

# Review of Victoria's emergency ambulance call answer performance

COVID-19 pandemic-related  
000 demand surge



**IGEM**  
Inspector-General  
for Emergency  
Management

**Publication information**

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IGEM honours Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practice.

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# Preface

It is not an understatement to say that the COVID-19 pandemic has changed life as we know it. For more than two years now Australia – and the world – has been dealing with a health crisis of such scale and consequences that the closest precedent was the devastating outbreak of Spanish Influenza following the Great War.

COVID-19 has challenged and stretched health systems across the world. Despite Australia's relatively small population and situated within a continent of its own, state and national health systems have been subjected to significant stress and strain, affecting both systems and people.

It is appropriate to acknowledge that many Victorians have died from the SARS-CoV-2 virus, leaving bereaved families and friends to carry-on in a world in which this pandemic is far from over.

In any emergency, seeking help from professionals is instinctual. Emergency communications – comprising call-taking and dispatch – are critical steps in responding emergency services. For many emergencies, especially those involving serious illness or injury, time is critical and timely response from emergency services may improve patients' chances of survival and can reduce the risk of further harm.

Victorians expect that when they call triple zero (000), their call will be answered promptly. The move to centralised emergency call-taking and dispatch in the mid-1990s largely delivered upon this expectation across emergency services organisations.

Presently, the Emergency Services Telecommunications Authority (ESTA) provides the critical link between Victorians and emergency services, delivering call-taking and dispatch for Ambulance Victoria (AV), the Country Fire Authority, Fire Rescue Victoria, Victoria Police, and the Victoria State Emergency Service. In so doing, ESTA manages millions of emergency and non-emergency calls and associated dispatches every year.

Emergency ambulance call-taking presents a particular set of challenges, given the nature of the events involved. Many 000 calls concern people who are acutely ill or seriously injured and in need of urgent assistance – the provision of which may literally be a matter of life and death.

When ringing 000, Telstra 000 agents are the first point of contact, ensuring that the call is transferred to emergency call-takers in the requested state or territory. Following transfer, ESTA call-takers obtain location and emergency details, enabling triage of the situation. This information is then passed to ESTA dispatchers who dispatch the required emergency services in line with the requirements of those organisations for whom ESTA provides services.

It is important that I recognise, at this point, the vital and skilful work of Telstra agents and ESTA call-takers and dispatchers during the past few years that have presented so many challenges for us all. On the frontline of Victoria's emergency management system, these people have worked tirelessly to help safeguard the community. Although this review details some missed opportunities and failings of the emergency communications system in Victoria – resulting in unacceptable call answer delays for many 000 calls during the COVID-19 pandemic – I find no fault in the people who have so capably served in this capacity through such difficulties as the pandemic has presented us all. This work is highly-skilled although physically and psychologically demanding on Telstra agents, ESTA call-takers, dispatchers, and their families.

The current benchmark for ESTA's speed of call answer for emergency ambulance is that within a calendar month, ESTA answers 90 per cent of such calls within five seconds. I have a key role in monitoring, investigating, and assuring ESTA's performance in accordance with the *Emergency Management Act 2013*.

Despite its careful planning and best endeavours ESTA's call answer speed performance for emergency ambulance via 000 has fallen below community and government expectations and performance benchmarks during the pandemic. This occurred in the face of enormous and unprecedented demand for AV services; demand that reverberated and challenged the health system broadly as a whole.

This review identifies significant declines in ESTA's emergency ambulance call answer times, commencing in December 2020, with ambulance call activity increasing beyond historical highs, and emergency calls queuing for completely unacceptable lengths of time – 10 minutes, 15 minutes, and longer.

I identified 40 potential adverse events during the period 1 December 2020 and 31 May 2022 (inclusive) associated with call answer delays, agency command and control decisions, and/or ambulance resourcing issues. Tragically, 33 of these patients did not survive their emergencies.

Due to legislative constraints placed upon me by the *Emergency Management Act 2013*, by law I am not permitted to include in this review report information that may identify any person. This means that case studies about the potential adverse events are limited in detail.

I do not make any findings about whether the associated performance issues may have contributed to the passing of these patients, or whether faster intervention may have prevented deaths. These important questions are for the jurisdiction of the Coroners Court of Victoria, with whom I have liaised closely and will be providing further information not contained in this report.

I therefore apologise to the families and friends of those 33 people, if their expectations of this report are not met concerning the circumstances of their loved ones' emergencies. I assure you that I will continue to consult with the State Coroner to ensure they are in possession of all relevant information so that they may acquit their critical function to investigate and make findings about these events, and to obtain for you the answers you deserve.

This review is specifically focused on emergency ambulance call-answer performance in Victoria and should be read in conjunction with the recent *ESTA Capability and Service Review* led by Mr Graham Ashton AM APM.

Mr Ashton's review focused more broadly on ESTA as an organisation and made many recommendations that my review supports and for several, reiterates.

In formulating my findings, I have had the advantage of doing so in retrospect, this is something the ESTA did not have luxury of, as it planned for and responded to the pandemic; an event that due to its rarity, ESTA could not have experienced before. I ask that you keep this in mind when reading this report.

The key reason that emergency callers to 000 have experienced ESTA ambulance call answer delays is related to resourcing. Since December 2020 – and more specifically since October 2021, when its call answer speed performance dropped below 70 per cent of 000 calls answered in five seconds, ESTA simply did not have sufficient ambulance call-takers to meet incredible demand.

ESTA missed opportunities to recruit and deploy additional emergency ambulance call-takers during the pandemic, particularly in 2020. This was for several reasons, one of which is related to the existing funding model to which ESTA is subject.

Another reason for shortfalls in call-takers related to the need to furlough employees affected by COVID-19 itself; a situation that affected all emergency services organisations and the broader health sector at various times during the pandemic.

Despite liaison with counterparts interstate and overseas, and extensive planning, ESTA's governance, existing links within the Victorian emergency management sector, and funding model revealed shortcomings in its ability to rapidly scale-up its response.

The nature of the COVID-19 pandemic itself and the lack of information about this novel Coronavirus also contributed to increased demand upon ESTA and AV. Tragically, COVID-19 is a fatal disease and a factor in the deaths of almost 4000 Victorians by June 2022.

For much of the duration of the pandemic, and especially when the population was unvaccinated, we have been told of its contagious and deadly characteristics. Little wonder, perhaps, that the first response of many facing a loved one displaying symptoms was to see this as an emergency and to ring 000 for an ambulance. Sometimes this was warranted, at other times, not.

This was not assisted by a lack of community education and information about when to ring for an ambulance in the early-stages of the pandemic, and further complicated by the difficulties many Victorians experienced in seeking healthcare during lockdowns.

The significant system impacts that flow from unwarranted calls to the emergency services highlight the need for much closer cooperation between agencies around public messaging and much better communication with the Victorian community about when it is appropriate to ring 000.

The numbers of COVID-19 positive infections in the community correlated directly with the large increases in emergency ambulance call demand in Victoria. Conversely, actions to stem virus spread, such as lockdowns contributed to temporary declines in demand for some other emergencies such as motor vehicle accidents. However, the ongoing demand for ambulance dispatch due to emergency events such as cardiac arrest, premature childbirth, and other demands for urgent medical intervention did not disappear.

It is heartening that emergency ambulance call answer performance has improved since this review began. There are fewer 000 calls waiting for an ESTA ambulance call-taker to answer, waiting times are less extreme, and ESTA reported emergency ambulance call answer performance of 86.2 per cent in June 2022. Although still below benchmark, this is a significant improvement on ESTA's lowest monthly performance of 39 per cent of such calls being answered at or within five seconds in January 2022. This improvement has no doubt been due to some urgent interventions by government and the committed efforts of ESTA.

This review is detailed and sometimes technical in nature; it includes 42 findings and eight recommendations that, if implemented together with those made in the *ESTA Capability and Service Review*, will improve the resilience of emergency call-taking and dispatch in Victoria, and assist in reducing risks associated with the call answer delays that have concerned so many Victorians.

I am very grateful for the assistance provided by many people and organisations, including those at the senior levels of managing the response to the COVID-19 pandemic, without whose time and expertise this review would not have been possible.

The consequences and effects on governments, health systems, the emergency management sector, and the lives of people around the world were largely unknown when the COVID-19 pandemic commenced. As I earlier intimated, this global health crisis is not over and while many consequences have made themselves crystal clear in the intervening years, some are still emerging.

In fulfilling my legislated role to foster continuous improvement of Victoria's emergency management arrangements, it is vital that the emergency management sector – considering all stages of planning, response, and recovery – continues to learn and evolve in order to continue to meet the current challenges and those yet to come. In the context of the world becoming a 'global village' and in which the risks and consequences of climate change are becoming more apparent, it is critical that we consider and prepare for the possibility that this may not be the only major public health emergency in our lifetimes.

Tony Pearce

**Inspector-General for Emergency Management**

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## Acronyms and abbreviations

ACMA	Australian Communications and Media Authority
AHT	Average (call) handling time
AM	Member of the Order of Australia
AML	Advanced Mobile Location
APM	Australian Police Medal
AV	Ambulance Victoria
BAU	Business-as-usual
BoM	Bureau of Meteorology
C+P	COVID Positive Pathways model
CAD	Computer-aided Dispatch
CCIPS	Collaborative Coalition for International Public Safety
CEO	Chief Executive Officer
CFA	Country Fire Authority
CIRP	Critical Incident Response Plan (ESTA)
CLI	Calling Line Identification
CMT	Crisis Management Team (ESTA)
CPR	Cardiopulmonary resuscitation
CSOPs	Communications Standard Operating Procedures
CTD	Call-taking and dispatch
DH	Department of Health (Victoria)
DHHS	Department of Health and Human Services (historical; refer to DH)
DISPLAN	Disaster plan
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications and the Arts (Australian Government)
DJCS	Department of Justice and Community Safety (Victoria)
DTF	Department of Treasury and Finance (Victoria)
ECP	Emergency Call Person
ECS	Emergency Call Service
EM	Emergency management
EMA	Emergency Management Australia
EMC	Emergency Management Commissioner

EMR	Emergency Medical Response
EMV	Emergency Management Victoria
ERP	Emergency Response Plan (AV)
ERTCOMM	Emergency ambulance communications
ESO	Emergency services organisation
ESTA	Emergency Services Telecommunications Authority
ETA	Estimated time of arrival
FRV	Fire Rescue Victoria
FTE	Full-time equivalent
IGEM	Inspector-General for Emergency Management
km/h	Kilometres per hour
MoU	Memorandum of Understanding
MPDS	Medical Priority Dispatch System
N / No.	Number
NECWG-A/NZ	National Emergency Communications Working Group of Australia and New Zealand
NETCOMM	Non-emergency ambulance communications
NSWA	New South Wales Ambulance
PAI	Pre-arrival instruction
PAL	Police Assistance Line
REFCOMM	Ambulance referral communications (secondary triage)
RVA	Recorded Voice Announcement
SCT COVID	State Control Team COVID
SCoT Health	State Coordination Team – Health
SCV	Safer Care Victoria
SECC	State Emergency Communications Centre
SHERP	State Health Emergency Response Plan
SHIMT	State Health Incident Management Team
SOP	Standard operating procedure
SP&CC	Service Performance and Commercial Committee (ESTA)
Triple zero	000
VAGO	Victorian Auditor-General's Office
VICSES	Victoria State Emergency Service
WFM	Workforce Management (team) (ESTA)

# Executive summary

The Emergency Services Telecommunications Authority (ESTA) is tasked with delivering Victoria's emergency call-taking and dispatch services. This includes emergency ambulance calls.

Victorians are accustomed to being able to rely on the emergency call service. They are used to calling triple zero (000) and being rapidly connected to the most appropriate emergency service in seconds.

Large-scale emergency events are common in Victoria. Hazardous events such as bushfires, floods and storms occur every year. Less common events include public health emergencies including thunderstorm asthma and epidemic human disease. Added to these are civil emergencies, such as the Bourke Street attacks of 2017 and 2018. Road accidents, house fires, calls for police assistance and myriad other reasons day-to-day mean that when people call for help, they expect that call to be answered quickly.

Although not without its challenges, ESTA has demonstrated an ability to manage large emergencies that result in a surge in calls over a period of hours, days or in some cases several weeks. However, in its 17-year history, ESTA has not had to face a sustained surge in activity that has lasted more than 12 months.

The onset of the COVID-19 pandemic challenged all aspects of society, including placing all parts of Victoria's health system under strain. Like its counterparts in other jurisdictions both in Australia and around the world, ESTA has faced challenges in managing record-breaking volumes of emergency calls, particularly for ambulance events. As the COVID-19 pandemic peaked, the level of emergency calls grew in late 2021 to a point where in Victoria, ESTA was taking longer than the five second target time to answer most 000 calls and at times taking more than 10 minutes, damaging the public's confidence in the system, and placing the community at risk.

Prior to the COVID-19 pandemic, ESTA had typically been compliant with the monthly call answer performance benchmark but there were a couple of notable periods where its call answer and dispatch performance as well as Ambulance Victoria's (AV) response times were problematic, notably from 2012 to 2014. However, compared to the experience of 2021 and 2022, these were minor non-compliance issues, with monthly call answer performance figures falling up to five per cent below the benchmark that requires ESTA to answer 90 per cent of emergency ambulance calls in five seconds.

ESTA's Corporate Plan 2020–21 forecast that it would be compliant with AV emergency call answer speed throughout the year but predicted it would be only just compliant for six months from January to June (in the 90 to 91.5 per cent range).

In December 2020 ESTA first reported a minor issue with its emergency ambulance call answer speed. Over the next six months, 000 ambulance call volumes fluctuated, following patterns that reflected Victoria's lockdowns. Call volumes fell during lockdowns and increased as they lifted. ESTA's performance fluctuated in line with this pattern but was consistently under the 90 per cent benchmark, ranging from the mid-70s to the high 80s. Despite the fluctuations in call volumes, by the end of the 2020–21 financial year, ESTA had answered 884,962 emergency ambulance calls, which was 53,201 more than the previous year.

From September 2021 ESTA's statewide call answer speed performance declined significantly to 67.8 per cent before sliding to its lowest point in January 2022, when it only answered 39 per cent of calls in five seconds. During this period, the Victorian Government ended the last in a series of lockdowns and began to ease restrictions from October 2021. This contributed to call volumes increasing significantly, with ESTA answering approximately 2800 calls a day for eight months, that is 400 more a day than the 2020–21 mean.

The COVID-19 Omicron variant was first identified in Victoria in January 2022, at a time when most restrictions had been eased. On 14 January 2022 ESTA received 2501 calls, with 139 calls waiting more than 10 minutes for ESTA to answer, with the longest waiting over 76 minutes. Over the six months from October 2021 to March 2022, ESTA reported the lowest emergency ambulance call answer performance in its history. Thousands of callers each month waited more than one minute for ESTA to answer their emergency call.

As was the case across the health sector, ESTA was having to furlough a significant percentage of staff due to COVID-19 infections or being deemed a close contact. This meant that even when call volumes eased on some days, it was not able to staff sufficiently. At the same time, AV assessed that many of these calls were for patients who did not need an emergency ambulance. AV's referral service was assessing 40 per cent of 000 calls and referring 24 per cent to alternative means of care or transport during 2021.

While ESTA plays a critical role in the Victorian health system, numerous others have critical roles in meeting the health needs of Victorians. For example, AV needs to ensure an ambulance arrives at the scene in a timely manner once the 000 call is answered and ambulance is dispatched. In the quarter from 1 January to 31 March 2022 during the Omicron wave, AV was reporting its lowest quarterly performance against its benchmark of 85 per cent of ambulance Code 1 responses ('lights and sirens' events) arriving within 15 minutes.

In that quarter, AV responded to 14.2 per cent more calls than it did over the same period in the previous year. The service managed to respond to 66.8 per cent of Code 1 calls within 15 minutes. Ambulances were also waiting longer at emergency departments to transfer patients (sometimes referred to as ramping). The percentage of ambulance transfers that occurred within the target time of 40 minutes fell to 63.5 per cent during this period. This period saw up to 1200 patients hospitalised each day for COVID-19 and around 5000 healthcare workers unavailable due to COVID-19 related absences.

The actual consequences of degraded call answer and response times for the community may not be clear for some time. It is the role of the Coroner to determine whether any call answer or response delays were contributing factors to any death. It may also be necessary for longitudinal studies to track patient outcomes over time.

Nonetheless, this review highlights that there were 40 events involving seriously ill and injured patients, many of which were subject to call answer delays. Tragically, 33 people did not survive these emergencies. This does not necessarily mean that call answer delay was a contributing factor because in some cases no amount of rapid intervention would have saved the patient. What it does mean is that due to these call answer delays, the community waited longer to receive important first aid advice, and paramedics had less time to apply advanced treatment in time to make a difference to the patient's outcome.

The Inspector-General for Emergency Management (IGEM) has liaised with the Coroners Court of Victoria in order to provide the court with information to assist its inquiries into the circumstances surrounding these deaths.

IGEM notes that ESTA continued to deliver a high level of service overall. This is despite the challenges faced by ESTA and the opportunities identified in this review to build and strengthen its capacity and capability to respond to future surges of this magnitude. During this period, ESTA reported some minor non-compliances for its services to the police, fire, and state emergency service. ESTA staff delivering these services were subject to some of the same challenges such as staff furloughing and the strain of working under pandemic conditions.

IGEM did not see any increase in reported potential adverse events due to other quality-related issues, even though it was an extraordinarily busy and stressful period for all staff. This is notable because ESTA is subject to the most intense monitoring against benchmarks and assurance processes that are typically higher than equivalents in other jurisdictions.

## IGEM's role and approach to this review

IGEM is an independent statutory role with responsibilities under the *Emergency Management Act 2013* (EM Act 2013) to:

- provide assurance to government and the community with respect to emergency management arrangements in Victoria
- foster continuous improvement in emergency management in Victoria.

IGEM undertakes system-wide reviews, including reviews of the emergency management functions of responder agencies and government departments as defined under section 64(1)(b) of EM Act 2013.

The need for this *Review of Victoria's emergency ambulance call-answer performance* was identified as part of IGEM's monitoring of ESTA's non-financial performance. IGEM consulted with stakeholders in December 2021 before including the review in its *Annual Forward Plan of Reviews 2022–23*.

All IGEM assurance activities are guided by the *Assurance Framework for Emergency Management* which provides the foundation for a coordinated and collaborative approach to sector-wide assurance. IGEM considers all relevant evidence in an impartial and objective manner and makes findings, observations and recommendations based on merit and without bias.

It is important to recognise that IGEM monitors ESTA against both quantitative and qualitative measures but the main driver for this review was the decline in call answer speed and the associated effect observed in terms of reported potential adverse events. However, the call answer performance metric – 90 per cent of emergency ambulance calls answered in five seconds – was not designed to be applied to such a protracted and significant emergency and surge event such as the COVID-19 pandemic. This review also considers – to the extent IGEM is permitted by law – consequences for the community caused by delayed ambulance call answer.

The recent *ESTA Capability and Service Review* led by Mr Graham Ashton AM APM was organisationally focused. IGEM's review is complementary to this and considers and assesses in detail a range of broader factors and is specifically focused on the surge in emergency ambulance calls. The following details IGEM's key findings.

While the report makes references to ESTA, this is not a reference to any individual. It should be read in the context of the *Emergency Services Telecommunications Authority Act 2004* (ESTA Act 2004). This Act establishes the Authority (Board), its functions, powers and governance. Therefore, the Board is ultimately accountable for ensuring its people and systems meet government and community expectations.

## National 000 service

The review considered whether the national emergency call system played a role in call answer delays – being the first link in the chain of Victoria's system. The system comprises a number of parts, these include the telephony infrastructure, the Emergency Call Person (ECP) or 000 operator (Telstra) who connect the call to police, fire or ambulance via the agencies' communications centres, which take the call and dispatch the emergency services.

Victoria is unique in having ESTA as a single authority, which takes all 000 calls and dispatches the police and emergency services. In other jurisdictions around Australia, the individual agencies do this.

The review found that ESTA's emergency ambulance call answer performance had a negative effect on the national system, causing a backflow effect on Telstra's 000 operators. This left Telstra operators tied up for long periods on calls waiting for ESTA to answer. This had the effect of not releasing calls quickly enough in order to answer the next call leading to callers experiencing delays where Telstra was taking longer than normal to answer the initial 000 call regardless of which agency they required. Considering the challenges that the surge presented and advances in technology that are now available, there is an opportunity for the emergency telecommunications sector to consult with the community on what best meets their needs and expectations for the service.

Overall, there was a high level of cooperation across the nation between Telstra, the Australian Government and the individual police and emergency services communications centres that led to positive initiatives and interventions both for Victoria and other jurisdictions. This led to improvements in information sharing, agreements on special messaging that reduced call demand, and sharing of interstate resources.

### **Planning and preparedness**

Concurrent to this review, IGEM also completed the *Review of Victoria's preparedness for major public health emergencies, including pandemics*. It discusses what is needed to plan for, respond to, and mitigate the risks associated with major public health emergencies.

One of the prerequisites of preparedness is having an awareness of all the emergency plans in play. That review found that this was not the case and that there was a general lack of awareness across the emergency management sector and government of the plans that were prepared prior to the onset of the pandemic and those prepared during it.

Conversely, this review (emergency ambulance call answer performance) found a high level of proactive planning to both protect workforces and ready the system for waves of infections over a prolonged period. This planning was well aligned in parts. While Victoria's lockdowns initially reduced calls to 000, this changed dramatically with the onset of the Delta and Omicron waves and the lifting of COVID-19 restrictions.

Both AV and ESTA prepared detailed COVID-19 plans that leveraged off improvements in their existing emergency or critical incident response plans. However, IGEM found there were some changes recommended after the 2016 thunderstorm asthma event that were not implemented. The most significant of these was that AV and ESTA had not implemented a system that enabled them to give callers an estimated time of arrival for their ambulance. This led to thousands of callers ringing back when the ambulance had not arrived in what they believed was a reasonable time.

In practice, as the crisis unfolded, IGEM found that the Department of Health and AV primarily focused on the likely effects on their services, without sufficiently considering the effect these could have on ESTA. The lack of coordination in developing strategies that might reduce unnecessary calls to 000 was a significant oversight.

ESTA identified COVID-19 related risks, planned and developed mitigation strategies through an executive-level Crisis Management Team (CMT) which commenced meeting in March 2020. The CMT decided to stop meeting in December 2020 following Victoria reaching zero community transmission of COVID-19, however kept a watching brief on the situation and continued to manage COVID-19 risks through its business-as-usual arrangements.

During this time, the upgrade of the Computer Aided Dispatch (CAD) system also became a significant risk for the organisation as an independent assessment found the system was at risk of failure heading into the 2020–21 fire season. The CMT did not resume meeting when emergency ambulance call activity increased in March and April 2021 and call answer performance fell further. The CMT recommenced meeting in September 2021 when the Delta related COVID-19 surge occurred.

This review found that one of ESTA's strengths is its capability in terms of modelling and forecasting emergency ambulance call volumes. ESTA made effective use of this data to project the effects of the pandemic on its services and to plan its workforce accordingly. As such, it was not ESTA's inability to model and forecast demand that led to its performance problems, rather, the driver was a lack of resources to meet forecasts.

### **ESTA's resourcing for the COVID-19 surge**

IGEM found that in early 2020 ESTA did not have the required budget and contingency funding to recruit significant numbers of additional operational staff for periods longer than three to six months.

ESTA missed an opportunity to seek urgent funding from the Victorian Government in early to mid-2020, in order to commence the recruitment pipeline for additional operational staff in anticipation of increasing 000 demand.

These financial constraints proved to be the main cause of ESTA's inability to develop capacity to meet the scenarios that were played out in the COVID-19 Delta and Omicron waves. In addition:

- ESTA's lack of resources during the COVID-19 surge was exacerbated by its current workforce model of limited multi-skilled call-takers (especially for the ambulance agency skill) and inflexible rostering.
- While yearly and monthly average rates of unplanned leave among ESTA employees have historically remained stable, acute (then chronic) rates of unplanned leave at critical times created significant issues in trying to meet spikes in call answer demand.
- Issues with ESTA's funding model are longstanding and contributed to the position ESTA found itself in when the COVID-19 surge commenced.

As the COVID-19 pandemic progressed in 2021, ESTA implemented a range of positive initiatives, some with support from AV, to boost or minimise effects on its resources and manage the increasing surge in 000 calls for ambulance. These included but were not limited to:

- signing a memorandum of understanding with relevant unions to expand shift allowances and introduce demand-based rosters
- recalling trained operational employees seconded into projects across the organisation to help meet demand
- targeting recruitment of former employees to boost capacity
- requesting funding from government for additional resources
- exploring (and implementing) strategies to reduce call time where possible, including the use of urgent disconnect and pre-triage
- having all multi-skilled call-takers work in ambulance only during the peak of demand
- liaising with interstate counterparts to seek additional resources to boost capacity.

### **ESTA's funding model**

The Victorian population increased from 5.74 million to 6.65 million between 2012–13 and 2020–21. This increase in population affected the demand on ESTA's services, with the annual number of emergency ambulance calls increasing from 682,433 to 884,962 during this period.

Even so, analysis of ESTA's performance against the emergency ambulance call answer benchmark shows it was able to recruit and keep enough AV call-takers to meet its business-as-usual demand for ambulance calls before the COVID-19 pandemic surge in demand.

Despite the yearly increase in demand on ESTA, performance against this benchmark has improved or remained stable since 2012–13 to 2020–21, except for a period in 2014–15 when there was a decrease in performance (87.7 per cent as compared to 93.6 per cent for the previous year). This reflects the significant increase in demand on ESTA and impacts faced by its workforce due to the COVID-19 pandemic.

Despite meeting the increasing demand on its emergency ambulance call answer service prior to 2020–21, ESTA's existing fee and funding model is evidently insufficient. It does not provide adequate funding to cover ESTA's costs due to demand growth and increases in wages under industrial agreements.

The Victorian Government was aware of ESTA's precarious financial position as early as 2015 via the Victorian Auditor-General's *Report on Portfolio Departments and Associated Entities: Results of the 2013–14 Audits*. Since 2014–15, ESTA has sought, and government has provided, annual supplementary funding via the Victorian State Budget for its structural deficit.

The ad hoc nature of the year-to-year supplementary funding arrangements limits ESTA's ability to recruit to meet demand. It also limits ESTA's ability to plan beyond 12 months or implement longer-term investments to improve the service during business-as-usual and surge events.



IGEM notes that work is currently ongoing between the Department of Justice and Community Safety, the Department of Treasury and Finance, Emergency Management Victoria and ESTA to provide government with options on a sustainable funding model. However, such work began more than 10 years ago and is yet to be completed. It is critical that an agreed and sustainable funding model is put in place for ESTA as soon as possible.

The agreed funding model should not only consider and reflect the increasing demand due to Victoria's changing demographics, but also consider the increasing frequency and severity of emergency events and the need for a surge workforce.

### **Collaboration and coordination**

Emergency management in Victoria works to a shared goal across all agencies expressed as 'we work as one'. This simple statement underpins the need for effective coordination and collaboration to achieve the EM Act 2013 objective of fostering a sustainable and efficient emergency management system that minimises the likelihood, impact and consequences of emergencies.

This review found considerable evidence of collaboration between AV and ESTA and the broader health and emergency management sector, some of which produced effective outcomes.

However, problems arose when organisations focused on their individual primary functions without giving sufficient attention to the flow-on effects for other parts of the system. A key example of this was a lack of community facing information about when COVID-19 positive patients should call 000 or use alternative pathways to get help, in turn reducing the demands on the emergency call system.

ESTA was not sufficiently integrated into the health system to ensure its concerns were heard. Its senior consultative governance body is the ESTA Advisory Committee established in legislation. It is chaired by a member of ESTA's Authority (board) on which AV and other agencies are represented but not the Department of Health. This committee did not focus on COVID-19 pandemic preparedness and response at any time prior to September 2021. Rather, it focused on other critical technical projects. ESTA instead relied on a number of other committees and meetings to manage its pandemic planning and response.

From October 2021, the Emergency Management Commissioner worked to ensure that ESTA had the support it needed to manage the call-taking crisis. This intervention may have been different had ESTA been better integrated into the emergency management arrangements.

### **ESTA employee health and wellbeing**

It is critical to maintain staff health and wellbeing, especially in the context of ESTA's workforce being confronted with distressing situations on a daily basis. The COVID-19 pandemic escalated the risks associated with mental health and burnout. In addition to facing ongoing potential for vicarious trauma in call-taking and dispatch activities, staff were facing the same uncertainty and rapidly changing COVID-19 pandemic restrictions and challenges as other Victorians.

The review found that ESTA had a clear understanding of how to manage mental health and prevent psychological injury and has a strong focus on prevention and early intervention across the organisation.

However, the COVID-19 pandemic brought additional challenges. Due to resource constraints, ESTA had to make difficult decisions to determine what was essential activity and what was not. As call volumes increased, ESTA reduced its number of essential training modules in order to maximise the call-taking and dispatch staff available for operational requirements. In this process ESTA determined that its mental health training was non-essential. While ESTA staff continued to have access to a wide range of resources during the COVID-19 pandemic, without formal training some staff may not have identified or understood their needs or the needs of their teams. ESTA recognised this decision was not appropriate and reinstated it as essential in August 2021.

During 2021, higher levels of fatigue and mental stress contributed to ESTA's inability to fill all shift requirements and meet the rising demand. A strong message from staff was that while interventions to make the working day better were appreciated, the most important mental health reform would have been to increase staff sufficiently to meet the overwhelming demand.



In the time since this review commenced, the Victorian Government has provided \$333 million to support ESTA over five years. ESTA has already recruited a significant number of staff who are making a difference. An underlying issue needing further research is the effect of ESTA's predominant 12 hour shifts and switching between day and night shift every two days to identify the impact this has on staff health and wellbeing.

### **Opportunities for improvement**

ESTA's staff, working at the frontline or supporting those that do, like many across the emergency management sector, have endured a heavy burden during the COVID-19 pandemic and continue to do so today.

As part of this review, IGEM has made 42 findings and eight recommendations that present opportunities for improvement. IGEM has made nine observations that acknowledge recommendations contained within the *ESTA Capability and Service Review* and add value where relevant.

The possibility remains of a new variant of COVID-19 or some other future disease that will challenge the health and emergency management sectors in similar ways. The improvements proposed here will not only strengthen ESTA's ability to better respond to future pandemics, but other emergencies and surge events of any type, some of which are predicted to increase in both severity and frequency.

IGEM considers the most critical reform must be a revision of ESTA's funding arrangements. This is to ensure that ESTA and any successor organisation has the capacity and means to fulfil its role and the Victorian communities' expectation that their calls for emergency assistance are answered quickly.

Another priority is improving community understanding of the emergency call service, including when to call 000. Demand management of 000 calls should be high on the agenda of all stakeholders. This type of community education needs to be an ongoing part of the agenda for all agencies rather than reactive to circumstance, be evidence based in terms of the messaging, and be regularly tested to ensure it is achieving its aims.

If implemented, the recommendations outlined in the report together with those made in the *ESTA Capability and Service Review*, will provide a foundation for restoring public confidence in Victoria's emergency call-taking and dispatch system.

## Summary of findings, observations and recommendations

Findings, observations and recommendations appear in the order as they appear in the body of the report, therefore numbering does not reflect any level of priority or importance.

### Chapter 3: Performance since the COVID-19-related surge in demand

#### Finding 1

From January 2016 to November 2020 the Emergency Services Telecommunications Authority (ESTA) met and often exceeded, the monthly call answer speed benchmark for answering emergency ambulance calls via triple zero (000) in each calendar month.

Prior to the pandemic, ESTA generally met or exceeded the relevant call answer speed benchmarks for all agencies serviced by 000. This includes ESTA's call answer speed for Victoria Police, Fire Rescue Victoria, and Country Fire Authority.

#### Finding 2

The Emergency Services Telecommunications Authority (ESTA) processed 53,201 more emergency ambulance calls in 2020–21 than the previous year, a 6.4 per cent increase.

There was a clear surge of emergency ambulance calls from October 2021 and ESTA's call activity in 2021–22 was 991,146. This represented an increase on the previous year of 12 per cent ( $N = 106,284$ ); Victoria's busiest year for emergency ambulance calls to triple zero.

#### Finding 3

Increases in emergency ambulance call activity received by the Emergency Services Telecommunications Authority strongly correlated with COVID-19 infections in the Victorian community, with increased numbers of patients triaged as suffering from breathing problems and chest pains in 2021 (increases on 2020 of 24.9 per cent and 21.3 per cent, respectively).

Notably, in 2021 there were even bigger increases in reported cases of heart problems and chest pains, when compared to 2019 (28.5 per cent and 25.3 per cent, respectively). These increases support the proposition that there were increases in sudden, serious illnesses within the community that may have been detected and treated at an earlier time if the community had been able to continue with normal health care routines. However, it would require further research to determine if indeed serious non-COVID-19 illnesses increased during 2020 and 2021 because although ESTA did process more calls on breathing problems and chest pain protocols during those years, COVID-19 patients were also triaged on these protocols, depending on the patient's chief medical complaint.

#### Finding 4

The Emergency Services Telecommunications Authority (ESTA) did not meet the primary ambulance emergency call answer speed benchmark in any month from December 2020 to June 2022.

However, ESTA did meet the call answer speed benchmarks for Victoria Police since the COVID-19 pandemic commenced (except November 2021), Fire Rescue Victoria, and Country Fire Authority (except October 2021 for both fire agencies).

#### Finding 5

Call volume increases from December 2020 to June 2022 alone, did not lead to the Emergency Services Telecommunications Authority's non-compliant performance.

## Chapter 4: Consequences of call answer delays

### Finding 6

From 1 July 2021 to 31 May 2022 (inclusive) the Emergency Services Telecommunications Authority reported 40 potential adverse events associated with call answer delays and/or agency command and control issues, in the context of COVID-19 surges in activity. In these events, 33 patients did not survive their emergency.

### Finding 7

The most common risks for patients associated with the Emergency Services Telecommunications Authority's emergency ambulance call answer delays included:

- delayed clinical triage
- delayed provision of appropriate pre-arrival instructions, including for cardiopulmonary resuscitation
- delayed dispatch of Ambulance Victoria (AV) resources
- delayed dispatch of Victoria Police resources to multi/multiple-agency events
- delayed dispatch of Fire Rescue Victoria and Country Fire Authority appliances in their emergency medical responder roles
- increased call activity to triple zero (000) for emergency ambulance due to multiple calls being made from witnesses on scene at individual emergencies.

When additional calls are made for the same patient, it potentially increases 000 call volumes. If ESTA is unable to answer these additional calls, it leaves callers waiting with Telstra's 000 operators who are then unable to answer new calls.

The most common risk of AV command and control/resourcing issues included delayed dispatch of AV resources.

### Finding 8

The Inspector-General for Emergency Management did not find any evidence that the delivery of Telstra's Emergency Call Person function contributed to the emergency ambulance call delays experienced by Victorians from December 2020. This is in the context of the review's limited scope and that Telstra's performance is subject to assurance by the Australian Communications and Media Authority.

### Finding 9

The Emergency Services Telecommunications Authority's emergency ambulance call answer delays resulted in delays for the national triple zero service in answering emergency 000 calls from the public. This affected callers in Victoria, and in other jurisdictions around Australia, at various times since the COVID-19 pandemic commenced, and most notably from October 2021 until January 2022.

## Chapter 5: National 000 service

### Finding 10

While the national triple zero system has a history of reliability and effectiveness, it adds time to callers' emergency call experience. However, the Emergency Call Person role plays an important role in filtering out approximately 25 per cent of non-genuine calls.

Victoria's emergency call answer performance issues highlight the risk that a single agency, such as the Emergency Services Telecommunications Authority, can detrimentally affect the efficiency of the national Emergency Call Person system.

Smart mobile phones have become the predominant tool used by callers, and the community continues to shift to alternative communication using methods other than the traditional telephone network. Consequently, there are opportunities to consult with the community on what it expects of the national emergency call service, because they are currently not part of the decision-making process.

Any enhancements to provide faster access to emergency services is likely to be of benefit, as Australia faces up to the increased challenges of climate change and global health risks.

### Observation 1

There is an opportunity for the Australian Government supported by the National Emergency Communications Working Group of Australia and New Zealand, to undertake consultation with the community of its expectations of the emergency call service. This should consider options for reducing the risk of call answer delays associated with increasing frequency and severity of emergency events. The output of this consultation should then form part of the decision-making process to determine appropriate enhancements to the national emergency call service.

### Finding 11

Some callers to triple zero (000) who waited more than 75 seconds for the Emergency Services Telecommunications Authority (ESTA) to answer, did not get answered in the expected order of first come, first served. This was because of the nature of the national 000 call presentation procedure and a lack of a suitable technical configuration on ESTA's telephony system.

Once Telstra and ESTA identified the problem, ESTA put in a fix to its internal telephony system in March 2022, which permanently solved the problem of calls being reduced in priority for answer after sixth presentation. However, the national re-presentation procedure continues to create situations where callers momentarily lose their spot in the queue, leading to instances where a later caller may be answered before them.

### Finding 12

While well intended, the nationally agreed application of the four-minute rule for disconnected callers in Victoria was inefficient and led to slow follow-up times by the Emergency Services Telecommunications Authority.

### Recommendation 1

The Inspector-General for Emergency Management recommends that the Victorian Government advocate to the Australian Government for changes to national triple zero call answer policies including:

- (a) revision of the call presentation procedure to minimise the chance of callers losing their place in the call priority queue
- (b) ensuring that procedures applied to managing calls where the caller hangs up prior to an emergency service call centre answering have efficient processes for passing on the details of the caller for timely follow up
- (c) consideration of appropriate assurance of procedure changes by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts.

## Chapter 6: ESTA and AV planning

### Finding 13

The Emergency Services Telecommunications Authority (ESTA) had in place an appropriately considered and detailed Critical Incident Response Plan (CIRP) and associated health sub-plan. Furthermore, ESTA made efforts to develop more flexible and useful planning documents during the COVID-19 pandemic, in order to bolster existing emergency plans, and to respond to emerging risks and issues.

Despite its hard work to prepare for the consequences of the COVID-19 pandemic, ESTA's focus shifted to the scheduled upgrade of its call-taking and dispatch operating system. While the upgrade became the priority for ESTA in late 2020, there was a missed opportunity for its COVID-19 Crisis Management Team to continue to meet or reform earlier. This may have assisted ESTA to manage the COVID-19 risks to the organisation at a strategic level, particularly as emergency ambulance call demand increased in March 2021, and its ambulance call answer speed performance decreased below 80 per cent in May 2021.

### Finding 14

Ambulance Victoria (AV) had in place an appropriately considered and detailed Emergency Response Plan and associated pandemic sub-plan. AV developed new planning documents in response to emerging risks and issues after the pandemic commenced in Australia.

### Finding 15

The Emergency Services Telecommunications Authority (ESTA) and Ambulance Victoria (AV) had substantially aligned their respective emergency planning documents prior to the commencement of the COVID-19 pandemic.

AV's Emergency Response Plan referenced the need to educate the community in order to build resilience. Largely absent from AV's planning documents were actions to inform and educate the community about when to ring 000, and what sorts of health situations may constitute an emergency. ESTA's own planning documents could have included ways in which it could support AV in this function, given its expert knowledge of caller behaviour.

## Chapter 7: Forecasting COVID-19 demand on 000

### Finding 16

As COVID-19 infections increased in the Victorian community during late 2021 and into 2022, this presented significant challenges for the Emergency Services Telecommunications Authority (ESTA) to accurately forecast call demand and therefore staffing requirements. During some periods, call demand completely outstripped ESTA's overall capacity.

### Finding 17

While the Emergency Services Telecommunications Authority identified key strategies to manage anticipated demand, not all of them were within its control.

### Finding 18

The consequence modelling contained within the Emergency Services Telecommunications Authority's Pandemic loss of workforce plan captured the potential for its call answer performance to degrade during the COVID-19 pandemic.

### Finding 19

While the Emergency Services Telecommunications Authority was able to meet its forecast required operational staff levels between January and June 2021, it was not able to meet the performance benchmark of 90 per cent of emergency ambulance calls answered in five seconds. This is likely due to periods of peak demand during individual shifts and erratic demand for emergency ambulance services at times due to the COVID-19 pandemic.

### Finding 20

The Emergency Services Telecommunications Authority (ESTA) demonstrated that it had a high level of capability in terms of its modelling and forecasting of emergency ambulance call volumes. Therefore, ESTA was able to plan its workforce needs accordingly. ESTA continuously updated its forecasting model inputs and assumptions, which led to forecast call volumes being consistently close to, or greater than the actual volume of calls received each month.

Although forecasting became more difficult as the COVID-19 pandemic continued in to 2021 and 2022, ESTA's call answer speed performance problems were through no deficiency of planning and forecasting. Rather it was an inability to acquire resources to meet demand.

### Finding 21

Between March 2021 and February 2022, the Emergency Services Telecommunications Authority (ESTA) was unable to match the required ambulance operational staff numbers to meet the forecast ambulance call volume demand. This was most applicable with the challenges ESTA faced from September 2021 onwards with significant increases in call volume demand in the context of the Delta and Omicron COVID-19 waves and reduced staff availability.

### Observation 2

The *Emergency Services Telecommunications Authority Capability and Service Review* recommended enhancements to its call-taking and dispatch processes with greater collaboration between the Emergency Services Telecommunications Authority and Ambulance Victoria, and exploring alternative call management techniques for large-scale emergencies. The Inspector-General for Emergency Management supports the principle of this recommendation.

## Chapter 8: Funding and resourcing

### Finding 22

The Emergency Services Telecommunications Authority's (ESTA) existing fee and funding model is insufficient and does not provide adequate funding to cover its costs due to demand growth and increases in wages under industrial agreements.

The Victorian Government was aware of ESTA's precarious financial position as early as 2015 after it received the Victorian Auditor-General's Office *Report on Portfolio Departments and Associated Entities: Results of the 2013–14 Audits*.

ESTA has previously implemented productivity and efficiency measures within the constraints of the industrial agreements, however the savings generated present only a minor fraction of its structural deficit (in 2020–21, savings generated were \$2 million, the structural deficit was \$33.3 million).

Since 2014–15, ESTA has sought, and government has provided, supplementary funding via the Victorian State Budget for its structural deficit.

The ad hoc nature of the supplementary funding arrangements (year-to-year via the Victorian State Budget) limits ESTA's ability to recruit to meet demand. It also limits ESTA's ability to plan beyond 12 months and implement longer-term investments to improve the service during business-as-usual and surge events. This translates to real consequences for the community in the face of increasing frequency and severity of emergency events.

