections will go a long way to addressing demand issues in the medium to long term. They will, however, take time to implement. In the mean-time, current demand is placing pressure on emergency resources in Ambulance Tasmania.



Increasing the supply of emergency ambulance services is beyond the Terms of Reference for this review. It is, however, considered critical to the success of the initiatives outlined below to give Ambulance Tasmania the 'space' to reform. This means that measures need to be developed to address demand pressures in the short term so that the important work on reform can progress. Advice from Ambulance Tasmania is that increasing emergency ambulance capacity in Hobart and Launceston would provide the greatest benefit in terms of meeting current demand for emergency services and assist in building organisational capacity for reform.

**Recommendation #1 – That the capacity of emergency ambulance services is increased, particularly in Launceston and Hobart, to allow for Ambulance Tasmania to develop and implement strategies to reduce demand, increase the sustainability of ambulance services and deliver better outcomes for both patients and the health system.**

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## Secondary Triage

A significant proportion of patients that call Triple Zero do not require an ambulance response or transport to an emergency department. Often patients are looking for reassurance and advice, or help to resolve an unexpected primary health-related event (like a minor cut, nausea or a closed fracture). Over half (53 per cent) of patients that are assessed by a paramedic either do not require transport (because they can be treated on site) or are non-acute. A further 45 per cent are assessed as acute, but not time-critical.

Secondary triage is a model that has been implemented effectively in a number of other jurisdictions as a strategy for reducing the inappropriate utilisation of emergency ambulance services and delivering better outcomes for patients.

Secondary triage services employ officers that have the skills, systems and support to diagnose the needs of low-acuity patients over the phone and divert them to alternative services that are suited to the patient's needs. Call takers are paramedics or nurses that are highly experienced and skilled. Each service has links with a range of alternative services, including community nurses, GPs (either in person or over the phone), aged and palliative care services and advice lines. Secondary triage services are also equipped to provide self-help advice for callers seeking reassurance.

There are two models of secondary triage in Australia:

- Low acuity patients are referred to another provider for secondary triage
- Low acuity patients are assessed in house.

NSW and Western Australia refer low acuity patients for secondary triage by healthdirect; a telephone-based, nurse-led advice and referral service. Queensland trialed that form of secondary triage but chose to pursue other priority innovations (notably the introduction of ECPs, see below).

St John Ambulance service in Western Australia report that around 14 per cent of calls are being referred to healthdirect, with only a small proportion (less than 10 per cent) being returned for an ambulance-based response. NSW refer a smaller proportion of calls to healthdirect.

Ambulance Victoria has chosen to build a secondary triage service in-house<sup>1</sup>. Analysis shows this is by far the most effective model nationally for reducing demand on paramedic services. Over 30 per cent of the Triple Zero call volume is being referred for secondary triage and, through this service, over 22 per cent of all Triple Zero calls are diverted to an alternative service provider or a non-emergency transport service.

The results being achieved in Victoria represent a very significant improvement in resource utilisation for low-acuity patients and response times for critical high-acuity patients. While there is no evidence to directly link response times and secondary triage, it is noted that response times for code 1 patients (at the 50th percentile) have decreased in Victoria from 11.2 minutes in 2012–13 to 10.9 minutes in 2015–16.

The critical success factor for Victoria's secondary triaging service is the cultural shift away from avoiding risk to carefully and deliberately managing risk. Supporting this change is rigorous clinical governance, robust decision-making support and a very productive and mature set of relationships between Ambulance Victoria and alternative service providers.

The review recommends that Tasmania develops, as a priority, a secondary triaging service. While further work is required to identify the best model for Tasmania, it is strongly encouraged that Tasmania levers off the wealth of experience built up over the last 15 years in Ambulance Victoria, rather than seeking to develop its own capability from the ground up.

In implementing a secondary triage model, care will need to be taken manage the risk for patients. Patients for whom paramedics transport as time-critical transport were generally assessed as requiring time-critical transport by dispatch. However, 1 in 8 patients in whom paramedics transported as time-critical were not identified by the dispatcher as needing time-critical attendance. Tools are available to manage this risk.

**Recommendation #2 – That AT develops, as a priority and with collaboration and support from Ambulance Victoria, a secondary triaging service.**

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<sup>1</sup>South Australia is currently considering the implementation of a similar model to Victoria.

Secondary triaging will rely on an ability to access alternative pathways to care for patients. In parallel with the development of a secondary triage capability, it is strongly recommended that Ambulance Tasmania works with the broader health system to identify appropriate pathways to alternative care.

Consultation with other States, particularly those that have implemented secondary triaging services emphasised the importance of increasing the role of GPs and other community health services in supporting the urgent primary health care need of patients. Enhancing the interface between Ambulance Tasmania and primary/community health services should be a key priority.

Tasmania's healthdirect (which incorporates GP Assist) represents a significant and unique opportunity to bridge the gap between Ambulance Tasmania and primary/community health services. Healthdirect has a working relationship with over 85 per cent of Tasmanian GPs and has the trust and confidence of the broader primary and community health system. It is competent in phone-based triaging and support, and guiding patients along alternative pathways to care.