### Finding 23

The Department of Justice and Community Safety (formerly the Department of Justice / Department of Justice and Regulation), and Emergency Management Victoria, in partnership with the Emergency Services Telecommunications Authority (ESTA) and the Department of Treasury and Finance, have developed and investigated several funding models, however the government is yet to agree to a sustainable funding model for ESTA for implementation.

### Observation 3

The *Emergency Services Telecommunications Authority Capability and Service Review* made three recommendations to address the need for the Victorian Government to:

- *sufficiently fund ESTA's workforce (Recommendation 7)*
- *implement industrial relations strategies to improve workforce flexibility (Recommendation 8)*
- *explore call management practices to deliver efficiencies for large-scale emergencies (Recommendation 5e).*

IGEM notes that as part of implementing these recommendations, the Victorian Government in partnership with ESTA and the emergency services organisations, should ensure it considers what the surge workforce for large-scale emergencies look like and associated funding that it requires. This will need to be considered in parallel with any potential new enterprise bargaining agreement that will promote and allow flexibility of resources to better address demands of future surge events on ESTA.

**Finding 24**

Recent funding that the Victorian Government announced in 2021 and 2022 will assist the Emergency Services Telecommunications Authority to recruit a substantial number of employees to improve its capability and capacity to meet demand.

**Finding 25**

The Emergency Services Telecommunications Authority missed an opportunity to seek urgent funding from the Victorian Government in early- to mid-2020, in order to commence the recruitment pipeline for additional operational staff in anticipation of increasing triple zero demand.

**Finding 26**

The Emergency Services Telecommunications Authority's (ESTA) current workforce model of limited multi-skilled call-takers (especially for the ambulance agency skill) and inflexible rostering constrains its ability to rapidly and flexibly deploy its workforce to meet call demand, particularly in a surge context. The Inspector-General for Emergency Management notes that ESTA's workforce model is constrained by relevant industrial agreements.

**Observation 4**

The *Emergency Services Telecommunications Authority Capability and Service Review* recommended that ESTA work with the Department of Justice and Community Safety and industrial stakeholders to develop and implement an industrial relations strategy that will address the limitations that prevent flexibility, meet surge demand, and support appropriate workforce management. The Inspector-General for Emergency Management (IGEM) supports this recommendation.

IGEM observes that the Victorian Government response to the recommendations of the *ESTA Capability and Service Review* does not specifically address the development of an industrial relations strategy. IGEM encourages the development of an industrial relations strategy as part of implementing Recommendation 8 of the *ESTA Capability and Service Review*.

**Finding 27**

While yearly and monthly average rates of unplanned leave amongst cohorts of Emergency Services Telecommunications Authority staff has remained stable, acute rates of unplanned leave during specific periods (including furloughing due to COVID-19) have created significant issues in meeting spikes in call demand.

**Finding 28**

From December 2020 the Emergency Services Telecommunications Authority (ESTA) explored and pursued a number of initiatives to minimise workforce impacts. From October 2021, ESTA implemented a range of initiatives, some with support from Ambulance Victoria, to boost or minimise effects on its resources to manage the increasing surge in 000 calls for ambulance.



**Finding 29**

The Emergency Services Telecommunications Authority's (ESTA) demand-based rosters better enable meeting forecast demand, but also provide a range of welfare benefits to employees, including less mental strain and fatigue. The Memorandum of Understanding – Pandemic Demand Response Initiatives, signed on 15 December 2021 is a step towards improving ESTA's ability to roster more effectively within its current resourcing constraints.

**Finding 30**

The policy within the Emergency Services Telecommunications Authority's training standards that it only recruits dispatchers from the existing pool of call-takers creates challenges for recruitment, and potential shortages in call-takers during surge events.

**Observation 5**

The *Emergency Services Telecommunications Authority Capability and Service Review* recommended that ESTA, in partnership with emergency services organisations, commission an independent review of ESTA's training standards, to ensure they are fit-for-purpose.

The Inspector-General for Emergency Management supports this recommendation, and suggests that ESTA also reviews its policy of only recruiting dispatchers from its call-taker pool, as part of reviewing the training standards.

**Finding 31**

There is an opportunity for the Emergency Services Telecommunications Authority to be more transparent with the Victorian community about the risks it faces in relation to resourcing services for a growing population, climate change, increasing numbers of surge events, and what actions it is undertaking to address these risks.

**Recommendation 2**

The Inspector-General for Emergency Management recommends that the Emergency Services Telecommunications Authority publicly reports its progress in improving its resourcing and management of surge events, through its annual reports and corporate plans.

**Chapter 9: Collaboration and coordination between agencies****Finding 32**

The Emergency Services Telecommunications Authority (ESTA) Advisory Committee was not used to assist with strategic planning for the effects of the COVID-19 pandemic on ESTA's services, instead focusing on other matters.

**Observation 6**

Recommendations 1 and 2 in the *Emergency Services Telecommunications Authority Capability and Service Review* propose new governance arrangements, including disbanding of the current ESTA Board and Advisory Committee. The Inspector-General for Emergency Management notes that until new governance arrangements are in effect, it is important that ESTA continues to apply the current arrangements to manage existing and new strategic issues as they arise.

### Finding 33

Ambulance Victoria (AV) and the Emergency Services Telecommunications Authority (ESTA) worked extensively together throughout the COVID-19 pandemic. However, AV's focus was predominantly on managing demand on its fleet with less emphasis on ensuring that both parties worked to also manage demand on 000 in the first instance. This became a priority for AV once ESTA's performance issues began to place the community at significant risk around October 2021.

### Finding 34

The Emergency Services Telecommunications Authority (ESTA) is a critical part of Victoria's health system, yet it is not a member of the State Health Incident Management Team. Nor did it have any formal relationship with the Department of Health, as the department is not a member of the ESTA Advisory Committee. In practice, Ambulance Victoria had control over any decisions around initiatives ESTA proposed, without the need to gain approval from the Department of Health or State Controller – Health in the context of the COVID-19 pandemic.

### Recommendation 3

The Inspector-General for Emergency Management recommends that the Department of Health enhance existing governance arrangements to ensure a whole-of-system approach to pre-hospital services – including the Emergency Services Telecommunications Authority and Ambulance Victoria – for health emergencies in both a business-as-usual and surge context. This includes pathways for effective information sharing, escalation and issues resolution and ensuring agreed changes are applied consistently in relevant policies and plans.

### Observation 7

The *Emergency Services Telecommunications Authority Capability and Service Review* made recommendations that seek to address some of the issues around ineffective collaboration.

Recommendation 2 aims to disband the current ESTA Advisory Committee and replace it with a board of advisors with both Ambulance Victoria (AV) and the Department of Health as members.

Recommendation 5 aims to ensure improved collaboration between ESTA and AV and the development of a roadmap to achieve greater integration of existing non-emergency assistance lines into ESTA's Computer-aided Dispatch system and explore alternative call management practices to deliver efficiencies for large-scale emergencies.

The Inspector-General for Emergency Management supports these recommendations.

### Observation 8

Recommendation 6 of the *Emergency Services Telecommunications Authority Capability and Service Review* states that ESTA, in partnership with emergency services organisations (ESOs), commission an independent review of ESTA training standards, to ensure that they are fit-for-purpose.

The Inspector-General for Emergency Management considers that as part of implementing this recommendation, it would be beneficial for ESOs to be more involved in training of ESTA call-takers and dispatchers, to ensure they understand how the ESOs operate and why they require ESTA to operate in a specific way and foster a shared understanding.

**Finding 35**

The current Emergency Services Telecommunications Authority (ESTA) ambulance emergency call answer speed performance benchmark is not based on any study of patient outcomes. It is similar to most ambulance call-taking organisations around Australia.

However, while other jurisdictions measure their call answer performance by applying a grade of service measure of 90 per cent of calls answered at or within a 10 second target time, in Victoria, ESTA is required to answer calls at or within a five second target time. Therefore, ESTA has a call answer speed target time that is half that of other jurisdictions.

**Recommendation 4**

The Inspector-General for Emergency Management recommends that the organisations confirmed as having overall policy responsibility for 000 calls by service type as per Recommendation 6, ensure that an appropriate mix of output and outcome measures are developed for all service types (that is, ambulance, police, fire services) and from a whole-of-system perspective. These should be:

- (a) publicly documented in existing or new frameworks
- (b) include appropriate sub-measures that can be attributed to the performance of each organisation, including the Emergency Services Telecommunications Authority (ESTA)

This recommendation is complementary to Recommendations 18 to 20 of the *Emergency Services Telecommunications Authority Capability and Service Review*.

**Finding 36**

The health sector assurance processes would benefit from better integration of the Emergency Services Telecommunications Authority into its existing sentinel event processes. This should be considered as part of implementing Recommendation 3.

**Finding 37**

While the Emergency Services Telecommunications Authority (ESTA) is recognised as a support agency within the current State Emergency Management Plan, it was not sufficiently integrated nor was the emergency management sector accustomed to managing 000 demand issues via these arrangements. This was exacerbated by the Victorian Government's focus on other aspects of COVID-19 response and ESTA not being effectively integrated as part of the State's health arrangements.

**Recommendation 5**

The Inspector-General for Emergency Management recommends that the Department of Health, as part its next review of the State Health Emergency Response Plan, consider changes to:

- (a) better integrate the Emergency Services Telecommunications Authority and ensure that its functions are fully considered in the pre-hospital arrangements
- (b) ensure that the State Health Commander role has specific reporting responsibilities for 000 demand.

**Finding 38**

While all parties actively participated in community messaging, it was not coordinated to the extent necessary to maximise the opportunity to reduce unnecessary demand for ambulance services via 000. While Ambulance Victoria and the Department of Health collaborated well, they did not engage sufficiently with the Emergency Services Telecommunications Authority to benefit from its knowledge.

For the most part, the information and community messaging campaigns did not directly give the public infected with COVID-19, clear information around the use of 000 and alternative pathways for care. However, there was a shift in support after the Victorian Government declaration of a system wide Code Brown in January 2022, where messaging began to directly address the issue of COVID-19 symptoms.

**Recommendation 6**

The Inspector-General for Emergency Management recommends that the Department of Justice and Community Safety, in consultation with the Emergency Services Telecommunications Authority, emergency services organisations, and relevant Victorian Government departments:

- (a) clarify overall policy responsibility for demand management of 000 calls by service type (that is, ambulance, police, fire services)
- (b) conduct further research into effective 000 community messaging, to inform better targeted community messaging strategies and options that support 000 demand management
- (c) lead the development of a coordinated approach for community information and education about the correct and appropriate use of 000 according to levels of demand and service type.

**Chapter 10: ESTA staff health and wellbeing****Finding 39**

The Emergency Services Telecommunications Authority (ESTA) has a comprehensive health and wellbeing strategy, with a variety of resources and information available to staff. ESTA is adept at providing support to its staff following critical incidents.

**Recommendation 7**

The Inspector-General for Emergency Management recommends that the Emergency Services Telecommunications Authority, in consultation with the emergency services organisations and Emergency Management Victoria, conduct research into optimal shift patterns and rostering arrangements. This research should include recommendations for change and consider:

- (a) existing research literature regarding the effects of different shift patterns
- (b) consultation with other emergency telecommunications services
- (c) consultation with health professionals
- (d) consultation with workplace leaders and operational staff
- (e) the need to balance staff wellbeing with operational requirements
- (f) existing sector guidelines relating to employee health and wellbeing.

This recommendation supports Recommendation 8 of the *Emergency Services Telecommunications Authority Capability and Service Review*.

## Chapter 11: Previous lessons and recommendations

### Finding 40

Ambulance Victoria (AV) and the Emergency Services Telecommunications Authority (ESTA) learned that providing an estimated time of arrival for the ambulance was important to callers to assist them in making decisions on whether to wait for an ambulance or take alternative action during a surge event.

However, there was a lengthy delay in AV making a formal change request to ESTA after the issue was identified. Thereafter, the change request was pending with ESTA for several months before the onset of the COVID-19 pandemic. This was an opportunity missed by both agencies to resolve the issue before the onset of the COVID-19 pandemic.

### Observation 9

Ambulance Victoria has prioritised the development of a technological solution to provide estimated time of arrival for ambulance during surge events and the Emergency Services Telecommunications Authority has commenced work on it.

### Finding 41

In October 2021 the Emergency Services Telecommunications Authority (ESTA) introduced a customised extreme event Recorded Voice Announcement (RVA) to callers on hold to triple zero. ESTA already had approval from Ambulance Victoria (AV) for a general extreme event RVA for events other than fire and storm but did not activate this. Once activated, the customised RVA assisted to reduce call demand. Both AV and the ESTA would have benefited from earlier implementation of the customised extreme event RVA.

### Recommendation 8

The Inspector-General for Emergency Management recommends that the Emergency Services Telecommunications Authority in consultation with emergency services organisations:

- (a) review the extreme event Recorded Voice Announcements (RVAs) for Victoria
- (b) ensure there are appropriate scripts that address known emergencies
- (c) develop a formal mechanism to rapidly customise extreme event RVAs for unanticipated emergencies.

### Finding 42

The Emergency Services Telecommunications Authority (ESTA) and Ambulance Victoria actively sought lessons information from interstate and overseas to improve their preparedness for the COVID-19 pandemic. ESTA did this insofar as it was able to do so within the constraints of its funding capacity, relevance to Victoria's operating environment, and the requirements of the emergency services organisations.

# 1 Introduction

## 1.1 Background

The Inspector-General for Emergency Management (IGEM) is an independent statutory role with responsibilities under the *Emergency Management Act 2013* (EM Act 2013) to:

- provide assurance to government and the community with respect to emergency management arrangements in Victoria
- foster continuous improvement in emergency management in Victoria.

IGEM undertakes system-wide reviews, including reviews of the emergency management functions of responder agencies and government departments as defined under section 64(1)(b) of EM Act 2013.

IGEM identified the need for this review as part of its routine monitoring of the non-financial performance of the Emergency Services Telecommunications Authority (ESTA). ESTA's call answer speed performance was compliant until November 2020 but declined into minor non-compliance in December 2020. From March 2021, emergency ambulance call activity continued to increase (although inconsistently) and performance fell through to October, remaining well below the required benchmark for remainder of 2021. Consequently, IGEM included this review in its *Annual Forward Plan of Reviews 2022–23*, which was provided to relevant agencies and the Minister for Emergency Services (the minister) as required by section 66 of the EM Act 2013.

IGEM's assurance activities are guided by the *Assurance Framework for Emergency Management* (the framework) that provides the foundation for a coordinated and collaborative approach to sector-wide assurance. IGEM considers all available relevant evidence before making findings, observations and recommendations.

## 1.2 Rationale

The 2020 onset of the COVID-19 pandemic in Victoria resulted in two significant infection waves. These were managed in part by the Victorian Government through long periods of lockdown and other measures stipulated through directions issued by the Chief Health Officer.

Throughout 2020 demand for ambulance services was manageable. However, demand for services surged in mid to late 2021 – just prior to and during the significant Delta and Omicron infection waves – and as COVID-19 case numbers peaked and vaccinations reached pre-determined levels for the easing of restrictions.

Public calls to triple zero (000) requesting ambulance services persisted through late 2021 and into 2022, in unprecedented and sustained numbers. For example, in late September and into October 2021, ESTA received more than 3000 emergency calls on some days for ambulance services – an increase of approximately 40 per cent on 2020.

ESTA has statutory responsibility for ambulance call-taking and dispatch in Victoria.

ESTA reports its non-financial performance to IGEM. In accordance with its functions under the EM Act 2013, IGEM provides assurance to government and the community in respect of ESTA's non-financial performance.

## 1.3 Review aims and objectives

In this review IGEM examined and assessed both ESTA's and the broader emergency management sector's planning and preparedness for a major surge in emergency ambulance calls due to the COVID-19 pandemic. The review also examined how the sector responded to the surge in 000 ambulance calls, the effectiveness of its response, and collaborative efforts to address the challenges.

The COVID-19-related surge in 000 demand has had major consequences for the community, with call answer times increasing significantly for calls relating to life-threatening emergencies. IGEM has assessed 40 events where the call answer delays may have directly or indirectly had a negative effect on patient outcomes. IGEM has used de-identified examples of these cases in this review to illustrate the potential consequences of call answer times that significantly extended beyond the 5 second target.

This review aims to provide independent assurance to the minister and the community regarding Victoria's emergency call answer speed performance. Where appropriate, it identifies improvements for the management of future protracted surges in emergency calls, not just in the health context but more broadly.

The review also identifies examples of both good practice and opportunities to learn, making recommendations in the interest of fostering continuous improvement and strengthening future arrangements for emergency call-taking.

## 1.4 Scope of review

The review considers the effects of the COVID-19-related call volumes on ESTA's wider service delivery across all agencies and the effect on 000 services nationally. IGEM has used identified potential adverse events as case studies to highlight the effects call-answer delays may have had on the Victorian community, in addition to the effects of agency command and control decisions or resource availability, given the intense pressures of high-demand for ambulance services.

The review assesses how the sector forecast and mitigated the call surge, and considers Ambulance Victoria's (AV) service delivery requirements for ESTA, and whether these influenced patient outcomes. This includes interactions between AV personnel working in ESTA centres and ESTA management to address day to day management of surges in call activity and escalations, and when AV declared 'Code Orange' and 'Code Red' periods during peak demand.

The review also examines the capacity for ESTA to manage such call surges in the context of its governance and financial arrangements, the effect on ESTA's frontline staff in terms of health and wellbeing, and the lessons that the sector was aware of prior to the pandemic, and how effectively it had implemented improvement initiatives, and lessons for the future.

The aim is not to replicate any aspect of the recent *ESTA Capability and Service Review* conducted by Mr Graham Ashton AM APM at the direction of the minister. However, IGEM has considered Mr Ashton's recommendations insofar as they relate to IGEM's review findings to avoid unnecessary duplication and to reduce any burden associated with implementing change.

IGEM's review is not intended to be a review of Victoria's health system and its broader performance. The scope is complementary to IGEM's *Review of preparedness for major public health emergencies, including pandemics*, but is focused on a later period in time, and is specific to emergency ambulance call-taking. ESTA's dispatch performance is not in the scope for this review except to the extent necessary to comment on it in relation to call answer speed.

While some media outlets have identified patients associated with potential adverse events, there are limitations on the type of information that can be legally published in this report, as per section 70(7) of the EM Act 2013.

It is the role of the Coroners Court of Victoria to determine whether call answer delay or any other aspect of the emergency response was a contributing factor to a death. Regardless, IGEM recognises that any significant call answer delay may result in a missed opportunity to reduce harm or prevent a death. This may be through bystanders giving first aid with verbal assistance from an ESTA call-taker, and then paramedics and emergency services personnel providing advanced life support and transport to the emergency department.

IGEM has liaised with the Coroners Court of Victoria in order to provide the court with information to assist its own inquiries into the circumstances surrounding these deaths. It is not IGEM's role to determine fault or ascribe blame in such situations.

For these reasons, IGEM has not conducted any analysis as to whether call answer delays (or any other emergency telecommunications performance issues) were contributing factors in the death or serious injury of any person in emergencies examined as part of this review.

A glossary of terms is provided at Appendix A.

## 1.5 Timing

IGEM formally commenced work on this review in January 2022. However, as IGEM has a statutory responsibility to monitor and investigate ESTA's non-financial performance, it had been undertaking a range of focused monitoring activities in the six months prior.

The report was completed in July 2022 and provided to the Minister for Emergency Services on 5 August 2022.

The COVID-19 pandemic affected daily life, business-as-usual activities, and emergency management activities throughout the entire period of this review. IGEM recognises that should government accept recommendations made in this review report, the organisations charged with their implementation will continue to be involved in managing increased call volumes for some time. Additionally, the government has also accepted in-principle, significant reform recommendations arising from the recent *ESTA Capability and Service Review* conducted by Mr Ashton.

## 1.6 Approach

IGEM developed lines of enquiry to guide the collection and analysis of evidence. IGEM analysed evidence from multiple sources to prepare this report. The types of evidence that the review considered included:

- organisational and operational plans, records, procedures, and reports
- interviews with stakeholders and sector agencies
- relevant reviews and reports by stakeholders and third parties
- analysis of confidential emergency/event information and data
- analysis of performance data and predictions
- desktop analysis of relevant legislation, guidelines, and policies
- news media including online, print and broadcast
- stakeholder feedback on the draft report.



IGEM engaged with the following stakeholders in the conduct of this review and thanks them for their contributions, including in many cases the submission of a considerable volume of evidence and responding to follow up enquiries:

- Ambulance Victoria (AV)
- Australian Communications and Media Authority (ACMA)
- Australian Government Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA)
- Country Fire Authority (CFA)
- Department of Health (DH)
- Department of Justice and Community Safety (DJCS)
- Emergency Management Commissioner (EMC)
- Emergency Management Victoria (EMV)
- Emergency Services Telecommunications Authority (ESTA)
- Fire Rescue Victoria (FRV)
- National Emergency Communications Working Group of Australia and New Zealand (NECWG-A/NZ)
- New South Wales Ambulance (NSWA)
- Queensland Ambulance Service (QAS)
- Safer Care Victoria (SCV)
- Telstra
- Victoria Police (VicPol)
- Victoria State Emergency Service (VICSES).

## 1.7 Findings, observations and recommendations

IGEM developed all findings, observations and recommendations based on evidence and thorough analysis, validated by key stakeholders, subject matter expertise, research, and observations. This includes feedback on the draft report from key stakeholders.

Findings outline where issues had important direct or indirect effects on emergency call answer performance and consequently the community.

Observations reflect a potential problem or opportunity for the sector. However, they are not recommendations, as in some cases appropriate third parties have already made relevant recommendations, or it relates to matters outside of Victoria's jurisdiction.

This report makes recommendations when either individual or multiple findings identify a critical gap where IGEM believes that well considered and implemented changes would improve safety and resilience outcomes as they relate to the scope of this review.

IGEM assigns organisations as accountable for implementing the recommendation based on their legislative responsibilities and assigned roles as per legislation and the State Emergency Management Plan (SEMP). IGEM considers the availability of resources required to implement the recommendations and other issues related to the viability of implementation.

## 1.8 Acknowledgements

IGEM acknowledges the amount of time and effort provided by stakeholder organisations and the individuals charged with coordinating their organisation's submission of evidence, follow-up information, interviews, and feedback. This was particularly onerous for ESTA and AV as both continue to manage the largest and longest period of emergency call demand in their histories.

This review was planned and conducted during the ongoing COVID-19 pandemic – a time when contributing stakeholders were also balancing many priorities in difficult circumstances.

Most of the data collection and feedback processes occurred during periods of heightened workload and altered working arrangements due to the COVID-19 pandemic. Despite this, stakeholders provided significant amounts of evidence to the review and responded appropriately to IGEM's requests.

IGEM notes that it was concurrently conducting its *Review of preparedness for major public health emergencies, including pandemics*, and that ESTA was the subject of various reviews including the *ESTA Capability and Service Review*. IGEM greatly appreciates the commitment of stakeholders in contributing candidly and completely to this review under these circumstances.

As noted throughout this review, IGEM recognises that the people at ESTA responsible for delivering Victoria's emergency call-taking and dispatch services work incredibly hard along with their colleagues from emergency services organisations, and Telstra. This has never been more apparent than during the pandemic which overlapped with major bushfires in Victoria in 2019–20, destructive storms in 2021, and the ongoing recovery efforts to support Victorians affected by all emergencies.

**Calling an Ambulance**

**Call Triple Zero (000) ask for ambulance** 

People with speech or hearing disability can call 106 – National Relay Service  Say “ambulance” and then the language you speak in English.

Extract from Ambulance Victoria How to Call card (Source: Ambulance Victoria)

## 2 Performance before the COVID-19-related surge in demand

### 2.1 Background

The current standard that IGEM uses to measure ESTA's emergency ambulance call answer performance is that 90 per cent of emergency ambulance calls are answered at or within five seconds within a calendar month. This reflects that not every call can be answered within five seconds due to factors such as increased demand for services at a given time or day. A secondary benchmark is that 95 per cent of calls are answered at or within 30 seconds.

IGEM has made a formal determination that applies these standards to the metropolitan areas. However, IGEM utilises the metropolitan standard to ESTA's regional emergency ambulance data for the purposes of comparison and to provide assurance of its statewide performance. Given this, IGEM uses the metropolitan standard to assess ESTA's statewide performance of emergency ambulance call answer throughout this report.

In the current version of IGEM's Standards for the Performance of the Emergency Services Telecommunications Authority in Delivering Services to the Ambulance Victoria (2017), 'call activity' is defined as follows:

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*Clause 1.0: Specification of 'call activity' for the purposes of performance calculations*

*Call activity for Ambulance Victoria comprises the following:*

- (a) Activity for ERTCOMM<sup>1</sup> 000 calls will be measured as the sum of all calls answered on all 000 DNs<sup>2</sup>;*
  - (b) Activity for ERTCOMM calls other than 000 calls ("non-000 calls") will be measured as the sum of all calls presented on non-000 ERTCOMM DNs less calls abandoned within five (5) seconds;*
  - (c) Total ERTCOMM Activity will be measured as the sum of (a) and (b) ("Total ERTCOMM Activity");*
  - (d) Activity for NETCOMM calls will be measured as the sum of all calls presented on NETCOMM DNs less calls abandoned within thirty (30) seconds on NETCOMM DNs ("NETCOMM Activity").*
- 

<sup>1</sup> The emergency management sector's moniker for 'emergency ambulance communications'.

<sup>2</sup> Directory numbers'.

## 2.2 Comparison of statewide emergency call activity and performance

### Activity

Prior to the arrival of COVID-19 in Australia in January 2020, ESTA reported steady statewide emergency ambulance call activity and performance (refer to Table 1).

**Table 1:** Comparison of ESTA's yearly, statewide emergency ambulance call activity 2015 to 2019  
(Source: ESTA)

YEAR	2015–16	2016–17	2017–18	2018–19
Activity	738,181	761,073	782,094	804,659
Difference	-	22,892	21,021	22,565
Percentage increase	-	3.1%	2.8%	2.9%

A simple comparison of call activity in 2015–16 and 2018–19, shows a difference of 66,478 calls, equating to an increase of nine per cent, or 182 calls per day.

### Performance

ESTA's statewide<sup>3</sup> emergency ambulance call answer performance met or exceeded 90 per cent of calls answered in five seconds between January 2016 and November 2020. ESTA recorded a slightly-below benchmark performance in the month of December 2015, with 89.6 per cent of calls answered within five seconds.

By comparison, ESTA met or exceeded the primary benchmark for VicPol call answer in every month from December 2015 until October 2021, and then again from December 2021 until June 2022 (the final month considered in this report) inclusive. In November 2021 when ESTA was under immense pressure, it recorded police call answer performance of 79.9 per cent of calls answered within the five second target time, falling a fraction short of the 80 per cent benchmark for this service.

For the fire services, in October 2021 ESTA failed to meet the speed of call answer benchmark for CFA (89.3 per cent) and FRV (85.7 per cent). This performance occurred in the context of a major storm event during that month (refer to Section 4.4.2). Since that time, ESTA has met the aggregated 90 per cent call answer benchmark for each fire agency.

### Finding 1

From January 2016 to November 2020 the Emergency Services Telecommunications Authority (ESTA) met and often exceeded, the monthly call answer speed benchmark for answering emergency ambulance calls via triple zero (000) in each calendar month.

Prior to the pandemic, ESTA generally met or exceeded the relevant call answer speed benchmarks for all agencies serviced by 000. This includes ESTA's call answer speed for Victoria Police, Fire Rescue Victoria, and Country Fire Authority.

<sup>3</sup> Measured against the metropolitan benchmark (refer to Section 2.1).

# 3 Performance since the COVID-19-related surge in demand

## 3.1 Comparison of statewide emergency call activity and performance

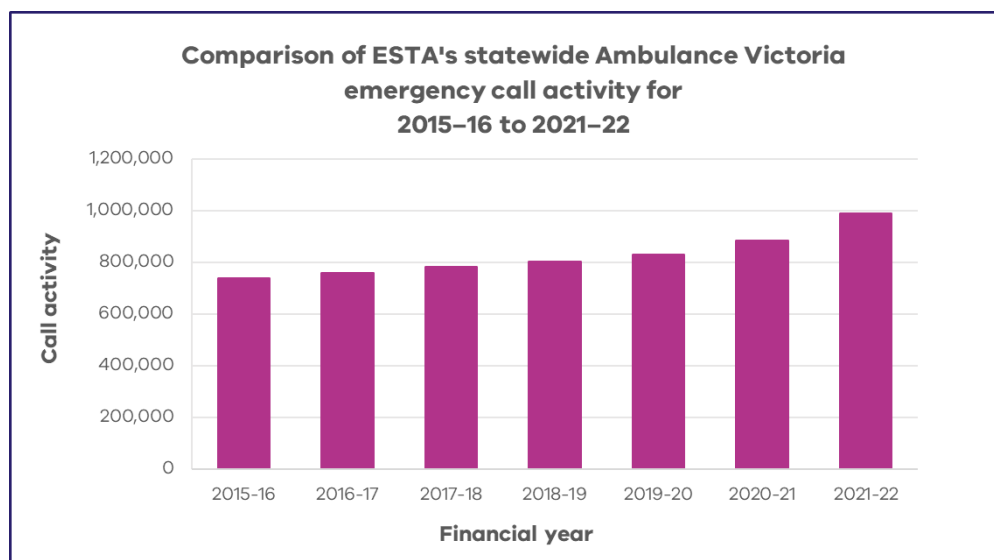
### Activity

In 2020–21, ESTA’s statewide emergency ambulance call activity was 884,926 calls. This was an increase of 6.4 per cent ( $N = 53,201$ ) compared to 2019–20. That equates to 146 additional 000 calls for ambulances in Victoria every day.

The impact of COVID-19 on Victoria’s ambulance call activity cannot be overstated. IGEM found that for the first eight months of 2021–22, ESTA already well exceeded average monthly call activity records. For this period, average monthly statewide emergency ambulance call activity was 80,764, 9.5 per cent higher than the average monthly activity for all of 2020-21 ( $N = 73,747$ ).

Despite the large increases in emergency ambulance call activity during the COVID-19 pandemic, records show that year on year, call volume has been increasing slowly over time (refer to Figure 1).

**Figure 1:** Yearly comparison of ESTA’s statewide emergency ambulance call activity from 2015–16 to 2021–22 (Source: ESTA)



As shown in Figure 1 ESTA’s call activity increased significantly in 2020–21 following the first COVID-19 infections in Australia.

The 2021–22 bar in Figure 1 shows that ESTA’s statewide emergency ambulance call activity exceeded all previous years with 991,146 calls. This was 12 per cent more calls than the previous year, representing almost 291 additional calls per day than in 2020–21.

The biggest increases in ESTA call activity during the period commencing 1 July 2021 coincided with increasing reports of infections with the Delta and Omicron strains of COVID-19 in Victoria. These strains were widely reported to be more infectious than those to which Victoria was first exposed in early 2020.

In comparison, the eight-month period from July 2021 to February 2022 (inclusive) and the same period in 2020–21, shows ESTA’s average, daily, statewide emergency ambulance call activity was up by 15.4 per cent; the equivalent of 355 additional 000 calls per day. This represents a significant increase in demand compared to previous, entire financial years.

**Finding 2**

The Emergency Services Telecommunications Authority (ESTA) processed 53,201 more emergency ambulance calls in 2020–21 than the previous year, a 6.4 per cent increase.

There was a clear surge of emergency ambulance calls from October 2021 and ESTA’s call activity in 2021–22 was 991,146. This represented an increase on the previous year of 12 per cent (*N* = 106,284); Victoria’s busiest year for emergency ambulance calls to triple zero.



VicEmergency warning January 2022 (Source: VicEmergency/Twitter)



IGEM has identified three key issues that drove emergency ambulance call activity in Victoria, particularly from 1 July 2021, leading to the severe call answer delays observed from September 2021:

1. There is a strong statistical correlation between emergency ambulance call demand via 000 and the numbers of newly diagnosed COVID-19 cases in Victoria five days prior.
2. A higher proportion of Victorians suffering from sudden, serious medical problems (including cardiac issues) that may have been detected and treated earlier. Medical professionals have claimed that many people did not keep up regular and scheduled medical and specialist appointments during periods of lockdown (this risk was flagged by medical professionals as early as mid to late 2020; AV advised IGEM that accessing general practitioners was a problem for many people during periods of lockdown in particular, because some required patients to present a negative COVID-19 test in order for a face-to-face consultation).<sup>4</sup>
3. The suspension of certain elective surgical procedures (at various times in 2020, 2021<sup>5</sup>, and 2022) also contributed to this issue. Media quoted the president of the Royal Australasian College of Surgeons, Dr Sally Langley '... "elective surgery" encompassed "serious pressing" surgeries including painful mobility and arthritic problems that would be "significantly worse" within 30 days'.<sup>6</sup> *The Sydney Morning Herald* quoted Australian Medical Association Victoria board member, surgeon Jill Tomlinson '[Delayed surgery] translates downstream to poorer health outcomes in the months and possibly years to come'.<sup>7</sup>

IGEM sighted various scientific studies that found there to be links between delayed medical care during the COVID-19 pandemic and subsequent mortality, poorer patient outcomes, and lower use of inpatient and outpatient services.<sup>8</sup>

In order to triage patients on the telephone, ESTA call-takers use a structured call-taking system known as the Medical Priority Dispatch System (MPDS).<sup>9</sup> This system categorises symptoms into what it calls protocols. It is from these that call-takers question the caller to then arrive at a code referred to as a determinant. ESTA uses the determinant as the event type in its CAD system. AV decides how it wants ESTA to dispatch for each event type and what the response priorities are. Sometimes AV paramedics find differences when they arrive on scene after having the benefit of assessing the patient face-to-face, or because the patient's condition has changed after the 000 call terminated.

<sup>4</sup> RACGP Web: As lockdown eases, Victorian GPs brace for wave of health issues, 20 October 2020, <https://www1.racgp.org.au/newsgp/clinical/as-lockdown-eases-victorian-gps-brace-for-wave-of> accessed 14 April 2022.

<sup>5</sup> Australian Government web: Elective Surgery, <https://www.aihw.gov.au/reports-data/myhospitals/sectors/elective-surgery> accessed 6 April 2022.

<sup>6</sup> Cassidy, Caitlin, 21 January 2022, Delaying elective surgery could spark 'massive healthcare crisis' in Victoria, experts warn, *The Guardian*, <https://www.theguardian.com/australia-news/2022/jan/21/delaying-elective-surgery-could-spark-massive-healthcare-crisis-in-victoria-experts-warn> accessed 6 April 2022.

<sup>7</sup> Cunningham, Melissa, 5 January 2022, 'Hospitals are being crippled': Elective surgery halted as health system strains under pressure, *The Sydney Morning Herald*, <https://www.smh.com.au/national/hospitals-are-being-crippled-elective-surgery-halted-as-health-system-strains-under-pressure-20220105-p59m1j.html> accessed 6 April 2022.

<sup>8</sup> Smith, M, Vaughan Sarrazin, M, Wang, X, et al. Risk from delayed or missed care and non-COVID-19 outcomes for older patients with chronic conditions during the pandemic, February 2022. *Journal of the American Geriatrics Society* 2022;70:1314-1324; Czeisler ME, Marynak K, Clarke KE, et al. Delay or Avoidance of Medical Care Because of COVID-19-Related Concerns — United States, June 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1250-1257.JB; Findling MG, Blendon RJ, Benson JM. Delayed Care with Harmful Health Consequences—Reported Experiences from National Surveys During Coronavirus Disease 2019. *JAMA Health Forum*. 2020;1(12):e201463; Giannouchos TV, Brooks JM, Andreyeva E, Ukert B. Frequency and factors associated with foregone and delayed medical care due to COVID-19 among nonelderly US adults from August to December 2020. *J Eval Clin Pract*. 2022 Feb;28(1):33-42; Czeisler ME, Kennedy JL, Wiley JF. Delay or avoidance of routine, urgent and emergency medical care due to concerns about COVID-19 in a region with low COVID-19 prevalence: Victoria, Australia. *Respirology*. 2021; 26(7):707-712.

<sup>9</sup> The Medical Priority Dispatch System (MPDS®) is the proprietary structured call-taking system owned and developed by the International Academies of Emergency Dispatch. AV approves ESTA to use MPDS to record details and prioritise emergency ambulance calls for dispatch.

In 2019 ESTA call-takers most frequently used the following protocols when creating emergency events:

- Protocol 10 Chest pain ( $N = 83,026$ )
- Protocol 17 Falls ( $N = 79,537$ )
- Protocol 6 Breathing Problems ( $N = 73,825$ ).

Refer to Table 2 for the five most common MPDS protocols used in the previous three years. In Table 2 and Table 3, it is important to note that on 6 August 2020 AV and ESTA implemented MPDS *Protocol 36 Pandemic/Epidemic/Outbreak* to assist in the identification of patients potentially infectious with COVID-19. ESTA removed it from use at AV's request on 11 September 2020 and then re-implemented it at AV's request on 20 September 2021 for three days only.

The consequence of this protocol was that, for the periods in which it was in place, ESTA ambulance call-takers would triage some patients on this protocol in preference to the usual MPDS protocols that represent symptoms that are associated with respiratory illness, including as *Protocol 6 Breathing Problems*, *Protocol 10 Chest Pain*, *Protocol 18 Headache*, and *Protocol 26 Sick Person*. This means that the figures in these tables will in fact underrepresent the true nature of, for example, the number of events for patients with chest pain, because this would be captured under *Protocol 36 Pandemic/Epidemic/Outbreak* when in operation.

In 2020 ESTA processed 5050 events using Protocol 36, accounting for 0.8 per cent of all MPDS related events that ESTA managed during the year. In 2021, given that this protocol was in place for a short time, ESTA only used it 872 times.

**Table 2:** Five most frequently used MPDS protocols in 2019, 2020, and 2021 (Source: ESTA)

2019		2020		2021	
MPDS PROTOCOL	NO. OF EVENTS	MPDS PROTOCOL	NO. OF EVENTS	MPDS PROTOCOL	NO. OF EVENTS
1 10. Chest Pain	83,026	10. Chest Pain	85,768	10. Chest Pain	103,997
2 17. Falls	79,537	17. Falls	79,417	26. Sick Person	86,677
3 6. Breathing Problems	73,825	26. Sick Person	75,174	17. Falls	86,472
4 26. Sick Person	73,251	6. Breathing Problems	68,771	6. Breathing Problems	85,898
5 31. Unconscious / Fainting	65,275	31. Unconscious / Fainting	57,017	31. Unconscious / Fainting	67,109

In 2020, *Protocol 10 Chest Pain* ( $N = 85,768$ ) and 17 ( $N = 79,417$ ) remained the most frequently applied by ESTA's ambulance call-takers. The third most frequent was *Protocol 26 Sick Person* ( $N = 75,174$ ) which is used as a somewhat generic protocol for patients whose symptoms do not clearly lead to triage within another MPDS protocol.

Of note, in 2021 *Protocol 26 Sick Person* ( $N = 86,677$ ) overtook *Protocol 17 Falls* ( $N = 86,472$ ) as the second most frequently used MPDS protocol in Victoria. With 103,997 events, however, *Protocol 10 Chest Pain* remained the most frequently used by ESTA call-takers in that year.

*Protocol 6 Breathing Problems* increased in frequency in 2021 compared to 2020 by 24.9 per cent; this was the biggest increase of any protocol at that time. Also in 2021, *Protocol 10 Chest Pain* increased by 21.3 per cent.



When comparing the MPDS protocols that experienced the biggest changes in frequency between 2019 and 2021 (refer to Table 3), IGEM found the following:

- *Protocol 18 Headache* – 29.6 per cent increase (but only 10,219 events in 2021)
- *Protocol 19 Heart Problems* – 28.5 per cent increase (2021 N = 19,748)
- *Protocol 10 Chest Pain* – 25.3 per cent increase (2021 N = 103,997). Comparison of top five MPDS protocols that increased in frequency from 2019 to 2020, 2020 to 2021, and 2019 to 2021.

**Table 3:** MPDS protocols that experienced the biggest changes in frequency between 2019 and 2021 (Source: ESTA)

2019–20		2020–21		2019–21	
MPDS PROTOCOL	% INCREASE	MPDS PROTOCOL	% INCREASE	MPDS PROTOCOL	% INCREASE
1 15. Electrocution / Lightning	15.9%	6. Breathing Problems	24.9%	18. Headache	29.6%
2 3. Animal Bites / Attacks	14.8%	2. Allergies / Envenomations	24.1%	19. Heart Problems	28.5%
3 7. Burns / Explosions	12.0%	30. Traumatic Injuries	23.3%	10. Chest Pain	25.3%
4 25. Psychiatric / Suicide Attempt	10.3%	10. Chest Pain	21.3%	2. Allergies / Envenomations	25.0%
5 16. Eye Problems / Injuries	10.0%	18. Headache	21.2%	15. Electrocution / Lightning	21.5%

Overall, ESTA created 0.8 per cent fewer events for emergency dispatch in 2020 (N = 660,078), compared to 2019 (N = 665,171). This appears logical given the multiple lockdowns Victoria experienced during 2020. However, in comparing 2020 to 2021, the difference is stark – a 14.4 per cent (N = 94,949) increase in events created for dispatch, the equivalent of an additional 260 events per day, noting that not every 000 ambulance call results in ESTA creating an emergency event for dispatch.

As has been shown by analysis of ESTA’s use of MPDS protocols from 2019 to 2021 it is reasonable to conclude that the combined factors of high levels of COVID-19 within the community and sudden illnesses – especially chest pains and cardiac issues – contributed to substantial increases in demand for ambulance services via 000 in 2021.

Note that correct use of *Protocol 10 Chest Pain* will capture patients presenting with a variety of symptoms that may or may not be related to cardiac issues. In the context of COVID-19 related demand, patients presenting with a primary complaint of chest pain associated with coughing or respiratory inflammation would be triaged using *Protocol 10 Chest Pain*. In ESTA’s environment, patients with COVID-19 could also be processed using *Protocol 6 Breathing Problems*, or *Protocol 36 Pandemic/Epidemic/Outbreak* depending on the primary complaint (the most serious symptom about which the patient complains).

**Finding 3**

Increases in emergency ambulance call activity received by the Emergency Services Telecommunications Authority strongly correlated with COVID-19 infections in the Victorian community, with increased numbers of patients triaged as suffering from breathing problems and chest pains in 2021 (increases on 2020 of 24.9 per cent and 21.3 per cent, respectively).

Notably, in 2021 there were even bigger increases in reported cases of heart problems and chest pains, when compared to 2019 (28.5 per cent and 25.3 per cent, respectively). These increases support the proposition that there were increases in sudden, serious illnesses within the community that may have been detected and treated at an earlier time if the community had been able to continue with normal health care routines. However, it would require further research to determine if indeed serious non-COVID-19 illnesses increased during 2020 and 2021 because although ESTA did process more calls on breathing problems and chest pain protocols during those years, COVID-19 patients were also triaged on these protocols, depending on the patient's chief medical complaint.

**Performance**

Although the COVID-19 pandemic reached Australia in January 2020, ESTA met its emergency ambulance call answer target times through to November 2020.

From December 2020 to June 2022 ESTA did not meet the performance target time for emergency ambulance call answer speed in any month. However, ESTA did meet the call answer speed benchmarks for VicPol since the COVID-19 pandemic commenced (except in November 2021), Fire Rescue Victoria, and Country Fire Authority (CFA) (except October 2021).

**Finding 4**

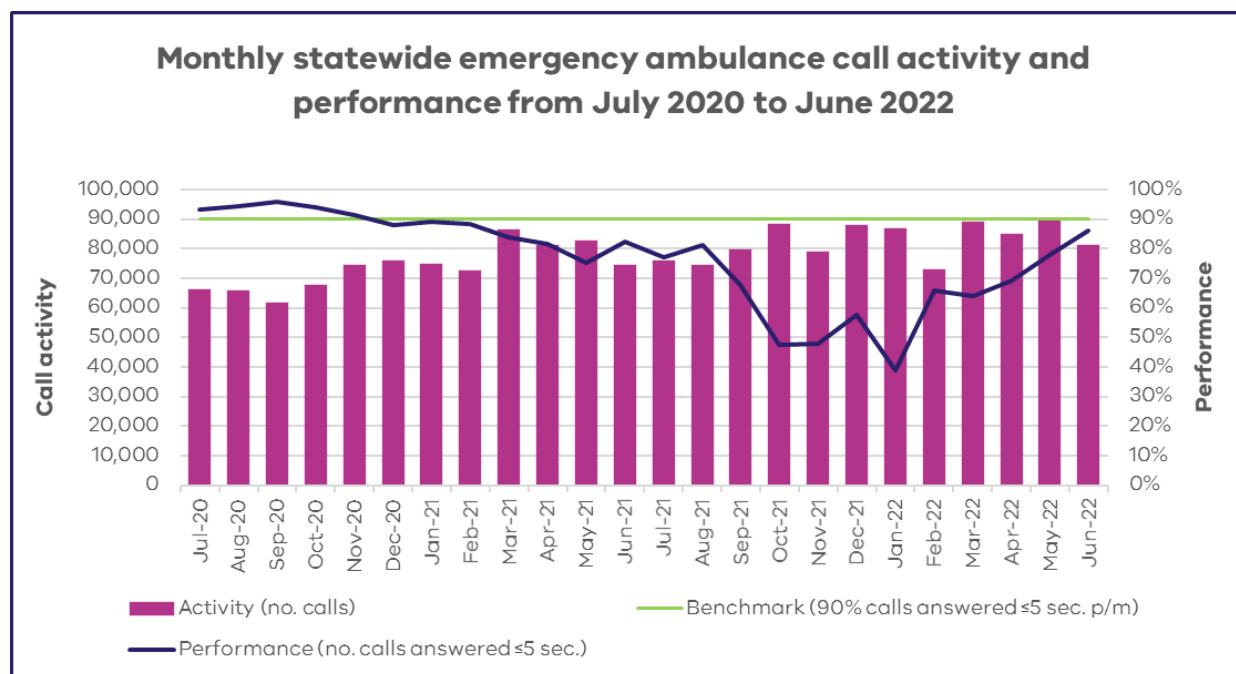
The Emergency Services Telecommunications Authority (ESTA) did not meet the primary ambulance emergency call answer speed benchmark in any month from December 2020 to June 2022.

However, ESTA did meet the call answer speed benchmarks for Victoria Police since the COVID-19 pandemic commenced (except November 2021), Fire Rescue Victoria, and Country Fire Authority (except October 2021 for both fire agencies).

Figure 2 illustrates several crucial elements of ESTA's performance. Although below benchmark, ESTA's monthly call answer speed did not drop below 80 per cent of calls answered at or within five seconds until May 2021. During that month, ESTA answered 75.4 per cent of calls at or within five seconds although it answered fewer calls ( $N = 82,705$ ) than it did in March 2021 ( $N = 86,671$ ). However, in that month ESTA answered 10,288 more calls within the benchmark than in May 2021.

This pattern of erratic performance, not necessarily tied to call activity, was repeated on several occasions in subsequent months. This demonstrates that ESTA's call answer performance is not only subject to call activity, but to other variables.

**Figure 2:** Comparison of statewide emergency ambulance call activity and performance from July 2020 to June 2022 (Source: ESTA)



It is clear that from September 2021, ESTA’s statewide call answer performance significantly declined to 67.8 per cent, well below the August 2021 performance of 81.2 per cent. This was in the context of 5224 additional calls during September 2021 (an extra 254.4 calls per day, compared to August 2021). Note that the COVID-19 Delta variant was first detected in Australia in June 2021; Omicron was first discovered in late November 2021. Additionally, Figure 2 shows ESTA’s performance improving to 86.2 per cent, just below benchmark, in June 2022.

ESTA commenced sourcing information to develop its own modelling of the potential effects of the COVID-19 pandemic from 2020 and attempted to forecast the increasingly erratic demand for ambulance services (refer to Chapter 7).

As highlighted, ESTA’s emergency ambulance call answer speed performance fell significantly below its five second call answer speed target time from September 2021. Table 4 shows ESTA’s emergency ambulance call activity and call answer performance from September 2021 to June 2022.

**Table 4:** Emergency ambulance call activity and monthly performance from September 2021 to June 2022 (Source: ESTA)

MONTH	STATEWIDE CALL ACTIVITY	MONTHLY PERFORMANCE (PERCENTAGE OF CALLS ANSWERED WITHIN FIVE SECONDS)
September 2021	79,894	67.8%
October 2021	88,350	47.4%
November 2021	78,833	47.8%
December 2021	88,085	57.5%
January 2022	87,006	39.0%
February 2022	73,095	66.0%
March 2022	89,304	63.9%
April 2022	84,924	69.1%
May 2022	89,406	71.8%
June 2022	81,403	86.2%

Not only was ambulance call activity somewhat erratic from September 2021 to June 2022, so too was ESTA's monthly call answer speed performance. The average monthly activity over the six months from September 2021 to February 2022 was 82,544 calls (an average of 2736.3 calls per day). ESTA averaged 54.3 per cent of calls answered within five seconds for these six months.

Although not yet compliant, it is positive to see ESTA's monthly performance increase in April, May and June 2022. In the latter month, ESTA fell short of compliance against its benchmark by 3.3 per cent. This is a dramatically different situation than occurred in January 2022, when ESTA's emergency ambulance call answer speed performance dropped to the lowest level on record.

#### MONTH-IN-FOCUS – OCTOBER 2021

Until surpassed in March 2022, ESTA's statewide emergency ambulance call activity in October 2021 was the highest in its recorded history.

During October 2021, Melbourne was in its sixth lockdown (commencing 5 August and ending 21 October). In that month, Victoria recorded over 50,000 COVID-19 cases. For each day of October, there was an average of 1613 newly diagnosed COVID-19 cases recorded five days prior<sup>10</sup> and an average of 2784 emergency ambulance calls into ESTA each day. This significant load coincided with the COVID-19 Delta wave.

The day with the longest maximum call answer time was 27 October, on which ESTA answered a 000 ambulance call after a wait of 2329 seconds (38 minutes and 49 seconds). On that day, for 80 of these ambulance calls, ESTA took over 10 minutes to answer, managing to answer only 18.8 per cent of calls within five seconds. ESTA's ambulance call activity on 27 October 2021 was 2547 calls; this was the third-lowest day for call activity in that month.

Contextually, due to resourcing challenges, ESTA recorded a 2.5 per cent drop in the number of emergency ambulance call-taker hours worked, compared to September 2021. Taken together with 7.9 per cent of its total hours were worked as overtime, it is clear that during October 2021 ESTA could not field enough call-takers to meet the increased call activity.



Melbourne's Bourke Street during lockdown (Source: Department of Jobs, Precincts and Regions)

<sup>10</sup> ESTA relied on WHO data to develop the 'five days prior' metric – this was the average duration between infection and the onset of symptoms.

## MONTH-IN-FOCUS – JANUARY 2022

In January 2022 ESTA's emergency ambulance call answer speed performance was the lowest in its history with 39.0 per cent of calls answered within five seconds. This was against call activity of 87,006 total calls for the month.

January is traditionally a busy month for ESTA and AV. IGEM identified the following factors (in no particular order) that influenced call activity during that month:

- Very high numbers of COVID-19 cases – 648,689 total cases in this month with an average of 20,925.5 cases per day; there were fewer than 10,000 cases reported on only three days in January 2022. This was during the COVID-19 Omicron wave that was first discovered in Australia in late November 2021.
- Fine summer weather contributing to greater numbers of people out and about and exposed to the elements (there were 17 recorded days in January 2022 where temperatures exceeded 30°C in Melbourne); increased movement results in more incidents of violence, motor vehicle crashes, sporting injuries, alcohol-related harm, and other causes; this also increased demand for Victoria Police via 000.
- The New Year's Day public holiday.
- The Australia Day public holiday.

The month's longest maximum call answer time occurred on 14 January 2022 when ESTA answered one 000 ambulance call after a wait of 4594 seconds (76 minutes and 34 seconds). On the same day, ESTA took over 10 minutes to answer 139 ambulance calls and managed to answer only 22.4 per cent of calls within five seconds. ESTA's ambulance call activity on 14 January 2022 was 2448 calls; this was the fourth lowest day for call activity in that month.

In January 2022, there were seven days on which ESTA answered fewer than 20 per cent of calls within five seconds. The poorest performing of these was on 22 January 2022 in which ESTA answered only 12.9 per cent of emergency ambulance calls within the target time. Call activity on that day was only 2386. However, ESTA managed to answer many more calls – and with a significantly higher percentage within five seconds – on other days in January 2022.

ESTA advised IGEM that January 2022 was a very challenging month, given the high numbers of staff it furloughed due to COVID-19. In this month, 6.4 per cent of hours worked by emergency ambulance call-takers were overtime – just over 600 hours of the total hours worked.

During January 2022, the number of actual emergency ambulance call-taking hours worked was 7.9 per cent fewer than in December 2021. Compared to October 2021, there were 5.7 per cent fewer hours worked. This illustrates the extent of ESTA's staffing challenges in what was a busy month with major constraints on its staffing resources.

The proposition that ESTA's call answer performance is not based solely on call demand is supported by IGEM's statistical analyses of ESTA call activity and daily call answer speed data for 231 consecutive days from 1 July 2021.

IGEM considers that ESTA's call answer performance has been negatively affected by other variables (refer to Chapter 8) in addition to increased demand. This is because although call activity was strongly correlated with COVID-19 infection numbers from five days prior, there is no such simple correlation between daily call activity and ESTA's performance.

### Finding 5

Call volume increases from December 2020 to June 2022 alone, did not lead to the Emergency Services Telecommunications Authority's non-compliant performance.

#### Qualitative performance

Under the ESTA Act 2004, performance standards must be quantitative and qualitative in nature (refer to Section 9.6). Call answer speed and dispatch speed are quantitative standards.

Qualitative performance refers to the measuring and benchmarking of quality aspects of call-taking and dispatch. For call-taking, these include *Accuracy of event location*, *Accuracy of event type*, and *Accuracy of general event information and adherence to MPDS protocols*. For dispatch, qualitative measures include *Accuracy of general event information*, *Appropriateness of allocated resources*, *Method of dispatch notification*, and *Responsiveness to requests*.

These measures are comprised of sub-elements that form the structure of call-taking and dispatch workflows and against which ESTA audits operators using its Service Delivery Audit methodology. Ambulance call-takers are subject to additional performance measurement using the AQUA audit system. This more specifically examines call-takers' triaging and clinical management of emergency events following the Medical Priority Dispatch System's software application, ProQA.

IGEM's performance benchmarks for these qualitative measures vary, but all require a certain percentage of events to be compliant against each measure within a calendar month. The benchmarks vary from 97.6 per cent for *Accuracy of event type* for call-taking, to 100 per cent for *Method of dispatch notification* for emergency ambulance dispatching.

Although ESTA's ambulance call answer speed performance has been below benchmark from December 2020 to June 2022, its qualitative performance for emergency ambulance call-taking, as reported monthly to IGEM, has been mostly compliant.

From July 2021 to June 2022, ESTA reported compliant performance against the measure *Accuracy of event location* in all but January and February 2022. ESTA was compliant against the measure *Accuracy of event type* in seven months, and non-compliant in five months (November 2021, January 2022, April 2022, May 2022 and June 2022). ESTA reported non-compliant performance against *Accuracy of general event information* for emergency call-taking in March and May 2022, exceeding 99.7 per cent compliance in every other month of 2021–22 to June 2022. ESTA also reported compliance in each month against the MPDS AQUA audit standards.

ESTA's qualitative performance since 1 July 2021, although not as high as 2020–21 (when ESTA was compliant against every call-taking qualitative benchmark in every month bar one), is consistent with ESTA's reporting to IGEM of potential adverse events in 2021 and 2022. In the majority of these events (refer to Chapter 4) call answer speed delay was the only performance risk identified during this review. This demonstrates the skill and professionalism with which ESTA call-takers manage so many 000 calls each year.



# 4 Consequences of call answer delays

## 4.1 Introduction

The effects of ESTA's emergency ambulance call answer delays vary in breadth and scale. Call answer delays exposed many Victorians to varying levels of risk and, in some cases, these may have resulted in adverse events. What is clear is that response to individual calls were delayed on a regular basis.

A potential adverse event is an event for which ESTA and/or emergency service organisations' (ESO) management of emergency telecommunications was not in accordance with performance expectations and/or organisational policies, procedures, or standards, and exposed members of the public or ESOs to risk.

Such events may have involved issues such as a call answer delay that in turn delayed dispatch of emergency services and provision of first aid advice, incorrect clinical triage of a patient, or dispatch of incorrect resources for the emergency type. Sometimes potential adverse events involve multiple performance issues, occurring at different points of the emergency telecommunications process. Under IGEM's approach actual harm or consequences are not required to consider an event to be potentially adverse.<sup>11</sup> This is because a fortuitously positive outcome does not mean the public was not exposed to avoidable risk, and that if the issue reoccurs in another event, there may be negative consequences (the near-miss scenario).

For the majority of potential adverse events including those discussed in this chapter, ESTA self-reported these to IGEM shortly after the event. In a minority of events, IGEM became aware of these via other sources such as media reports or a public complaint, which IGEM then followed up with ESTA.

## 4.2 Potential adverse events

As part of this review, IGEM assessed known risks from its routine monitoring of ESTA's performance for surge planning, call answer delay, and ESO command and control decisions and/or resourcing that may have negatively affected ESTA's call-taking and/or dispatch performance.

Prior to IGEM's review of these events, ESTA and AV engaged in collaborative review of all events where certain criteria were met. These included, for example, all cardiac arrest events with a delay in call answer exceeding one minute. ESTA and AV commenced this review process in October 2021 to ensure that they did not overlook events not reported by other means.

The review of 8712 emergency ambulance events was a major piece of work for AV and ESTA and much of this occurred during the busiest times of the COVID-19 pandemic in late 2021.

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<sup>11</sup> In addition to IGEM's process for ESTA that applies to all services, there are other terms and processes used in Victoria relating to reporting to assurance bodies on events that related to harm. For example, the definition for an adverse event used by some organisations in the health context is that of the Victorian Health Incident Management System (VHIMS). This enables creation of a standardised data set for collection and classification of clinical incidents and near misses. VHIMS defines an adverse patient safety event as an event that results in unnecessary or avoidable patient harm. Harm implies impairment of structural function of the whole body and/or harmful effects arising from disease, injury, suffering, disability, or death. The VHIMS has four severity ratings and classifications known as ISR ratings. These are: ISR 1 severe patient harm/death, ISR 2 moderate harm, ISR 3 mild harm, ISR 4 no harm or near miss.

The identification and linking of these cases on such a scale represents a degree of sophistication, cooperation, and transparency previously unseen between the two organisations. From mid-June until mid-September 2021, ESTA advised IGEM that – as just the first level of case review – it had screened almost 98,000 cases.

As detailed in Table 5 ESTA and AV have extracted 8712 emergency ambulance events for review. Of these, 4268 were pending examination to determine the issues involved, and whether 000 call answer delays or other issues affected patient clinical outcomes. Under this system, AV ranks emergency events based on an incident severity rating from one to four, with one being the most severe (ISR 1 events typically involve cardiac arrests and other serious medical emergencies, generally where a patient did not survive). Not all of the ISR 1 cases in the table involve patient deaths. Additionally, not all events involved ESTA call answer or other performance issues.

**Table 5:** List of case reviews conducted by ESTA and AV from 20 September 2021 to 15 June 2022 (Source: ESTA)

All cases screened from 20 September 2021 (97,610)	Cases extracted	Excluded/duplicate	Total cases for review	ISR 1	ISR 2	ISR 3	ISR 4	Cases reviewed	Pending review
Cardiac arrests with a 000 ESTA call answer delay of >1 minute	1239	80	1159	18	329	76	699	1122	37
Paediatric (0 –12 years) Sig 1 with a 000 call answer delay of >1 minute	539	69	470	0	32	112	161	305	165
Adult time critical with a 000 ESTA call answer delay of >1 minute: Stroke	678	49	629	0	390	85	154	629	0
Adult time critical with a 000 ESTA call answer delay of >1 minute: STEMI	548	22	526	0	16	140	67	223	303
Adult time critical with a 000 ESTA call answer delay of >1 minute: Sepsis	199	17	182	0	18	76	86	180	2
Adult time critical with a 000 ESTA call answer delay of >1 minute: Anaphylaxis	105	8	97	0	48	35	14	97	0
Adult time critical with a 000 ESTA call answer delay of >1 minute: Other	3336	263	3073	0	177	183	418	778	2295
Total time to dispatch with a 000 ESTA call answer delay of >1 minute: Not transported	326	38	288	0	25	14	57	96	192
Inadvertent urgent disconnect	26	1	25	0	0	0	25	25	0
A 000 ESTA call answer delay but no AV event created (transported by private means)	0	0	0	1	1	2	1	5	0
A 000 ESTA call answer delay: other ESO request for ambulance	0	0	0	1	0	1		2	0
<b>Sub Total</b>	<b>6996</b>	<b>547</b>	<b>6449</b>	<b>20</b>	<b>1036</b>	<b>724</b>	<b>1682</b>	<b>3462</b>	<b>2994</b>



All cases screened from 20 September 2021 (97,610)	Cases extracted	Excluded/duplicate	Total cases for review	ISR 1	ISR 2	ISR 3	ISR 4	Cases reviewed	Pending review
Code 1 events held	1481	403	1078	1	35	127	822	985	93
Dispatch node not defined	4	0	4	0	0	0	4	4	0
Non-emergency event held > 4 hours	1181	0	1181	0	0	0	0	0	1181
Secondary Triage: Cardiac arrest	14	0	14	0	0	0	0	0	14
Secondary Triage: Code 1	115	0	115	0	0	0	0	0	115
<b>Sub Total</b>	<b>2795</b>	<b>403</b>	<b>2263</b>	<b>1</b>	<b>35</b>	<b>127</b>	<b>826</b>	<b>989</b>	<b>1274</b>
<b>Total as of 15 June 2022</b>	<b>9791</b>	<b>950</b>	<b>8712</b>	<b>20</b>	<b>1071</b>	<b>851</b>	<b>2508</b>	<b>4451</b>	<b>4268</b>

In conducting analysis of the potential adverse events reported from 1 December 2020 (when ESTA's call answer performance first showed non-compliance) until 31 May 2022, IGEM linked 40 potential adverse events related to surge planning, call answer delay, and/or emergency services organisation command and control.

IGEM excluded from the analysis, four additional potential adverse events that occurred during the timeframe because they did not meet the scope of this review. IGEM reviewed the excluded events separately by applying its normal screening process.

Unlike the ESTA and AV system of review previously described, IGEM examines the most severe potential adverse events in accordance with its risk assessment process developed in 2017.

IGEM identified the following from its analysis of the 40 events:

- No potential adverse events occurred prior to late August 2021 despite ESTA's call answer issues from December 2020
- 30 of the events occurred in metropolitan Melbourne
- 10 events occurred in regional Victoria
- 39 events involved AV as the primary agency requested by the caller
- 16 cases involved VicPol
- 15 events involved FRV
- 2 events involved CFA.

VicPol may have been dispatched to some of these events for several reasons. Firstly, VicPol attends deaths that occur in public places. Secondly, AV may have requested police or the fire services to provide assistance at the location (including, for example, crowd and traffic control, or to assist paramedics in gaining access to a premises). Finally, ESTA may dispatch police to certain types of emergencies by default. These include car crashes with injuries, fires, wild animal attacks, and drowning events, among others that also require dispatch of ambulance and/or fire services.

Fire services also respond to some medical events in support of AV. FRV provides emergency medical response (EMR) in its metropolitan and regional response areas, as do some CFA brigades in regional Victoria.

The EMR program involves dispatch of EMR-trained firefighters to serious medical emergencies (for example, cardiac arrest), in order to provide rapid intervention, often ahead of the arrival of ambulance crews. EMR crews undertake advanced life support and assist attending ambulance resources.

The disparity in numbers for different locations of potential adverse events in Victoria is due to the increased numbers of 000 calls made from the population-dense metropolitan areas of Melbourne.

Of the 40 potential adverse events, 11 occurred in October 2021. This aligns with the biggest surges in demand for emergency ambulance via 000 and ESTA's declining call answer performance for such calls.

Five events occurred on a single day, 6 October 2021. IGEM notes that ESTA's emergency ambulance call-taking performance for that day was 25.4 per cent of calls answered within five seconds, with statewide emergency ambulance call activity of 3081 calls in 24 hours – a very high call load.

Table 6 provides details of 40 potential adverse events considered in this report. The final column 'First call answer delay (in seconds)' does not suggest any fault on behalf of the ESTA ambulance call-taker involved in the management of the event.

**Table 6:** Distribution of potential adverse events related to emergency ambulance call answer delays/ command and control /resourcing (Source: ESTA)

NUMBER	SEASON	SINGLE/MULTI-AGENCY EVENT <sup>12</sup>	PROBLEM	FIRST CALL ANSWER DELAY (IN SECONDS)
1	Winter 2021	Single agency event	Cardiac arrest	3
2	Spring 2021	Single agency event	Cardiac arrest	101
3	Spring 2021	Single agency event	Choking	136
4	Spring 2021	Multi/multiple agency event	Cardiac arrest	389
5	Spring 2021	Multi/multiple agency event	Cardiac arrest	434
6	Spring 2021	Single agency event	Sick person	1879
7	Spring 2021	Single agency event	Chest pain	1875
8	Spring 2021	Single agency event	Breathing problems	481
9	Spring 2021	Single agency event	Cardiac arrest	261
10	Spring 2021	Single agency event	Cardiac arrest	399
11	Spring 2021	Single agency event	Cardiac issue (not arrest)	358
12	Spring 2021	Multi/multiple agency event	Cardiac arrest	3003
13	Spring 2021	Single agency event	Asthma attack	880
14	Spring 2021	Single agency event	Cardiac arrest	203
15	Spring 2021	Multi/multiple agency event	Cardiac arrest	234
16	Spring 2021	Multi/multiple agency event	Workplace accident	310
17	Spring 2021	Multi/multiple agency event	Drowning	358
18	Spring 2021	Multi/multiple agency event	Haemorrhage	1386
19	Spring 2021	Single agency event	Haemorrhage	325

<sup>12</sup> IGEM defines 'single agency' events to be those in which only one ESO was required to attend. For example, this may be an ambulance responding to a purely medical issue, such as shortness of breath. A 'multi-agency' event is one in which two or more ESOs were required to attend. For example, a cardiac arrest with the state's EMR zone, such that ESTA dispatches the fire services in addition to AV resources.

A 'multiple agency' event is defined as an emergency in which one agency was initially required, with a second (or subsequent) agency dispatched at a later time. For example, this may be an event in which ambulance initially attended for a medical emergency, but then requested police when on scene due to safety issues or an alleged crime.

NUMBER	SEASON	SINGLE/MULTI-AGENCY EVENT <sup>12</sup>	PROBLEM	FIRST CALL ANSWER DELAY (IN SECONDS)
20	Spring 2021	Multi/multiple agency event	Fire	79
21	Summer 2021	Multi/multiple agency event	Animal attack	209
22	Summer 2021	Multi/multiple agency event	Cardiac arrest	284
23	Summer 2022	Single agency event	Breathing problems	373
24	Summer 2022	Single agency event	Cardiac arrest	144
25	Summer 2022	Multi/multiple agency event	Cardiac arrest	629
26	Summer 2022	Multi/multiple agency event	Cardiac arrest	243
27	Summer 2022	Multi/multiple agency event	Breathing problems	505
28	Summer 2022	Multi/multiple agency event	Choking	238
29	Summer 2022	Single agency event	Seizure	262
30	Summer 2022	Multi/multiple agency event	Cardiac arrest	245
31	Summer 2022	Single agency event	Cardiac arrest	0*
32	Summer 2022	Single agency event	Cardiac arrest	202
33	Summer 2022	Multi/multiple agency event	Cardiac arrest	155
34	Summer 2022	Multi/multiple agency event	Cardiac arrest	212
35	Autumn 2022	Single agency event	Breathing problems	0*
36	Autumn 2022	Single agency event	Cardiac arrest	165
37	Autumn	Multi/multiple agency event	Asthma attack	26
38	Autumn 2022	Single agency event	Cardiac arrest	259
39	Autumn 2022	Multi/multiple agency event	Asthma attack	15
40	Autumn 2022	Single agency event	Breathing problems	0*

For the three events in Table 6 with an asterisk against the zero in the call answer delay column, IGEM identified that although ESTA answered these calls within its target time, there were AV command and control and/or resourcing issues that contributed to dispatch delays, independent of actions by ESTA.

As shown in Table 6, 50 per cent of potential adverse events involved cardiac arrest, and 12.5 per cent involved patients suffering from breathing problems (this becomes 20 per cent when combining breathing problems generally, and the more specific data from the category asthma attack).

Some of the 40 events included more than one call to 000. For the first call of each event, ESTA's average call answer time was 431.5 seconds (seven minutes and 11 seconds).

The average first call answer delay for potential adverse events was longest in October 2021 with 917.7 seconds (15 minutes and 17 seconds). This was followed by an average first call answer delay in November 2021 of 413.6 seconds (six minutes and 53 seconds).

Of the 40 potential adverse events, IGEM is aware that 33 of the patients died at the scene of their emergency, or later in hospital.

### Finding 6

From 1 July 2021 to 31 May 2022 (inclusive) the Emergency Services Telecommunications Authority reported 40 potential adverse events associated with call answer delays and/or agency command and control issues, in the context of COVID-19 surges in activity. In these events, 33 patients did not survive their emergency.

The following case studies aim to provide a fuller account of the circumstances for some potential adverse events, detailed in Table 6. These are brief and de-identified. These case studies have been selected for the insight they provide into the variety of consequences that can flow from ambulance call answer delays.

#### CASE STUDY 1 – DELAYED CALL ANSWER FOR A PERSON IN CARDIAC ARREST IN SPRING 2021

An adult was reported to have collapsed one day in spring 2021, during daylight hours.

As no ESTA ambulance call-takers were available to answer the first 000 call for the patient, the Telstra 000 Service re-presented the call three times before the caller disconnected. Telstra presents calls for 75 seconds before withdrawing them if unanswered, then re-presents them on a higher priority line.

A second call presented to Telstra approximately five minutes after the first, about the same patient. Telstra then presented the call to ESTA's emergency ambulance call queue and then re-presented it a further nine times before ESTA answered. This equated to a call answer delay of 12 minutes and 20 seconds.

Telstra presented a third 000 caller to ESTA, who also reported that the patient required cardiopulmonary resuscitation (CPR). The ESTA ambulance call-taker provided appropriate advice to enable this.

ESTA dispatched both AV and FRV crews (in their EMR capacity). The first AV resource arrived on scene approximately 21 minutes after the first caller rang 000 and within four minutes of ESTA dispatching the crew.

Despite the efforts of witnesses at the scene, AV, and FRV could not revive the patient.

Case study 1 highlights that the delay in call answer also delayed the time it took for an ESTA ambulance call-taker to provide appropriate pre-arrival instructions.<sup>13</sup> In relation to the chain of survival:

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*A person in cardiac arrest has the best chance of survival if CPR [cardiopulmonary resuscitation] is started immediately and a defibrillator is used on them as soon as possible.<sup>14</sup>*

*National Heart Foundation of Australia, 2011*

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<sup>13</sup> Pre-arrival instructions (PAIs) are a series of MPDS protocol instructions and questions that emergency call-takers use interactively with emergency callers; each specific instruction leads the call-taker onto the next in sequence. CPR instructions are an example of PAIs.

<sup>14</sup> National Heart Foundation of Australia, 2011, 18.

The call answer delay not only delayed the dispatch of AV resources, but those of FRV in its EMR capacity. At times when AV's resources are stretched – a fact seen often during the past year of the COVID-19 pandemic – it can be crucial for the fire services to be dispatched quickly. Having trained first responders provide some form of first aid and/or CPR to a patient until paramedics arrive can prove lifesaving and is the foundation of Victoria's EMR program.

Another consequence of the call answer delay is related to the subsequent calls. In this event, there were multiple witnesses and helpers at the scene. The first 000 call being disconnected is not uncommon in circumstances where there is a significant call answer delay. The result is that if the caller calls back, their call is now further down the queue, further delaying pre-arrival instructions and the dispatch of emergency resources.

Related to this is the effect of multiple calls about the same emergency. Several times during its analysis of potential adverse events, IGEM identified that – due to long call answer times and times on hold – other witnesses to same emergency have called 000 in addition to the person who first rang for help. This has the effect of increasing call answer times for all emergency calls in the queue. Further upstream, this can place pressure on the Telstra 000 Service which must wait for an ESTA call-taker to answer the call, in order to handover the emergency call for ESTA to triage.

Case Study 2 highlights similar risks. In this case, the call answer delays led to downstream delays in dispatch of AV resources.

#### CASE STUDY 2 – DELAYED CALL ANSWER FOR A PERSON IN CARDIAC ARREST AT A VICTORIA POLICE STATION IN SPRING 2021

An adult in custody, was reported to have gone into cardiac arrest one day in spring 2021.

A VicPol member made two attempts to ring 000 and was waiting for three minutes and 54 seconds before abandoning the calls and making a field request via the police radio. The advantage of ringing 000 is that ambulance call-takers triage using the MPDS system whereas police dispatchers do not.

After receiving some patient details via the radio, an ESTA police dispatcher quickly created an event for ambulance to attend. The first AV resource arrived six minutes and 12 seconds after the first call to 000.

ESTA also dispatched FRV in its EMR role.

On that particular day, ESTA's emergency ambulance call answer performance was 48.4 per cent of calls answered within five seconds, from a 24-hour call load of 2378 statewide emergency ambulance calls.

Although AV resources arrived within a few minutes and despite the efforts of personnel involved in this event, they could not revive the patient.

Given the call was not answered via 000, there was a delay in dispatching ambulance resources. Additionally, there was no opportunity for ESTA to triage the patient using the structured call-taking system or provide CPR instructions to those on scene. However, IGEM notes police members are trained in CPR.

In this case, the police member was correct in determining the patient was in cardiac arrest. If this was not the case, then it is possible that the dispatched AV and FRV resources may have been redirected from a higher priority event, risking the health and safety of other 000 callers and patients as a consequence of insufficient triage.

Case study 3 highlights that the call answer delay resulted in delayed dispatch of AV and VicPol resources, in addition to delayed provision of pre-arrival instructions (PAI) to the caller so as to assist the patients on scene.

#### CASE STUDY 3 – DELAYED CALL ANSWER FOR TWO PATIENTS ATTACKED BY AN ANIMAL IN SUMMER 2021

Two people were attacked by a wild animal, during a day in summer 2021.

A member of the public rang 000 to report the attack; there was a call answer delay of three minutes and 29 seconds.

At this time, at the request of ESTA, there was an extreme event Recorded Voice Announcement (RVA) in place at Telstra 000 – during this call, and all evening until early the next morning. An RVA is a recorded message that 000 callers will hear when they ring, to advise, for example, that there is a high volume of 000 calls for ambulance (refer to Section 6.2.4).

In two 15 minute periods (during which the call was made and answered), Telstra presented 66 calls to the emergency ambulance call queue and ESTA did not answer any of these calls within the five second target time.

ESTA's emergency ambulance call answer performance on this day was very low, answering only 29.1 per cent of calls within five seconds. The emergency ambulance statewide daily call activity was 2807 calls.

AV transported both patients to hospital and they survived.

In this event, given the ages of the patients and the difficult location, there were additional risks for health and safety, and the requirement for specialist emergency resources to transport them to hospital.

#### CASE STUDY 4 – DELAYED CALL ANSWER FOR A PATIENT IN CARDIAC ARREST IN SUMMER 2022

A person was reported to be in cardiac arrest one day in summer 2022.

From the time Telstra first presented the 000 call to ESTA until ESTA answered, there was a delay of four minutes and three seconds.

The ambulance response time was within AV's response benchmark of 15 minutes. The time from the first presentation of the first call until the first AV resource arrived was 11 minutes and 19 seconds.

ESTA's emergency ambulance call answer performance for this particular day was a very low 17.1 per cent of calls answered within five seconds. Emergency ambulance call activity was 2712 for that day.

Despite the efforts of paramedics, they could not revive the patient.

The consequences for the call answer delay in case study 4 were:

- delayed triage
- delayed provision of pre-arrival (first aid and clinical) instructions to the caller
- delayed dispatch of AV resources.

The chain of survival requires CPR and defibrillation as soon as possible, to give patients in arrest the best possible chance of a positive outcome. Although AV arrived within its target time and ESTA's attempt to dispatch AV as soon as possible, there was a call answer delay of over four minutes in this case.



#### CASE STUDY 5 – DELAYED CALL ANSWER AND DELAYED DISPATCH DUE TO LACK OF RESOURCES FOR A PATIENT WITH BREATHING PROBLEMS IN SUMMER 2022

This case study concerns two delayed 000 calls for a patient experiencing trouble breathing one day in summer 2022.

The caller experienced a call answer delay of six minutes and 13 seconds for the first 000 call.

After an ESTA call-taker created an event for dispatch in the Computer-aided Dispatch (CAD) system ESTA could not identify any available, appropriate nearby AV resources. ESTA therefore held the event for two minutes in accordance with AV procedures because the only available unit was kept for dispatch to Priority 0 events (the highest priority).

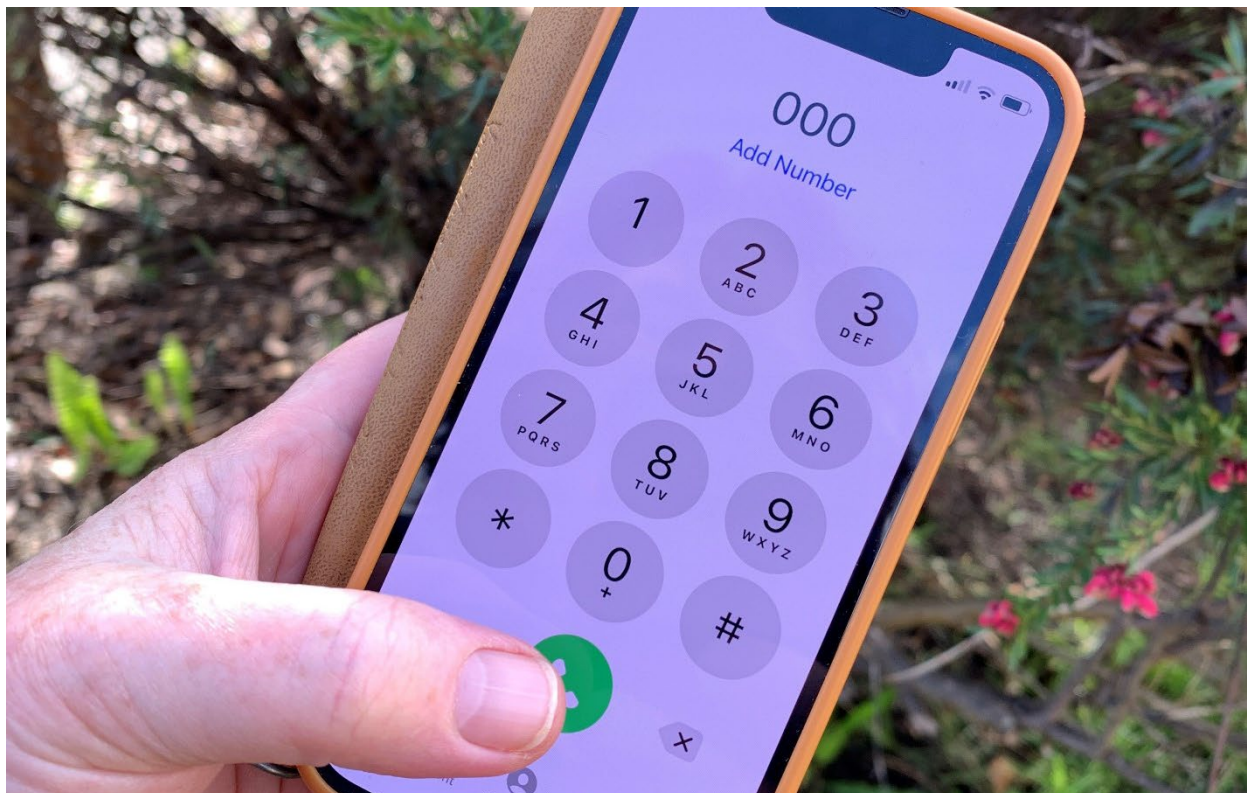
Approximately 20 minutes after Telstra presented the first call to ESTA, a caller rang 000 again. ESTA answered that call three minutes and 55 seconds after first presentation. Although the caller provided new information that led to ESTA revising the event type, it remained a Priority 1/Code 1 event.

ESTA dispatched the first AV unit 21 minutes and one second after it answered the first 000 call.

The first ambulance arrived on scene 34 minutes and 38 seconds after ESTA answered the first call. The patient went into cardiac arrest after AV resources arrived and later died in hospital.

ESTA's emergency ambulance call-taking performance for the day in question was 15.0 per cent, off the back of a call volume load for the 24 hours of 2777 calls statewide. This was one of ESTA's lowest performance days since the start of the COVID-19-surge.

In case study 5, in addition to the call answer delay, a lack of available AV resources to dispatch was an identified issue affecting ESTA's (and AV's) ability to meet community expectations. This has been an ongoing issue for AV at various stages throughout the pandemic and has resulted in emergency declarations under its Emergency Response Plan.



Dialling 000 (Source: IGEM)

## CASE STUDY 6 – DELAYED CALL ANSWER FOR A FIRE IN METROPOLITAN MELBOURNE IN SPRING 2021

A house fire occurred one day in spring 2021.

At the time of the fire, due to high demand on ambulance calls, ESTA had requested Telstra implement the extreme event Recorded Voice Announcement (RVA), which emergency callers would hear before speaking with a Telstra agent (operator). This recording played for 22 seconds with Telstra operators not being able to answer the call during that time due to the configuration of the RVA<sup>15</sup>.

Telstra answered the first 000 call for this event in one minute and 23 seconds including the 22 seconds RVA play time. Telstra received a total of 13 emergency calls for this fire.

The first 000 caller requested police and the Telstra operator then presented the call to ESTA's police operations. ESTA took 79 seconds (one minute and 19 seconds) to answer the call. IGEM notes that ESTA's police call answer speed performance was compliant in every month during the financial year except one when its performance fell to 79.9 per cent, just 0.1 per cent below the benchmark.<sup>16</sup>

The ESTA police call-taker then took two minutes and seven seconds to create an event in its CAD system to respond the required services.

ESTA dispatched the fire services and the first fire services crew arrived on scene 10 minutes and 10 seconds after Telstra first presented the call to ESTA.

In this hour, ESTA received 92 calls for ambulance and 239 for police. ESTA answered only five of the ambulance calls within the target time of five seconds.

While ESTA answered the first fire call it received from Telstra in under five seconds, ESTA's ambulance call answer delays at that time created a backlog of calls at Telstra 000, affecting its ability to answer calls promptly. Telstra operators were unable to release calls expeditiously to ESTA, delaying the time Telstra took to then answer new 000 calls for all services. This is because Telstra does not know what service the caller will request and therefore cannot allocate dedicated resources for different agencies.

In case study 6, IGEM found two issues affecting other emergency services:

- delayed call answer for police
- consequent delayed dispatch for fire services, police, and ambulance.

Unlike ambulance, ESTA call answer delay for police and fire services has occurred infrequently since December 2020.

<sup>15</sup> The RVA was intended to advise callers of the high demand and discourage callers from remaining on the line if their call was not an emergency. Therefore, Telstra had configured the RVA to play the full message before allowing its operators to answer.

<sup>16</sup> The benchmark for ESTA's police call answer speed performance is that, within a calendar month, ESTA answers 80 per cent of such calls ≤5 seconds.



### Finding 7

The most common risks for patients associated with the Emergency Services Telecommunications Authority's emergency ambulance call answer delays included:

- delayed clinical triage
- delayed provision of appropriate pre-arrival instructions, including for cardiopulmonary resuscitation
- delayed dispatch of Ambulance Victoria (AV) resources
- delayed dispatch of Victoria Police resources to multi/multiple-agency events
- delayed dispatch of Fire Rescue Victoria and Country Fire Authority appliances in their emergency medical responder roles
- increased call activity to triple zero (000) for emergency ambulance due to multiple calls being made from witnesses on scene at individual emergencies.

When additional calls are made for the same patient, it potentially increases 000 call volumes. If ESTA is unable to answer these additional calls, it leaves callers waiting with Telstra's 000 operators who are then unable to answer new calls. This can create a backlog of 000 calls waiting to be answered by Telstra, potentially affecting 000 at the national level.

The most common risk of AV command and control/resourcing issues included delayed dispatch of AV resources.

## 4.3 Emergency Call Person (Telstra 000 Service)

From its own analysis, Telstra advised IGEM that its national Emergency Call Person (ECP) service 'was significantly affected by ESTA delays (and on some occasions by other jurisdictions outside of Victoria) in answering emergency calls during pandemic surge periods'.

As a result of ESTA call answer delays, Telstra identified the following consequences on the national ECP.

Firstly, when ESTA does not have available call-takers to answer new calls presented by Telstra, there is an obvious delay in connecting emergency callers to the service they require.

Secondly, Telstra's handover of 000 callers to respective state ESOs (ESTA, in Victoria) creates a funnelling effect that delays its ability to answer subsequent 000 calls.