There are various options for engaging healthdirect to support Ambulance Tasmania. Identifying the best model is beyond the capacity of this review. It is recommended, however, that Ambulance Tasmania commence discussions with healthdirect in parallel with the development of a secondary triaging capability.

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**Recommendation #3 – That AT commences discussions with healthdirect to identify an appropriate model for supporting secondary triage and guiding patients along pathways to care outside of the acute health system.**

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The relationships that Ambulance Tasmania requires to deliver appropriate care to low acuity patients extends well beyond GP Assist and includes services such as community nurses, aged and palliative care services, mental health and drug and alcohol support services. Ambulance Tasmania should establish formal mechanisms to define and build these relationships.

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**Recommendation #4 – That AT engages with primary and community health services to build strong relationships and support alternative pathways to care.**

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## Extended Care Paramedics

Triaging patients for referral over the phone brings with it an increased risk of misdiagnosis and must be carefully managed. While secondary triage services are better equipped to manage patient risk compared to the initial call-takers, they must still maintain a relatively low risk appetite and focus only on those patients that are stable and meet a pre-approved clinical risk profile.

There is undoubtedly a cohort of patients that could receive care outside of the hospital system that cannot be referred over the phone, and require face-to-face assessment.

As mentioned previously, Tasmania has recently introduced Extended Care Paramedics (ECPs). These paramedics have an increased scope of practice that means they can treat a range of patients at home, without transporting them to an emergency department. Additional interventions include suturing, catheter replacement and distributing short-term antibiotics which will tide the patient over until they can see their GP. ECPs can also refer patients to other community based services.

ECPs, if appropriately trained and supported, are the ideal point for supporting the referral of patients along alternative pathways to care where the risk for the patient is assessed as requiring a face-to-face review. Very positive results are being secured through the use of ECPs interstate, particularly in Queensland, NSW and South Australia.

There are benefits for both the patient and the health system associated with the use of ECPs as part of the mix of resources available to Ambulance Tasmania:

1. Patients benefit from not having to wait for a paramedic response or admission to an emergency department.
2. The system (Ambulance Tasmania and emergency departments) benefits through reduced utilisation of high-cost paramedic response units and emergency departments for those requiring low levels of care.

The use of ECPs in urban areas will benefit the patient, particularly in periods of high demand (and long wait times) in emergency departments. Single officer ECPs are also a more efficient use of resources for appropriately triaged patients compared to a double paramedic crew in an ambulance.

The potential patient and system benefits of ECPs are, however, higher in urban fringe and rural communities. Generally speaking, the availability of alternative health services decreases away from high-density urban environments and ambulance utilisation for low acuity health events increases.

For example, in 2016 around 18 per cent of patients transported by Ambulance Tasmania from inner Hobart suburbs (postcode 7000 or 7001) were assessed by paramedics as non-acute. The corresponding rate was higher for nearby regional towns: 20 per cent Huonville and 22 per cent in New Norfolk. Similarly, the rate of non-acute patients transported in Launceston was 19 per cent, compared to 28 per cent for the regional town of Scottsdale.

<sup>2</sup>Areas with total transport rates of less than 300 per year were excluded from the analysis.



The three areas with the highest rates of transported patients being non-acute<sup>2</sup> in 2016 were:

- Postcode 7322 (Somerset and surrounds) – 49 per cent (264 patients)
- Postcode 7325 (Wynyard and surrounds) – 45 per cent of patients (614 patients)
- Postcode 7307 (Port Sorell and surrounds) – 41 per cent (981 patients).

There are exceptions to this rule, as areas such as Smithton and Deloraine have very low rates of transporting non-acute patients (12 per cent and 13 per cent respectively).

The impact on Ambulance Tasmania and emergency departments associated with transporting non-acute patients in urban fringe and rural areas is exacerbated by the long travel times and the limited ambulance availability in rural communities. It is often the case that rural communities are serviced by a single emergency response unit. If a paramedic crew is tied up transporting a non-acute patient, there will be no local crew available to respond to a patient with a more urgent and acute need.

A particular challenge for deploying ECPs to rural communities is that the demand for ambulance services is significantly reduced and there is the potential that an ECP will be under-utilised. A potential strategy to mitigate this risk is to consider embedding an ECP into local health services (eg with community nurses, GPs or local health facilities) so that their skills add value when not dispatched to patients. Pursuing this model would require further analysis and a level of stakeholder engagement that is beyond the capacity of this review.

Finally, it is noted that South Australia has provided their ECPs with in-field blood diagnostic tools to assist with identifying the most appropriate clinical pathway for a patient. This adds to the capacity to refer patients to alternative services, but would also assist as a pre-hospital assessment tool if the patient requires transport to an ED. Further consideration should be given to the suitability and merit of introducing this capability in Tasmania.

**Recommendation #5 – That AT continues to expand the use of ECPs, focussing on urban fringe and rural communities based on a spatial analysis of need.**

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Advice from other States and Territories that include ECPs within their service model is that it is critical to direct ECPs towards appropriately triaged individuals. These States and Territories have placed an ECP within their dispatch service to review patients that are seeking assistance and to identify those patients that meet the criteria for an ECP response.