At this time, the Telstra 000 Service aims for 45 per cent occupancy, meaning that Telstra agents (operators) are rostered with the expectation they will be on calls for less than half the duration of their shifts. The result of this is that, in general, the community does not receive a delay (or only experiences a very short delay) in Telstra answering their call to 000.

However, Telstra reported that its occupancy at times reached 60 per cent, from October 2021 onwards, triggering a need to recruit new agents at its call centres in three states, and to second 24 additional staff from other parts of its business.

Telstra advised that some other Australian jurisdictions experienced emergency ambulance call demand surges of an equivalent order to Victoria. However, it was ESTA's delayed call answer times in particular that significantly affected Telstra's ability to manage the national 000 service (refer to Chapter 5).

IGEM examined evidence provided by Telstra and found that as ESTA's emergency ambulance average call answer time approached and then exceeded 120 seconds in October 2021, so did the prospect of Telstra falling below its own 85 per cent grade of service.

This was despite both New South Wales and Queensland generally having daily emergency ambulance call activity that is higher than Victoria, even during periods of surge.

This is supported by Telstra's average ESO comparison data. For example, it took an average of 90 seconds for ESTA to answer emergency ambulance calls in Victoria during October 2021, against a national average of 13 seconds. In January 2022, the national average increased by two seconds to 15 seconds. However, ESTA's average call answer time for emergency ambulance calls also increased to 118 seconds.

### Finding 8

The Inspector-General for Emergency Management did not find any evidence that the delivery of Telstra's Emergency Call Person function contributed to the emergency ambulance call delays experienced by Victorians from December 2020. This is in the context of the review's limited scope and that Telstra's performance is subject to assurance by the Australian Communications and Media Authority.

### Finding 9

The Emergency Services Telecommunications Authority's emergency ambulance call answer delays resulted in delays for the national triple zero service in answering emergency 000 calls from the public. This affected callers in Victoria, and in other jurisdictions around Australia, at various times since the COVID-19 pandemic commenced, and most notably from October 2021 until January 2022.

## 4.4 Management of other surge events

ESTA's Critical Incident Response Plan (CIRP) was originally designed to manage surges in activity for VICSES during severe weather emergencies.

While the subject of this review is ESTA's call answer performance related to the COVID-19-related surge, it is important to examine how ESTA managed other elements of its operations during the same period.

### 4.4.1 Thunderstorm asthma activity during 28 October 2021

On 28 October 2021 ESTA faced challenges in addition to the surge in demand for emergency ambulance via 000 due to the forecast of an elevated risk of epidemic thunderstorm asthma. There was a high risk of thunderstorm asthma in three districts, and a moderate risk in another three districts.

ESTA reported an increase in asthma-related calls to its emergency ambulance operations – 110 cases for the day. This compared to 77 on the previous day (27 October 2021). There was only one day during that month (17 October) where ESTA recorded more than 100 calls for asthma-related problems ( $N = 102$ ).

For October 2021 the average number of asthma-related calls ESTA answered each day was 84.3.

On 28 October 2021 ESTA answered 53.6 per cent of emergency ambulance calls within the five second target time, with total activity of 2880.

ESTA dispatched 81.3 per cent of statewide Code 1 ambulance events within 150 seconds. This was below the metropolitan benchmark of 90 per cent but consistent with monthly performance at the time.

Although ESTA's call answer speed for the day was poor and it did not meet the metropolitan dispatch benchmark, IGEM found that ESTA activated its CIRP on 27 October 2021, in anticipation of a possible surge in calls related to thunderstorm asthma. This provided advanced warning to the emergency management sector and enabled ESTA to prepare additional resources to attempt to meet forecast demand.

#### 4.4.2 Thunderstorm activity during 29–31 October 2021

Over the course of Friday 29, Saturday 30, and Sunday 31 October 2021, commencing the day after the CIRP activation for forecast elevated risk of thunderstorm asthma, ESTA again activated its CIRP, reporting:

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*[o]n Friday 29 October 2021, Victoria experienced severe weather conditions with damaging winds reaching 70 km/h and peak gusts of up to 100 km/h were forecast for parts of Victoria including the Greater Melbourne area. A severe weather warning for Victoria including Central district for damaging north westerly and south westerly winds was first issued by the Bureau of Meteorology (BOM) at 232 hours on Thursday, 28 October with progressive updates throughout the night and into Friday, 29 October 2021.*

*Call activity on Friday was at normal levels for all services until approximately 0500 hours when the severe weather conditions resulted in a significant increase in call activity for police, VICSES 132500 Storm Emergency and Fire Services with ambulance experiencing negligible impact to call taking and dispatch services. In response to the increase in service demand to ESTA, with over 140 calls waiting for VICSES, ESTA activated Level 2 Critical Incident Response Plan at 0610 hours Friday, 29 October. ESTA also had an EMLO [Emergency Management Liaison Officer] present at the State Control Centre to support operations with the influx in activity.*

*The increased activity put pressure on ESTA's ability to maintain performance benchmarks, especially as activity levels exceeded normal activity by up to 5,000% for VICSES at the peak of the storm. Due to the heightened activity, the impact of the severe weather conditions resulted in reduced call answer performance and dispatch performance for ESTA...*

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ESTA recorded non-compliant monthly performance for CFA, FRV, and VICSES call-taking and dispatch in October 2021.

When IGEM assessed the month by removing the poorest performing days – corresponding to the intense storm activity on 29–31 October– it calculated that ESTA would have achieved compliant performance for each of these agencies for both call-taking and dispatch over the month. This confirms the performance degradation only related to the period of severe weather.

This issue highlights that even with emergency planning and preparation, there are limited opportunities to improve call answer performance – at short notice – during overwhelming surges of activity.

To a large extent, during storm surges, it is difficult for ESTA to adequately prepare for a scenario where there are 140 calls waiting for VICSES assistance (as occurred at one stage on 29 October 2021). ESTA does not have the capacity to allocate sufficient call-takers to the VICSES queue to manage that level of demand, let alone to meet the demand for other agencies that are also busy at the same time. That said, the more call-taking and dispatch staff ESTA can apply to these situations, the less performance degrades during these intense periods of surge.

#### 4.4.3 New Year's Eve 31 December 2021

Historically, New Year's Eve is the busiest night of the year for several ESOs, particularly AV and VicPol. This is associated with parties and mass gatherings across the state, along with alcohol and drug-related harm. ESTA's ambulance operations have managed call activity during the COVID-19 pandemic that is sometimes well in excess of normal New Year's Eve forecasts.

**Table 7:** ESTA emergency ambulance call activity and performance over the two days of Friday 31 December 2021 (New Year's Eve) and Saturday 1 January 2022 (New Year's Day) (Source: ESTA)

AV STATEWIDE CALL ANSWER DATE	CALL ACTIVITY	CALLS ANSWERED WITHIN 5 SECONDS	PERFORMANCE
Friday 31 December 2021	3261	1337	41.0%
Saturday 1 January 2022	3849	1626	42.2%
Combined	7110	2963	41.7%

As shown in Table 7 call activity was extremely high and ESTA's performance over the two days was low, with just over 40 per cent of calls being answered within five seconds.

**Table 8:** ESTA police call activity and performance over the two days of Friday 31 December 2021 (New Year's Eve) and Saturday 1 January 2022 (New Year's Day) (Source: ESTA)

VICTORIA POLICE CALL ANSWER DATE	CALL ACTIVITY	CALLS ANSWERED WITHIN 5 SECONDS	PERFORMANCE
Friday 31 December 2021	3923	3625	92.4%
Saturday 1 January 2022	4398	4100	93.2%
Combined	8321	7725	92.8%

Conversely, Table 8 shows the high performance of ESTA for VicPol over the same period. ESTA met the call answer speed target on each of these days.

These two datasets show the disparity in call answer performance between ESTA's ambulance and police operations on what is predictably one of the busiest periods of the year.

There are differences between the way ambulance and police emergency calls are processed by ESTA's call-takers. These different skill sets also have average handling times (that is, some police calls may take longer to process than some ambulance calls and vice-versa, depending on the specific circumstances of each case). Regardless, there is the same five second target time to answer these calls but against different benchmarks, that is 90 per cent for emergency ambulance calls and 80 per cent for police calls.

The call activity on the days in question were similar for the two agencies but ESTA is more used to managing that level of calls for police, than it traditionally has for ambulance. The reason ESTA did not meet the ambulance call answer benchmark on these days – and on many others from December 2020 – chiefly concerns it having the necessary number of emergency ambulance call-takers to meet the demand (refer to Chapter 8).

# 5 National 000 service

## 5.1 Overview

Australia's 000 service was first introduced in 1961, progressively replacing state and locally-based emergency call-taking arrangements in metropolitan and regional areas over the following years. It ensures consistency of call access to police and emergency services regardless of location.

When a person calls 000, the call is answered by an agent (operator) at the national level. This agent service is known as the Emergency Call Person (ECP). The ECP agent's job is to identify which emergency service the caller needs, and the broad location of the emergency, so they can connect the caller to the right service in the right state or territory.

The ECP provides a common approach across the country, but this adds time to the overall call. It does, however, ensure that the caller's location details (address and spatial – Global Positioning System – information) is passed on to the relevant police or emergency services call centre. This is essentially the same as the emergency telecommunications services in New Zealand (111), the United Kingdom and Northern Ireland (999). Another benefit of this system is that the 000 ECP assists in filtering out up to 25 per cent of call volume by detecting non-genuine calls that do not get passed to emergency services.

In other countries, such as the United States of America, its emergency (911) number is answered directly at the local public safety answer point. This still ensures the caller's address and geographic details are passed on, but without the delay of the ECP agent as a middle person.

During the surge period that is the subject of this review, ESTA's poor call answer performance had a negative effect upon the national 000 system. This was because, under the current rules applied to the ECP, the agent must stay on the phone with the caller until the police or emergency services call centre staff answer. When ESTA was taking minutes to answer calls, this meant the ECP agents were left holding on to calls and could not move on to answer other new calls in its call queue.

Under the Australian Constitution, the Federal Parliament has power to make laws relating to postal, telegraphic, telephonic, and other like services (telecommunications)<sup>17</sup>. The states retain responsibility for making laws in relation to health and emergency services among other areas. Australia was able to develop a national emergency call service (ECS) because of the telecommunications power.

The Australian Government Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) has policy responsibility for the 000 ECS.

The Australian Communications and Media Authority (ACMA) regulates and monitors the provision of the ECS under Part 8 of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*.

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<sup>17</sup> Commonwealth of Australia Constitution Act -The Australian Constitution Part V - Powers of the Parliament - 51. Legislative powers of the Parliament.

The Telecommunications Numbering Plan 2019, also administered by ACMA, specifies that:

- the primary emergency service number is triple zero '000'
- the secondary emergency service numbers are '106 and 112'.

All calls made to these numbers that form part of the emergency call service, are answered by agents contracted by the Australian Government. Telstra currently has the ECP role of answering and connecting 000 and 112 calls.

These arrangements do not preclude state and territory authorities from establishing other systems or services to provide emergency callers with direct access to police and emergency services.

To assist its role, DITRDCA formed the Triple Zero Coordination Committee. Its terms of reference open membership to any party with a role in 000.

Australian jurisdictions formed the National Emergency Communications Working Group of Australia and New Zealand (NECWG-A/NZ) in the 1990s to enable collaboration about matters relating to the ECS/ECP. Victoria is represented on NECWG-A/NZ by ESTA, AV, CFA, FRV, VicPol, and VICSES.

In Victoria, when the public needs to report an emergency for police, fire, or ambulance, the community is only encouraged to contact ESTA via 000 (or 112, or 106 for people with hearing/speech impairment).

Victoria operates some other numbers where a caller can direct dial for non-emergency assistance. These include 131 444 for the non-emergency Police Assistance Line (PAL), 132 500 for non-life threatening Victoria State Emergency Service (VICSES) storm and flood events, and 1300 366 314 for non-emergency ambulance transport. For health services there is the NURSE-ON-CALL service (1300 60 60 24) for non-urgent health queries and, additionally, DH established the Coronavirus Helpline in 2020 (1800 675 398).

## 5.2 Regulatory framework

ACMA regulates and monitors the provision of the ECS under Part 8 of the Telecommunications (Consumer Protection and Service Standards) Act.

The Telecommunications (Emergency Call Persons) Determination 2019 specifies the operators of the ECP. The Determination details the national operators for these numbers.

The Determination recognises Telstra as the ECP for 000 and 112. Telstra has responsibility for providing the service that answers calls to these numbers, and transfers them with relevant associated information, to the requested emergency services organisation.

Under the Determination, Telstra must ensure that for all calls to the emergency service numbers (000 or 112), it answers 85 per cent of calls within five seconds, and 95 per cent of calls within 10 seconds. Telstra measures this from when the call reaches its ECP answering point and reports on its performance daily. The performance outcome is known as the Grade of Service

Telstra performs this switching function from call centres located around the country, which it staffs with 000 agents. The usual time for Telstra to perform call handover is less than 50 seconds. This is from the time an agent answers a call to the time they transfer the call to the ESO operator and they answer it.<sup>18</sup>

As of 8 March 2022, the ECP's average handling time (AHT) was 48.6 seconds.

In a civil context, it is the responsibility of states and territories to protect the life and property of their communities. Each state and territory (with some exceptions) has their own emergency services, such as police, ambulance, and fire and rescue. Unlike other states and territories, ESTA is responsible for call-taking and dispatch for police and all emergency services in Victoria.

<sup>18</sup> Determination, s48(1)(b). With an exception for unforeseen matters outside Telstra's control.

## 5.3 Alternatives to 000

The current arrangements provide callers with only one way to report emergencies – via an agent-assisted telephone call.

Previously, under the national numbering plan, there were three, unique, five-digit emergency services numbers for direct access (one for police, one for ambulance, and another for fire). The Australian Government removed these from the numbering plan in the 1990s leaving only 000, 112, and 106. State and territory ESOs have taken some of the old five-digit numbers and created similar non-emergency access numbers from them, such as 131 444 for non-emergency police assistance.

In 1997 the Victorian Auditor-General's audit of the then Bureau of Emergency Services Telecommunications, led to its *Special Report No. 53 Victoria's multi-agency approach to emergency services: A focus on public safety* (Special Report). The Special Report found that:

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*... the availability to the public of many emergency numbers creates confusion as to the most appropriate number to call ... It is clearly very important, primarily in maximising public safety but also for enhancing operational efficiency, that ...the emergency service organisations continue to actively promote the adoption of one emergency number in Victoria. In this regard, the phasing out of the 3 emergency service access numbers ... should be regarded as a high priority.*

*Victorian Auditor-General, 1997*

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ESTA advised IGEM that it does not support reinstatement of the direct access services similar to the five-digit access numbers, for the reasons set out in the Special Report. Through IGEM's interviews with national bodies and selected ambulance services, there does not appear to be any desire to change the current model.

Telstra's average call handling time is just under 50 seconds. While some of this includes the time taken to handover calls to ESOs, such as ESTA, this time is added to the overall emergency call process. This is not the case in a direct access model such as the North American 911 system.

As discussed in Section 4.3, there were call answer delays at Telstra's end of the 000 process, mostly attributed to ESTA not being able to answer calls from Telstra quickly enough. Callers ringing in Victoria for police or fire, were caught up in these ambulance-based delays, because until Telstra answers, it does not know what service the caller is seeking. If the system allowed callers to use technology in a way to identify the service they require, this could prevent one service type such as ambulance causing delays for the other two services.

Given the scale of emergencies across Australia since 2019 – including the Black Summer bushfires, the COVID-19 pandemic, and devastating floods in Queensland and New South Wales – it is possible that other jurisdictions may be the source of similar call answer delays that cause future bottlenecks at Telstra.

One option may be to add an interactive voice response system, or similar, as part of the 000 queue when there are call answer delays at Telstra. This could give callers the option to select the agency they require via voice or keypad and enable them to bypass any delays not affecting the service they require. If a caller does not make a selection, it could default to queuing them for Telstra as per normal processes. Where they make a selection, Telstra could then either reserve capacity to manage emergency calls for the non-affected services or isolate the affected agency and state/territory from the rest of the national network.

Since an Australian Government review in 2014, there is no evidence available to IGEM that indicates the community has been part of a conversation about what type of emergency call service it expects (refer to Section 5.4.4).



Smart mobile phones are now the predominant tool used by callers<sup>19</sup>, and the community has shifted to communication methods using alternatives to the traditional telephone network. In this context, IGEM considers that consultation on what the community expects of the national emergency call service is important.

It is clear from IGEM's discussions with stakeholders that NECWG-A/NZ is well placed to progress work on policy proposals such as this. However, the Australian Government needs to actively support and progress change through its policy role, and states and territories will need to support implementation.

### Finding 10

While the national triple zero system has a history of reliability and effectiveness, it adds time to callers' emergency call experience. However, the Emergency Call Person role plays an important role in filtering out approximately 25 per cent of non-genuine calls.

Victoria's emergency call answer performance issues highlight the risk that a single agency, such as the Emergency Services Telecommunications Authority, can detrimentally affect the efficiency of the national Emergency Call Person system.

Smart mobile phones have become the predominant tool used by callers, and the community continues to shift to alternative communication using methods other than the traditional telephone network. Consequently, there are opportunities to consult with the community on what it expects of the national emergency call service, because they are currently not part of the decision-making process.

Any enhancements to provide faster access to emergency services is likely to be of benefit, as Australia faces up to the increased challenges of climate change and global health risks.

### Observation 1

There is an opportunity for the Australian Government supported by the National Emergency Communications Working Group of Australia and New Zealand, to undertake consultation with the community of its expectations of the emergency call service. This should consider options for reducing the risk of call answer delays associated with increasing frequency and severity of emergency events. The output of this consultation should then form part of the decision-making process to determine appropriate enhancements to the national emergency call service.

## 5.4 National cooperation during the pandemic

Interstate and national support for emergency response is a normal part of business. This support has been repeatedly demonstrated in emergencies including bushfires, floods, and security events. However, there have been no recorded instances of inter-jurisdictional support in the emergency call-taking and dispatch space prior to COVID-19.

NECWG-A/NZ is recognised by the Australian Government for its capability and value and is central to consultation on matters relating to 000.

From early 2020, NECWG-A/NZ took a lead role in facilitating information-sharing to assist its members in relation to the COVID-19 pandemic, with a national meeting held to discuss pandemic planning. A meeting took place on 18 March 2020 to discuss the application of a national Recorded Voice Announcement (RVA) to direct non-urgent callers to the National Coronavirus Helpline.

<sup>19</sup> Telstra advised IGEM that of the total of landline and mobile telephone calls that it connects to ESOs nationally, 78 per cent are from mobile telephones. According to the Deloitte Mobile Consumer Survey 2018, 89% of 2000 Australians surveyed now own a smartphone, up from 88% in 2017 and 84% in 2016.



During mid to late 2021, NECWG-A/NZ met to address issues arising from the pandemic and to assist all jurisdictions in addressing the challenges in emergency call answer performance for ambulance. Within NECWG-A/NZ, there are streams for each agency type being police, fire, and ambulance. The ambulance stream worked on a national-specific 000 advertisement in an attempt to manage demand, particularly as the COVID-19 Omicron wave began to affect other jurisdictions.

During the COVID-19 pandemic, ESTA's relationship with NECWG-A/NZ varied. In 2020, ESTA appeared to be regularly engaged with NECWG-A/NZ. Its forum representation was at a senior level and was tracking lessons internationally.

By 2021, ESTA was only represented on NECWG-A/NZ by mid-level representatives, this was at the point when it needed assistance from the broader national community. Arguably, ESTA did not make effective use of this forum during this critical period but with limited resources it had to decide how best to use them.

For many years, AV has been a participant in NECWG-A/NZ, and specifically its ambulance stream. AV engaged directly with NECWG-A/NZ during the second half of 2021, as the call answer delays in Victoria continued to escalate. IGEM notes that AV does not have the same role as other state/territory ambulance services in this setting, because it does not answer 000 calls. However, in hindsight, AV advised IGEM that it could have increased its engagement with NECWG-A/NZ at an earlier point during the COVID-19 pandemic.

While NECWG-A/NZ is a voluntary body, DITRDCA has the policy responsibility for the provision of emergency call service, but that only relates to the Commonwealth jurisdiction. As this is quite a complex network with a lot of different partners DITRDCA created the Triple Zero Coordination Committee with the intention of providing policy leadership. When DITRDCA established this forum, it intended it to be a place for discussion on both ongoing issues of concern to the emergency service organisations and policy matters.

The Triple Zero Coordination Committee met on 9 December 2021. After that, ESTA and New South Wales Ambulance (NSWA) met separately after a National Coordination Mechanism meeting to agree to ongoing mutual support and set up coordination meetings between the two organisations.

#### 5.4.1 The role of Telstra as the Emergency Call Person

Through the conduct of this review, Telstra received universally positive feedback in its role as the ECP. Telstra has been a longstanding member of NECWG-A/NZ and is a member of its executive.

Telstra and ESTA actively communicated with each other on a regular basis throughout the pandemic. When ESTA's performance negatively affected Telstra's ability to answer 000 calls nationally, it asked the executive of NECWG-A/NZ to hold an urgent meeting with the DITRDCA and ACMA. This meeting occurred on 5 January 2022.

The meeting discussed national call answer speed performance issues and sought to identify strategies to reduce call volumes to 000. This was at a time when many callers were ringing 000 simply for COVID-19 advice.

The NECWG-A/NZ executive identified two strategies:

1. Commonwealth and state/territory-based media campaigns advising of the correct use of 000 and 112 for emergencies (Strategy 1).
2. Activation of a new Recorded Voice Announcement to be played to callers ringing 000 at the commencement of the emergency call, that provided alternative contacts for COVID-19 information (Strategy 2).

As part of actioning Strategy 1, on 12 January 2022 the Honourable Paul Fletcher MP, the then Minister for Communications, Urban Infrastructure, Cities, and the Arts, released a statement to the community entitled 'Don't call triple zero unless it's a genuine emergency'. Additionally, states and territories ran media campaigns about the appropriate use of 000; in Victoria, this was the 'Save 000 for emergencies' campaign, that had already been running during periods of 2021 and into 2022 (similar versions ran in other jurisdictions).

All parties agreed to implement Strategy 2 and Telstra implemented a new RVA on 14 January 2022 in an effort to manage emergency call demand. This announcement added an additional 17 seconds<sup>20</sup> to the emergency call time but provided valuable advice to redirect callers seeking COVID-19 information only, to the national [healthdirect.gov.au](https://www.healthdirect.gov.au) service. At the request of the police and fire agencies, Telstra removed this announcement one month later, on 14 February 2022.

While this announcement was active, Telstra saw a 19 per cent decrease in 000 calls, nationally. This coincided with Victoria's declaration of a system wide Code Brown, as part of efforts to manage demands on Victoria's health system, including 000.

### 5.4.2 Inter-jurisdictional resource sharing

Following a meeting of the NECWG-A/NZ ambulance stream in September 2021, ESTA and NSWA discussed a possible staff deployment to Victoria. ESTA subsequently made a formal request, with NSWA committing trained call-takers. However, NSWA experienced its own surge in demand via 000 and recalled its staff at the start of January 2022.

This is the first known interstate deployment of its type but was limited in value because there were considerable lead times, with ESTA having to train the NSWA call-takers in its CAD system and other Victoria-specific nuances in ambulance telecommunications. In principle, the approach of ESTA and NSWA to the deployment was similar to that adopted for interstate firefighting deployments.

ESTA also explored the possibility of interstate support from South Australia. This was along the lines of using South Australian call-takers, working in their home state but remotely accessing ESTA's CAD system for dispatch. Ultimately the hurdles for such a remote access model were too great to overcome in a short timeframe and the parties agreed to discontinue these efforts.

From interviews IGEM conducted for this review, there was a consensus that inter-jurisdictional support for call-taking and dispatch is a welcome initiative that should be further pursued. There are opportunities to improve interoperability and support along the eastern seaboard states through technology. However, the pandemic resulted in all states being subject to their own surges in demand for ambulance via 000, resulting in a need to manage capability and capacity issues locally.

In future, there may be protracted or campaign events in the health or other emergency management areas in which interstate cooperation of the type seen between ESTA and NSWA could be used, as occurs in the management of bushfires and floods. Fire and other state/territory ESOs have well established and functional interstate support arrangements that could be applied to call-taking and dispatch. However, future human disease emergencies may play out in a similar fashion to the COVID-19 pandemic and states and territories need to escalate their own capacity and work in isolation if their counterparts are under equal duress.

As a result of national collaboration, ESTA made an agreement with NSWA to undertake a peer-review of ESTA's ambulance call-taking practices. This occurred over three days from 20 June 2022. IGEM positively notes this activity, which encourages national cooperation and assurance in the sector.

Like ESTA, AV recognised it could have utilised NECWG-A/NZ to a greater extent and advised IGEM it will aim to make better use of this forum in future.

In summary, the level of cooperation at the national level was high, resulting in new inter-jurisdictional support initiatives. While limited in benefit due to the rapid onset of the COVID-19 Omicron variant, groundwork has been established for an enhanced model of coordination and support in emergency communications for future protracted surge events.

### 5.4.3 Educating the community on correct use of 000 in a national context

At the national level, there is limited education around the use of 000, other than from the perspective of awareness. ACMA has resources on its website describing how 000 works and how the community can use it appropriately. The function of community education around how and when to use 000 primarily resides with states and territories (refer to Section 9.10).

<sup>20</sup> There is a standard RVA that tells callers that they have called 000 and to please hold. This is to encourage callers who unintentionally called 000 to disconnect. It takes five seconds to play. The new RVA added a further 17 seconds.

#### 5.4.4 Review of the national triple zero operator (2014)

In 2014 the Australian Government announced a *Review of the national Triple Zero Operator*. Its purpose was to explore how the 000 service could improve and continue to offer a world class, technologically adaptable service. The national review made 11 recommendations related to six key themes:

- technology
- governance and coordination arrangements
- funding
- delivery model
- regulation
- possible tender for the ECP.

In May 2016 the Australian Government released an implementation plan aligned to the recommendations.

There have been major enhancements to mobile origin location information but otherwise, there has been no substantive change to how the national 000 system operates for many years.

In May 2014 NECWG-A/NZ also released its vision of the future for 000, called Next Generation Triple Zero (NG000) Strategy Proposal. In this proposal, NECWG-A/NZ made six findings. Finding 3 stated:

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*Triple Zero needs to be more innovative to ensure customer requests for emergency assistance are quickly actioned to reach the appropriate responder(s).*

*NECWG-A/NZ, Next Generation Triple Zero (NG000) Strategy Proposal, 2014*

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NECWG-A/NZ also stated that:

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*Situation and challenge:*

*Today, only voice communications are available for communicating with emergency services operators, however the community is increasingly expecting more*

*Rapidly changing technology means better quality information is available to better service the community. NG911 and NG112 in the US and Europe have taken advantage of these technologies to deliver a multi-channel capability resulting in improved community outcomes*

*The current model, which remains effective, relies on service provision via an ECP however timing of ECP contract negotiation in 2016 presents an important opportunity to adapt to changing needs*

*Failing to deliver on community expectations, remaining reactive and falling behind international best practice will affect public trust in Emergency Service Operators and the Government.*

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In the eight years since this proposal, there have been no changes to the channels available to the community and Telstra remain the only pathway to 000.

IGEM considers that the situation envisioned in the final point above has eventuated, at least in Victoria. Media coverage and community responses to this are indicators that there is little tolerance for extensive call answer delays affecting emergency ambulance requests.

#### 5.4.5 Policy and procedures relating to the functionality of 000

Many of the operational procedures adopted by the ECP are at the discretion of Telstra and ESOs (including ESTA) within each jurisdiction. Telstra has mostly negotiated these procedures over the past 20 years through NECWG-A/NZ.

The complexity of negotiating effective and innovative processes is a result of Telstra being constrained by the technology and capability of the lowest common denominator. This ensures that all jurisdictions can work with Telstra at a national level and in a common manner. This is generally the telephony and dispatch hardware and software used in each jurisdiction, which have varying capabilities and interoperability with Telstra's infrastructure.

## 5.5 Call presentation procedure

When Telstra attempts to connect a caller to a call centre such as ESTA, it presents the call to a designated directory number (DN) known as the 'first choice'. If, for example, ESTA does not answer the call after a pre-determined time, then Telstra keeps the caller on the line, but 'withdraws' the call and re-presents it to a second choice DN. This process is repeated until ESTA answers. There are six choices in ESTA's system with each one being allocated incrementally to a higher priority. The purpose of the priority is to ensure that calls that have waited longest in the queue, are answered first when an ESTA call-taker becomes available.

Telstra negotiated a national approach to call presentations in the early 2000s. There were two critical reasons for this policy.

- Allow some jurisdictions with multiple call centres to move calls from one centre to another when one centre was busy.
- Protect against a technical failure on a directory number. By enabling calls to be withdrawn and re-presented to an alternative, line faults could be worked around.

In normal times, when ESTA answers 90 per cent of calls at or within five seconds, it answers them on the first choice DN. It is only during short spikes in demand that Telstra must escalate to second or third choice directory numbers by withdrawal and re-presentation. This often corresponds with a major or highly visible emergency such as a serious motor vehicle accident on a busy freeway that attracts dozens of 000 calls. Traditionally, Telstra only re-presents a small percentage of emergency calls more than once.

To ensure a consistent approach to Telstra presenting and re-presenting calls, it introduced three representation options, 27 seconds, 45 seconds, and 75 seconds. In Victoria, ESTA has linked up call centres and uses its own telephony network to move calls around its State Emergency Communications Centres (SECCs). Therefore, it does not need the re-presentation process to do this. In Victoria, application of the re-presentation procedure is used only to protect against technical failure.

ESTA requests that Telstra applies the 75 seconds re-presentation procedure for calls to Victoria. Victoria's preferred position is that calls from Telstra are not re-presented. However, Telstra has insisted on a nationally consistent approach for its agents. Telstra's agents also find application of this policy reassuring to emergency callers when the presentation time elapses, because they advise callers that they are trying to connect to another directory number.

Given that ESTA does not need re-presentation from a technical perspective, guarding against technical line faults and reassuring callers are the only benefits against several disadvantages.

The first disadvantage is that when Telstra withdraws a call, it means there are a few seconds during which time ESTA loses the opportunity to answer it, until Telstra re-presents it to the next choice directory number. This means that a caller temporarily loses their place in the call queue. However, when the call is placed into the next choice queue, it gains higher priority, restoring its original place.

On occasions, an ESTA call-taker can become available in those few seconds when the call is technically absent from the queue. In this case the call may miss out on being answered in its rightful place in the queue, because another 000 call placed after the first can take its place in the call queue upon withdrawal.

The second disadvantage relates to the way ESTA manages its own telephony system. Until recently, if ESTA failed to answer a call after 75 seconds on the sixth presentation, Telstra re-presented it back to the first priority instead of remaining at the sixth. This resulted in the call being situated well down the queue, even if subsequently placed 000 calls had not waited as long. Therefore, a call that had already waited several minutes could be further delayed due to the inadvertent prioritisation of calls that had waited shorter amounts of time.

ESTA advised IGEM that this issue rarely (if ever) arose prior to the COVID-19 pandemic. ESTA only began to realise the risk of calls not being answered until after the sixth presentation, when its call answer speed performance significantly declined.

Among the potential adverse events IGEM has examined as part of this review, several of them involved 000 calls that were not answered by ESTA before Telstra exceeded six presentations. In some cases, multiple callers rang for the same patient.

In other cases, the re-presentation process and the way ESTA had configured its telephony system resulted in ESTA answering calls for a patient before others (for the same patient) that were placed several minutes earlier.

Prior to the COVID-19 pandemic there was a very low risk of Telstra re-presenting calls to ESTA more than six times. For most jurisdictions, it had already implemented a technical solution within their own telephony systems that prevented what in effect was a seventh presentation returning to the lowest priority. Telstra advised IGEM, it was not aware until recently that ESTA was still exposed to this problem.

Once Telstra and ESTA identified the issue, ESTA put in a fix to its internal telephony system in March 2022, which solved the problem.

Another issue that arose during the COVID-19 pandemic was that as more callers waited to be answered, other people (often other family members) on scene at an emergency would also call 000, possibly to see if they would get through to an ESTA call-taker when others were not succeeding. This resulted in a higher workload for both Telstra and ESTA and created even longer call answer times as more and more traffic fed into the Telstra bottleneck of calls waiting for an available ESTA call-taker.

This may have been fuelled by public misunderstanding of how the 000 system works, and a belief that if more people rang 000, the better the chances of at least one caller getting through. This made the situation worse and resulted in multiple calls about the same emergency needing to be answered by Telstra and ESTA in turn. This is a long-standing issue that pre-dates the COVID-19 pandemic.

Multiple callers have always called 000 for a single emergency, particularly if it is highly visible such as a fire, or road crash on a freeway. It is difficult to control this, however there are opportunities to reduce the likelihood of multiple callers in the presence of the same patient, by improving call answer speed.

### **Finding 11**

Some callers to triple zero (000) who waited more than 75 seconds for the Emergency Services Telecommunications Authority (ESTA) to answer, did not get answered in the expected order of first come, first served. This was because of the nature of the national 000 call presentation procedure and a lack of a suitable technical configuration on ESTA's telephony system.

Once Telstra and ESTA identified the problem, ESTA put in a fix to its internal telephony system in March 2022, which permanently solved the problem of calls being reduced in priority for answer after sixth presentation. However, the national re-presentation procedure continues to create situations where callers momentarily lose their spot in the queue, leading to instances where a later caller may be answered before them.

## 5.6 Technical changes to meet surges in demand

One of the centrepieces of 000 policy and process is that Telstra remains on the call until the emergency services call centre answers and performs a handover. For ESTA, this ensures they are provided with the Calling Line Identification (CLI) reference number and that the caller is properly engaged with an ESO call-taker, before disconnecting. This is known as a 'warm transfer'. Note that not all services in all states and territories require the Telstra operator to verbally advise them of the CLI number.

The alternative would be a 'cold transfer' where Telstra simply places the caller in a queue for the emergency service they have requested and then disconnects. This has never been considered as a normal option due to risks of losing the caller and not matching the CLI data to the right caller.

Within the NECWG-A/NZ forum however, cold transfers were raised as an option in extreme circumstances, as part of its planning discussions. The proposal was that Telstra could undertake cold transfers to emergency services who may be unable to maintain their call answer performance during the COVID-19 pandemic.

Under this proposal, Telstra would connect a call to the required ESO queue and then leave the caller to wait for the ESO to answer. This would ensure that Telstra remained available to answer incoming calls to the national call queue and thereby minimise any negative effect on it. As part of this proposal, ESOs were asked to review their technical capability to support cold transfers. Several ESOs informed NECWG-A/NZ that they did not have the necessary capability to support the proposal, so it did not go ahead. ESTA advised IGEM that it does have the capability to support cold transfers but found that it would experience significant technical and operational consequences if implemented.

Another special measure established around 2009 to manage peak call periods is what is termed the 'four-minute rule'. Telstra introduced it so that it could pass caller details to ESOs, if the ESO had not answered after four minutes and the caller hung up or became disconnected.

Normally, Telstra waits for agencies such as ESTA to answer, advises the call-taker that the caller had disconnected, mentions anything they may have told them, and provides the CLI reference number. Under the four-minute rule, rather than wait for ESTA to answer, the Telstra agent can disconnect from ESTA's queue. They then advise their team leader of the details, who then contacts the ESTA team leader to pass the details on to ESTA to follow up.

Telstra and ESTA agreed to put in place an email process where Telstra could then email ESTA with these details. At times when ESTA's call answer performance was extended and the four-minute rule was likely to be in use, ESTA used a call-taker to monitor a specific email inbox to review and call-back emergency callers referred to in emails.

Telstra applied this rule extensively to pass information relevant to disconnected callers during the surges in demand when ESTA's call answer times were extreme.

January 2022 was the peak time in which Telstra emailed ESTA under the four-minute rule, doing so on 2302 occasions (refer to Figure 3). Many of these callers called 000 back if they still needed an ambulance. However, this meant they were further back in the queue than if they stayed on the call. Additionally, it sometimes resulted in ESTA attempting to call them back tying up another call-taker, but their line was engaged because they were now back in the 000 call queue.

**Figure 3:** ‘Four-minute’ rule escalations from Telstra to ESTA from 6 October 2021 to 28 February 2022  
(Source: Telstra)



IGEM found that this process was applied in at least one event it screened as a potential adverse event. In that case, the caller disconnected and rang back. This placed the caller further back in the queue, resulting in further call answer delays before ESTA was able to act on the details passed on by Telstra. Over 11 minutes passed from first call presentation to when ESTA created its first event in this case.

It is difficult to ascertain how significant a delay the four-minute rule created and how often it had a negative effect. This is because in practice many callers who disconnected before ESTA answered, either did so because someone else (for the same patient) had already managed to get through to an ESTA call-taker, they decided to take the patient to hospital themselves, or changed their mind and decided they no longer needed an ambulance. IGEM also notes that Telstra agents actively encourage callers to remain on the call and not disconnect when managing callers during long wait times.

**Finding 12**

While well intended, the nationally agreed application of the four-minute rule for disconnected callers in Victoria was inefficient and led to slow follow-up times by the Emergency Services Telecommunications Authority.

## 5.7 Risks and benefits of national Emergency Call Person system

There are real risks to the national ECP if any one jurisdiction or emergency service organisation fails to meet its expectations, as has been the case in Victoria during the ongoing COVID-19 pandemic. ESTA’s very low call answer performance at times had the effect of backing-up the national system (refer to Section 4.3).

At ESTA’s request, Telstra activated the extreme event Recorded Voice Announcement (RVA) for Victoria 150 times from October 2021 to March 2022. On occasion Telstra had to contact ESTA when ESTA’s call answer performance was already having a negative effect on the national 000 call queue.



During the COVID-19 pandemic, Telstra's 000 average handling time was typically 50 seconds, noting some of this is handover time to ESTA. The main advantage of this is the provision of the caller's calling line identification (CLI) data and the Advanced Mobile Location (AML) spatial data.

ESTA provided IGEM with data on how long it takes to verify an emergency event address in its CAD system when it does not have CLI and AML information. ESTA answers VICSES calls on the 132 500 number routinely and these calls are transferred with no location information.

IGEM's analysis of data from November 2021 found that without the advantage of CLI and AML, it takes ESTA on average approximately 65 seconds to answer and verify an event location in CAD. For emergency ambulance events (Code 1 and 2) with CLI and AML, it took on average 26 seconds. For police and fire 000 calls it was approximately 42 seconds and 37 seconds respectively.

This suggests that the advantage of direct dialing is negated by the benefits of faster emergency location verification. However, this would not be the case if a direct dial option carried with it the CLI and AML data.

Telstra advised IGEM that in its opinion, the following are benefits of the national ECP as it operates now:

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*The National ECP Model*

- (a) A single number for all Australians to use when facing a time critical or life-threatening event.*
  - (b) Nationally coordinated approach to emergency call answering ensuring a consistent experience for callers.*
  - (c) National focus on the end-to-end service, including national call monitoring, alarming of national emergency network and national contingency planning strategies (i.e., Extreme Event RVAs).*
  - (d) National Performance visibility*
  - (e) Nationally considered and endorsed innovation Roadmap for future enhanced capabilities.*
  - (f) Nationally considered and endorsed Media Campaigns relating to educating the Public as to the appropriate use of the ECS.*
  - (g) Trusted Relationship between ESOs, Telstra, as the ECP and Australian telecommunications providers for the provision of the service.*
  - (h) Increased resilience and redundancy with multiple call centres in different states.*
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Based on IGEM's interviews with DITRDCA, NECWG-A/NZ, and the ambulance services, they agreed with Telstra's opinion of the benefits. While IGEM considers the ECP system is appropriate under normal circumstances, protracted surge events such as the COVID-19 pandemic and ESTA's associated performance issues demonstrate situations can occur that diminish its ability to meet the intent of the current ECP policy and affect community outcomes.

## **Recommendation 1**

The Inspector-General for Emergency Management recommends that the Victorian Government advocate to the Australian Government for changes to national triple zero call answer policies including:

- (a) revision of the call presentation procedure to minimise the chance of callers losing their place in the call priority queue
- (b) ensuring that procedures applied to managing calls where the caller hangs up prior to an emergency service call centre answering have efficient processes for passing on the details of the caller for timely follow up
- (c) consideration of appropriate assurance of procedure changes by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts.



# 6 ESTA and AV planning

## 6.1 Introduction

This chapter considers the plans ESTA and AV had in place before the COVID-19 pandemic arrived in Australia in January 2020, and the plans these organisations adjusted or made in response to it.

## 6.2 ESTA planning

ESTA's current CIRP (v21.2) came into effect on 12 October 2017. ESTA last revised it on 2 September 2021. The CIRP's purpose:

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*... is to outline the requirements for business and operational response and escalation, for incidents and emergencies that may/will, or is having, an impact to [ESTA] service delivery in Operations (e.g., increase workload in Call-taking and Dispatch [CTD], technology incident).*

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*This document defines the varying roles, responsibilities, and actions within ESTA before, during and after a defined incident.*

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ESTA defines a 'critical incident' as:

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*An incident that may/will, or is having, a substantial effect on ESTA's service delivery capability.*

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Importantly, ESTA defines a 'service delivery impact' as:

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*A service delivery impact is a significant effect, over a period, to ESTA's ability to maintain service level agreements for Call-taking and Dispatch. This does not include performance trends over a period and must be directly linked to an incident with an extreme surge of events.*

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Although ESTA's CIRP does not define the term 'surge' specifically, IGEM is applying the following definition for the purposes of this review:

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*A surge is a sudden and dramatic increase in incoming calls volumes to ESTA via 000 that is much higher in number than was forecast or expected for a specific period.*

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In general, a surge in calls in ESTA's emergency ambulance operations may occur in the case of a serious motor vehicle accident with multiple patients. In such a scenario it is not unusual for ESTA to receive dozens of 000 calls for the same incident, as patients, passers-by, and witnesses ring for help.

When this occurs there may be surges to each of ESTA's ambulance and police emergency call queues that sometimes result in call answer delays because the number of calls that Telstra transfers via the 000 ECP outnumbers the available ESTA call-takers for a particular agency. Such surges – for a single, but serious incident – often result in call answer delays that range from seconds to minutes. This can dissipate quickly, as people see emergency services arriving on scene.

In relation to the surge period that is the subject of this review, IGEM is treating the dramatic increases in call activity experienced by ESTA in 2021 and 2022 as one surge, rather than hundreds of small surges in which emergency calls for ambulance in Victoria exceeded ESTA's ability to manage within performance benchmarks.

The COVID-19 pandemic is by its nature very different from a single emergency such as a period of severe weather or a large and complex motor vehicle accident. This is because it is not restricted to common notions of an emergency timeframe. It is not geographically isolated, it ebbs and flows in terms of severity (consider periods of high community transmission both during and beyond lockdown periods) and has significant consequences. These affect aspects of community life and economic activity beyond the immediate health and wellbeing of those directly affected by the disease.

Following Victoria's 2016 thunderstorm asthma event, ESTA completed a full review of its CIRP and created additional sub-plans. This meant that ESTA no longer focused the CIRP on bushfires, storms, floods, and internal business continuity matters, but expanded its approach to other large-scale and/or protracted incidents including health emergencies.

The sub-plan most relevant to the COVID-19 pandemic in Victoria in 2020 was the 'health sub-plan', first created in 2017. ESTA issued version 20.1 of the sub-plan on 10 November 2020.

In the health sub-plan ESTA acknowledges that pandemic is one example of:

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*a health incident ... considered to be a widespread incident that impacts the Victorian public resulting in an increase in requests for ambulance attendance.*

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Additionally, ESTA noted the consequences of such a health incident include:

- surge in call activity from the public
- surge in dispatch activity
- impact to Ambulance service delivery.

ESTA's CIRP sub-plan for ambulance, detailed the following consequences:

- impact to resourcing capabilities and possible Code Orange or Red called [by AV]
- impact to ambulance response times.

For the Victorian public, possible adverse events due to delay in assistance from either:

- delay in call answer
- delay or no ambulance attendance
- delay in triage at hospital emergency department.

Importantly, ESTA's CIRP health sub-plan considers the triggers and responses detailed in AV's own Emergency Response Plan (ERP), to ensure that the organisations scale up their responses to surge events in tandem.

ESTA activates its CIRP health sub-plan when its Operations Support Services Manager determines that a forecast or unplanned health incident is or will have negative effects on ESTA's service delivery capacity. ESTA's sub-plan states that it will only trigger it after consultation with AV.

## 6.2.1 ESTA's planned, short-term responses to manage surge events

The health sub-plan considers a range of tactics to help manage service delivery impacts such as surges in emergency calls and call answer performance.

The immediate treatments available to ESTA in a call surge include:

- recalling operational employees from breaks to increase calls answered from queued 000 calls
- revising the breaks of call-takers and dispatchers to increase capacity
- using multi-skilled call-takers for ambulance calls (for example police call-takers who are also trained in taking ambulance emergency calls)
- sending out notifications to off duty employees asking them to attend for overtime shifts
- obtaining revised forecasts from ESTA's Real Time Desk of call demand and identifying any scheduling gaps.

These actions are available to ESTA operations managers to address immediate surges. ESTA uses these tactics individually or in combination to manage high call activity regardless of the agency affected. ESTA used each of these to some extent over the past two years, more notably from July 2021 onwards.

## 6.2.2 ESTA's planned, longer-term responses to manage surge events

Additionally, ESTA can use targeted and more complex tactics if it considers they may have the potential to positively influence community behaviour or improve performance during a surge. These include:

- use of a Recorded Voice Announcement (RVA), as detailed in ESTA's CIRP:

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*The National Protocol has been prepared by the Commonwealth in consultation with Telstra (Emergency Call Person for 000 and 112) and State and Territory Emergency Service Organisations.*

*The purpose of the National Protocol is to effectively manage increased call volume during Critical or Extreme Events. Tailored Recorded Voice Announcements (RVAs) will be applied at the front of the Triple Zero (000) call queue to assist in redirecting non-emergency calls from the 000-call queue to non-emergency information lines such as the VicEmergency Hotline which may be more appropriate and notifying callers of possible delays.*

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- surge scripting:

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*[t]he purpose of the scripting is to make the public aware when there is a high demand for ambulance attendance. This is so callers can make more informed decisions about their situation...*

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Surge scripting enables ESTA call-takers to deliver alternative post-dispatch instructions.

- urgent disconnect – follows the use of surge scripting:

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*[t]he intent of the urgent disconnect rule is to reduce the time call-takers are on the phone with a caller when there is an extreme situation or a surge event occurring...*

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Urgent disconnect empowers ESTA call-takers to disconnect from emergency callers after obtaining necessary details, but only in specific clinical situations that AV has approved. Since AV authorised its use in October 2021, ESTA may opt to provide pre-arrival instructions using the RVA instead of the call-taker.

- The emergency rule – ESTA only uses this in 'catastrophic situations' (for example, an emergency like the 2016 thunderstorm asthma event or a large-scale terrorist attack):

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*The emergency rule involves disconnecting from all calls and not delivering any PAIs, PDIs or DLS instructions such as CPR, Imminent Childbirth, Severe Haemorrhage etc. The rule is vastly different from the workflows operators use each day and it is acknowledged that this may be a confronting process.*

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ESTA has all of these options available to it when managing immediate surges in emergency calls and can use these tactics individually or in combination.

### 6.2.3 ESTA's Pandemic loss of workforce plan

During the early stages of the COVID-19 pandemic, ESTA began drafting a *Pandemic loss of workforce plan*. The purpose of this plan was to address ESTA's preparedness for a decline in workforce availability that led to a loss of an ESTA SECC. The plan included how it would use alternative approaches to delivering emergency communications. It also covered how ESTA would communicate with government and ESOs about loss of workforce issues.

ESTA's *Pandemic loss of workforce plan* included solutions such as:

- reducing event volume – by use of RVAs, examining the use of an external workforce to manage, for example, burn-off and VICSES storm and flood calls
- increasing operational workforce – including, recalling seconded operational employees, grouping training into essential and non-essential groups, altering rest break models, reverting to a single team leader model
- reducing call-handling time – including, reduction of structured call-taking questioning time, changes to workflows for call-backs related to medical alarm calls, and the NURSE-ON-CALL service, examination of a technical solution to send post-dispatch instructions, changes to call scripts, and generic COVID-19 information to emergency callers via text.

ESTA's plan details several models and explanations about the effects on emergency telecommunications for different ESOs in case it lost a SECC.

In November 2021 it became clear to ESTA that the likelihood of obtaining significant numbers of trained call-takers from other jurisdictions in Australia, to bolster its workforce, would be extremely difficult given emergency ambulance call activity, especially along the eastern seaboard.

IGEM notes that ESTA's planning documents did not include actions as to how it could assist AV or DH inform and educate the community about when to ring 000, and what types of health situations might constitute an emergency (refer to Section 7.4). While occurring later in the pandemic, IGEM notes that ESTA addressed this in its Q2, Q3, and Q4 2021–2022 COVID-19 resilience preparedness and response plan.

### 6.2.4 Use of Recorded Voice Announcements

There are two categories of RVA, and four RVAs in total, that ESTA may employ in cases of high 000 demand.

ESTA requests the Telstra 000 Service to activate the first RVA category when it obtains an agreement with an affected ESO. For example, the state-based RVAs are pre-recorded messages to advise callers that there currently is a high volume of 000 calls for ambulance. This is known as an 'extreme event RVA'. In this instance, a 000 caller will hear ESTA's RVA before Telstra answers the call and begins the transfer process to the requested agency queue. It also plays after the caller has waited for a specific period for Telstra to answer.

In assessing the use of an extreme event RVA for emergency ambulance calls in October 2021, ESTA reported:

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*[a]nalysis has indicated that the deployment of the RVA suppressed volumes to around 3000 calls per day thereafter [15 October 2021]. Forecasts indicated that without this treatment we would regularly be expecting 3500 calls by the end of October [2021].*

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The second type is a national extreme event RVA. After gaining agreement from all jurisdictions, Telstra on request from national agencies and on agreement with key stakeholders, may add to the front-end of all calls to 000. Telstra activated this for the first time on 14 January 2022 across all jurisdictions in Australia. This RVA included the following pre-recorded message:

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*You have dialled Emergency Triple Zero. If you require information in relation to COVID-19, please visit [healthdirect.gov.au](http://healthdirect.gov.au) or call the National Coronavirus Helpline on 1800 020 080. If you require emergency assistance from Police, Fire or Ambulance please stay on the line.*

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The introduction of the national extreme event RVA was designed to assist in the management of call activity increases to several Australian ambulance services, specifically by influencing caller behaviour. The aim was to reduce the proportion of non-emergency calls to 000, especially in cases of people only wanting COVID-19 information.

Telstra removed the extreme event national RVA on 14 February 2022 after one month of operation, at the request of national agencies and on agreement with key stakeholders. This was to limit potential negative effects on police and fire calls in the form of longer call answer times for these services.

The introduction of the RVA, in conjunction with other initiatives, such as a concurrent national 000 education campaign, resulted in a national reduction of 000 calls into Telstra of 19 per cent. Ambulance services in some states advised of call activity reducing by between 200 and 500 calls per day.

Following activation of the national extreme event RVA, ESTA observed positive effects on its emergency ambulance operations. These included significant reductions of daily ambulance call activity and improvements in its call answer performance from January to February 2022.

### 6.2.5 Planned actions ESTA took to manage emergency ambulance call activity

In 2020 ESTA activated its CIRP for ambulance-related activity on four occasions. One of these was in January 2020 due to a heat health alert and concerns about air quality. The other three activations were in November and December 2020 due to forecast increased risks of thunderstorm asthma.

During October 2021 ESTA activated its CIRP (for ambulance) once for thunderstorm asthma and again due to a forecast of high demand after the lifting of a COVID-19 lockdown.

Between 7 October 2021 and 26 April 2022, ESTA requested Telstra to activate the health RVA on 156 occasions, due to a combination of issues, including high demand and ESTA resourcing challenges. This is evidence of the number of times 000 demand overwhelmed ESTA's emergency ambulance operations. ESTA's plan calls for it to enact the health related extreme event RVA when it experiences 10 emergency ambulance calls waiting for longer than five minutes.

On 15 October 2021 ESTA implemented revised scripts for its call-takers to provide to emergency ambulance callers in relation to surge, estimated time of arrival (ETA) and call closure scripts. This was in addition to the use of urgent disconnect procedure for Priority 2 stable patients, and Priority 3 patients. In agreement with AV, ESTA changed the advice it gave to 000 callers to ensure that they were provided a more accurate reflection of when an ambulance was expected to arrive for their event, given high demand. Also, so that call-takers could return to the call queue to answer other incoming 000 calls more quickly, call-takers did not remain on the telephone with callers for patients triaged as less urgent.

Between 15 October 2021 and 15 February 2022, ESTA used urgent disconnect for 127,978 emergency ambulance events. This was an average of 35.8 per cent of its total call activity for the period.

On 22 October 2021 ESTA also re-activated an RVA for non-emergency ambulance communications (NETCOMM) to encourage online bookings for patient transport.

## 6.2.6 ESTA executive focus in 2020 and 2021

On 17 June 2020, noting ESTA's April 2020 monthly performance summary report, ESTA's Advisory Committee<sup>21</sup> papers stated:

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*[t]he impact of the COVID-19 pandemic and the corresponding reduction in calls was noted, however call volumes are increasing to normal levels.*

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At that time, ESTA was meeting its monthly emergency ambulance call-taking benchmarks. ESTA then provided its draft corporate plan to stakeholders. In it, ESTA forecast that it would be compliant with AV emergency call answer speed throughout the year but predicted it would be only just compliant for six months from January to June (in the 90 to 91.5 per cent range). ESTA noted it had taken a conservative approach to the forecast in light of the uncertain demand due to COVID-19.

To ensure its corporate plan is appropriate and meets its stakeholders needs, ESTA consults on the draft. On 6 August 2020 AV provided the following feedback on ESTA's draft Corporate Plan 2020–21, noting:

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*... largely silent on COVID-19 despite the significant and likely ongoing impact to our respective agencies. It would be appropriate to recognise ESTA's contribution to supporting AV and the wider Health sector response to this pandemic. Our ongoing joint response to COVID-19 is likely to require further work to update and align our respective response plans, escalation processes and operating models.*

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AV added:

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*Emergency call answer performance for Ambulance is forecast at 90.0% in March 2021. The forecast does not clearly articulate the drivers for the decline in performance against a high of 94.7% in July 2020, nor does the Corporate Plan clearly identify which strategies will either support or improve ESTA performance against this measure.*

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On 16 September 2020 the ESTA Advisory Committee approved ESTA's final corporate plan with AV in attendance and not proposing further changes.

IGEM notes that ESTA's final Corporate Plan 2020–21 did not include additional commentary about its role in Victoria's management of the COVID-19 pandemic, nor the reasons behind its optimistic forecasts for compliance against all emergency ambulance call-taking and dispatch benchmarks, except for Code 1 dispatch into 2021.<sup>22</sup>

IGEM reviewed other evidence that suggested that in the second half of 2020 ESTA's executive shifted its focus from COVID-19 response to the management of the then upcoming major CAD upgrade, scheduled to commence from August 2020. This was a critical project ESTA had to implement to ensure its CAD remained stable and supported by the software provider.

At that meeting, the then CEO of ESTA indicated that although the CAD upgrade project was on schedule there was 'no room for any further delay' and proposed a 'go-live' date of 13 October 2020.

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<sup>21</sup> ESTA established the Advisory Committee in accordance with the requirements of the *Emergency Services Telecommunications Authority Act 2004*. It is a multi-agency forum derived from the ESOs to whom ESTA provides emergency call-taking, dispatch, and contractual services. The Chair of the ESTA Board also chairs the ESTA Advisory Committee. ESTA expects the CEOs or chief officers form the membership of the committee.

<sup>22</sup> The Code 1 benchmark (benchmark one) for AV speed of dispatch is that, within a calendar month, ESTA dispatches 90 per cent of Code 1 events at, or within, five seconds. This has been a long-term performance issue for ESTA, largely related to the fact the current benchmarks for that measure are long out-of-date, and ESTA's compliance against this has been affected by additional requirements on ambulance call-takers without corresponding changes to performance requirements.



In contemporaneous notes, IGEM's observer at the 16 September 2020 ESTA Advisory Committee meeting wrote about ESTA's concerns regarding the importance of the scheduled upgrade to the CAD call-taking and dispatch system:

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*It [the CAD upgrade] will need a manual [operation] period but only of [three] hours.*

*The chair said there is a concern in ESTA if it [the upgrade] has to be pushed out further due to onset of fire season...*

*If this upgrade does fall over, it puts the CAD version further behind in terms of support with Hexagon [that is, technical support from the CAD software vendor]. ESTA has estimated that it could lose 18 lives a day if it was stuck in manual mode with over 7000 calls a day.*

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IGEM notes that there is no mention COVID-19 or pandemic in the minutes of the 16 September 2020 ESTA Advisory Committee or the meeting minutes from 9 December 2020.

In the March 2021 ESTA Advisory Committee meeting, the only reference to increased call activity and issues with ESTA's emergency ambulance call answer performance was in relation to its non-compliant February 2021 call answer performance:

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*[ESTA] introduced the performance report briefly. Increasing demand was affecting call answer speed and this was problematic. [AV] confirmed that Ambulance Victoria was seeing the same problem.*

*The Committee noted the [February 2021] Performance Report.*

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This reference is despite evidence that ESTA's emergency ambulance call answer performance had declined to a state of non-compliance for a period of three straight months from December 2020, in the context of increasing call activity.

In late-January 2021, AV raised its concerns regarding the falling call answer performance with ESTA, by writing to the Chair of the ESTA Service Performance and Commercial Committee (SP&CC). The terms of reference for this committee state that its first objective is:

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*To review service performance of both CAD/CTD and Operational Communications Services and provide advice and/or recommendations to the Advisory Committee, including initiatives to improve service efficiency and effectiveness of ESTA's service delivery performance.*

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IGEM notes that AV and other agencies have raised concerns in these meetings that the committee had not been fulfilling this function effectively. IGEM was unaware of the SP&CC providing any advice to the ESTA Advisory Committee on call answer performance. ESTA has since revised its focus on performance during SP&CC meetings during 2022 at the request of the members.

At the next quarterly ESTA Advisory Committee meeting of 16 June 2021, the minutes reflected significant discussion among ESTA and agency stakeholders about emergency ambulance call answer performance.

In June 2021 ESTA acknowledged that it could not absorb the large increases in emergency ambulance call activity seen in May 2021 and that the reasons for non-compliant performance in that month were due to a 'combination of factors' including:

- ESTA operators suffering from fatigue, resulting in high unplanned leave
- ESTA operators also taking unpaid leave that it acknowledged was unusual
- parental leave doubling in May 2021.

ESTA advised it:

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*... was addressing the issue. 80 people had been taken on with an additional 30 planned and training for these new people is underway.*

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At that meeting the members also discussed the effect of ESTA resourcing on performance, and:

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*"[t]he committee discussed shift arrangements and whether changes might lead to increased availability [of operations staff]"*.

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The seeming lack of focus on these risks by the ESTA Advisory Committee is contrary to the information and briefings provided by ESTA executives to IGEM staff during the early stages of the COVID-19 pandemic.

From March 2020 into July 2020, ESTA routinely reported to IGEM about its planning, performance, and future intentions concerning its response to the COVID-19 pandemic. At the first meeting, ESTA informed IGEM that 'modelling looks bad, focused on mitigating risks'. ESTA provided IGEM with a list of the activities it was preparing for, many of which were in alignment with its CIRP.

AV executives expressed to IGEM that they felt ESTA did not communicate to them, as well as they should have, about the organisational and service delivery risks associated with COVID-19. ESTA advised IGEM that it does not share this view.

As early as April 2020 ESTA focused on undertaking a detailed COVID-19 risk analysis to its business and predicted future surges in demand for emergency ambulance, and possible impacts to staff availability.

Meeting with ESTA on 14 April 2020, IGEM noted:

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*From ESTA participating in the European Emergency Number Association (EENA) Covid response forum last week, ESTA learned that in Europe one of the biggest lessons was that public messaging can change public call demand patterns.*

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In July 2020 ESTA informed IGEM that it expected high COVID-19 caseloads to affect its call activity, commencing December 2020 (refer to Section 7.2).

The apparent lack of focus on these matters by the ESTA Advisory Committee is in contrast to the evidence IGEM has of ESTA's significant planning for its management of emergency telecommunications, particularly during the pandemic, and its refinement of planning and forecasting throughout 2020.

ESTA advised IGEM that it felt that it managed its pandemic planning appropriately using other forums that were able to be more responsive to the needs of the frequently changing situation as the pandemic evolved. This included the ESTA COVID Response Group (an internal team), State Control Team, State Emergency Management Team and the EMV-led Response Agency Taskforce.

However, the ESTA Advisory Committee has a key governance role as set out in the ESTA Act 2004 and IGEM considers it should have been more active in pandemic planning (refer to Section 9.2).

### 6.2.7 ESTA COVID-19 Crisis Management Team

ESTA established a COVID-19 Crisis Management Team (CMT) in March 2020 for the purposes of appropriately briefing its executive about the COVID-19 situation in Victoria and its plans to manage its operations within this context.

ESTA's CMT first began meeting in March 2020 and met on a weekly basis until December 2020. The then CEO of ESTA chaired the CMT, with ESTA's senior executives as members.

Based on the CMT minutes, IGEM observed that it had a focus on sharing intelligence to inform strategy and risk management. The shared intelligence included:

- the COVID-19 situation – international, national and Victorian developments, including modelling and forecasts
- people and wellbeing – staff being tested, in isolation, absenteeism, unplanned leave, workforce availability
- demand on ESTA, especially AV and VicPol call volumes
- key government decisions – both Australian and Victorian.

IGEM notes that the CMT discussed and assigned responsibility for implementation of mitigation actions such as the development of plans, further analysis of various risks and engagement with particular stakeholders on various issues. IGEM notes that the CMT minutes also recorded decisions and approvals.

IGEM considers that the CMT had a strong focus on understanding the shifting COVID-19 landscape and risks and sought to implement various mitigation strategies to ensure business continuity throughout 2020.

On 2 December 2020 ESTA's executive emailed ESTA's Chair and Board with an update:

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*This week in consideration of the fact Victoria has eliminated the COVID virus from community transmission at this point in time and no new cases for over a month, we have stood down the Crisis Management Team that has been in situ since March this year. Therefore, this will be the last weekly update as the CMT is now finished. We are managing the organisation under business as usual from this point forward unless a third wave occurs.*

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IGEM is aware that there was concern raised about the decision to wind-up the COVID-19 CMT. This was primarily because ESTA's focus was being drawn away from the ongoing COVID-19 pandemic to address the issues caused by the November 2020 CAD upgrade and consequent instability of the CAD system.

IGEM notes evidence of internal email of 2 December 2020 raising issues about ambulance demand and performance:

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*Demand continues to be historically high - Since the release of restriction Ambulance call demand has plateaued from last week (avg. of 2524 calls a day stable from last week).*

*CAD upgrade has impacted call answer speed, with CAS [call answer speed] compliance with IGEM reduced to 72%, 87% and 78% on Friday.*

*We had a number of significant dispatch delays resulting from the CAD screen freezes, Regional CLI not being available, and AV Polling issues.*

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However, the email also mentioned ESTA's police call answer speed performance, stating:

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*CAD performance did not clearly impact call answer speed performance for Police with ESTA performing above the benchmark on Wednesday, Thursday and slightly under after during the weekend peak - but also on Monday.*

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Of concern, this statement was made at the commencement of ESTA's first month of non-compliant ambulance call answer performance in many years. It also coincided with ESTA's own modelling that forecast increases in 000 call demand in December 2020 due to COVID-19.

Finally, the last paragraph of the 2 December 2020 email indicates that, despite ESTA's planning and forecasting, there was thinking that the worst of the COVID-19 pandemic was over and while maintaining a watching brief, it was already planning for a new normal:

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*Thank you for the Board's support of management throughout the COVID-19 crisis as we now move into a watching brief and work through our roadmap to return Support Office toward a COVIDSafe and new normalcy in 2021. PwC have conducted a global study and only 2% of organisations have found COVID a positive experience and I believe we sit in that group as we have learned so much, pivoted the organisation during COVID and applied our learnings.*

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ESTA advised IGEM that following cessation of the CMT, the Emergency Coordination Response Group undertook responsibility for identifying operational and strategic risk, exploring mitigation strategies, and responding to evolving issues. It was also responsible for maintaining the watching brief. ESTA stated that this forum had direct access to the then CEO, who would brief the executive leadership team.

IGEM considers that, while the CAD upgrade necessarily became a priority risk for ESTA in late 2020, there was a lost opportunity for its CMT to continue to meet post-December 2020, to manage the COVID-19 risks to the organisation at a strategic level or reactivate at the first signs of deterioration. This is especially relevant considering the very high jump in call activity in March 2021 and ESTA's inability to meet this demand (refer to Section 7.6). This could have ensured that ESTA was better able to manage the increasing demand on ambulance calls and its declining performance.

However, IGEM also recognises the intense pressure on ESTA post the CAD upgrade to address implementation issues such as CAD faults and associated performance problems.

**Finding 13**

The Emergency Services Telecommunications Authority (ESTA) had in place an appropriately considered and detailed Critical Incident Response Plan (CIRP) and associated health sub-plan. Furthermore, ESTA made efforts to develop more flexible and useful planning documents during the COVID-19 pandemic, in order to bolster existing emergency plans, and to respond to emerging risks and issues.

Despite its hard work to prepare for the consequences of the COVID-19 pandemic, ESTA's focus shifted to the scheduled upgrade of its call-taking and dispatch operating system. While the upgrade became the priority for ESTA in late 2020, there was a missed opportunity for its COVID-19 Crisis Management Team to continue to meet or reform earlier. This may have assisted ESTA to manage the COVID-19 risks to the organisation at a strategic level, particularly as emergency ambulance call demand increased in March 2021, and its ambulance call answer speed performance decreased below 80 per cent in May 2021.

## 6.3 Ambulance Victoria Emergency Response Plan and AV Pandemic Plan COVID-19 planning

AV has its own Emergency Response Plan (ERP) that provides guidelines for the management of major incidents and highlights the key responsibilities and activities of AV personnel during a multi-casualty incident. The aim of the AV ERP is threefold:

- ensure effective management of incidents
- minimise the impact on normal operations
- adopt a whole-of-organisation approach.

As with ESTA's CIRP, the November 2017 ERP details roles and responsibilities of AV employees, triggers for escalation and graduated responses to manage serious incidents and the use of the Ambulance Emergency Operations Centre (AEOC). The plan links it to Victoria's emergency management system, and its relationship to other plans, such as the State Health Emergency Response Plan (SHERP).

Along with the ERP, AV approved version two of its AV Pandemic Plan COVID-19 (the pandemic plan) in November 2021. This plan is a sub-plan of the ERP and its purpose:

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*... is to outline AV's current preparation and Response Actions in order to manage an escalation in the number of COVID-19 cases whilst simultaneously ensuring high quality pre-hospital care and medical transport are available for people in life-threatening, time-critical emergencies.*

*The plan should be considered a fluid document that will be periodically updated as more is learnt about the virus, its key risks and the activities required to support the Victorian community during this pandemic... The ERP must integrate with existing daily operational subplans to manage spikes in daily demand or unexpected supply losses.*

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The pandemic plan is detailed and includes both AV's COVID-19 response procedure and response actions to manage:

- workload demand
- workforce supply
- fleet capacity
- triage services
- patient safety and monitoring among other topics.

The pandemic plan closely aligns with ESTA's CIRP and details the same response actions, including the use of RVAs, surge scripting, urgent disconnect, and the emergency rule.

The pandemic plan considers several actions that AV can take to increase its workforce supply, and fleet capacity.

IGEM notes AV activated its Code Red protocol on 5 January and 11 January 2022 due to high demand for services via 000 and depletion of the ambulance fleet (in part affected through COVID-19 furloughing of employees). At this time there were significant increases in the numbers of Victorians hospitalised with COVID-19. By the end of June 2022, AV had activated Code Red on a further four occasions.

Largely absent from AV's planning documents were actions to inform and educate the community about when to ring 000, and what sorts of health complaints may constitute an emergency. As noted earlier, ESTA's planning could have included how it could support AV in this function, especially with its expert knowledge of caller behaviour. For more about public education and messaging about 000 and the associated recommendation, refer to Section 9.10.

#### **Finding 14**

Ambulance Victoria (AV) had in place an appropriately considered and detailed Emergency Response Plan and associated pandemic sub-plan. AV developed new planning documents in response to emerging risks and issues after the pandemic commenced in Australia.

#### **Finding 15**

The Emergency Services Telecommunications Authority (ESTA) and Ambulance Victoria (AV) had substantially aligned their respective emergency planning documents prior to the commencement of the COVID-19 pandemic.

AV's Emergency Response Plan referenced the need to educate the community in order to build resilience. Largely absent from AV's planning documents were actions to inform and educate the community about when to ring 000, and what sorts of health situations may constitute an emergency. ESTA's own planning documents could have included ways in which it could support AV in this function, given its expert knowledge of caller behaviour.

# 7 Forecasting COVID-19 demand on 000

## 7.1 Overview

While ESTA produces long-term call demand forecasts every six months, it makes frequent adjustments and revisions. These occur from three months prior through to one day prior. This ensures ESTA incorporates the most up-to-date information and intelligence available to inform decisions. ESTA also reviews the accuracy of its forecasting by comparing its projected data with actual values on the day itself.

ESTA's forecasting uses various assumptions and variables, including average call handling time (AHT), the historical consequences and demand on emergency services during extreme weather events, historical trends around holidays and days of the week. ESTA applies an automated process to update its staffing requirements based on forecast call volumes.

ESTA uses the 'Erlang C' method of calculating required call-taking and dispatch staff rostering numbers based on call volumes. This is a method used in call centres worldwide, although it was designed for a larger-scale operation than ESTA and not for an emergency services context.

IGEM understands that ESTA's workforce management (WFM) team develops forecasts for call demand and staff levels, and that its Data Science Team uses those forecasts from a point in time to report on predicted performance for longer-term business planning. The latter is predominantly used in executive briefings and correspondence when quoting forecast performance. This explains some discrepancy between recent actual performance and forecasts.

ESTA's call-taking process works by 'pushing' incoming calls to the next available call-taker. ESTA calculates the average call duration and expected call volumes, then using the Erlang C formula, determines how many call-takers it needs in any 15 minute period. Therefore, in theory, if there are sufficient call-takers working in a shift to meet that expectation, ESTA will achieve compliance with performance benchmarks, unless the volume increases significantly and unexpectedly (as in the 2016 thunderstorm asthma event), or potentially if a technical fault occurs.

During the surge period that is the subject of this review, the drop in performance for ambulance call answer speed is due to factors including an increase in call volumes and insufficient available call-taking and dispatch staff to meet demand. As a result, callers waited longer with Telstra operators before being transferred to ESTA.

## 7.2 ESTA's forecasting to inform workforce planning

ESTA's WFM life cycle includes the following four components:

- forecasting future demand using historical data, skills, and experience
- scheduling resources to meet forecast demand
- tracking intra-day activities in real time to best respond to unexpected demand, sick leave, or handling time
- reporting on performance, trends, and business insights.

Once ESTA has calculated base requirements, the forecast process adds expected levels of staff shrinkage to obtain the full staffing requirement. Shrinkage is a percentage of paid time lost to activities such as unplanned leave, planned leave and training.

ESTA has a high shrinkage value of between 50–55 per cent, which significantly increases staffing requirements. The WFM team aims to minimise shrinkage where possible through optimising schedules, break times, training, planned leave, and other activities.

The WFM team compares staffing requirements to actual staffing levels. Net staffing can be negative, zero or positive. If the actual number of staff equals the forecast number, then net staffing is zero. If there are more actual staff than forecast, then net staffing is positive. Conversely, if there are fewer actual staff than the forecast, then net staffing is negative (negative net staffing).

Greater negative net staffing can result in greater negative effects on ESTA's performance.

ESTA's WFM team can forecast call answer performance each month by comparing the actual number of staff employed to the forecast staffing requirement.

When lower than expected call answer performance occurs, the team analyses the contributing variables in order to understand the cause and recommend or implement mitigating actions.

ESTA's Data Science Team commenced work on 30 August 2021 to map the correlation between COVID-19 Delta strain cases and calls to 000. This was in preparation for anticipated demand on 000 calls due to the COVID-19 Delta strain. The team completed this work on 13 September 2021. The team used NSW to determine a 'case to calls' ratio. They based the forecast on three scenarios:

- a high scenario that would have had a higher correlation than experiencing during Victoria's first and second COVID-19 wave (30 calls per 100 cases)
- a central scenario (20 calls per 100 cases)
- a low scenario (10 calls per 100 cases).

ESTA's Data Science Team used the Burnet Institute model as the basis of its forecast, refreshing it every time the institute released new modelling. The Victorian Government used this modelling extensively during the COVID-19 pandemic.

The forecast was used by ESTA's CMT to drive workforce planning decisions, however there were significant limitations to this, as some of the daily peaks that occurred in October 2021 required up to five times the number of call-takers ESTA could roster and exceeded its capacity. Figure 4 shows the forecast and actual required staffing levels for 28 October 2021. This coincides with a forecast thunderstorm asthma day (refer to Section 4.4.2).

**Figure 4:** ESTA's forecast call-takers against actual required on 28 October 2021 (Source: ESTA)

ESTA advised that unlike the COVID-19 Delta wave, the speed of the Omicron wave made it impossible for it to produce an accurate forecast and therefore required staffing, before impacts occurred.

### Finding 16

As COVID-19 infections increased in the Victorian community during late 2021 and into 2022, this presented significant challenges for the Emergency Services Telecommunications Authority (ESTA) to accurately forecast call demand and therefore staffing requirements. During some periods, call demand completely outstripped ESTA's overall capacity.

## 7.3 Historical performance

Prior to COVID-19, ESTA's emergency ambulance call answer performance has been consistently above or close to the benchmark (refer to Section 2.2).

For four months in 2012, performance varied from 86.1 to 89.2 per cent. In 2013 performance dipped below benchmark in only one month (88.5 per cent).

In 2014, ESTA achieved 84.5 per cent and 84.1 per cent to benchmark in August and September respectively. ESTA wrote to AV on 21 August 2014 to note that its August performance was tracking below the benchmark and stated:

*ESTA is **highly reliant on overtime** as a normal practice to fill any roster vacancies related to planned and unplanned leave, but the amount of overtime available to staff to complete this training has **decreased the appetite for additional operational overtime**. This is exacerbated further by the higher than usual number of **unplanned absences**. I understand this **current cold and flu season is one of the worst in the last ten years** and this certainly appears to have affected a large number of our CTD staff across all the centres and services.*

*[IGEM's emphases]*



In that circumstance, ESTA required its operational employees to work additional shifts beyond those for which they were rostered. ESTA identified the reason for the shortfall in available staff was due to:

- a high level of absenteeism in the context of a significant cold and Influenza season
- the requirement for the one-on-one mentoring of trainees with experienced call-takers.

In an attempt to increase the finite pool of available staff in 2021, ESTA recalled operational staff who were on secondment in other roles within the organisation, and the emergency management sector, as well as contacting staff on long-term leave, or who had recently departed the organisation.

In 2014 ESTA addressed its performance issues by recruiting more staff. At the time, ESTA advised IGEM that performance would improve once it had fully trained new call-takers and they were able to work independently. ESTA went on to exceed the call answer performance benchmark for the remainder of 2014, and for nearly all of 2015 (except for December, 89.6 per cent).

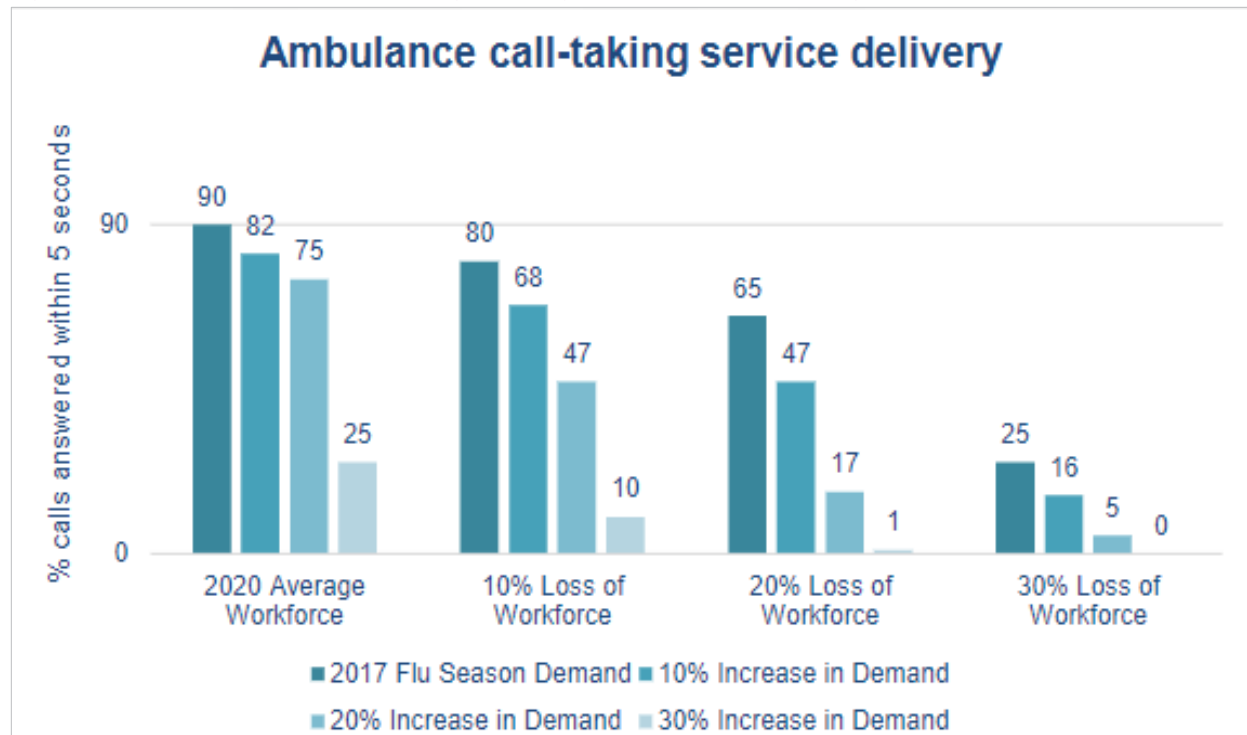
## 7.4 First half of 2020

In early March 2020 and because of an expected COVID-19 outbreak in Victoria, ESTA began planning for a potential significant increase in demand, particularly for ambulance calls. ESTA also considered the potential workforce challenges, including staff being unable to attend work due to infection or quarantine, and staff being unable to take annual leave due to the operational shortfall. In early April 2020, ESTA briefed IGEM that it was gathering evidence to identify whether to expect a sudden short-term spike in demand for 000 and especially ambulance, or a longer-term, sustained increase.

ESTA’s Pandemic loss of workforce plan (approved in April 2020) detailed how ESTA could maintain its functions with a declining workforce, or in the event of a SECC temporarily closing due to a COVID-19 infection of a staff member, the need to isolate others, and follow public health guidelines for decontamination of the site.

The plan, using data from the 2017 Influenza season, predicted that ESTA could meet forecast demand with its existing workforce. However, the data indicated that with a 10 per cent decrease in workforce, or 10 per cent increase in call volume, it could not maintain performance above benchmark as shown in Figure 5.

**Figure 5:** ESTA’s loss of workforce modelling for emergency ambulance call-taking (Source: ESTA)



ESTA's analysis took a conservative approach to modelling, assuming no changes to work processes that it may put into place to mitigate the effect on service delivery, for example the use of urgent disconnect from non-urgent callers (refer to Section 6.2.5). ESTA also assumed an average AHT of 285 seconds. The plan identified three options to maintain call-taking service delivery in the event of unavailable workforce or increased call volume:

1. reduce the number of events processed by ESTA operators
2. increase ESTA's operational workforce
3. reduce handling time of calls and event dispatch.

ESTA used all three approaches at different times through the COVID-19 pandemic (refer to Sections 6.2.3, 6.2.4 and 6.2.5), however the plan focused on internal activities and consequences and did not consider possible flow-on effects to other areas of the health system and community. IGEM was unable to determine whether the ESTA's executive approved the Pandemic loss of workforce plan or how widely it was used.

### **Finding 17**

While the Emergency Services Telecommunications Authority identified key strategies to manage anticipated demand, not all of them were within its control.

### **Finding 18**

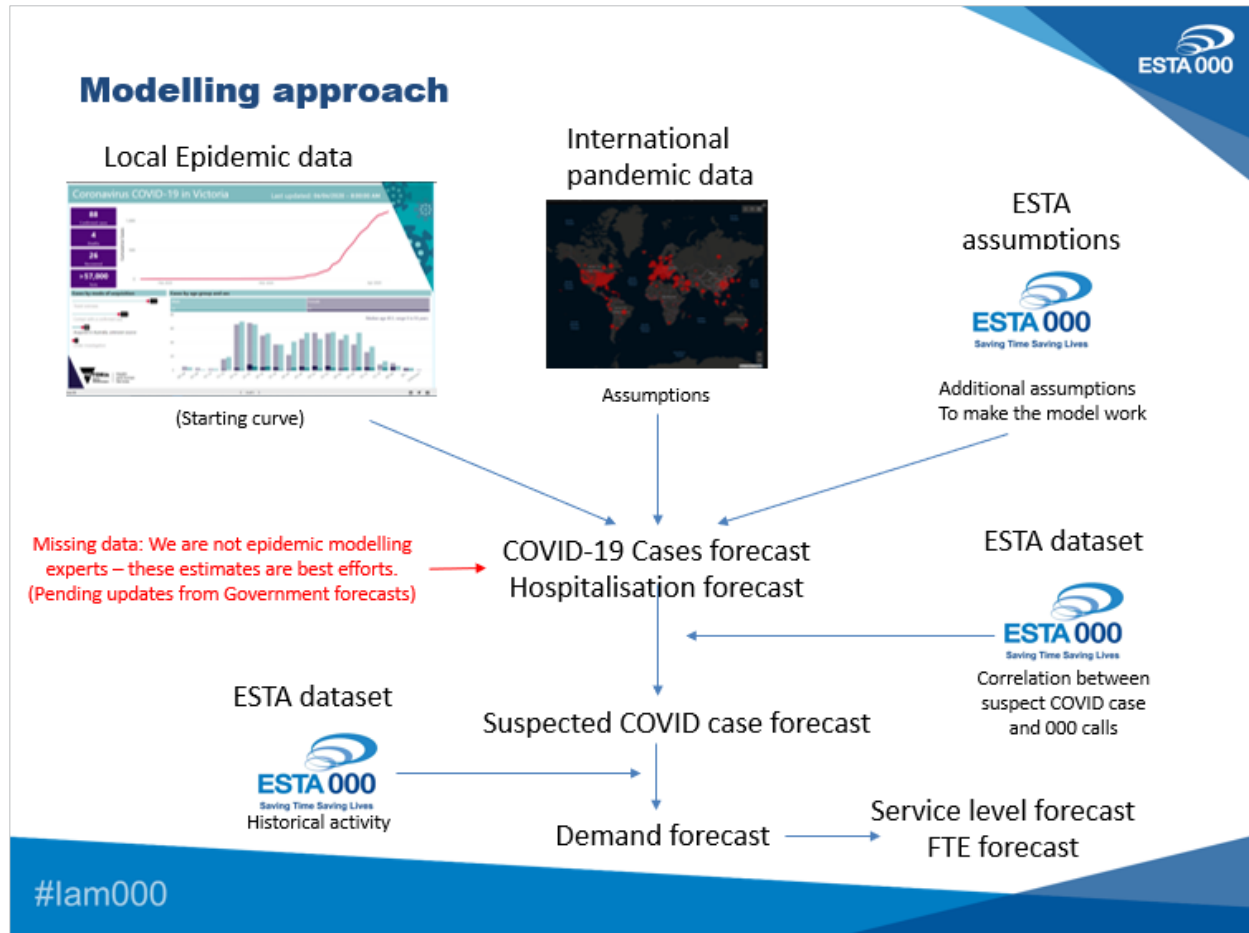
The consequence modelling contained within the Emergency Services Telecommunications Authority's Pandemic loss of workforce plan captured the potential for its call answer performance to degrade during the COVID-19 pandemic.

In April 2020 ESTA produced its COVID-19 forward modelling approach document, specific to ambulance call answer demand. Figure 6 (p 90) shows an overview of inputs to the modelling, which generate service level (call volume) and staffing forecasts. The document stated that forecasting is a 'useful risk management tool' but that ESTA anticipated changes to the assumptions used. Given the rapidly changing nature of the COVID-19 pandemic and response at the time, this was appropriate.

In its plan, ESTA generated hypothetical scenarios of different levels of COVID-19 infection in the Victorian community to track the effect on its forecast future demand and rostering requirements. ESTA provided evidence that it continued refining its WFM forecasts frequently, in the lead up to each day.

In March 2020, call volumes and operational staffing levels were higher than forecast. However, in April 2020, the number of calls received was below that forecast (14 per cent), and staffing levels remained above forecast. The drop in call volume during April 2020 is likely due to the COVID-19 restrictions in place for Victoria at the time. ESTA's call answer performance at this time exceeded the monthly benchmark.