The scale of operations in Tasmania is limited, and this will place some challenges on the capacity to have a full-time ECP in dispatch (NSW has one ECP for the Greater Sydney area). Whilst justifying an ECP in the Communications Centre solely for this task is difficult, there is currently a lack of clinical support available in the communications centre and for paramedics and volunteers state-wide. Introducing a clinical based role into the communications centre could provide significant benefits including actively searching for appropriate cases for ECPs, managing care plans, providing real time clinical review and support for paramedics and volunteers and assisting in selecting appropriate pathways to care for patients outside of the emergency department.

**Recommendation #6 – That Ambulance Tasmania investigates opportunities to include an ECP in dispatch to direct ECP resources to appropriate patients and provide broader operational support for paramedic and volunteer crews.**

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The review has identified a number of issues associated with the current model for using ECPs in Tasmania.

Firstly, there is a tendency to combine the role of an ECP with the role of a First Intervention Vehicle. Under this arrangement, an ECP will be dispatched as a single officer in a sedan to assess and monitor a patient where a paramedic crew is not immediately available. While the use of First Intervention Vehicles as a response strategy is supported, the use of ECPs in this capacity introduces a very significant risk that the skills of ECP are 'captured' monitoring patients that require a paramedic response and, conversely, patients that could benefit from the skills of an ECP are either left waiting or are managed through the traditional response (ie being transport to an emergency department for care).

For the ECP model to succeed, it is critical that this role is separated as much as reasonably possible from the emergency transport demands on Ambulance Tasmania. ECPs should be generally free to be dispatched to suitably triaged low acuity patients or, as is the case in Queensland, should be able to 'bid' for patients that would benefit from an ECP response.

**Recommendation #7 – That AT clearly delineates the role of ECPs, First Intervention Vehicles and ICPs and separates the functions as far as is reasonably possible from an operational and resourcing perspective.**

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Similarly, the roles of an Intensive Care Paramedic and Extended Care Paramedic have been linked in the current model being deployed by Ambulance Tasmania by requiring that ECPs are also trained ICPs. Advice received in the review was that roles were linked because ICPs have the skills and experience to make the diagnostic-related judgements required for treatment and/or referral of a patient to alternative services.

Further consideration should be given to whether this is an appropriate use of paramedic skills. The skills and focus required by an ECP are significantly different to the skills and focus required by an ICP.

An ICP must be highly skilled in identifying emergency interventions that prevent the further deterioration of a patient and allow the patient to be brought into the potentially life-saving care of an emergency department. An ICP must be highly skilled in emergency care, and have a strong working relationship with emergency clinicians in the acute hospital system.

ECPs focus on primary care diagnostics and appropriate referral pathways. An ECP needs a very sound knowledge of primary care-based interventions and an understanding of the services that may be available to support the primary needs of the patient. An ECP will need to foster close, productive working relationships with a broad range of services.

Separating the career development streams of ECPs and ICPs is important to allow these streams to be clearly defined and for training and skills maintenance to be targeted to those skills that best meet the needs of a patient. While there is no problem with an individual choosing to develop both ECP and ICP skills, it is considered unnecessary and potentially duplicative to require them to do so.

**Recommendation #8 – That AT further considers the appointment of ECPs based on skills and experience relevant to the position as opposed to requiring an ECP applicant to be a qualified ICP.**

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## Urgent Care Centres

St John Ambulance in Western Australia (St John WA) has embarked upon a set of reforms that are unique in Australia. Rather than implement Extended Care Paramedics, St John WA have purchased a number of Urgent Care Centres to provide both an alternative destination for ambulances carrying lower acuity patients, and to encourage individuals self-presenting to an emergency department to consider whether urgent care is more appropriate to 'emergency care'.

St John WA based its model upon the notion that only a minority of WA patients attending emergency departments arrive by ambulance; the majority 'self-present'. This also occurs in Tasmania, where 72.6 per cent of ED patients arrive through some form of transport other than an ambulance. St John WA reasoned that ECPs cannot impact upon self-presenters and therefore are not able to divert this broader cohort of individuals to a service that can more efficiently accommodate their urgent care needs. The solution that is being implemented by St John WA is to create integrated care centres that include a walk-in, no-appointment based urgent care centre.

The urgent care centre is staffed by a combination of medical, nursing and paramedic staff and is configured in a way that is not dissimilar to an emergency department; ie open bays monitored and serviced from a central coordination hub. Co-located with the urgent care centre are GP consulting rooms, dental consulting rooms, radiology (x-rays), pathology and a pharmacy.

The costs of the urgent care centre are covered partially by the user fees for accessing the services. It will however require cross-subsidisation, most likely including Government support, if the model is to be sustained.

Assessing the merits of Urgent Care Centres is beyond the scope and capacity of this review. The State should, however, monitor the success of this initiative to consider whether there is any benefit to introducing urgent care centres in larger urban centres in Tasmania.