Figure 6: ESTA's modelling approach (Source: ESTA)



## 7.5 Second half of 2020

The AV Pandemic Plan COVID-19, dated 18 August 2020, noted that a significant outbreak of COVID-19 would result in a 'surge in 000 calls and demand for ambulance attendance' and that ESTA is a key external stakeholder. The plan also noted that:

*[u]sing data modelling... in April 2020, AV should prepare for a potential peak of 3,400 daily '000' cases.*

*AV Pandemic Plan COVID-19, 2020*

This refers to a prediction of 3400 calls for emergency ambulance per day in Victoria, during the peak of the COVID-19 pandemic.

In July 2020, ESTA received an average of 2132 calls per day (66,111 calls for the month) and in August 2020 it received an average of 2126 per day (65,908 calls for the month), which was at the peak of the second wave. Fortunately, this was well below the forecast of 3400 calls per day, and ESTA maintained its staffing levels and call answer performance during this peak.

In an attempt to manage ambulance dispatch workload, in late 2020 ESTA and AV agreed to use the Medical Priority Dispatch System (MPDS) *Protocol 36 Pandemic/Epidemic/Outbreak*, also called the 'pandemic protocol'. This protocol was designed for use during a pandemic of Sudden Acute Respiratory Syndrome (SARS).<sup>23</sup> Its purpose was to support call-takers in directing more callers with no 'priority' symptoms to the AV referral service (REFCOMM), for secondary triage with a paramedic or nurse, rather than dispatch an emergency ambulance in the first instance.

ESTA and AV agreed to discontinue the use of Protocol 36 later in the pandemic when they determined it was not making a meaningful difference to workload and the numbers of emergency ambulances that ESTA was dispatching.

From AV's perspective, it is likely that in the Victorian context, *Protocol 36 Pandemic/Epidemic/Outbreak* did not achieve the expected results. This was because the proprietor of the MPDS system developed a more specific version for use in the current COVID-19 environment as there are several differences between the Coronavirus types that cause SARS and COVID-19. However, this version was for users of the ProQA version 13 (ProQA is the software application of MPDS that ESTA call-takers use within its CAD system). However as ESTA was using version 12.2 it could not access the updated version of Protocol 36.

ESTA's ProQA upgrade project was supposed to be finalised prior to the pandemic and its implementation has been delayed several times. In IGEM's 2021 investigation into another potential adverse event from 2019, it wrote that ESTA's latest ProQA version 13.3 uplift date was scheduled for May 2022. However, given the current emergency ambulance call-taking performance and resourcing issues, the upgrade did not go ahead and was still outstanding at the end of June 2022.

Between July 2017 and December 2020, the variation between ESTA's forecast call volumes and actual call volumes was between 8.2 per cent *fewer* than forecast and 2.3 per cent *more* than forecast. Across six month periods between July 2017 and December 2020, the average was no more than 4.7 per cent under or over forecast. That is, ESTA was able to maintain a stable rate of accuracy for forecasting call volumes. During the same period, ESTA's call answer performance remained above benchmark, though dropped to 88 per cent in December 2020. For graphical comparison, refer to Appendix B.

Between December 2020 and February 2021, call volumes were between 2.1 and 6.7 per cent lower than forecast, while operational staff levels were 2–4 per cent above the required forecast. While individual days (or parts thereof) may have had a much higher variance, this indicates that ESTA was, for the most part, able to maintain appropriate staffing levels. However, it did not meet the performance benchmarks in those three months, in part due to dramatic spikes in call volume at times during the period.

IGEM notes that ESTA monitors its call activity in 15 minute increments, enabling it to identify periods of a day when it requires additional staff. It can therefore plan for training sessions, breaks, and leave to take place around peak times. While IGEM did not undertake that level of analysis as part of this review, daily briefings during late 2021 and early 2022 indicate that there were periods on some days when ESTA would have needed at least double its daily forecast of call-takers to meet demand.

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<sup>23</sup> Sudden Acute Respiratory Syndrome (SARS) is a potentially fatal respiratory disease caused by another Coronavirus (SARS-CoV) and first discovered in February 2003, preceding COVID-19 (SARS-CoV-2) by over 15 years.

## 7.6 Sustained high demand in 2021

During the first half of 2021, actual call volumes were below the forecast in all months, by an average of 5.8 per cent (refer to Table 9).

**Table 9:** Forecast versus actual emergency ambulance call volumes January to June 2021 (Source: ESTA)

DATE	FORECAST CALL VOLUME	ACTUAL CALL VOLUME	VARIATION BETWEEN FORECAST AND ACTUAL CALL VOLUME
Jan-21	80,194	74,804	-6.7%
Feb-21	74,237	72,685	-2.1%
Mar-21	88,936	86,651	-2.6%
Apr-21	85,602	81,342	-5.0%
May-21	87,696	77,614	-11.5%
Jun-21	79,505	74,463	-6.3%

ESTA met its forecast required staff levels for the first two months of 2021, before falling to 7.6 per cent below forecast in May 2021. During this period, performance was below benchmark but mostly stable, ranging from 75.4 per cent in May 2021 to 89.1 per cent in January 2021 (refer to Table 10). This is most likely due to peaks and troughs of demand throughout shifts.

**Table 10:** Forecast, scheduled, and actual emergency ambulance operational staff hours, and call answer speed performance, January to June 2021 (Source: ESTA)

DATE	FORECAST CTD	SCHEDULED CTD	ACTUAL CTD	VARIATION BETWEEN FORECAST AND ACTUAL CTD	CALL ANSWER PERFORMANCE
Jan-21	10819.8	13188.8	11084.02	2.4%	89.1%
Feb-21	9753.3	11833.7	10011.87	2.7%	88.4%
Mar-21	11673.3	13146.4	11287.96	-3.3%	83.8%
Apr-21	11168.6	12474.3	10402.42	-6.9%	81.6%
May-21	10866.8	11863.5	10038.12	-7.6%	75.4%
Jun-21	10514.8	11740.5	9814.43	-6.7%	82.3%

### Finding 19

While the Emergency Services Telecommunications Authority was able to meet its forecast required operational staff levels between January and June 2021, it was not able to meet the performance benchmark of 90 per cent of emergency ambulance calls answered in five seconds. This is likely due to periods of peak demand during individual shifts and erratic demand for emergency ambulance services at times due to the COVID-19 pandemic.

From March 2021, ESTA and AV discussed ESTA's difficulty in fulfilling the forecast required number of operational staff to manage elevated call volumes. AV advised ESTA that the higher volumes of emergency ambulance calls did not correlate with the number of ambulance events dispatched, indicating that there could have been multiple calls for individual events, for example, from patients seeking an estimated time of arrival (ETA) of an ambulance.

IGEM notes that COVID-19 caused extra work for paramedics to thoroughly clean their vehicles and equipment, and re-stock, following transporting an infectious or potentially infectious patient. This delayed response times for some ambulances, on top of increased ambulance ramping at hospital, which the media widely reported on during 2021 and into 2022.<sup>24</sup>

Regarding the types of events ESTA and AV were responding to, AV noted that there was a consistent split of event types compared to before the pandemic to March 2021. That is, all event types increased (or decreased) at an equal rate and there was no individual event type increasing (for example breathing problems in COVID-19 patients) above others. However, there were some large increases in the numbers of people ringing 000 for an ambulance with breathing problems, chest pain, and mental health issues, among other complaints, at times during the COVID-19 pandemic (refer to Section 3.1).

ESTA noted that high levels of absenteeism was an issue for both operational and non-operational employees through to June 2021, supporting the notion of increasing staff exhaustion and burnout as the pandemic progressed. ESTA stated that it could not achieve a higher baseline number of staff due to COVID-19 disrupting recruitment and training, and a lack of funding available for new staff (refer to Chapter 8). June and July 2021 saw a continued inability for ESTA to fill the forecast required operational staff for a shift, and call answer speed performance dropped to 77.2 per cent.

On 20 July 2021 ESTA set up an internal group called the Ambulance Performance Executive Group, to discuss the mismatch between demand and supply for ambulance activity. At its first meeting, ESTA identified that there were issues of community expectations, lack of resources, and increased unplanned leave.

The group noted that unplanned leave (including COVID-19 leave) was affecting ESTA's call answer speed performance, and that its WFM team would track it closely. It also noted that new call-takers have longer call-handling time than experienced call-takers, and that other questioning and triage of COVID-19 symptoms were adding to increased time on 000 calls.

IGEM notes that the Ambulance Performance Executive Group initiative disbanded in August 2021 after one month of operation, with its role reverting to the executive leadership team to focus on, and continue to develop, plans to address operational staffing levels.

## 7.7 September 2021 re-forecast

In September 2021 ESTA's operational staffing levels were 14.1 per cent below the required forecast. Consequently, its emergency ambulance call answer speed performance declined to 67.8 per cent.

ESTA developed a revised demand and rostering forecast in September 2021, due to increasing ambulance call volumes, its ongoing inability to meet operational staff forecasts, increasing COVID-19 case numbers, and the Victorian Government's proposed reopening roadmap.

ESTA based its revised forecast on assumptions from NSW data, the Burnet Institute modelling, and again developed three hypothetical scenarios. The revised forecast noted that vaccination rates may affect the rate of COVID-19 infections, reducing the numbers of very ill people, but that vaccination levels were unlikely to immediately reduce call volumes.

Most importantly, ESTA's revised forecast pointed out that it expected Victoria's COVID-19 case numbers would peak before it could recruit and train the staff it needed based on the recruitment and training pipeline at the time. ESTA also noted that it may need to adjust its training and mentoring arrangements to keep separate from its normal workforce, a surge workforce to address the potential peak of COVID-19 cases and associated increased ambulance demand.

<sup>24</sup> ABC News, <https://www.abc.net.au/news/2021-09-29/victoria-ambulance-hospital-health-system-covid-strain/100499266>, accessed 25 March 2022.

## 7.8 Second half of 2021 and early 2022

Through the second half of 2021 and early 2022, ESTA received lower than forecast call volumes in each month. November 2021 and January 2022 are outliers with significantly fewer calls than forecast received (-14.1 and -14.6 per cent respectively), as shown in Table 11.

**Table 11:** Forecast versus actual emergency ambulance call volumes July 2021 to February 2022 (Source: ESTA)

DATE	FORECAST CALL VOLUME	ACTUAL CALL VOLUME	VARIATION BETWEEN FORECAST AND ACTUAL CALL VOLUME
Jul-21	80,176	76,176	-5.0%
Aug-21	77,275	74,650	-3.4%
Sep-21	82,134	79,894	-2.7%
Oct-21	100,775	88,350	-12.3%
Nov-21	91,732	78,833	-14.1%
Dec-21	91,587	88,085	-3.8%
Jan-22	101,830	87,006	-14.6%
Feb-22	78,257	73095	-6.6%

Despite the forecasts being higher than actual call volumes in the second half of 2021, ESTA's performance continued to degrade but not in a linear fashion. In October 2021 it fell to a low of 47.4 per cent of emergency ambulance calls answered within five seconds, then after some minor improvements, degraded to 39.0 per cent in January 2022. The degradation of performance aligns to the increasing difference between forecast required and actual operational hours, with a low of 29.1 per cent below forecast in January 2022 (refer to Table 12).

**Table 12:** Forecast, scheduled and actual emergency ambulance operational hours, and call answer speed performance, July 2021 to February 2022 (Source: ESTA)

DATE	FORECAST CTD	SCHEDULED CTD	ACTUAL CTD	VARIATION BETWEEN FORECAST AND ACTUAL CTD	CALL ANSWER PERFORMANCE
Jul-21	10,706.2	11,090.3	9819.7	-8.3%	77.2%
Aug-21	10,558.1	12,114.7	10,071.04	-4.6%	81.2%
Sep-21	11,349.9	11,302.5	9747.39	-14.1%	67.8%
Oct-21	12,925.5	11,024.6	9698.69	-25.0%	47.4%
Nov-21	12,284.3	10,597.4	8867.54	-27.8%	47.8%
Dec-21	11,700.2	12,183.3	10,243.06	-12.5%	57.5%
Jan-22	13,537.5	11,903.8	9600.01	-29.1%	39.0%
Feb-22	11,089.7	12,402.6	9605.57	-13.4%	66.0%



In early-September 2021, ESTA's former CEO wrote to AV with a prediction that performance would continue to improve to the end of 2021 and into 2022, with ESTA meeting the benchmark by March 2022 at the latest. This prediction appeared at odds with actual performance, and ESTA's increasing inability to meet the forecast of required operational staff hours. ESTA's former CEO acknowledged this last point by advising in the letter that

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*'...without additional operational resources, meeting performance will remain a challenge throughout the year'.*

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Ambulance call volumes reached an average of 2850 calls per day in October 2021 (a record high of 88,350 for the month). Table 13 shows the five dates with the highest volumes of emergency ambulance calls received, two of which exceeded AV's early COVID-19 pandemic forecast of 3400 calls.

**Table 13:** Top five highest emergency ambulance call volume days between 13 September 2021<sup>25</sup> and 31 January 2022 (Source: ESTA)

DATE	EMERGENCY AMBULANCE CALL VOLUME
Saturday, 1 January 2022	3849
Sunday, 2 January 2022	3487
Monday, 3 January 2022	3316
Friday, 31 December 2021	3261
Monday, 27 September 2021	3250

AV's COVID-19 planning projections, dated 17 October 2021, used the Burnet modelling, and demonstrated that there had been a seven per cent decrease in 000 demand during the fifth Victorian lockdown period (in July 2021), followed by a very swift increase following the easing of restrictions.

The sixth lockdown was in place from the start of August 2021 and, although there was an initial drop in ambulance demand, it was not as significant or sustained as during the shorter, fifth lockdown. This sustained increase in demand for ambulance continued into 2022.

The projection document also forecast the 000 demand to the end of 2021, showing a consistent increase in call volumes peaking at over 2800 calls per day in December 2021. The assumptions for this included that Victoria would lift stay-at-home restrictions while there were active COVID-19 cases in the community, that AV was under significant demand pressure even with additional support staff from other agencies, and that hospital systems were still under significant pressure. Again, it is not clear if AV shared these forecasts with ESTA or discussed them further internally.

In preparation for its Corporate Plan for 2021–22, ESTA prepared a Service Delivery Performance Forecast. In it, ESTA predicted it would not meet the emergency ambulance call answer speed performance standards from July 2021 (83.9 per cent) to January 2022 (89.9 per cent), but that it would improve from February 2022.

Furthermore, ESTA stated that its predicted performance was based on the 'historic forecast model'. That model is seven years' historical data to predict 'recurring baseline activity' but not 'non-predictable surge performance'. ESTA indicated that 2022 performance would be re-evaluated in December 2021 based on additional staff availability, service processes, and technology changes. ESTA's actual performance did not follow this trend and in fact decreased, reaching a record low of 38.9 per cent in January 2022.

ESTA's continuous forecasting model continues to predict call volumes to a similar level of accuracy as it had historically. However, it was consistently unable to forecast required levels for operational staff, leading to ongoing degradation of performance.

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<sup>25</sup> 13 September 2021 is when ESTA started providing daily call volume data to IGEM.

In December 2021, at a meeting with agencies to discuss challenges with call-taking and dispatch performance, ESTA noted:

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*... [k]nown roster pressures, nothing out of the ordinary. Work in progress to encourage shift and overtime uptake.*

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At that time, the actual operational staff levels were below the forecast required, though had improved somewhat from November 2021.

In its 17 November 2021 update to the AV Pandemic Plan COVID-19, AV noted that:

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*... demand forecasting and planning will be informed by Department of Health modelling and local and international experience...*

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and

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*... demand on AV services correlates with the number of COVID[-19] patients hospitalised.*

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### Finding 20

The Emergency Services Telecommunications Authority (ESTA) demonstrated that it had a high level of capability in terms of its modelling and forecasting of emergency ambulance call volumes. Therefore, ESTA was able to plan its workforce needs accordingly. ESTA continuously updated its forecasting model inputs and assumptions, which led to forecast call volumes being consistently close to, or greater than the actual volume of calls received each month.

Although forecasting became more difficult as the COVID-19 pandemic continued in to 2021 and 2022, ESTA's call answer speed performance problems were through no deficiency of planning and forecasting. Rather it was an inability to acquire resources to meet demand.

## 7.9 Data sharing and effective communications

ESTA advised IGEM that it did not have access to health modelling data for forecasting demand until later in the pandemic, and that it did not feel well-connected with the Department of Health (DH) for access to additional pandemic plans.

DH advised IGEM that like all government departments and agencies, ESTA, EMV, and DJCS were privy to the same information via SCT COVID around COVID-19 modelling and expected impacts. A range of government agencies used this modelling without DH involvement, to plan for and respond to the pandemic.

It is clear to IGEM that both AV and ESTA felt that the other was not forthcoming with documentation for planning, nor considering the full picture of the pandemic response and Victorian community needs.

One example of this disconnect is AV's COVID[-19] Planning Projections, dated 17 October 2021, that was presented to the State Health Incident Management Team (led and attended by health staff only). It is not clear from evidence provided if AV shared its plan with ESTA separately, nor if it discussed the projections with ESTA to coordinate planning.

That said, in its interview with IGEM, AV stated that it had met with ESTA to discuss health modelling throughout the pandemic on a regular basis (weekly or twice weekly).

ESTA commenced sourcing information to develop its own modelling from 2020 and attempted to forecast the increasingly erratic demand for ambulance services. ESTA based its modelling on its own data and research in addition to evidence and other work undertaken by various organisations, including the World Health Organisation (WHO)<sup>26</sup>, London Ambulance Service National Health Service Trust, New South Wales Health, the Burnet Institute, and DH.

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<sup>26</sup> ESTA relied on WHO data to develop the 'five days prior' metric – this was the average duration between infection and the onset of symptoms.

A data sharing agreement that DH first developed in August 2021, and updated in October 2021 included AV and ESTA, defining how and what COVID-19 data the parties would share across the agencies for the purposes of planning and managing ambulance services. ESTA has confirmed that prior to August 2021, there was no formal arrangement to share COVID-19 data and information between the agencies. There was, however, ongoing data sharing between ESTA and AV for operational purposes.

Correspondence shows that in September 2021, when ESTA faced significant challenges in filling shifts, it proposed a collaborative working group to AV, but it was not until October 2021 that there was a more coordinated cross-agency approach to managing the situation. Emergency Management Victoria (EMV) led the creation of a cross-agency team tasked with supporting ESTA in planning for increased demand, identifying risk mitigation strategies, and identifying how to implement strategies.

On advice from DH, ESTA consistently updated its staff planning throughout the pandemic, as part of its COVIDSafe plans. This included how it would manage COVID-19 positive cases within ESTA SECCs and associated staff isolation requirements.

ESTA's modelling showed that if it furloughed all staff in a shift, there would be significant and widespread delays to call answer speed, for ambulance emergencies, as well as other agencies and 'upstream' to Telstra 000 call centres. The likelihood of a SECC being unavailable was low but nonetheless considered, and plans communicated to EMV on a regular basis.

### **Finding 21**

Between March 2021 and February 2022, the Emergency Services Telecommunications Authority (ESTA) was unable to match the required ambulance operational staff numbers to meet the forecast ambulance call volume demand. This was most applicable with the challenges ESTA faced from September 2021 onwards with significant increases in call volume demand in the context of the Delta and Omicron COVID-19 waves and reduced staff availability.

### **Observation 2**

The *Emergency Services Telecommunications Authority Capability and Service Review* recommended enhancements to its call-taking and dispatch processes with greater collaboration between the Emergency Services Telecommunications Authority and Ambulance Victoria, and exploring alternative call management techniques for large-scale emergencies. The Inspector-General for Emergency Management supports the principle of this recommendation.

# 8 Funding and resourcing

## 8.1 Introduction

The ESTA Act 2004 established ESTA and provided for its funding via fees charged to ESOs. The funding arrangement recognises that that ESTA provides services that would otherwise be the responsibility of the ESOs. This user pays model was designed to encourage ESOs to prioritise their needs effectively to help contain costs by imposing discipline on the sector in relation to further expansion in service demand and cost.

ESTA's call-taking and dispatch line of business and corporate overheads are funded through the following sources:

- ESO fees (AV, CFA, FRV, VicPol and VICSES)
- State Budget funding for specific projects (such as telephony/Computer-aided Dispatch [CAD] maintenance)
- contract administration funding
- other revenue.

The first section of this chapter details ESTA's resourcing prior to the COVID-19 pandemic. In this context, resourcing focuses on staffing of operational roles. Following this, IGEM discusses ESTA's funding model upon which all resourcing is based.

## 8.2 Resourcing of ESTA prior to the COVID-19 surge

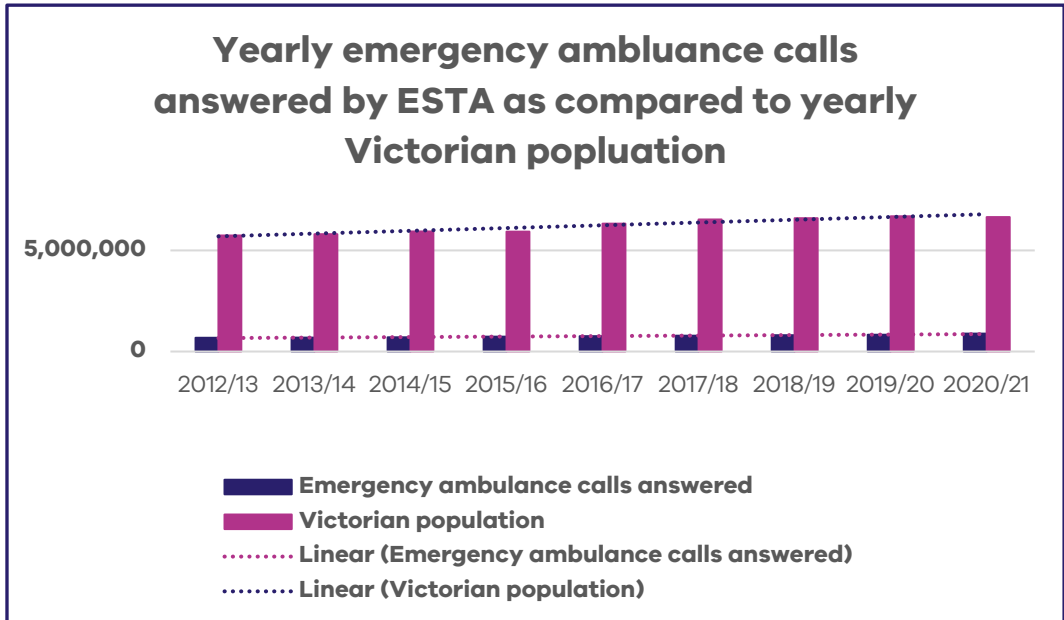
From 2012–13 to 2020–21, the Victorian population increased from 5.74 million to 6.6 million people, with yearly increases except for 2015–16 and 2020–21.<sup>27</sup>

Understandably the increase in population influenced 000 demand for police, fire and ambulance. The number of calls that ESTA has answered increased year-on-year since 2012–13, and this is also reflected in the number of emergency ambulance calls (refer to Figure 7).

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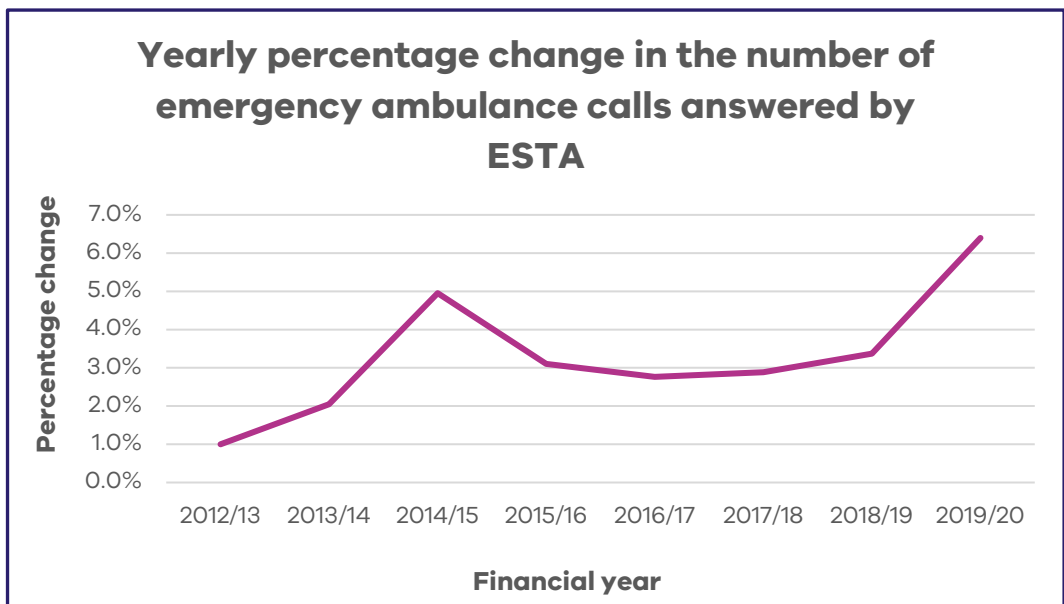
<sup>27</sup> Australian Bureau of Statistics.

**Figure 7:** Yearly emergency ambulance calls answered by ESTA as compared to yearly Victorian population  
 (Source: ESTA and Australian Bureau of Statistics)



On average, the number of emergency ambulance calls that ESTA has answered since 2012–13 has increased 3.3 per cent per year. The largest percentage increase occurred in 2020–21 (6.4 per cent) which was likely due to the COVID-19 pandemic and associated government interventions. Regardless, even without accounting for 2020–21, the average yearly increase of emergency ambulance calls is 2.9 per cent (refer to Figure 8).

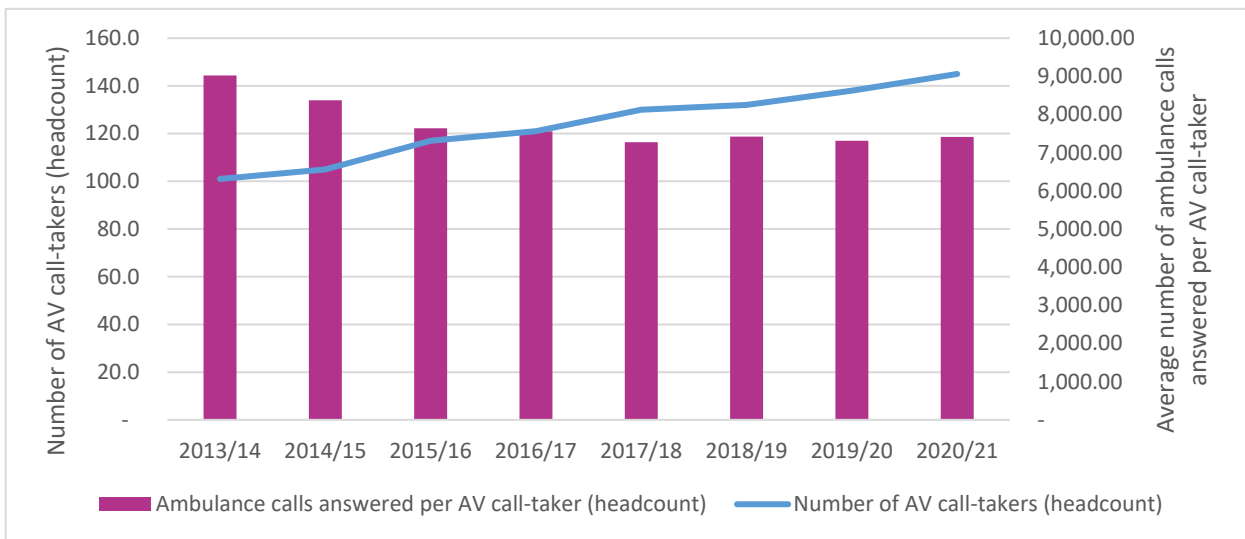
**Figure 8:** Yearly percentage change in the number of emergency ambulance calls answered by ESTA  
 (Source: ESTA)



ESTA has been able to recruit and retain sufficient ambulance call-takers to meet its business-as-usual demand for ambulance calls prior to the COVID-19 pandemic surge with:

- the number of fulltime equivalent ambulance call-takers growing from 84.9 in 2014 to 114.6 in 2021 (this metric also had year-on-year growth, except for 2021)
- the number of ambulance call-takers (headcount) growing year-on-year from 101 in 2014 to 145 in 2021 (refer to Figure 9)
- the recruitment of ambulance call-takers from 2014 to 2021 exceeding the respective yearly attritions (refer to Figure 9)
- the number of ambulance calls answered per ambulance call-taker reducing from 9024 in June 2014 to 7412 in June 2021.

**Figure 9:** Number of ambulance call-takers (headcount) and average number of ambulance calls answered per ambulance call-taker from 2013–14 to 2020–21 (Source: ESTA)



This indicates that overall the growth of ambulance call-takers since 2014 has been sufficient to meet the demand on an average yearly basis.

Furthermore, despite the yearly increases in demand, performance against the benchmark of 90 per cent of calls answered at or within five seconds improved or remained stable since 2012–13. The exception was 2020–21 which was a result of significant increase in demand and impacts faced by ESTA due to the COVID-19 pandemic.

### 8.3 Issues with the ESTA funding model

The ESO fees were set in 2004–05 with an annual indexation rate of 2.5 per cent. This has not since been reviewed, nor has it kept pace with the increasing cost to deliver call-taking and dispatch services due to increased demand on ESTA. As a result, a funding shortfall emerged, which since 2014–15, the government has covered by supplementary funding (refer Table 14).

IGEM notes that under section 31 of the ESTA Act 2004, ESTA has the ability to determine the level of fees it charges, however, it must first consult with the ESOs and gain approval from the Minister for Emergency Services.

In 2015, the Victorian Auditor-General’s Office (VAGO) raised concerns about ESTA’s funding shortfall in its *Report on Portfolio Departments and Associated Entities: Results of the 2013–14 Audits*. This included giving ESTA a ‘red light’ for its financial sustainability, indicating a high risk of short-term and immediate sustainability concerns.

VAGO recommended that the Department of Treasury and Finance (DTF) work with self-funded entities, including ESTA, to review its underlying pricing model and sources of funding in order to improve long-term financial sustainability. DTF responded that it supported continuing to review the pricing and funding of these entities to improve, where appropriate, their long-term financial sustainability. In its response, DTF noted that entities can seek funding as part of the annual budget process in the context of whole-of-government asset management and service delivery objectives and priorities.

In the same year, an independent report found that ESTA's indexed fee structure (2.5 per cent) was insufficient to allow it to meet:

- increasing salary and wage costs
- costs to implement ESOs' operational change requests, such as changes to call scripts that increase call duration
- demand growth and costs outside its control, such as surge events.

In 2018 another independent report that ESTA commissioned made similar findings to VAGO's 2015 report and noted the growing gap between the value of ESO fees and ESTA's call-taking and dispatch costs.

**Table 14:** Supplementary funding since 2014–15 that the government has provided to ESTA (Source: ESTA)

	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Structural deficit funding via the Victorian Budget	\$10m	\$25m	\$31.2m	\$28.1m	\$31.6m	\$32.4m	\$33.3m

The increasing structural deficit gap can predominantly be attributed to the lack of allowance for ESTA demand growth and increased salary costs. Specifically:

- growth in demand for ESTA's services caused by an ageing and growing population, technological improvements that make it easier to access 000, changes in Victoria's demographics, climatic and economic conditions and policy settings, particularly police and ambulance, including the growth of the number of officers in both services
- increase in wages of ESTA staff as per the industrial agreements.

IGEM heard from stakeholders that existing industrial agreements limit the extent to which ESTA can reconfigure its operating model to allow for greater utilisation of resources across different call-taking and dispatch streams. For example, in 2020–21, ESTA implemented a range of efficiency and cost control measures which resulted in savings of \$2 million. ESTA used this to partially offset the industrial agreement mandated wage growth, however it was insufficient to address the structural deficit of \$33.3 million in the same year.

ESTA's current arrangement of seeking State Budget funding on a yearly basis and government providing 'yearly top-ups' to cover its structural deficit is unsustainable. This situation also prevents ESTA from undertaking long-term planning in relation to its recruitment pipeline and improving its service delivery through technological advancements to benefit the Victorian community.



## Finding 22

The Emergency Services Telecommunications Authority's (ESTA) existing fee and funding model is insufficient and does not provide adequate funding to cover its costs due to demand growth and increases in wages under industrial agreements.

The Victorian Government was aware of ESTA's precarious financial position as early as 2015 after it received the Victorian Auditor-General's Office *Report on Portfolio Departments and Associated Entities: Results of the 2013–14 Audits*.

ESTA has previously implemented productivity and efficiency measures within the constraints of the industrial agreements, however the savings generated present only a minor fraction of its structural deficit (in 2020–21, savings generated were \$2 million, the structural deficit was \$33.3 million).

Since 2014–15, ESTA has sought, and government has provided, supplementary funding via the Victorian State Budget for its structural deficit.

The ad hoc nature of the supplementary funding arrangements (year-to-year via the Victorian State Budget) limits ESTA's ability to recruit to meet demand. It also limits ESTA's ability to plan beyond 12 months and implement longer-term investments to improve the service during business-as-usual and surge events. This translates to real consequences for the community in the face of increasing frequency and severity of emergency events.

## 8.4 Time taken to develop a sustainable funding model

The work to develop a sustainable ESTA funding model dates back almost a decade. ESTA first mentioned it in its *Annual Report 2012–13*. The report stated that a review of ESTA's funding arrangements commenced during the year under the auspices of the then Department of Justice and was due for completion in 2013.

IGEM notes that stakeholders have provided limited evidence in relation to the period prior to 2017–18 as to the reasons behind the delay with development of the funding model. ESTA advised that throughout late 2013 to 2015, it worked in partnership with the then Department of Justice to develop an econometric model to forecast future demand as a key input into the funding model.

As part of the 2017–18 Victorian State Budget process, the then Minister for Police and Emergency Services, in consultation with the Treasurer and Minister for Finance, was requested to report back on a framework for annual consideration (and approval, if required) of ESO service fees and funding forecast for demand growth for ESTA services. ESTA supplied the report to EMV in January 2018 but EMV did not submit it to government until December 2018. ESTA advised that the reason behind the delay was EMV's desire to determine the impact of the newly introduced Police Assistance Line on ESTA's call demand.

A further report back on ESTA's funding model was requested as part of the 2021–22 Victorian State Budget process. EMV led the development of a phased acquittal of the 2021–22 report-back request. This included commissioning the conduct of a cost benefit analysis and stakeholder engagement on a range of viable funding options for ESTA. EMV developed the funding options through consultation with ESTA, DJCS, and DTF and included options previously proposed by ESTA. EMV also conducted stakeholder engagement on the options with ESOs, departments, and government agencies.

In March 2022 the Minister for Emergency Services was due to provide government with a recommendation on a future funding model for ESTA. The model would consider the cost benefit analysis, stakeholder engagement, and outcomes of the *ESTA Capability and Service Review*, and the ESTA-specific component of the broader emergency services financial sustainability review. IGEM notes that at the time of this review, the final report back had not been completed.

After almost a decade, the government has still not implemented an agreed and sustainable funding model for ESTA. Based on interviews with stakeholders, reasons raised for this included the complexity of ESTA's business, ESOs perceiving the funding model as additional cost-shifting to them, and changes in leadership and stakeholder relationships within ESTA and EMV.

### Finding 23

The Department of Justice and Community Safety (formerly the Department of Justice / Department of Justice and Regulation), and Emergency Management Victoria, in partnership with the Emergency Services Telecommunications Authority (ESTA) and the Department of Treasury and Finance, have developed and investigated several funding models, however the government is yet to agree to a sustainable funding model for ESTA for implementation.

## 8.5 Consideration of surge resources in funding model

The challenges faced by ESTA's workforce and consequently the organisation's ability to meet the surge in demand on its services is no different to that faced by numerous other organisations across Victoria during the COVID-19 pandemic. The impacts on workforces are unprecedented in their whole-of-society reach and duration.

It is critical that the agreed funding model not only considers and reflects the increasing demand due to Victoria's changing demographics, but also considers the increasing frequency and severity of emergency events. This translates into ESTA having to manage more surge events in the future, as well as potential surge events of longer duration.

ESTA and government need to explore the need for a surge workforce, what this looks like, and the associated funding. They should consider this in parallel with any new enterprise bargaining agreement which should promote and allow flexibility of workforce allocation to better address demands of future surge events.

For example, Telstra advised IGEM that under its agreement with the Australian Government, Telstra is reimbursed for the costs it incurs in connection with its function as the ECP up to a monetary cap. This arrangement allows Telstra to make quick and sensible decisions as to the level of resources it requires to allow it to effectively perform its role as the ECP. Telstra was able to increase recruitment to address the effects of the COVID-19 pandemic and it will be able to recover the costs of that recruitment.

IGEM notes that Recommendation 5e. of the *ESTA Capability and Service Review* recommended that as part of ESTA retaining responsibility for call-taking and dispatch, it should explore alternative call management practices to deliver efficiencies for large-scale emergencies. Recommendation 7 also recommended that:

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*The Victorian Government allocate ongoing funding to ESTA so they can employ a sufficient CTD workforce, based on current and future demand for emergency services, to meet community expectations and protect the health and wellbeing of CTD staff.*

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Additionally, Recommendation 8 proposes that:

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*ESTA must work with DJCS and industrial stakeholders to develop and implement an industrial relations strategy that will address the limitations that prevent flexibility, meet surge demand, and support appropriate workforce management.*

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### Observation 3

The *Emergency Services Telecommunications Authority Capability and Service Review* made three recommendations to address the need for the Victorian Government to:

- *sufficiently fund ESTA's workforce (Recommendation 7)*
- *implement industrial relations strategies to improve workforce flexibility (Recommendation 8)*
- *explore call management practices to deliver efficiencies for large-scale emergencies (Recommendation 5e).*

IGEM notes that as part of implementing these recommendations, the Victorian Government in partnership with ESTA and the emergency services organisations, should ensure it considers what the surge workforce for large-scale emergencies look like and associated funding that it requires. This will need to be considered in parallel with any potential new enterprise bargaining agreement that will promote and allow flexibility of resources to better address demands of future surge events on ESTA.

## 8.6 Recent ESTA funding announcements

The Victorian State Budget 2021–22 included \$294 million for Victoria's emergency services, which included \$46.14 million for ESTA. In October 2022 ESTA was allocated \$17.017 million in 2021–22 and \$4.225 million in 2022–23 for strategies to address increased demand. This included recruitment of 43 new full-time equivalent (FTE) staff for call-taking, dispatch, and mental health support roles. ESTA has also committed to extending these 43 FTE for 2022–23, which government has funded (\$6.322 million), based on forecast for continued demand.

The 43 FTE staff includes 20.8 FTE ambulance call-takers and dispatchers (multi-skilled – trained in ambulance and one other agency skill such as police or fire communications) and one FTE ambulance team leader. It also includes 2.5 FTE multi-skilled dispatchers who can flexibly assist operators with overloaded workloads during the general peak time of 2pm to 8pm.

On 7 March 2022 the Minister for Emergency Services announced a funding package totalling \$115.6 million for ESTA, of which \$93.95 million was allocated over five years and \$21.667 million ongoing to recruit 120 additional call-takers (including more than 50 for ambulance call-taking and dispatch), to better support and manage the workforce, and to deliver recruitment and community education campaigns. The announcement stated that this funding is in addition to the \$27.5 million allocated to ESTA as part of the 2021–22 Victorian State Budget. ESTA expects the new positions to be operational by mid-2023.

ESTA will also allocate this funding towards a dedicated, contemporary learning centre with specialist, off-shift training resources. This will ensure ESTA can rapidly onboard new operational employees in the future, without needing to take experienced call-takers offline to conduct training and mentoring.

On 3 May 2022 the government announced that as part of the Victorian Budget 2022–23, ESTA will receive more than \$333 million (which includes the \$115.6 million announced on 7 March 2022) to recruit 400 new staff to increase call-taking and dispatch capacity for 000 services and training more operators to distribute emergency calls across the state.

### Finding 24

Recent funding that the Victorian Government announced in 2021 and 2022 will assist the Emergency Services Telecommunications Authority to recruit a substantial number of employees to improve its capability and capacity to meet demand.

## 8.7 Impact of surge events

The COVID-19 pandemic has tested all aspects of the Victorian health system, with different components coming under pressure at periods and for various lengths of time. The waves of COVID-19 have influenced the government's timing and implementation of control measures such as lockdowns.

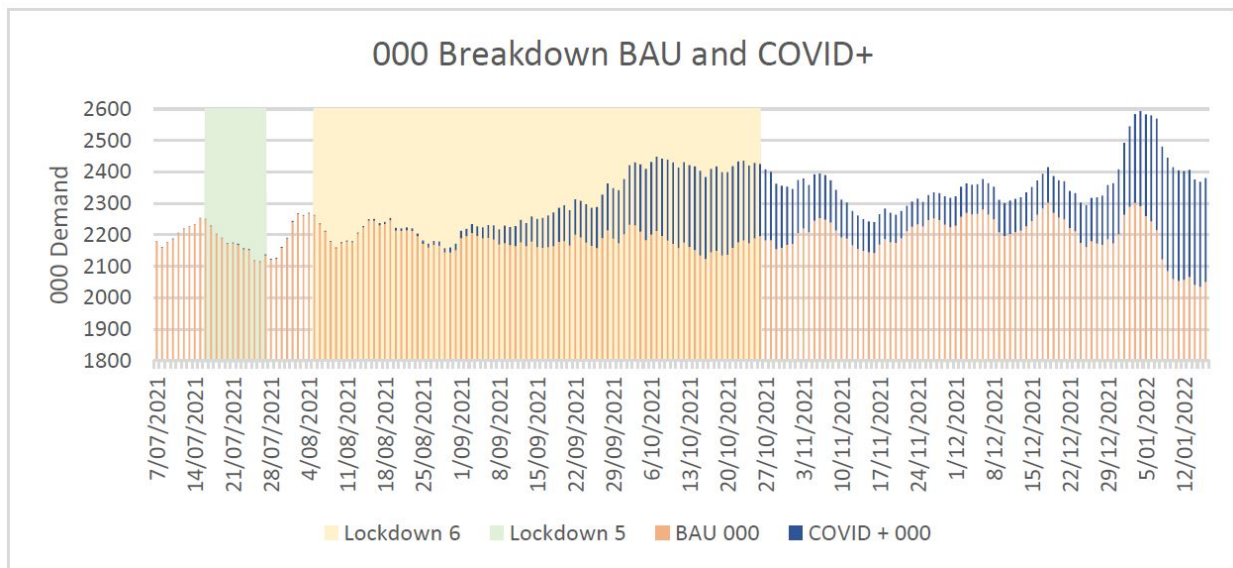
While ESTA has been affected by acute surge events before, the nature, length, and intensity of the surge of emergency ambulance calls to 000 due to COVID-19 is unprecedented.

In ESTA's 2016–17 Annual Report, the then-chair of ESTA stated:

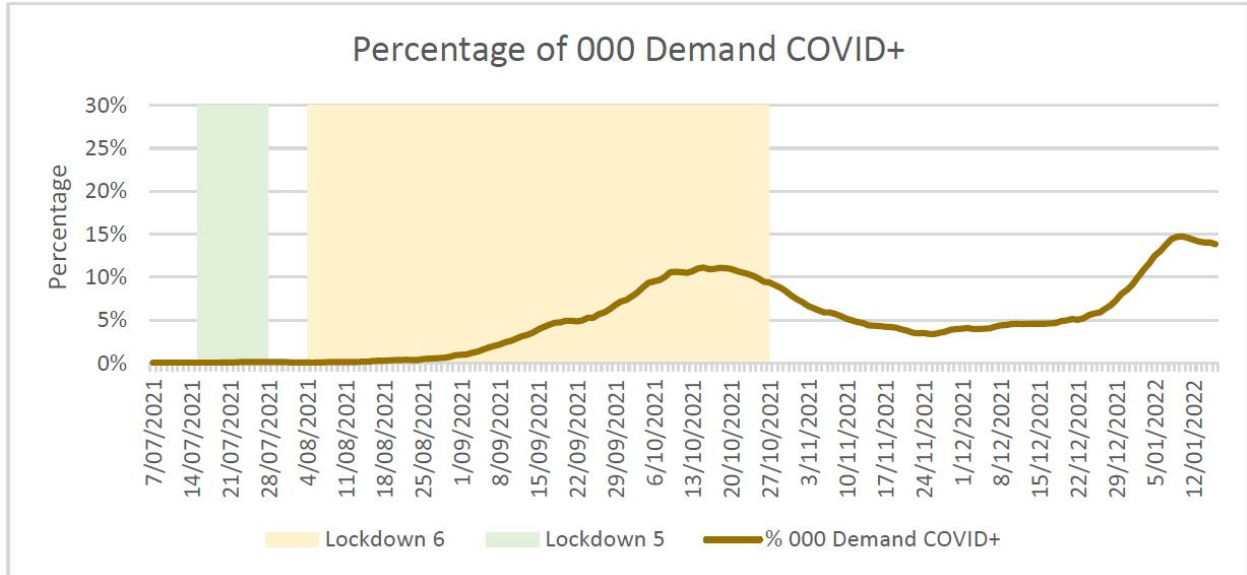
*ESTA can now claim that it handles the daily demand of all its business well; however, it still struggles from time to time with large surges in demand. There is still a need for ESTA to more comprehensively understand the dynamics of its surge demand peak periods and develop a range of better responses to the public. This challenge will constitute one of the highest priorities for ESTA over the next 12 months.*

From early September 2021, ESTA measured additional emergency ambulance call demand due to the COVID-19 pandemic. It peaked in mid-October 2021, before declining and then increasing again in early January 2022 due to the Omicron wave. At the peak, the additional 000 demand on top of business-as-usual was about 15 per cent (refer to Figure 10 and Figure 11).

**Figure 10:** Breakdown of 000 demand across business-as-usual (BAU), lockdown 5, lockdown 6 and COVID-19 waves (Source: AV)



**Figure 11:** Percentage of 000 calls attributed to COVID-19 (Source: AV)



## 8.8 Opportunity to increase ESTA’s workforce in 2020 to early 2021

During the COVID-19 pandemic, ESTA advised that it sought to increase its workforce availability through overtime, multi-skilling, and the recalling of trained operators working in its support office.

ESTA advised it did not have the required budget and contingency to recruit significant numbers of additional staff for periods longer than three to six months, and that expenditure of funding not allocated to ESTA or in contingency would have been a breach of the *Financial Management Act 1994*.

In early to mid-2020, ESTA did not make a request to government for urgent funding to recruit additional staff in anticipation of a potential COVID-19 surge. Had there been stronger relationships and engagement between ESTA, the broader emergency management sector and government, it may have been able to raise and escalate the criticality of this risk. As a result, ESTA initially focused on applying non-financial initiatives to manage its demand.

In comparison, NSW had the authorising environment and relationship with its Ministry of Health to recruit aggressively in June and July of 2020 based on modelling and intelligence. NSW acknowledged that overspend occurred, however cited that it was willing to overspend to avoid fatiguing its staff and to reduce reliance on overtime. When the Omicron wave occurred, NSW needed all of these staff to keep its performance relatively close to meeting its grade of service expectations.

Similarly, the Queensland Ambulance Service (QAS) recruited emergency medical dispatchers from 1000 graduate paramedics for operations centres and as on-road paramedics.

### Finding 25

The Emergency Services Telecommunications Authority missed an opportunity to seek urgent funding from the Victorian Government in early- to mid-2020, in order to commence the recruitment pipeline for additional operational staff in anticipation of increasing triple zero demand.

## 8.9 Inability to rapidly deploy staff during surge events

### 8.9.1 Lack of a multi-skilled and flexible workforce

In 2018 only 16 per cent of ESTA's workforce were multi-skilled – that is they are accredited to work in two or more services (such as ambulance, fire, police and VICSES). Most staff work within their primary function (84 per cent of hours), working only two per cent of their time in a different service. In addition, 18 per cent of staff were part-time, and three per cent were employed on a casual basis.

ESTA attributed this to the following reasons:

- lack of rostering standardisation across locations, services, and individuals
- absence of enabling technology such as a common CAD system
- lack of established, standardised processes
- variations in rosters across locations and services
- time taken to transit between locations
- reluctance of staff wanting to switch between services during their shifts
- industrial agreements.

At the time of this report, ESTA has:

- 19 staff that normally work for agencies other than AV and are multi-skilled in emergency AV call-taking
- 20 per cent of staff employed on a part-time basis
- 9 per cent of staff employed on a casual basis, which includes paramedic students seconded to ESTA from AV under a memorandum of understanding.

ESTA advised current industrial agreements contain very limited rewards for staff who are multi-skilled, and that workforce flexibility is an issue that needs to be addressed to ensure the right person with the right skills are in the right place at the right time. IGEM considers that a more flexible workforce model would allow ESTA to manage service spikes in one service line (such as ambulance) with staff from another service line (such as police).

### 8.9.2 Fixed shift length

The majority of ESTA's call-taking and dispatch workforce is full-time. Staff work 12 hour shifts for four days in every eight or nine days. The fixed 12 hour shift pattern assumes that call volumes are distributed evenly across the day. In reality, there is significant variability in call volume across a 24 hour period. As a result, there are times in each day where ESTA has rostered significantly more resources than required, whereas at other times ESTA may struggle to meet call demand.

IGEM notes that the Memorandum of Understanding – Pandemic Demand Response Initiatives (the MoU) represents a starting point for more flexible rostering. The Interim ESTA CEO and the Chair of the ESTA Board stated that it is important that the next industrial agreement recognises and appropriately reflects the flexibility required in the workforce for ESTA to better deliver its services to the community.

The *ESTA Capability and Service Review* also recommended that ESTA work with DJCS and industrial stakeholders to develop and implement an industrial relations strategy that will address the limitations that prevent flexibility, meet surge demand, and support appropriate workforce management. IGEM supports this recommendation. Refer to Chapter 10 for further discussion on shift patterns and IGEM's Recommendation 7.



**Finding 26**

The Emergency Services Telecommunications Authority's (ESTA) current workforce model of limited multi-skilled call-takers (especially for the ambulance agency skill) and inflexible rostering constrains its ability to rapidly and flexibly deploy its workforce to meet call demand, particularly in a surge context. The Inspector-General for Emergency Management notes that ESTA's workforce model is constrained by relevant industrial agreements.

**Observation 4**

The *Emergency Services Telecommunications Authority Capability and Service Review* recommended that ESTA work with the Department of Justice and Community Safety and industrial stakeholders to develop and implement an industrial relations strategy that will address the limitations that prevent flexibility, meet surge demand, and support appropriate workforce management. The Inspector-General for Emergency Management (IGEM) supports this recommendation.

IGEM observes that the *Victorian Government response to the recommendations of the ESTA Capability and Service Review* does not specifically address the development of an industrial relations strategy. IGEM encourages the development of an industrial relations strategy as part of implementing Recommendation 8 of the *ESTA Capability and Service Review*.

**8.9.3 Victoria Police**

Most of the 000 calls that ESTA answers are requests for police assistance. The VicPol model of operations and associated call-taking and dispatch model is less complex than for ambulance. The large size and lower level of complexity of the calls makes it easier for ESTA to service and meet expectations relative to ambulance calls.

ESTA met the call answer performance benchmarks for VicPol in all but one month during the COVID-19 pandemic (to June 2022), and consistently receives from police, the least number of observation reports of any ESO.<sup>28</sup>

IGEM notes that VicPol generally does not support 12 hour shifts in its business-as-usual service environment. Police work is demand driven, by nature unpredictable, often physical, and the risk of fatigue over a 12 hour period is considered too great (refer to Chapter 10).

**8.10 Challenges faced by the ESTA workforce in meeting demand**

Emergency ambulance call demand in March 2021 was 14.8 per cent higher than in the same period in 2020, and 20 per cent higher than in March 2019. The then ESTA CEO attributed a less-engaged, pandemic-fatigued workforce, with lower take-up of overtime and increased absenteeism as additional factors to a diminishing workforce during a time of increasing demand.

In correspondence to AV dated 9 September 2021 the then ESTA CEO advised that without additional operational resources, meeting performance would remain a challenge throughout the year. The then ESTA CEO noted that the resource growth increase announced in the budget would take in the order of six months for new call-takers to become operational, as well as proficient enough to meet call-handling times. During this establishment period, ESTA's existing workforce remained under significant pressure to meet performance expectations which had a compounding impact of mental health and wellbeing challenges and consequently, an increase in unplanned leave.

<sup>28</sup> Typically, an observation report is a form of complaint lodged with ESTA by police and ESOs regarding its services. They typically detail service delivery problems but can also be positive observations.

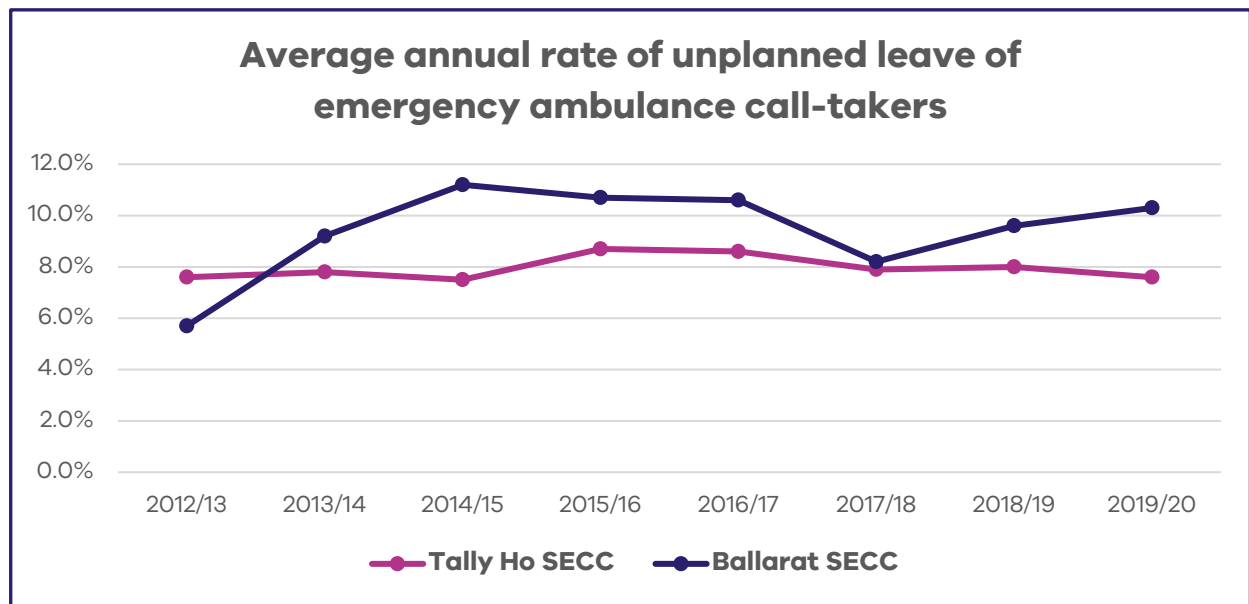


In correspondence to AV dated 9 September 2021 and 2 December 2021, ESTA further reinforced the challenges it faced with a fatigued and diminishing workforce.

### 8.10.1 Unplanned leave

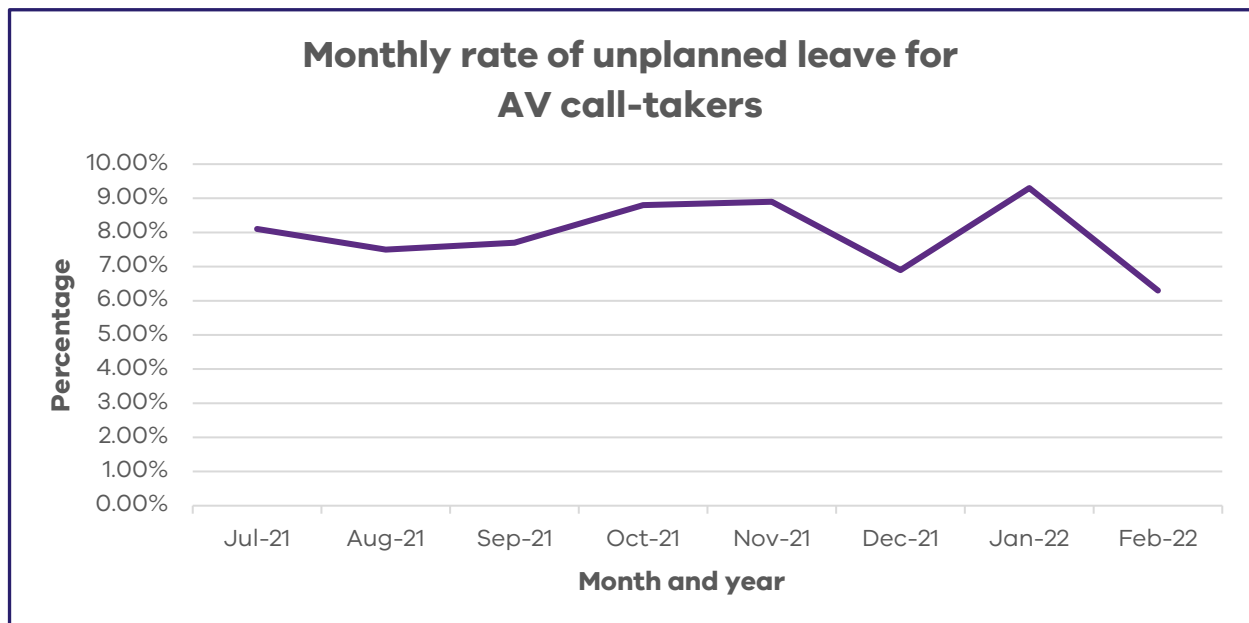
Since 2012–13 the average annual rate of unplanned leave of emergency ambulance call-takers has remained stable at around eight per cent for ESTA’s Tally Ho SECC. It has fluctuated from around six per cent to around 11 per cent for the Ballarat SECC (refer to Figure 12).

**Figure 12:** Average annual rate of unplanned leave of emergency ambulance call-takers from 2012–13 to 2019–20 (Source: ESTA)



The monthly rate of unplanned leave hovered around eight to nine per cent from July 2021 to November 2021, before dipping to 6.9 per cent in December 2021 and rising back up to 9.3 per cent in January 2022 (refer to Figure 13).

**Figure 13:** Monthly rate of unplanned leave for AV call-takers from July 2021 to February 2022 (Source: ESTA)



IGEM’s analysis of the daily unplanned leave rate from July 2021 to February 2022 found there were 66 out of 233 days (28 per cent) where ESTA’s daily unplanned leave was greater than 10 per cent. The highest rate of unplanned leave during this period reached 17.3 per cent. This occurred on two days.

In September 2021 ESTA struggled to meet demand on a regular basis at specific times of the day and on specific days of the week. Data showed that afternoon shifts of Mondays, Thursdays, and Fridays were especially problematic. ESTA noted that high unplanned leave on these three days significantly affected performance, with the Tally Ho SECC most affected.

**Finding 27**

While yearly and monthly average rates of unplanned leave amongst cohorts of Emergency Services Telecommunications Authority staff has remained stable, acute rates of unplanned leave during specific periods (including furloughing due to COVID-19) have created significant issues in meeting spikes in call demand.

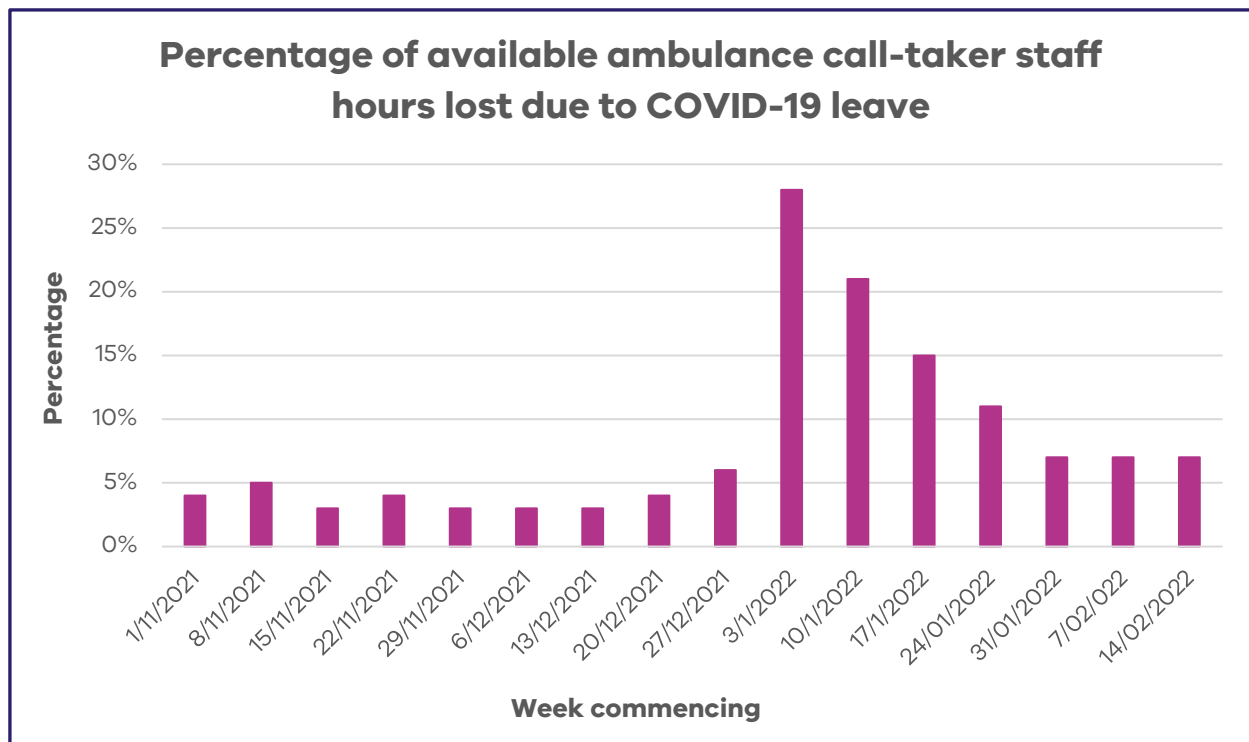
**8.10.2 COVID-19 impacts on staffing**

Throughout the COVID-19 pandemic ESTA has taken measures to ensure a safe working environment for its staff, and DH has been satisfied with ESTA’s infection control measures.

Nonetheless, ESTA’s operational workforce has been affected by COVID-19. In January 2022, ESTA advised government that approximately 17 per cent of employees were affected, due to either testing positive to the virus, isolating while awaiting results, or being identified as a close contact. Infections were likely due to social transmissions, and not work-related.

ESTA also advised government that unplanned leave increased during this period due to nervousness in the workforce about contracting COVID-19. All these factors resulted in ESTA experiencing considerable work hours lost due to COVID-19 leave (refer to Figure 14).

**Figure 14:** Percentage of available ambulance call-taker staff hours lost due to COVID-19 leave from November 2021 to February 2022 (Source: ESTA)



ESTA's recruitment and training pipelines were also affected by the absence of students and training staff due to COVID-19.

ESTA attempted to combat the effects on its call-taking and dispatch operations by recalling operators from planned leave (where possible) and asking employees to do overtime. However, this was not sustainable and consequently, performance reduced. ESTA engaged with DH to ensure its employees were treated the same as healthcare workers, resulting in a reduction of the isolation period for furloughed staff. Despite this measure, employees who returned to work post COVID-19 infections struggled to complete a 12 hour shift, citing vocal strain and fatigue.

## 8.11 Resourcing actions implemented by ESTA to manage the COVID-19 surge

From December 2020, ESTA explored a number of options and commenced pursuing initiatives to minimise effects on its workforce.

From October 2021, ESTA implemented numerous initiatives, some with support from AV, to help manage the increasing surge in 000 calls. These included ESTA:

- signing a Memorandum of Understanding – Pandemic Demand Response Initiatives with relevant unions
- recalling trained operational employees seconded into projects across the organisation to help meet demand
- recalling former employees to boost capacity
- recruiting, with AV support, a surge work force (additional AV call-takers) of 90 paramedic students, with 71 of the 90 remaining engaged in the surge workforce
- successfully applying for, and receiving, a Treasurer's Advance to support ongoing recruitment, process, and infrastructure changes
- requesting and receiving the assistance of NSW call-takers
- proactively engaging with DH and the Chair of State Health Incident Management Team (SHIMT) to raise the risk of a SECC becoming a Tier 1 COVID infection site and having to send a team off for 14 days home quarantine (a potential loss of 70 to 80 staff resulting in significant impacts on 000 call answer performance)
- introducing arrangements to subsidise childcare costs to encourage staff on parental leave to return earlier than planned
- providing special payments over the 2021 Christmas and New Year periods to encourage staff to take up additional shifts
- engaging with Monash University to establish a student paramedic workforce pool, including alumni who might be suitable for training and non-operational roles
- working on fast-tracking the implementation of an advanced learning centre to reduce the reliance of taking people off the operations floor to deliver training
- changing, in conjunction with AV, training course duration from seven weeks to five weeks in the emergency ambulance call-taker courses.

**Finding 28**

From December 2020 the Emergency Services Telecommunications Authority (ESTA) explored and pursued a number of initiatives to minimise workforce impacts. From October 2021, ESTA implemented a range of initiatives, some with support from Ambulance Victoria, to boost or minimise effects on its resources to manage the increasing surge in 000 calls for ambulance.

## 8.12 Memorandum of Understanding – Pandemic Demand Response Initiatives

On 15 December 2021 ESTA signed the Memorandum of Understanding – Pandemic Demand Response Initiatives (MoU) with signatories United Workers Union (Ambulance Employees Australia – Victoria Division), United Firefighters' Union, and the Victorian Ambulance Union. The MoU took effect from 11 December 2021.

This MoU aimed to mitigate the unprecedented levels of sustained demand for ESTA's services by expanding shift allowances and implementing demand-based rosters. ESTA intended the new rosters to match the significant escalation in ambulance calls between 9am and 2am.

Under the MoU, ESTA employees can volunteer to move to the demand-based rosters; existing employees who move to new rosters will have the option of returning to their standard roster from 30 June 2022. New staff recruited directly into the demand-based roster can also request to move to the standard roster from 30 June 2022. The parties to the MoU agreed that no employees will be worse off after the implementation of the new arrangements.

ESTA advised that when the MoU took effect on 11 December 2021, no current employees volunteered to take up the new rosters. However, as of 26 April 2022, 24 newly recruited employees elected to take up the option.

In addition, ESTA advised that the new shift arrangements have been effective in assisting it to meet surges in demand. These new arrangements are providing ESTA with the following benefits:

- Employees' work hours that assist it target peak call periods, rather than at times where there is little or no operational demand.
- During peak periods, the rosters assist to spread workload across the workforce. This reduces both the call waiting times and the stress levels of all operational staff.
- Rosters allow for 9.5 hour shifts, rather than the standard 12 hour shifts. Employees reported experiencing less mental strain/fatigue due to reduced shift length.
- Rosters provide for a standard 38 hour week, rather than a 40 or 42 hour week. This ensures the employee has an additional two hours off per week.
- Shift hours (between 10am and 9.30pm) allow for employees to be more rested.
- Rosters better align to meet forecast demand, assisting ESTA to meet agreed service levels.

**Finding 29**

The Emergency Services Telecommunications Authority's (ESTA) demand-based rosters better enable meeting forecast demand, but also provide a range of welfare benefits to employees, including less mental strain and fatigue. The Memorandum of Understanding – Pandemic Demand Response Initiatives, signed on 15 December 2021 is a step towards improving ESTA's ability to roster more effectively within its current resourcing constraints.

### 8.12.1 Managing the impacts of COVID

In early 2022 ESTA worked with DH to secure Rapid Antigen Tests and priority access for staff at testing sites, as well as exemptions from isolation. This ensured that it could undertake forward roster planning with more certainty. ESTA also worked with DH to develop a quarantined space within its existing Tally Ho SECC, providing greater capacity for staff who were close contacts to continue to provide services if needed.

### 8.12.2 Recruitment and training of new staff

From June 2021 to January 2022, ESTA recruited over 100 new call-takers. It has also seconded and onboarded 33 student paramedics from AV. In January 2022, ESTA advised government that it had reached its capacity to recruit and train new staff, and that rolling recruitment will continue throughout 2022, supported by building additional training capacity. ESTA incrementally brought on an additional 43 staff throughout January 2022.

Recruiting new employees and deploying them to operations is essential to ensure ESTA can manage the increasing demand on its services. However, there are significant challenges in recruitment, induction and onboarding of operational staff that constrain ESTA in its response to a sustained surge event:

- The time it takes to hire a new operational employee (76 business days on average).
- Lengthy training courses<sup>29</sup>.
- Up to 90 per cent of candidates who were applying for a call-taking role did not complete or pass all stages of the recruitment process following submission of application<sup>30</sup>.
- Up to 50 per cent of new employees did not complete the induction and training program.

When new call-takers commence in their role, there may be an associated and noticeable degradation in ESTA's call-taking performance. This is an expected consequence as the new call-takers develop the skills required to undertake this complex role. However, as the new call-takers complete their training and consolidate their skills, both the qualitative and quantitative performance measures typically improve.

ESTA's current training standards include a policy that it only recruits dispatchers from the existing pool of call-takers. ESTA advised that the rationales for this include:

- Dispatchers need to have a fundamental understanding of call-taking so that they perform the job of dispatcher effectively.
- Provision of an avenue for career progression within ESTA, in order to attract applicants.

IGEM notes these rationales, but the current policy creates challenges for recruitment, and potential shortages in call-takers during surge events.

The *ESTA Capability and Service Review* states that:

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*[ESTA's] current training standards include a policy that dispatchers can only be recruited from the existing pool of call-takers. While sound reasons were provided to the Review to explain the policy, there is potential to review this policy given the small recruitment pool it creates. There is no doubt that dispatchers need a granular understanding of the call-taking environment, however, there may be alternative ways this could be achieved.*

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*ESTA Capability and Service Review, 2022*

This has the potential to become an acute issue during events such as the COVID-19 surge, when ESTA can only recruit dispatchers from the pool of call-takers, further reducing the number of call-takers required to meet the high demand.

<sup>29</sup> IGEM notes that ESTA worked closely with AV to change the training course duration from seven weeks to five weeks for the emergency ambulance call-taker courses in early 2022.

<sup>30</sup> IGEM notes that ESTA advised that the recruitment process has since been adjusted to improve passing rates.

This policy also creates challenges for long-term recruitment of both call-taking and dispatch staff. ESTA would need to recruit significantly more call-takers to ensure sufficient coverage, because the pool of call-takers will reduce as they move on to dispatcher roles.

IGEM notes that recruitment and training of staff directly to the dispatcher role, with call-taking as part of their initial training, would enable staff to have both skills from the outset.

### Finding 30

The policy within the Emergency Services Telecommunications Authority's training standards that it only recruits dispatchers from the existing pool of call-takers creates challenges for recruitment, and potential shortages in call-takers during surge events.

### Observation 5

The *Emergency Services Telecommunications Authority Capability and Service Review* recommended that ESTA, in partnership with emergency services organisations, commission an independent review of ESTA's training standards, to ensure they are fit-for-purpose.

The Inspector-General for Emergency Management supports this recommendation, and suggests that ESTA also reviews its policy of only recruiting dispatchers from its call-taker pool, as part of reviewing the training standards.

## 8.13 Future state

### 8.13.1 Staffing review

ESTA is committed to completing a review of staffing allocations. Pursuant to the Emergency Services Telecommunications Authority Operational Employees Enterprise Agreement - 2020–2023, ESTA committed to completing it within 12 months of the agreement coming into effect.

An independent person, agreed upon by ESTA, the unions, EMV, and Industrial Relations Victoria, must conduct the review. The parties must agree to the terms of reference prior to commencement of the review and this agreement will also be facilitated by the independent person. In addition, a working group will support the independent person and will consist of representatives from ESTA, two representatives from each union (no more than one operational delegate from each), one representative from EMV, and one representative from Industrial Relations Victoria.

The independent person will make recommendations for ESTA to consider, and if appropriate, to make submissions to government based on those recommendations.

Where ESTA does not accept the recommendations of the independent person, it will provide reasons for this in writing to the working group members.

ESTA advised IGEM that the that review process is currently underway and expects it to be finalised by mid-2022.

## 8.14 Transparency and accountability

IGEM notes that ESTA has faced, and continues to face, resourcing issues. ESTA publicly acknowledged it does not have enough employees to answer emergency calls due to the time it takes to build the required capability and capacity.<sup>31</sup>

IGEM has sighted ESTA's 2019–20 and 2020–21 corporate plans, but they contained very limited information regarding actions to improve its resourcing situation, nor how it planned to onboard and upskill new employees. In addition, there is no information on how ESTA plans to manage its performance during surge events into the future.

ESTA's Interim CEO stated it will take between 18 months and two years to get to a position where it can deliver on outcomes that meet community expectations. The plans and actions ESTA seeks to undertake to improve its resourcing, onboarding and upskilling of new employees, and managing future surge events, should be publicly reported through its annual reports and corporate plans. This will provide the community with assurance that ESTA is making progress.

### Finding 31

There is an opportunity for the Emergency Services Telecommunications Authority to be more transparent with the Victorian community about the risks it faces in relation to resourcing services for a growing population, climate change, increasing numbers of surge events, and what actions it is undertaking to address these risks.

### Recommendation 2

The Inspector-General for Emergency Management recommends that the Emergency Services Telecommunications Authority publicly reports its progress in improving its resourcing and management of surge events, through its annual reports and corporate plans.

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<sup>31</sup> Comments made by ESTA Interim CEO on Channel 9's *60 Minutes* which aired on 6 March 2022.



# 9 Collaboration and coordination between agencies

## 9.1 Overview

This chapter considers the effectiveness of interactions between ESTA, AV, EMV, and DH, including governance. These relationships affected the way that Victoria managed the emergency ambulance 000 surge and ultimately community outcomes.

## 9.2 Governance

Under Victoria's emergency management arrangements, neither ESTA nor AV are deemed control agencies for the purposes of combating hazards such as fire, flood, motor vehicle crashes, and disease outbreaks.

ESTA is internally governed by the Authority (or Board) headed by a Chairperson as set out in the ESTA Act 2004. Ultimately, the Board is accountable for ESTA meeting its legislated functions:

- 
- a) *to provide or enable and control the provision by others of emergency telecommunications and other communications services;*
  - b) *to promote and develop policies and procedures to improve the standard and provision of emergency telecommunications and other communications services;*
  - c) *to advise the Minister on the administration of this Act and on any other matter referred to the Authority by the Minister;*
  - d) *any other functions that are conferred on the Authority by this or any other Act.*
- 

ESTA as an Authority is independent but may be subject to direction by the Minister for Emergency Services. It also has other considerations it must have regard to when carrying out its functions. This includes that the Authority must have regard to any advice and recommendations of the advisory committee.

Additionally, ESTA must recognise the right of emergency services and other related services organisations to:

- 
- a) *assess and vary their own operational standards; and*
  - b) *manage their own resources; and*
  - c) *assume direct control of communications in the event of incidents and emergencies.*
- 

The ESTA Act 2004 provides that ESTA must appoint an Advisory Committee comprising representatives of Victoria's emergency services agencies including police, fire services, ambulance, VICSES, and other related organisations, including EMV and the Department of Environment, Land, Water and Planning (DELWP). IGEM notes that DH is not part of the Advisory Committee.

Section 22 of the ESTA Act 2004 sets out the functions of the Advisory Committee. These are to:

- 
- a) *advise the Authority of any specific requirements of or issues relating to the organisations represented on the committee; and*
  - b) *carry out any other functions that are conferred on the committee by this Act, by the regulations or by the Authority.*
- 

The ESTA Act 2004 outlines ESTA's functions more broadly including that it must prepare and submit to the minister a plan for its operations at least annually, and in doing so must consult with and have regard to any advice given by the Advisory Committee.

In 2019 ESTA refreshed the Advisory Committee, because it considered its focus had drifted over time. This change reset the membership, largely restoring it to CEO or chief officer level. However, the Advisory Committee continued to primarily report upon performance and deal with technical project issues rather than the key strategic and system-level requirements of the ESOs. An example being COVID-19 pandemic preparedness and planning and meeting potential surge demand as the pandemic developed (refer to Section 6.2.6).

The onset of the COVID-19 pandemic occurred within a year of the Advisory Committee refresh. While meeting frequency has changed over time, it meets quarterly as it did for some years prior to the COVID-19 pandemic.

### Finding 32

The Emergency Services Telecommunications Authority (ESTA) Advisory Committee was not used to assist with strategic planning for the effects of the COVID-19 pandemic on ESTA's services, instead focusing on other matters.

### Observation 6

Recommendations 1 and 2 in the *Emergency Services Telecommunications Authority Capability and Service Review* propose new governance arrangements, including disbanding of the current ESTA Board and Advisory Committee. The Inspector-General for Emergency Management notes that until new governance arrangements are in effect, it is important that ESTA continues to apply the current arrangements to manage existing and new strategic issues as they arise.

## 9.3 Collaboration between AV and ESTA

ESTA and AV have had a long history of working in a challenging environment where the performance issues of both have been well documented. When AV commenced its planning for the COVID-19 pandemic it used its ERP and pandemic sub-plan to drive the work it would undertake (refer to Chapter 6). In August 2020, AV approved a specific plan called the Ambulance Victoria Pandemic Plan COVID-19. It included the following section:

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#### ESTA

*Ongoing engagement between AV and ESTA is required to ensure there is a common understanding between the organisations of:*

- *The involvement of ESTA to implement any part of the recommended response activity including changes to resource distribution, the call taking process and dispatch process; and*
  - *The status of their preparedness and ability to meet these requirements alongside 000 demand.*
-

The second point highlights AV's focus on its needs and ESTA's ability to meet them in the face of demand. However, it did not mention working with ESTA to reduce 000 demand.

IGEM did not find evidence of adequate, ongoing collaborative COVID-19 pandemic planning and modelling sessions between AV, DH, or ESTA. IGEM notes that AV had meetings with ESTA in mid-2020 as part of AV's pandemic response plan for COVID-19, and just prior to finalising its first version in August 2020.

The EMC and EMV advised that challenges remained in integrating health into the emergency management arrangements, and ensuring planning is occurring at the State Control Centre where all relevant parties are represented. There is a need to ensure all officers working in this environment are effectively trained, and understand the emergency management context that they are working within.

In July 2020 the Victorian Government introduced a new set of operational arrangements to manage the state's response to the COVID-19 pandemic. This included a revised membership of the State Control Team COVID-19 (SCT COVID) to include all departmental secretaries, the Chief Commissioner of VicPol and the Chief Health Officer. The EMC chaired the SCT COVID. Other changes included the Secretary of DH becoming the State Controller – Health, as the head of the agency leading and managing the response to the COVID-19 pandemic.

Throughout its operation, IGEM observed that SCT COVID had a strong focus on implementing the decisions of the Crisis Council of Cabinet, which later became the Coordinating Ministers Committee, as well as assurance and accountability across the numerous COVID-19 operations.

As part of SCT COVID reporting, workforce capacity was the most common risk reported across the operations, including in areas of testing and engagement and enforcement requiring Authorised Officers and/or VicPol officers.

SCT COVID undertook actions and decision-making to manage the workforce challenges for various COVID-19 operations. However, it did not have visibility of ESTA's emergency ambulance call answer performance crisis and workforce challenges until October 2021, when they were well entrenched. Therefore, any discussion of the issue and management actions – such as community education to reduce pressure on 000 – did not occur in this key governance forum until October 2021.

Going forward, IGEM considers that organisations like ESTA, AV, and DH must all work to agreed scenarios, with a mutual understanding and set of assumptions.

### 9.3.1 Operational change requests

From an operational perspective, AV made many requests to ESTA for changes to the CAD system or associated call-taking and dispatch processes throughout 2020 and 2021. These requests were for the purposes of responding effectively and minimising the risk of being overwhelmed by patient demand.

ESTA processed almost 50 changes for AV in 2020. Both parties worked hard to prioritise these. By November 2021, ESTA had 144 AV requests in its change management system with 125 in progress. This was equivalent to all change requests combined from the other four ESOs that ESTA services.

AV agreed to stop work on other initiatives it had requested ESTA to work on including an upgrade for its software-based, call-taking triage system (ProQA), and the non-emergency web-based request forms intended to provide an alternative to fax and voice bookings.

ESTA developed several proposed processes to simplify and manage ambulance call-taking but the approval of these rested with AV. This resulted in ESTA being able to progress and implement some, while AV rejected others such as the pre-triage call-taking process that it considered medically risky.

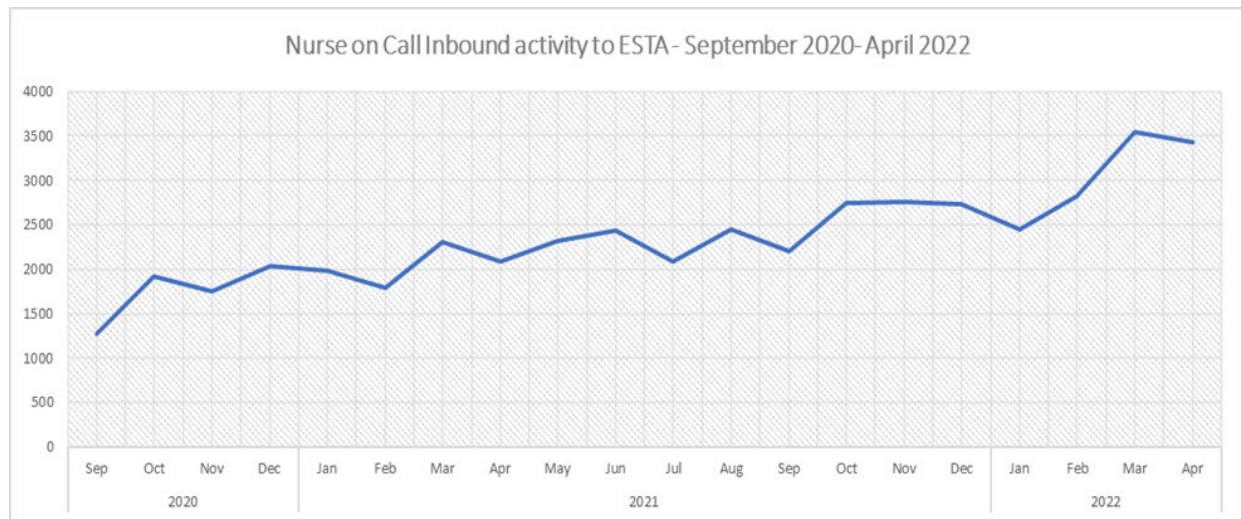
Initially AV rejected some initiatives such as the rapid disconnect protocol, but later agreed to some after ESTA re-presented them in a more detailed and operationally coherent manner. This allowed AV's Clinical Response Model Improvement Committee to assess them effectively and subsequently gain approval by the AV executive. AV initially provided a verbal briefing to DH of the pre-triage proposal in late 2021, followed by a written briefing in April 2022.

ESTA was aware of a London Ambulance Service initiative, where it identified a need for a separate COVID triage line. ESTA brought this initiative to the attention of AV, as it felt that developing a similar initiative for use in Victoria had the potential to reduce the number of calls needing to go via 000 and ESTA call-takers to reach a triage point. Instead, AV staffed up its secondary triage referral service doubling its capacity. This meant ESTA still had to initially answer and triage these calls.

AV's only performance metric on its referral service is to divert 15 per cent of cases avoiding an emergency dispatch through the intervention of the secondary triage service. This reduces demand on AV's fleet, not demand on 000.

IGEM notes that Victoria's COVID-19 hotline is not a triage point, but an advice line. In addition, NURSE-ON-CALL<sup>32</sup> referred callers to 000 in large numbers, particularly from October 2021 onward. In March and April 2022 ESTA saw a 54 per cent and 64.8 per cent increase in calls transferred from NURSE-ON-CALL compared to the same period in 2021 (refer to Figure 15).

**Figure 15:** Calls transferred from NURSE-ON-CALL to ESTA from September 2020 to April 2022 (Source: ESTA)



AV revised its dispatch grid, progressively moving events that normally would see ESTA dispatching an emergency ambulance without delay, to referring these patients/callers initially to REFCOMM for secondary triage and referral to an alternative treatment. An outcome of this was inaccurate reporting in the media, suggesting ESTA call-takers were advising callers an ambulance was not coming.

*Extract from letter to DHHS*

*Each grid sees an increasing number of certain case types moved to lower dispatch priorities and/or to secondary triage. In total, 84 changes have been identified across three grids with some event types having multiple updates throughout the levels. First and foremost, patient safety was the key consideration in developing the alternative grids. Implementation of the alternative grid will see progressively higher work volumes diverted through to AVs Referral Services for secondary triage. It is anticipated that between 280 and 384 additional cases per day would need to be managed by the Referral Service based on our current caseload and will increase pressure on our ability to respond. This has the potential to increase significantly and will be largely dependent on trajectory of the COVID-19 pandemic. Through the course of the COVID-19 pandemic, AV's Secondary Triage and Referral unit has seen an increase in daily caseload from 16% of Triple Zero calls per day to a peak of almost 22% in April.*

<sup>32</sup> NURSE-ON-CALL is a telephone-based health advice service that puts callers directly in touch with a registered nurse for caring, professional health advice around the clock. NURSE-ON-CALL can transfer the caller direct to ESTA's emergency ambulance queue.