**Recommendation #9 – That the State monitors the effectiveness of urgent care centres in Western Australia on demand for emergency departments.**

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## Intensive Care Paramedics

The service model for Intensive Care Paramedics in Tasmania is outside of the Terms of Reference for the review. The review has however considered a number of representations regarding ICPs that are closely related to the review's consideration of ECPs. For completeness, it is considered appropriate to provide some observations on this part of Ambulance Tasmania's service model.

There are two views on the future of ICPs in Tasmania that, at first, appear contradictory. The first is that Tasmania should employ more ICPs and that most paramedics should be encouraged to work towards ICP status. The second is that the scope of practice of ICPs should be increased significantly (perhaps to the level of Paramedic Practitioners) and that the number of ICPs should be reduced to ensure that they can maintain their skills.



Unpicking this issue requires an examination of both the skills required for an ICP and the way that they are deployed by AT.

ICPs are currently dispatched as part of paramedic crews on the general roster. This means that they can, and are, dispatched for any call for assistance. The Medical Priority Dispatch System prioritises calls and identifies, by pre-set determinants, which cases require ICP intervention. ICPs can be allocated to provide an initial response to a patient if available, or could be asked to provide back-up to a paramedic crew.

The consequence of the current model is that ICPs are not always available to respond to patients that could benefit from their increased scope of practice as they may already be tasked with transporting a lower acuity patient. A reasonable proportion of the roster, therefore, needs to be ICPs to ensure that the capability is available when required.

Furthermore, calling an ICP crew to back-up a paramedic crew means that an additional unit must be directed to the incident, which is inefficient and can significantly degrade the response capacity in a region. For example, Launceston has three crews on the roster at any one time. Calling a second ICP crew to back-up a paramedic-only crew may result in 66 per cent of the city's capability being tied up with one patient.

Three solutions to this issue have been suggested:

1. Employ a larger number of ICPs so that they are available routinely (builds on current practice)
2. Remove ICPs from the regular roster and use a smaller, more highly qualified ICP for triaged cases that require the increased scope of practice.
3. Consider a hybrid of the above and deploy ICPs on the general roster, but also retain a smaller cohort of ICPs to provide a single vehicle back-up for a paramedic crew when required.

Given that this issue is out of scope, the review does not make any recommendations on this issue. Further consideration of option 3, however, is encouraged as it allows for general skills development, but provides the service with increased flexibility to provide back-up when required without depleting the broader capacity in the region.

Any change in the service delivery model would need to carefully consider the impacts on the utilisation of both paramedics and ICP resources. The scale of any resource taken off the general roster for targeted dispatch must be balanced against the demand for ICP skills to ensure that they are fully utilised.

Further examination of the ICP service delivery model should be progressed outside of this review to ensure that the model is contemporary, effective and efficient.

## Training of ECPs and ICPs

Success of the ECP model (and ICP model) relies on both robust skills development and maintenance, and confidence of other parts of the health system in those skills. For example, confidence in the skills of an ECP will be critical to an efficient referral of a patient to a community nurse or GP service. Similarly, confidence of an emergency clinician in the judgement of an ICP is critical for effective preparation of an emergency department prior to the arrival of a patient.

Training of both ICPs and ECPs is currently delivered in-house by Ambulance Tasmania. While these courses are effective, the ongoing development of the model, and ongoing confidence in the skills of the graduates could be enhanced by Ambulance Tasmania pursuing a partnership with a recognised training provider (most probably a tertiary institution). Paramedic training, and in particular the training of ICPs and ECPs would benefit from the resources available in a tertiary institution, particularly if the course is closely aligned with a medical school.



The University of Tasmania has expressed an interest in working more closely with Ambulance Tasmania on training and skills development. Assessing the merit of a partnership with any particular institution is beyond the scope of this review. It is recommended, however, that AT explore options for outsourcing its training to an appropriate institution.

**Recommendation #10 – that AT develops a plan to partner with an appropriate professional training body (potentially an appropriate tertiary institution).**

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### Patient Management Plans

During discussions with ambulance services in other States and Territories, the review team was presented with a number of strategies to improve the service response to individuals that were very frequent users of ambulance services. Most notably, Ambulance Victoria has dedicated resources to develop patient management plans for frequent users in consultation with primary health carers and emergency departments. This process has significantly reduced the rate at which some patients are calling for an ambulance.

Over the three years, 2014–16, 14 patients have called for an ambulance over 51 times each. The most frequent user called for an ambulance 219 times over the three year period. Some patients may have a legitimate clinical need for frequent transport to an emergency department. A preliminary analysis of the data, however, suggests that some frequent users could benefit from an alternative health care provider, or improved management of their condition at home. Cases where the reason for attendance suggests that the case could be examined more closely include:

- Headache, back pain and cough (99 attendances)
- Alcoholism (67 attendances)
- Anxiety (49 attendances).

Examining these cases more closely does not mean that these patients do not benefit from assistance. Rather, it is likely that a review will identify alternative management plans that deliver better outcomes for the patients and reduce their reliance on ambulance services and emergency departments.

**Recommendation #11 – that AT works with the acute, primary and community health services to develop patient management plans for frequent users of ambulance services.**

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# Improving the Interface between AT and Emergency Departments

Irrespective of the service model employed by Ambulance Tasmania, there will inevitably be periods in which excess demand on either emergency departments or the ambulance service will impact upon the smooth flow of patients into and out of the hospital system. The most obvious consequence of this is what is known as 'ambulance ramping'; or the time that ambulances are located at a hospital's ED before the care of the patient can be handed over to ED staff.

The issue of ramping is not a local problem, but is a focus of Governments nationally and internationally, and it often draws media attention. A number of initiatives have been successfully implemented in Tasmania to address the issue of ambulance ramping. A number of other initiatives have been implemented interstate that could be considered further in Tasmania.

Firstly, it is considered important to ensure that there is a shared clinical governance of the patient's journey into emergency departments by both Ambulance Tasmania and emergency departments. Ambulance Tasmania should maintain operational awareness of the challenges being faced by emergency departments, and emergency departments should be aware of the demand pressures on Ambulance Tasmania.

Queensland and NSW have been highly successful in improving the partnership between emergency departments and the ambulance service by introducing ambulance arrivals boards into emergency departments. Through this initiative, emergency departments can actively track patients waiting to be 'offloaded', and those en route to the hospital. Appropriate alerts are provided for any patient waiting longer than 30 minutes in an ambulance.

It is recommended that a similar strategy is pursued in Tasmania. In the first instance, Ambulance Tasmania patient arrivals boards should be placed in emergency departments alongside of internal patient tracking boards. In the medium term, consideration should be given to integrating both boards into a single patient tracking board.

Conversely, live reporting on overall emergency department capacity and demand should be available for ambulance dispatch services. This will assist with activating appropriate strategies to assist emergency department during periods of high demand.

**Recommendation #12 – That Ambulance Arrivals Boards are introduced into emergency Departments and Hospital Patient Tracking Boards into Ambulance dispatch.**



Situational awareness of the pressures on Ambulance Tasmania and emergency departments will have limited impact on patient flow unless options are identified to systematically respond to relieve those pressures. To achieve this, a joint escalation protocol could be developed over time by the Tasmanian Health Service and Ambulance Tasmania. Under this protocol, the THS could activate arrangements to transfer the care of patients to the emergency department where ramping is unreasonably impacting on Ambulance Tasmania's response capability and placing patients at risk. Conversely, Ambulance Tasmania could consider opportunities to reduce the flow of lower acuity patients into the emergency department when the latter are under significant pressure.

Developing a joint escalation protocol is a significant piece of work and will take time to fully implement. In the interim, it is recommended that Ambulance Tasmania and the Tasmanian Health System agree to the threshold at which ambulance ramping represents an unreasonable risk to patients that need to access to an ambulance. Factors that will need to be considered in identifying this threshold will be the demand for and occupancy of the emergency departments, the number of ambulances being held at emergency departments, and the unmet demand for an urgent ambulance response in the community.

**Recommendation #13 – That AT and the Tasmania Health System work to identify the threshold of unacceptable community risk associated with ambulances being held at emergency departments.**

A final initiative that could be considered by Ambulance Tasmania to improve patient flow into and through emergency departments is the practice adopted in NSW for paramedics to take blood samples prior to arrival in emergency departments so that they can be immediately sent off to pathology upon arrival. Evaluation of this initiative in NSW showed that this can reduce the average patient stay in an emergency department by over 20 minutes.

It is noted that Ambulance Tasmania already establishes intravenous access in many patients, thereby creating the mechanism for pathology blood collection. There would be minimal training and overhead cost to implement this practice in Tasmania.

Further detailed work is required to ensure that blood samples are collected in a way that meets the requirements to pathology services.

**Recommendation #14 – That AT consider requiring paramedics to take blood samples prior to arrival at the emergency department, and provides ECPs with in-field blood diagnostic tools.**

# Engaging Non-Emergency Patient Transport

The non-emergency patient transport sector in Tasmania has been evolving rapidly over recent years.

Until relatively recently, the sector comprised a public NEPT service that provided non-emergency transport between public hospital facilities during business hours, with limited after hours capacity. Two private providers serviced the private sector and provided back-up when the public service was not able to respond to the needs of the public system.

Three additional service providers have recently entered the market with each service seeking to differentiate itself either geographically or through the type of service that it provides.

The review has considered a range of issues associated with the NEPT sector in Tasmania. Some of these issues are directly relevant to the terms of the reference of the review. Others are only marginally relevant but should be considered further, to ensure the State maintains a robust and high quality NEPT sector.

## Referral to NEPT Services from Ambulance Tasmania

The review received advice from both within and outside of Ambulance Tasmania that paramedic ambulance services could be more effectively utilised if Ambulance Tasmania introduced formal referral pathways from paramedics to non-emergency patient transport services. Formal referral pathways should also be developed from secondary triage services to non-emergency patient transport services if this capability is introduced. Referral to non-emergency patient transport service should be considered where:

1. A paramedic crew assesses a patient transport need as being more appropriately met by a non-emergency patient transport provider
2. A secondary triage service assesses the needs of a patient as only requiring non-emergency patient transport and where no alternative transport is available to the patient
3. There are heightened operational demands on Ambulance Tasmania and the risks associated with a non-acute patient waiting for a paramedic response is greater than the risks associated with transporting that patient to hospital using a non-emergency patient transport service.

A number of paramedics consulted in the review commented that they are often dispatched to patients only to find that the patient transport task is more suited to a non-emergency patient transport provider. For example, a clinically stable elderly patient may simply need transport to hospital or an alternative medical facility for a test to rule out the possibility of a serious condition. In this example, the patient is stable and the need for support is real but not urgent. In these circumstances, paramedics suggested that they should have the ability to transfer the transport task to a non-emergency patient transport service (either public or private) allowing the paramedic to be available for a more urgent case.

Secondary triage in the Victorian Ambulance Service refers 25 per cent of all received calls to a non-emergency patient transport service. This benefits both patients and the ambulance service as patients receive the service that they need in a timely way and the ambulance service can focus its resources on the patients that require paramedic assisted transport services.

There have been occasions with non-acute patients wait for many hours to be transported by a paramedic crew. Lengthy wait times arise because the paramedic is constantly being diverted to patients with more urgent needs. This is done with little or no consideration of whether the patient could be reasonably transported by a non-emergency patient transport service. The outcome for the patient is most likely clinically appropriate, but the patient experience is very poor, especially as the patient will most likely have a long wait in the emergency department after a long wait for the ambulance.

**Recommendation #15 – That a protocol for the referral of patients to NEPT services for transport be developed by AT.**

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## Improved Regulation of Support for Major Events

Major events are a growing industry in Tasmania and receive widespread support across the State. Major events include food festivals, public fun runs and major sporting events.

The review heard concerns from a range of stakeholders that there are uncertainties surrounding the regulatory environment for providing paramedical support for major events. Concerns were expressed that the expectation of the community regarding NEPT service providers attending major events may exceed the actual capabilities and approved scope of practice of these services.

As noted previously, the NEPT service sector in Tasmania is growing and maturing. A number of stakeholders expressed the view that further consideration should be given to authorising a limited, but increased, scope of practice for NEPT service providers to support major events.

Achieving this goal would require changes to the regulatory framework for NEPT services. It will require robust clinical governance and, potentially, processes for approving the scope of practice of NEPT services based on the skills and qualifications of the patient transport officers.

These issues are beyond the scope of this review, but should be considered over the medium term.

## Greater Flexibility for Utilisation and Innovation in NEPT Services

Building on the issues raised with regard to major events, a number of NEPT services have expressed the desire to have some flexibility to innovate and provide either a broader range of services or more specialised services to the private sector. NEPT services have also expressed an interest in, over time, providing greater support for Ambulance Tasmania during disasters, significant emergency events or other periods of excessive demand.

As with the previous discussion regarding major events, extending the scope of practice for NEPT services would require a review of the regulatory environment and further consideration of issues such as clinical governance and the management of approved clinical practice guidelines. These issues should be considered over the medium term.

**Recommendation #16** – That the Department continues to build on the existing regulatory framework for Non-emergency Patient Transport Services, including considering further:

- a. Targeted regulation of services provided for major events
- b. Once paramedic registration is introduced, the merits of allowing any NEPT services to apply for a broader scope of practice based on approved clinical governance, clinical practice guidelines and training/skills maintenance arrangements
- c. Support in case of a disaster, emergency events or excessive demand.

# Balancing Operational and Non-Operational Resources

The review has analysed the structure of Ambulance Tasmania for the purpose of considering whether there is an appropriate balance between operational and non-operational resources. The review has considered data reported through the Report on Government Services and internal data on full-time equivalent employees (FTEs). The review also analysed the organisational structure.

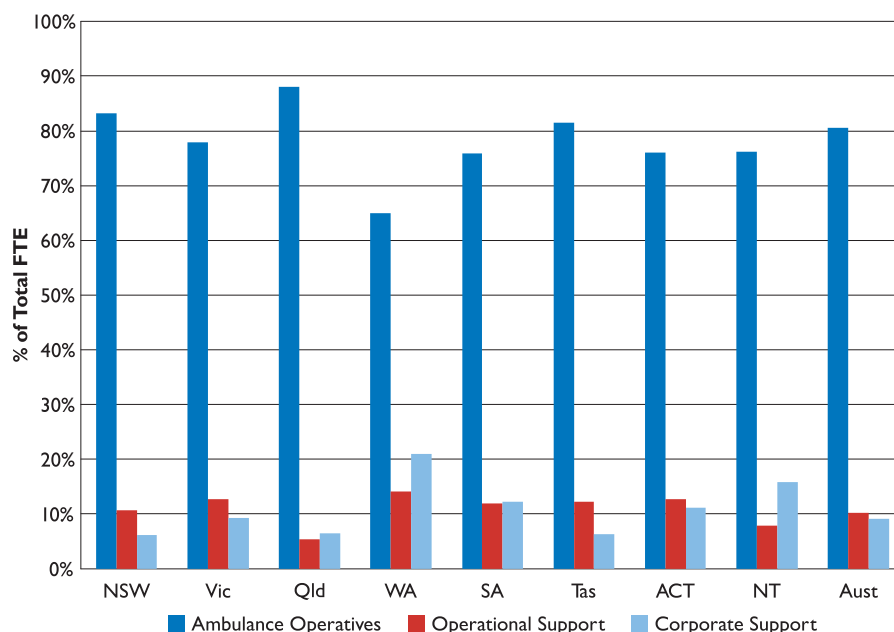
## Non-Operational Resources

Understandably, given the significant growth in activity, the overall size of the workforce in Ambulance Tasmania has grown over the past 10 years. Since 2009–10, the FTE total has grown steadily from 318 FTE to 392 FTE, an increase of over 23 per cent.

The Report on Government Services categorises employees as Ambulance Operatives, Operational Support and Corporate Support. The proportion of FTEs in each of these categories for Ambulance Tasmania and other States and Territories is shown at Figure 4.

**Figure 7 – Workforce composition of Australian Ambulance Services**

(Source: Productivity Commission)



In terms of percentage of total FTE, Ambulance Tasmania has the second lowest level of corporate support resources nationally (6.20 per cent of the total workforce, compared to 9.08 per cent nationally).

In terms of corporate support FTE per 10 000 incidents, Queensland has the smallest corporate support capability (2.73 FTE per 10 000 incidents), followed by NSW (2.92 FTE per 10 000 incidents) and Tasmania (3.21 FTE per 10 000 incidents). Western Australia and the Northern Territory have the largest corporate support capabilities (10.92 and 7.73 FTE per 10 000 incidents respectively).



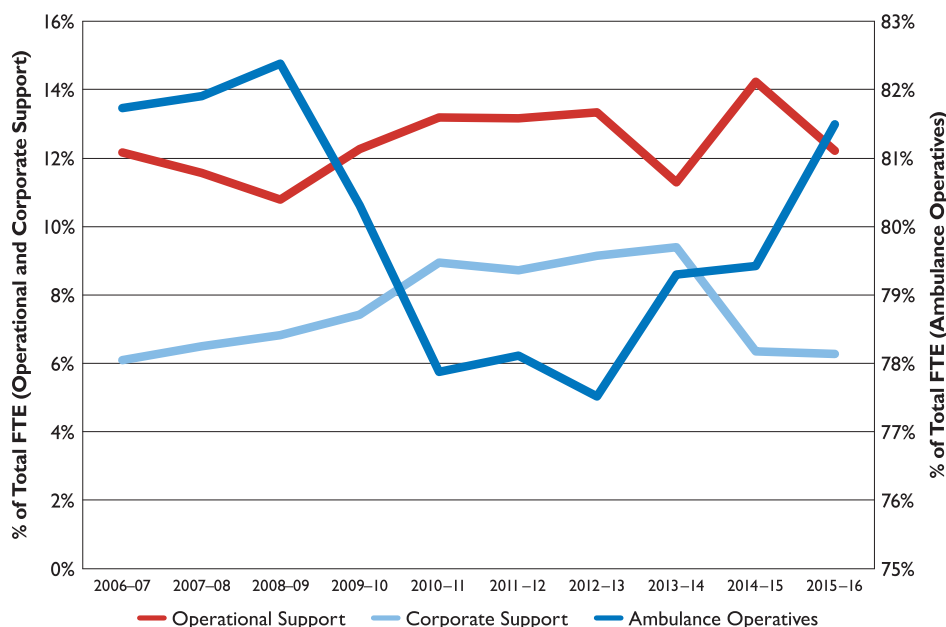
The proportion of Ambulance Tasmania's corporate support capability is broadly consistent with the larger States of NSW, Victoria and Queensland and around half of the corporate support capability of other smaller jurisdictions (South Australia, Australian Capital Territory and Northern Territory).

Larger jurisdictions can better leverage economies of scale when providing corporate support resources. While some corporate support functions need to grow as the workforce grows (eg. payroll processing), other functions would grow at a rate that is slower than growth of the operational workforce (eg. policy and corporate planning). While further analysis would be required to provide specific recommendations regarding corporate support capabilities, the fact that it is already closely aligned with larger jurisdictions strongly suggests that there is not an over-investment in this area of Ambulance Tasmania.

In terms of absolute numbers of FTE in Ambulance Tasmania, all categories of employment have grown steadily over the past decade (See Figure 5). There was a dip in the proportion of Ambulance operatives between 2010 and 2013 (with an associated increase in the proportion of corporate support resources), but this has since returned to the ratios seen in 2008–09.

**Figure 8 – Change in the FTE Composition of Ambulance Tasmania**

(Source: Productivity Commission)



Ambulance Tasmania currently has eight paramedic FTEs on alternative duties for occupational health and safety reasons. This represents 2.5 per cent of the total operational workforce. Considering the type of work done by staff, this is not considered to be excessive and is consistent with rates experienced nationally.

In a review conducted by the Institute for Safety, Compensation and Recovery Research in May 2016, the number of workers compensation claims and rate of claims for 1 000 workers in Tasmania was 174.5 per 1 000 workers, which was lower than New South Wales, Victoria and Western Australia, but higher than the national average of 156.3 per 1 000 employees.

Ambulance Tasmania is continuing to work on reducing the number of workplace injuries.

Based on the above overview, there are no concerns regarding the proportion of resources dedicated to non-operational functions. If anything, further consideration should be given to whether the corporate support resources available to Ambulance Tasmania are adequate to meet operational and non-operational support requirements. This is discussed further in the next section.

## Operational Support and Supervision

The review considered the current organisational structure of Ambulance Tasmania in terms of operational coordination and support, and non-operational administrative support.

In term of operational support, the review identified significant concerns with regard to the current operational structure, and the ability to support operational resources.

Ambulance Tasmania currently has a very flat operational structure. For example, there are currently around 138 FTE in Emergency and Medical Services in the South and around 300 volunteers reporting to a single Duty Manager. This manager is responsible for professional development and management of all of these paid and volunteer staff. This is a very large span of control and impedes the ability of Ambulance Tasmania to provide effective support and supervision.

Identifying a solution to providing adequate supervision and line management to paid and volunteer staff in Ambulance Tasmania is beyond the scope of this review. It should, however, be considered further as a priority.

**Recommendation #17 – That AT reviews its organisational structure, particularly in relation to frontline tactical and clinical management, to include greater depth and shared accountability for operational coordination, clinical governance and professional development of operational staff.**

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## Corporate Support

As with operational support and supervision, the review has identified risks associated with the limited capacity for Ambulance Tasmania to sustain its corporate support capabilities. There are widespread single-person dependencies, which represent a significant and ongoing organisational risk for Ambulance Tasmania.

The Department of Health and Human Services has recently reviewed all of its business units with the intent of consolidating support functions into single, whole of agency support units. This included consolidation of human resources, asset management, budgeting and finance, communications and marketing into single capable units.

This review was unable to examine in detail the merit of individual opportunities for consolidated DHHS support functions to work with Ambulance Tasmania and to reduce single person dependencies in corporate services. This should however be considered further as a priority.

**Recommendation #18 – That DHHS (including AT) identify an appropriate model for corporate support services to reduce single person dependencies in AT.**

# Conclusions and Next Steps

The Review engaged a broad range of stakeholders within and outside of Ambulance Tasmania and has identified a range of opportunities that, if implemented, could:

- Improve patients' experience in the health system and their health outcomes
- Increase the efficient utilisation of Ambulance Tasmania resources and allow emergency service to focus on patients most in need of critical care
- Reduce the flow of patients into resource-constrained emergency departments.

To achieve this vision, Ambulance Tasmania will need to significantly improve its ability to manage risk. This can be achieved through learning from other jurisdictions, an intensive focus on training and clinical governance and, perhaps most importantly, the development of formal referral and patient management partnerships with primary and community health service providers.

Success will require a significant cultural shift both in Ambulance Tasmania and the broader health system. It will also require ongoing investment in robust training and a commitment to continuous improvement based on rigorous evaluation of available data.

Finally, the new direction for Ambulance Tasmania should be considered in the context of the broader strategy for the service. Further work is required to embed the changes recommended in this report into a medium-term strategic plan that gives consideration to issues covered in this report, and how to embed them into ongoing business, including:

- Ongoing training and skills maintenance arrangements, including for volunteers
- Service delivery models, including how to manage the tasking of paramedics, ECPs, ICPs and first intervention vehicles
- Information systems and the capacity to extract information to support operational and strategic decision-making
- Ongoing development of the non-emergency patient transport sector
- Capital investment strategies that are aligned to the new direction for Ambulance Tasmania
- Ongoing development of patient retrieval services, including clear strategies for the development and utilisation of helicopter services.

To progress the reforms for Ambulance Tasmania, the next step is for the review team to work with Ambulance Tasmania and key stakeholders to:

- Clearly articulate the plan for the implementation of immediate priorities
- Further consider and provide advice to Government on the medium to long term plan for Ambulance Tasmania, including the direction for those issues identified as medium term priorities
- Articulate the medium to long term strategic plan for Ambulance Tasmania.

# Acronyms

<b>AT</b>	<b>Ambulance Tasmania</b>
<b>DHHS</b>	<b>Department of Health and Human Services</b>
<b>EDs</b>	<b>Hospital Emergency Departments</b>
<b>ECP</b>	<b>Extended Care Paramedics</b>
<b>FIV</b>	<b>First Intervention Vehicle</b>
<b>GPs</b>	<b>General Practitioners</b>
<b>ICP</b>	<b>Intensive Care Paramedics</b>
<b>NEPT</b>	<b>Non-Emergency Patient Transport</b>
<b>THS</b>	<b>Tasmanian Health Service</b>