IGEM notes that AV invited ESTA to participate in this work. AV created this initiative to manage its fleet demand, a legitimate critical change, however it did not assist ESTA around call demand. In fact, it drove up call volumes as more calls went to REFCOMM and longer wait times for an ambulance, resulting in increased call-backs seeking an estimated time of arrival. AV more than doubled its REFCOMM capacity to assist with the grid changes and to manage increased referral calls.

AV fleet availability also has had a negative effect on ESTA’s ability to answer calls and dispatch events. Callers waiting longer than expected for an ambulance, made increased numbers of calls back to 000 seeking an estimated time of arrival (refer to Section 11.2).

One initiative under development is joint work between DH, AV, ESTA, EMV, and the Department of Premier and Cabinet (DPC) to undertake a feasibility assessment of introducing a call-taker assist model that will see an alternative workforce take non-urgent 000 calls after a truncated triage.

AV’s own fleet was under major stress throughout the same period that ESTA call volumes were at unprecedented levels. AV declared a state of Code Orange 81 times and Code Red four times between July 2021 and April 2022. AV uses these code declarations to implemented specific emergency management plans to manage high demand on its fleet, in accordance with its ERP (refer to Chapter 6).

Under the code-based emergency response plans, AV has embedded strategies to work with ESTA to manage demand including AV considering approval of the activation of RVAs, implement urgent disconnect process or modified call scripts to shorten call times.

When AV declared a Code Red it used community messaging to try to reduce demand. It did this through mechanisms such as media interviews with its senior executives, and social media posts. AV also arranged for community warnings to be posted via VicEmergency, the state’s centralised website for Victorians to find emergency information and warnings.



Examples of Ambulance Victoria Code Red communications (Source: Ambulance Victoria/Twitter)

AV also worked with ESTA to link its CAD system to its clinical transport service with DH’s COVID-19 pandemic planning funding. This enabled AV to manage some events from its REFCOMM service without sending them back to ESTA. However, this project stalled in December 2021 when ESTA raised concern over the security of the link and the risk to the CAD system.

Further, AV assisted with a review of ESTA’s ambulance call-taking course reviewing its content and reducing it from seven weeks to five weeks.



When ESTA began proposing additional initiatives to improve call answer times, AV assisted in assessing these and agreed to some around 'Urgent Disconnect' (refer to Chapter 6). However, AV did not support other initiatives such as 'Pre-Triage Call-taking' because it did not consider that ESTA's case for development was appropriately risk-assessed.

AV gained approval of proposed changes via its clinical governance framework, using its Medical Advisory Committee, its Quality Committee and informing DH via briefings of its decisions as appropriate.

One historical issue that remained unresolved between AV and ESTA until it became critical, was the process around giving callers ETAs for ambulances. The Coroner highlighted this issue after the 2016 thunderstorm asthma event (refer to Section 11.2).

IGEM considers that after ESTA appointed an Interim CEO in October 2021 and instituted the new role of Deputy CEO, cooperation and collaborative work between AV and ESTA improved. There has also been considerable change in the composition of ESTA's broader executive team. The forging of new relationships takes time and building trust to sustain them is important.

For example, IGEM notes collaboration on driving down demand on 000 became more prominent in October 2021 when on AV's request, DH reinitiated its 2018 'Save 000 for emergencies' campaign. IGEM notes that DH had also activated this campaign from 18 May and 30 July 2021 (refer to Section 9.10). However, AV focused on strategies that assisted it in managing patients and its fleet capacity, and appeared to be less focused on managing demand on 000.

From October 2021 AV became more actively involved with ESTA in working to reduce demand on call-taking by encouraging the community to think before calling 000 and to use other health pathways. By late 2021 AV had approved a range of initiatives because in its opinion:

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*... in a pandemic [AV is] prepared to wear those risks because the greater good is the quicker they can get off that call the quicker they can answer the next one.*

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As of December 2021, AV had supported the following initiatives for ESTA:

- ongoing urgent Disconnect (saving 50 seconds per call) on all Priority 1-3 events
- developed surge scripts – five per cent reduction in ETA call backs
- enacted Telstra Recorded Voice Announcement
- facilitated engagement of call takers from New South Wales Ambulance
- provided more than 80 student paramedics to work for ESTA to support increased call taker capacity
- facilitated engagement through the Council of Ambulance Authorities with other ambulance services
- proposed alternative surge options
- introduced initiatives to reduce workload in the ESTA environment (CAD/surge)
- increased calls to be managed by REFCOMM (275 calls per day)

In summary, these examples demonstrate there is extensive evidence of collaboration between AV and ESTA to manage the surge in demand for ambulance services via 000. However, IGEM considers that strong differences of opinion, ineffective working relationships at times, and an absence of either party escalating these issues to a higher authority, meant that resolution of critical problems was delayed or not approached from a whole-of-system perspective.

## 9.4 Department of Health involvement in decisions around initiatives

IGEM considers that some decisions around interventions needed to be considered at the departmental level as the issues involved were bigger than just the pre-hospital component of healthcare. This did not always take place.

For example, AV assessed ESTA's pre-triage call-taker proposal via its internal governance but IGEM understands that while it provided a verbal briefing to DH, it did not seek any form of endorsement or support before rejecting it in December 2021. AV did brief the State Controller – Health (Secretary of DH) of its decision and reasoning but did not seek their position prior to rejection.

DH considers that AV's clinical review of the pre-triage proposal to be appropriate and consistent with how AV and other health services make a range of operational decisions. This includes, for example, the use of surge responders by AV and other health services during the pandemic.

DH advised IGEM that in the context of a devolved health system, the role and functions of the department are as a systems manager, including to fund, monitor, and review ambulance services. It views devolution as an important feature of Victoria's health system. Health services are accountable for outcomes and the associated operational decisions. The department's role is around effective oversight and setting clear expectations, with respect to service delivery outputs and outcomes.

While IGEM notes DH's position, the department also held the role of control agency for human disease/epidemics and the function of State Controller – Health. With this comes responsibilities for decisions including the setting of control strategies and providing direction on these to support agencies such as AV and ESTA.

SHIMT manages DH's control and coordination of its agency functions. The coordination objective is:

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*Co-ordinating the DHHS [Department of Health] emergency response activities across the health system (including hospitals, primary health, and other acute services) at the state tier.*

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IGEM notes that AV briefed SHIMT on its 000 forecasts on 17 October 2021 as part of its COVID Planning Projection. The presentation also stated that:

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*Strategic risks and issues are:*

*Governance of health system (devolved governance) enshrines variation between health services (long)*

*The SHIMT is mitigating this by endeavouring to bring the various parts of the DHHS system together for common messaging and joined up responses.*

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As ESTA is not seen as part of the health system in the traditional sense, and therefore not represented on SHIMT, it did not have the opportunity to raise issues or its concerns in this forum. ESTA's options therefore were to raise these in other forums. It could have raised them through its SEMT membership. Alternatively, ESTA could have raised issues with the EMC who in turn could bring those concerns to SCT COVID's attention on ESTA's behalf.

However, IGEM notes that the SCT COVID meetings were more strategic in nature and would normally act as a point of escalation for operational issues raised at SEMT or SHIMT, where they may have required broader strategic and system-level interventions to resolve. Therefore, IGEM considers it was still more appropriate that ESTA's concerns should have been raised at SHIMT or SEMT initially.

DH has a number of ways of monitoring and interacting with AV in addition to SHIMT (refer to Table 15). ESTA is not party to any of these. IGEM notes that AV did facilitate contact between ESTA and DH in late 2021 as the crisis was peaking, but this was not a normal part of the arrangements.



**Table 15: Ambulance Victoria links to the Department of Health**

FORUMS	PURPOSE AND CONTENT
AV Weekly ESTA Performance Patient Safety Monitoring Report	<ul style="list-style-type: none"> <li>AV provides DH with a weekly report on ESTA call answer performance and updates on adverse incidents or sentinel events attributable to ESTA call answer delays.</li> </ul>
Monthly letter from AV CEO to Secretary of DH	<ul style="list-style-type: none"> <li>AV CEO provides monthly advice to the Secretary of DH in line with AV's legislative requirements to advise the department of major risks affecting the operations of AV.</li> <li>The monthly letter provides updates on patient safety risk and monitoring, ESTA performance and initiatives to address performance issues (for example, recruitment and onboarding of additional call-takers).</li> </ul>
Health service Chief Operating Officer meeting (includes AV and all health services)	<ul style="list-style-type: none"> <li>Twice weekly meeting.</li> <li>Verbal update on system demand.</li> <li>Issues escalation.</li> </ul>
Meeting with AV on Sentinel Events (SE)	<ul style="list-style-type: none"> <li>Weekly meeting between AV, Safer Care Victoria (SCV) and DH Ambulance Branch representatives to discuss current state, progress on sentinel event investigations and assessment of new incidents.</li> <li>SCV has provided support for AV with incident monitoring, reporting and internal DH escalation of issues.</li> </ul>
Performance meeting between AV and DH, including SCV	<ul style="list-style-type: none"> <li>The effect of ESTA issues, and AV role in assisting ESTA monitoring incidents.</li> </ul>
State Controller / SHIMT	<ul style="list-style-type: none"> <li>Weekly meeting.</li> <li>Verbal update from AV to state controller on system issues and concerns.</li> <li>Also issues escalation and updates from DH on system issues.</li> </ul>
CEO forums	<ul style="list-style-type: none"> <li>Forum for information provision to CEOs of health services.</li> </ul>

In the context of Victoria's emergency management arrangements, if two support agencies were collaborating to deliver support (to a control agency) but disagreed on the approach, they should raise it with the State Controller (in this instance the State Controller – Health) for resolution.

ESTA was not in a position to do this and based on the evidence available to IGEM, AV did not appear to consider such a process necessary, notwithstanding briefing the State Controller – Health. AV informed IGEM that it had acted in accordance with its responsibilities to ESTA as per the ESTA Administrative Arrangements. However, neither AV nor ESTA activated the resolution process under those arrangements to resolve their differences.

AV took the view that the Administrative Arrangements supported the position that control of clinical standards, practices, change requests, and protocols rests with AV, without a requirement to seek approval or support at the department level. As discussed earlier, ESTA could have also raised its concerns at SEMT or directly with the EMC.

IGEM considers that reforming the relationships between ESTA, AV and DH is essential to ensuring ESTA's service delivery model is working effectively in the patient's interest, and that they apply an end-to-end (that is, from 000 call to hospital or health service), whole-of-system approach.

### Finding 33

Ambulance Victoria (AV) and the Emergency Services Telecommunications Authority (ESTA) worked extensively together throughout the COVID-19 pandemic. However, AV's focus was predominantly on managing demand on its fleet with less emphasis on ensuring that both parties worked to also manage demand on 000 in the first instance. This became a priority for AV once ESTA's performance issues began to place the community at significant risk around October 2021.

**Finding 34**

The Emergency Services Telecommunications Authority (ESTA) is a critical part of Victoria's health system, yet it is not a member of the State Health Incident Management Team. Nor did it have any formal relationship with the Department of Health, as the department is not a member of the ESTA Advisory Committee. In practice, Ambulance Victoria had control over any decisions around initiatives ESTA proposed, without the need to gain approval from the Department of Health or State Controller – Health in the context of the COVID-19 pandemic.

**Recommendation 3**

The Inspector-General for Emergency Management recommends that the Department of Health enhance existing governance arrangements to ensure a whole-of-system approach to pre-hospital services – including the Emergency Services Telecommunications Authority and Ambulance Victoria – for health emergencies in both a business-as-usual and surge context. This includes pathways for effective information sharing, escalation and issues resolution and ensuring agreed changes are applied consistently in relevant policies and plans.

**Observation 7**

The *Emergency Services Telecommunications Authority Capability and Service Review* made recommendations that seek to address some of the issues around ineffective collaboration.

Recommendation 2 aims to disband the current ESTA Advisory Committee and replace it with a board of advisors with both Ambulance Victoria (AV) and the Department of Health as members.

Recommendation 5 aims to ensure improved collaboration between ESTA and AV and the development of a roadmap to achieve greater integration of existing non-emergency assistance lines into ESTA's Computer-aided Dispatch system and explore alternative call management practices to deliver efficiencies for large-scale emergencies.

The Inspector-General for Emergency Management supports these recommendations.

## 9.5 Collaboration in training

A positive development was the assistance AV gave ESTA in reviewing and reducing the duration of call-taker training courses.

Under the ESTA Administrative Arrangements, the ESOs must supply a set of Communications Standard Operating Procedures (CSOP) that ESTA then turns in to Standard Operating Procedures and training guides for its staff. However, ESTA staff do not hear or gain insights from ESO staff on their functions and why ESTA needs to perform its role in certain ways.

IGEM notes that the *ESTA Capability and Service Review* Recommendation 6 states that:

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*ESTA, in partnership with ESOs, commission an independent review of ESTA training standards, to ensure that they are fit-for-purpose.*

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IGEM considers this as an opportunity to ensure that ESOs are more effectively involved in training of ESTA employees to foster a shared understanding of requirements and needs.

### Observation 8

Recommendation 6 of the *Emergency Services Telecommunications Authority Capability and Service Review* states that ESTA, in partnership with emergency services organisations (ESOs), commission an independent review of ESTA training standards, to ensure that they are fit-for-purpose.

The Inspector-General for Emergency Management considers that as part of implementing this recommendation, it would be beneficial for ESOs to be more involved in training of ESTA call-takers and dispatchers, to ensure they understand how the ESOs operate and why they require ESTA to operate in a specific way and foster a shared understanding.

## 9.6 Performance standards

Output-based performance standards or measures are primarily used for both AV and ESTA, resulting in a focus on meeting time-based metrics as opposed to better patient outcomes and a whole-of-system perspective.

The ESTA Act 2004 requires that the standards must be *quantitative* and *qualitative*. IGEM considers that, broadly speaking, governments, media and communities tend to focus on the time-based quantitative standards with little or no focus on the qualitative measures such as appropriate medical triage. This is understandable given the time-critical nature of emergencies.

Output and time-based measures are useful indicators but do not alone drive the best outcomes. Current performance standards provide little incentive or reason for ESOs to be active participants in managing demand. In the context of an overwhelming surge in demand for ambulance services via 000, a focus on meeting individual ESO time-based metrics can contribute to poor outcomes for the Victorian community.

It is also important to recognise that in this review, IGEM has assessed ESTA against metrics that were not designed to be applied to such a protracted and significant emergency and surge event such as the COVID-19 pandemic.

While the ESTA Act 2004 confers responsibility to IGEM for determining ESTA's standards, it does not provide any specific guidance as to how this should occur, other than to say it must be in consultation with the organisations and ESTA. IGEM notes that it inherited this responsibility from the former Office of the Emergency Services Commissioner and that it does not set performance standards for any other ESO, as this would not be consistent with IGEM's assurance role.

Since being appointed in 2014, the Inspector-General has advised ESTA and ESOs of their approach to determining standards. The Inspector-General expects agencies to determine the nature of the desired service by working work with ESTA – as the service provider – to negotiate standards that best meet the needs and expectations of the parties. IGEM would then ratify any changes.

As part of its Revised Ambulance Dispatch project, AV and ESTA developed an alternative measure known as activation time. They wrote to IGEM in May 2019 to seek approval to trial this new measure. Both AV and ESTA intended the measure to be patient-focused and align performance measures to ambulance response times.

Due to problems that arose with the design and utility of the measure, AV and ESTA have not sought a determination from IGEM, but it has been a step towards outcome-based measures. This example highlights attribution issues and the difficulty of developing outcome measures in an environment where multiple parties have an influence on patient outcomes.

IGEM (and previously Office of the Emergency Services Commissioner) has on several occasions engaged ESOs in discussions aimed at enhancing ESTA's performance standards. As part of these efforts IGEM sought to better reflect ESTA's role as an enabler of ESOs functions.

Only when all ESOs have clear and measurable outcome measures reflective of their own service delivery is it possible to develop complementary ESTA standards that recognise its function as the enabler.

EMV is working to finalise a Sector Outcomes Framework, which the State Crisis and Resilience Council endorsed in June 2022, before being provided to the State Emergency Management Committee of Cabinet in July 2022.

Following this, work will include the development of an Outcomes Measurement Strategy. The strategy will involve identifying an initial suite of measures to enable baseline reporting and will look at the enablers and barriers to measurement and reporting. The strategy will support the sector to move towards outcomes-based reporting and measure the collective impact of Victoria's emergency management sector. EMV has indicative timelines that show it delivering the strategy by May 2023 and baseline reporting in July 2023.

### 9.6.1 Ambulance-specific standards

The historical basis for ESTA's ambulance emergency call answer performance measure being 90 per cent within five seconds per month, dates back to 1994–95. Since this standard was adopted there have been few adverse events arising from the risk of harm due to delayed call answer.

Most Australian ambulance organisations measure their call answer performance applying a grade of service measure of 90 per cent of calls answered within a 10 second target time.

Under IGEM's standards for ESTA's non-financial performance there are some secondary benchmarks for AV and police call answer and dispatch speeds. These benchmarks are a legacy of contractual arrangements that pre-date the creation of ESTA. They were a point where financial penalties applied to previous service providers if performance fell below the secondary benchmark.

IGEM retained the secondary benchmarks at the request of AV and VicPol but focuses more on the primary benchmark when monitoring ESTA as there are no financial penalties under the ESTA Administrative Arrangements. The other agencies endorsed the removal of secondary benchmarks.

The secondary benchmark for emergency ambulance call answer is that within a calendar month, ESTA answers 95 per cent of calls at or within 30 seconds.

ESTA last met the secondary benchmark in November 2020. The lowest monthly performance against this benchmark was 39 per cent in January 2022. ESTA's best recent performance against this benchmark was 81.2 per cent in August 2021. Since January 2022, ESTA's performance against this benchmark has improved, and in June 2022 ESTA reported 90.1 per cent of emergency ambulance calls were answered in 30 seconds.

While call answer speed was one of several factors that had a negative effect on patients during the 2016 thunderstorm asthma event, it has not been a prevalent factor in most IGEM-led investigations.

As a result of the COVID-19 pandemic and ESTA's performance issues, there is now a dataset that can be studied to determine at what point call answer speed truly begins to affect patient outcomes. From such a study, it may be possible to develop a more appropriate call answer speed measure that reflects good patient outcomes. The *ESTA Capability and Service Review* has recommended reforming the standards with Recommendation 18 stating:

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*ESTA, in partnership with DJCS, ESOs, and in consultation with IGEM and SCV, must develop and implement outcome-based performance standards that properly reflect the end-to-end process of incident management.*

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IGEM considers there is a conflict of interest in it determining the standards for ESTA and then being its monitor. In all other circumstances, other bodies set the standards, (DH for AV or the EMC for the fire services and VICSES). IGEM or SCV then undertakes the assurance activities. Recommendation 19 of the *ESTA Capability and Service Review* also addresses this issue:

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*Responsibility for approving the outcome-based performance standards should sit with the Emergency Management Commissioner and the Minister for Emergency Services to ensure IGEM, with the support of SCV, can maintain independent monitoring and reporting of ESTA's performance.*

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**Finding 35**

The current Emergency Services Telecommunications Authority (ESTA) ambulance emergency call answer speed performance benchmark is not based on any study of patient outcomes. It is similar to most ambulance call-taking organisations around Australia.

However, while other jurisdictions measure their call answer performance by applying a grade of service measure of 90 per cent of calls answered at or within a 10 second target time, in Victoria, ESTA is required to answer calls at or within a five second target time. Therefore, ESTA has a call answer speed target time that is half that of other jurisdictions.

**Recommendation 4**

The Inspector-General for Emergency Management recommends that the organisations confirmed as having overall policy responsibility for 000 calls by service type as per Recommendation 6, ensure that an appropriate mix of output and outcome measures are developed for all service types (that is, ambulance, police, fire services) and from a whole-of-system perspective. These should be:

- (a) publicly documented in existing or new frameworks
- (b) include appropriate sub-measures that can be attributed to the performance of each organisation, including the Emergency Services Telecommunications Authority (ESTA).

This recommendation is complementary to Recommendations 18 to 20 of the *Emergency Services Telecommunications Authority Capability and Service Review*.

## 9.7 Quality assurance

Prior to the COVID-19 pandemic, ESTA and AV had well-established internal quality assurance processes. However, once the system came under strain, both organisations needed to develop a means of reviewing the extensive number of calls that exposed patients to potential harm due to long call wait times associated with the surge in demand.

As a result, AV worked with ESTA on a weekly basis to review all Code 1 (lights and sirens) cases where the initial caller waited more than one minute for ESTA to answer. AV also reviewed events to evaluate the individual safety ratings of each sentinel or adverse event.

This process has already identified the significant number of potential adverse events related to ESTA's call answer delays. However, it is unclear if delays and triaging decisions by AV staff at REFCOMM or via AV clinicians and duty managers were also subject to the same level of review in some instances.

In March 2022, SCV advised IGEM that there were no reported potential adverse events relating to AV fleet availability or triage practices. AV advised IGEM of the same in May 2022, however in the same month AV's Acting CEO advised the Public Accounts and Estimates Committee that there were three sentinel events arising from AV service delivery issues.

As of 24 February 2022, AV reported to DH that it had not identified any formal events where its response delay was a factor. However, IGEM notes that by March 2022, response delays due to lack of AV resources available for dispatch was a significant problem for ESTA. DH advised IGEM that in May 2022 AV had notified SCV of some events where there was both a call answer delay by ESTA and delays by AV in responding that likely contributed to the outcome.

By March 2022, ESTA had data showing that many thousands of patients waited extended periods for ambulances to arrive due to resource shortages caused by reasons, such as staff furloughing, heightened demand, and COVID protocols.

Ambulance response delays were at times also much longer than the call answer delay. IGEM considers that delays in having trained paramedics treat the patient and apply lifesaving drugs would potentially have been a factor in some adverse events.

Before the COVID-19 pandemic and up to October 2020, ESTA was only recording an inability to immediately dispatch an ambulance crew due to a lack of nearby ambulance units for 3-15 per cent of events (varying day-to-day). When this situation arises, the dispatcher activates a button to record this. From November 2020 to November 2021, the use of the 'No Nearby Units' button had significantly increased to 10-25 per cent of cases.

IGEM understands SCV relies on a self-reporting model. IGEM considers there is merit in SCV undertaking a thematic review of AV cases to confirm AV's internal findings and provide assurance of the self-reporting process.

### 9.7.1 Sector assurance and open disclosure

As adverse events occurred, there were issues between AV and ESTA in terms of managing 'open disclosure' processes. This is part of health assurance processes and ensures that those affected by potential failings in the health system receive information about what happened to them or their loved ones after an incident.

SCV's role is to review cases that AV has itself identified and reviewed, in order to evaluate the latter's findings. The intent is not for SCV to review other random potential adverse events not already identified and reviewed by AV. IGEM considers there is merit in SCV undertaking a thematic review of the events that AV reviewed, to confirm AV's internal findings and provide assurance of the self-reporting process.

In 2022, the Victorian Parliament passed amendments to the *Health Services Act 1988* that aim to improve transparency in Victoria's health system, by encouraging staff to report adverse outcomes, and talk openly with patients if something goes wrong. As it is not a health service, these amendments do not apply to ESTA. However, ESTA has for several years voluntarily engaged with AV to participate in open disclosures when relevant.

SCV advised IGEM that open disclosure should occur as soon as practicable after an incident occurs, and end when the party affected is satisfied it has all the information it needs.

Around October 2021, differences between AV and ESTA arose as to how AV conducted open disclosures. AV led them as the health service, supported by ESTA's attendance where there was a potential ESTA-related issue. The issues around conduct of open disclosures led ESTA to step back and pause its involvement.

It is not IGEM's role, nor is it party to any open disclosures. In line with Recommendations 19 and 20 of the *ESTA Capability and Service Review* there is a need to clearly define the relationship SCV plays in relation to ESTA's assurance.

IGEM supports better integration of ESTA's adverse event reporting into the health assurance system. To ensure events identified by AV relating to ESTA's services, are appropriately reviewed, SCV has proposed the following process for the reporting of sentinel events:

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*The addition of a category to the sentinel event portal, "Category 12 -Parahealth service adverse patient safety event resulting in serious harm or death".*

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The same paper shows cross-portfolio briefing and information sharing. ESTA is also providing updates on emergency ambulance call demand to the Minister for Emergency Services. The most recent update noted:

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*AV has alerted, briefed and, as appropriate, are engaged in identifying and enacting potential risk mitigation and management with the following stakeholders: ESTA, Telstra, Emergency Management Victoria, Inspector General of Emergency Management, the Statewide Incident Controller and Department of Health.*

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**Finding 36**

The health sector assurance processes would benefit from better integration of the Emergency Services Telecommunications Authority into its existing sentinel event processes. This should be considered as part of implementing Recommendation 3.

## 9.8 Engaging support from the broader sector

ESTA is just one of many agencies involved in the wider Victorian Government COVID-19 pandemic response. For much of 2020 and 2021, the focus and resources were dedicated to system risks such as outbreak management, contact tracing and quarantine arrangements. For example, DH did not make reference to either 000 or ESTA in the State's COVID-19 Pandemic Plan for the Victorian Health Sector.

ESTA advised it had good support throughout from EMV, but the relationship with DH was not in place, was ad hoc and always in the presence of AV.

ESTA wrote to EMV on 25 March 2021 to raise its concerns regarding the increase in ambulance call demand and the effect on its performance. This letter also sought to ensure support for its funding bid to manage this demand (refer to Chapter 8).

ESTA attempted to manage its capacity issues without effectively escalating its needs through the emergency management arrangements until it was in crisis in October 2021. At that point, it sought assistance from the EMC to gain support from the other agencies to which it provides services.

AV also held informal discussions with the EMC due to its concerns about how ESTA was managing its services, and the effect call answer speed performance was having on AV's subsequent service delivery and patient outcomes. Arguably, ESTA could have approached the EMC earlier to seek out support but was not accustomed to applying this approach as it did not operate from an emergency management philosophy but rather as a government service provider.

The EMC worked in October 2021 to create what became known as the ESTA Joint Agency Support Team overseen by a Joint Governance Group. Once formed, ESTA received strong support. This was in line with the Commissioner's functions, which include:

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- (1) *The functions of the Emergency Management Commissioner are to—*
- (a) *be responsible for the coordination of the activities of agencies having roles or responsibilities in relation to the response to Class 1 emergencies or Class 2 emergencies...*<sup>33</sup>
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The COVID-19 pandemic is a class two emergency and ESTA has a role in the response of AV in terms of its call-taking and dispatch functions.

Coordination is defined as:

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*The bringing together of agencies and resources to ensure effective preparation for, response to and recovery from emergencies.*<sup>34</sup>

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<sup>33</sup> *Emergency Management Act 2013*

<sup>34</sup> <https://www.emv.vic.gov.au/about-us/what-we-do/the-six-cs>



The State Health Emergency Response Plan (version 4) states that:

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*The Emergency Management Commissioner is accountable for ensuring the response to emergencies in Victoria is systematic and coordinated. This includes ensuring that control arrangements are in place during a Class 2 emergency, responsibility for consequence management for a major emergency, and management of the State Control Centre on behalf of (and in collaboration with) agencies that may use it for emergencies. State Controller (DHHS as control) / State Health Incident Management Team Lead (DHHS as support) As agency lead, the Secretary to DHHS appoints the State Controller (by instrument of appointment) to enable appropriate focus on managing health consequences according to the nature of the emergency:*

- *the Public Health Commander will be appointed State Controller for identified public health emergencies (most likely to occur in circumstances where a public health emergency is anticipated)*
- *all other emergencies, including in the event of a rapid onset health emergency where the causation is unclear, the State Health Coordinator will be appointed as State Controller. The State Controller is responsible for the following initial decisions and actions, in consultation with the appropriate internal and external stakeholders:*
  - *verify the relevant response assessment..*
  - *determine the strategic objectives for response*
  - *determine the incident management model or activate pre-agreed plans for the initial response*
  - *establish incident management team(s) (as applicable)*
  - *ensure timely and appropriate public information and warnings are provided to the community*
  - *notify the EMC, support agencies and relevant health system service providers.*

*The State Controller may appoint a Deputy Controller. The State Controller should delegate their function on the State Health Incident Management Team (that is, Public Health Commander or State Health Coordinator) to a deputy or equivalent.*

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There is also a role assigned to AV called the State Health Commander. The State Health Commander reports to the State Controller with responsibilities for commanding the pre-hospital and field response to an emergency (including ambulance services, first responder assistance, and spontaneous volunteers) at the state tier. AV advised IGEM that the State Health Commander was confident that they raised the impact of ESTA's performance at the State Control Team and State Coordination Team (SCoT) Health meetings.

When ESTA wrote to EMV in March 2021 concerning its performance issues, it did not seek direct intervention by the EMC in their coordination role.

IGEM notes that ESTA is the gateway to responder agencies as defined in the EM Act 2013. ESTA is an integral part of the emergency management arrangements and without its services, emergency response fails to initiate for almost all emergencies.

IGEM found that the DH had little insight into the pressures facing ESTA until October 2021. Until then, DH had focused on managing community information, contact tracing, and health care for the community. This came at the expense of ensuring that all parties were having input into the information campaigns to derive appropriate community messaging, including how and when to call 000 upon contracting COVID-19.

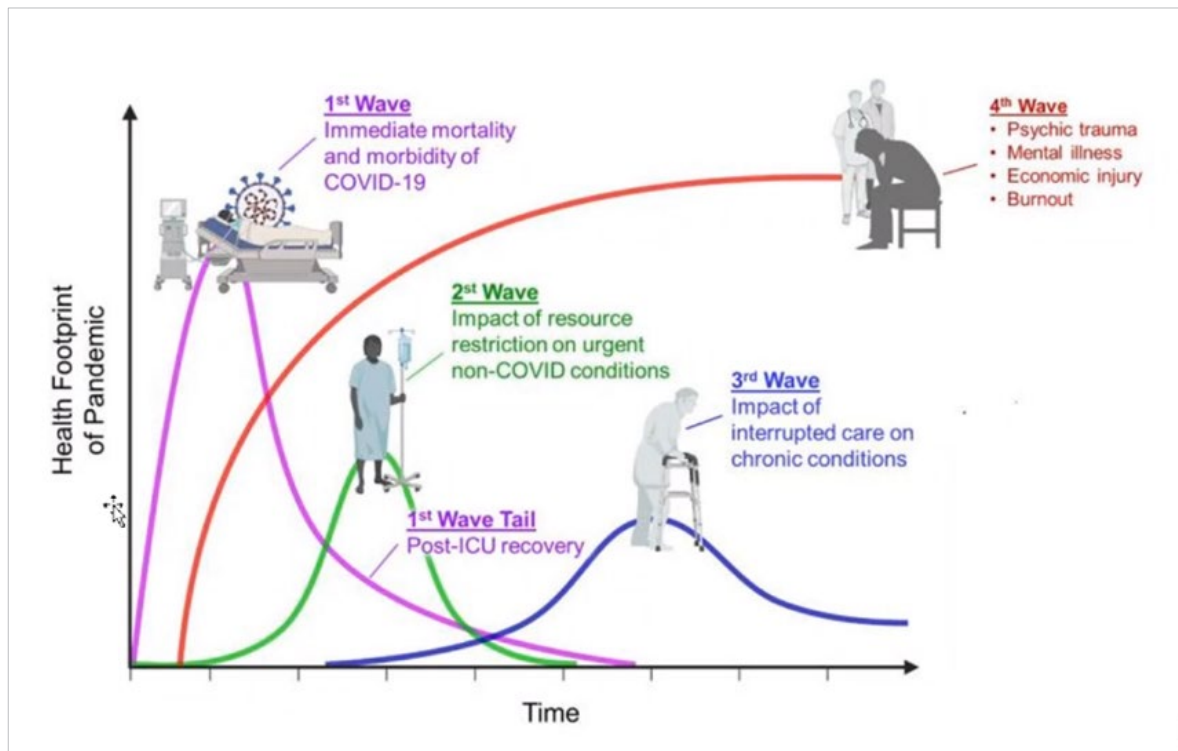
DH became more actively involved in this type of messaging in January 2022 when the Omicron wave overwhelmed all parts of the system and the State Controller – Health declared a system wide 'Code Brown' prompting a rethink of the information and communications campaigns.

ESTA had been attending SCoT Health meetings, SEMT meetings, and had an Emergency Management Liaison Officer at the State Control Centre at times. Consequently, ESTA was privy to a range of COVID-19 response information and decision making. However, from IGEM's observations, ESTA was a passive attendee at these forums, unlike AV, whose representatives took a more active role.

One aspect of the COVID-19 pandemic that may have led to a level of complacency, was that the first two waves passed without a major surge in patients and 000 call volumes. In fact, there was a fall in call volumes during these waves.

In its earliest briefings to IGEM in the first week of April 2020, ESTA showed its planning had considered traditional pandemic models where it is often the third or fourth waves that cause the most risk. At that time, ESTA advised IGEM that it was most focused on the fourth wave line (refer to Figure 16).

**Figure 16:** Illustration of the consequences of successive waves of the COVID-19 pandemic (Source: ESTA)



ESTA had foreseen that its staff would build up significant leave and that when all are fatigued, staff availability may drop and leave requests increase. This was realised in the waves that occurred from mid-2021 to the present.

### Finding 37

While the Emergency Services Telecommunications Authority (ESTA) is recognised as a support agency within the current State Emergency Management Plan, it was not sufficiently integrated nor was the emergency management sector accustomed to managing 000 demand issues via these arrangements. This was exacerbated by the Victorian Government's focus on other aspects of COVID-19 response and ESTA not being effectively integrated as part of the State's health arrangements.

### Recommendation 5

The Inspector-General for Emergency Management recommends that the Department of Health, as part its next review of the State Health Emergency Response Plan, consider changes to:

- (a) better integrate the Emergency Services Telecommunications Authority and ensure that its functions are fully considered in the pre-hospital arrangements
- (b) ensure that the State Health Commander role has specific reporting responsibilities for 000 demand.

## 9.9 EMC and national support

The EMC contacted the Director-General of Emergency Management Australia (EMA) to discuss how the National Coordination Mechanism worked to bring together the other organisations across Australia and New Zealand. This resulted in a meeting on 8 August 2021 of the national ambulance executive (ambulance services from around Australia), ESTA's CEO, the EMC, and EMA.

The meeting worked through the problems affecting the 000 system arising from Victoria and opportunities to address them. The meeting highlighted that this was a national problem, although the peak for most states and territories was yet to arrive. This helped in setting up much of the interstate collaboration that followed from October 2021.

## 9.10 Community education and 000

The ESTA Act 2004 does not place any expectation on ESTA to lead or support others to ensure the community understands how the emergency call answer services work and when to use 000 or alternative non-urgent call options.

ESOs have historically accepted they have a role in public education in this regard, but there is no coordination and it has mostly focused on 000 awareness.

AV acknowledged its legislated function to foster public education in first aid and sees that, as part of this role, it has a responsibility to educate the public about the correct use of 000. AV also recognises one of the functions of its board is to facilitate research and education in relation to ambulance services. In part it considers it has acquitted this through its support of the 'Save 000 for emergencies' campaign.

Ambulance demand has been a major pressure point for government over the last decade. In 2014 one of the findings of the *Working with paramedics to end the ambulance crisis, Interim report March 2015*, was that:

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*There could be better community awareness of when to call for an emergency ambulance.*

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This was based in part on the previous year where AV had managed 37,000 cases via its referral service, REFCOMM. In response to this finding, in 2018 DH launched the campaign 'Save 000 for emergencies'. This was pre-pandemic and targeted at broadly educating the community on when it was right to call 000 and when to use other health pathways.

Prior to the COVID-19 pandemic, AV's referral service managed 16 per cent of 000 calls per day. By April 2022 it had risen to almost 22 per cent. AV reported in its 2020–2021 annual report that it managed 40 per cent of events via its secondary triage service.

Following transfer of the call by Telstra, callers must first undergo emergency ambulance call triage by ESTA. This mandatory part of the call process always occurs before ESTA determines whether to transfer the caller to REFCOMM. In some cases, the caller may have initially rung NURSE-ON-CALL and been transferred to ESTA, who in turn transferred them to REFCOMM.

In October 2021, ESTA made public appeals via the media to reduce unnecessary calls to 000. It pointed out that 40 per cent of ambulance 000 calls did not need an emergency ambulance at the time and called upon all Victorians to use the service sparingly.

At this time the 'Save 000 for emergencies' campaign had been in hiatus for about a year prior to the 2021 surge. AV decided to request DH to reactivate it, initially run between 18 May and 30 July and then again in October 2021, to reduce demand on 000. Additionally, from September 2021 AV promoted it via its social media channels. AV recognised it as a useful way to influence community behaviour and that one in five callers ring 000 but do not need an ambulance.

Prior to its re-launch, AV had undertaken sophisticated and published studies on the short and long-term effects of the campaign.<sup>35</sup> The long-term study found that:

*Conclusions: A long-term campaign developed through evidence review, stakeholder consultation and behavioural theory was successful in reducing the number of daily calls requesting an emergency ambulance in Victoria and in increasing intentions to use alternative services. This research highlights the importance of collaborative intervention design along with the importance of implementing a robust monitoring and evaluation framework.*

AV advised IGEM that it seeks to continually improve its data and analytics methodology so it can harness better insights from any of its campaigns.

The most recent release of the 'Save 000 for emergencies' campaign (launched in October 2021) included more information about what AV considers is an emergency. A list on DH's Better Health Channel home page for the "Save lives 'Save 000 for emergencies'" reflects this.<sup>36</sup>

AV reviewed this additional messaging from a clinical perspective and ensured it was clear. However it did not have a full list of emergency symptoms, and recommended always calling 000 if in doubt, telling the call-taker your symptoms, and letting them know if you have COVID-19.

In April 2022, AV undertook further analysis of the campaign to assist with determining its effectiveness. This work combined with an earlier analysis demonstrated that it had significant media exposure across a range of both traditional and social media platforms.



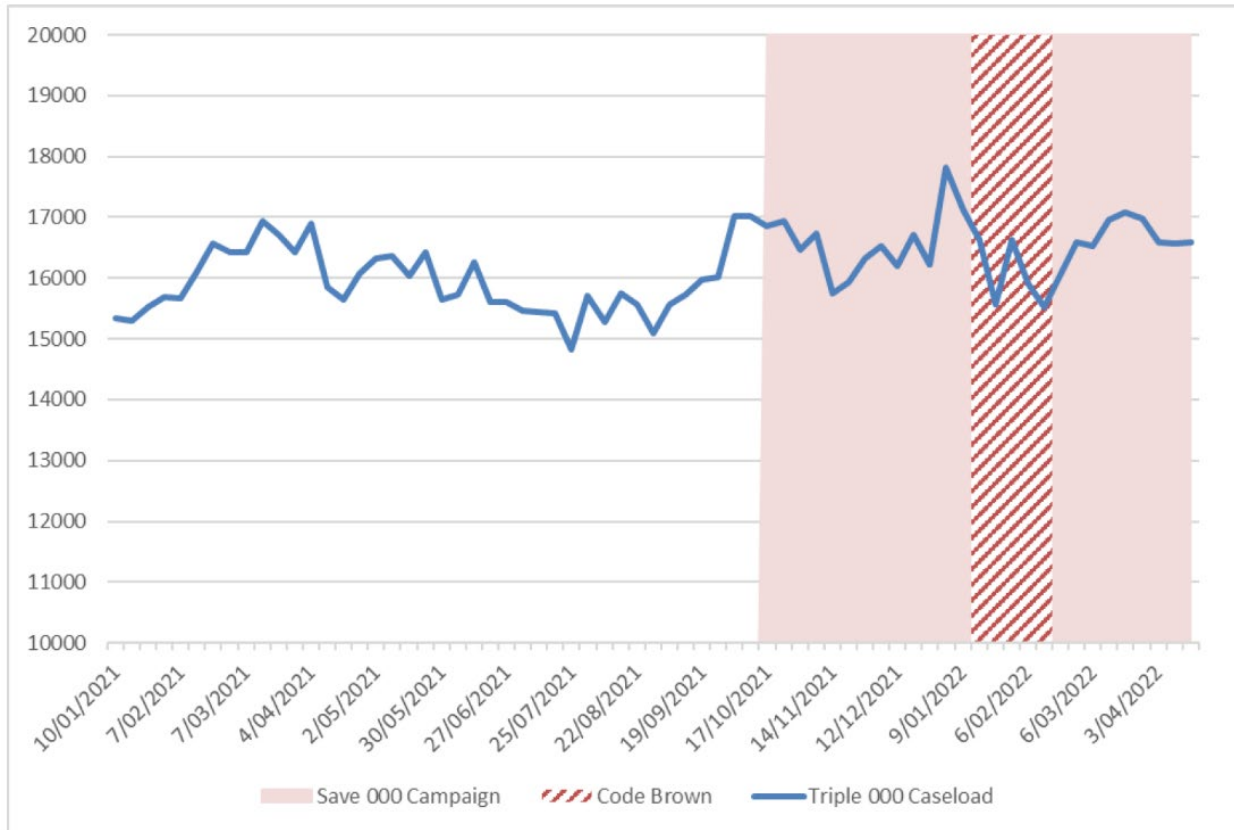
Example of social media communications October 2021 (Source: Ambulance Victoria/Facebook)

<sup>35</sup> <https://health-policy-systems.biomedcentral.com/articles/10.1186/s12961-019-0517-z>

<sup>36</sup> <https://www.betterhealth.vic.gov.au/save-lives-save-000-emergencies>

Ambulance caseload via 000 fluctuated during the campaign (refer to Figure 17).

**Figure 17:** Triple zero caseload during ‘Save 000 for emergencies’ campaign in Victoria (Source: AV)



IGEM notes that AV undertook some consultation with ESTA and sought data to assist with the reactivation of the campaign. ESTA's only involvement was post the re-launch when it met with DH to discuss opportunities to build on the campaign.

Many people, especially during the early stages of the COVID-19 pandemic, repeatedly heard from government, health experts and the media, that COVID-19 was deadly. It is probable that for many people, simply being diagnosed as COVID-19 positive was in their opinion, an emergency. The COVID-19 pandemic response with the restrictions, masks, quarantine, testing, and lockdowns all reinforced how dangerous the disease was.

DH's 2019 COVID-19 Pandemic Plan for the Victorian Health Sector considered community-based actions and the need for direct community education. However, it was focused on slowing the spread of the disease and did not consider the need for community education campaigns to manage demand on all aspects of the health system, such as ambulance services and 000.

AV noted in hindsight that there is a lot of default messaging about contacting 000 across the health system, often as the last point in any community messaging. Members of the public who had spoken to AV staff said that they had called 000 because of that messaging. Some callers were also seeking advice on where to get COVID-19 tests and other related questions.

Anecdotally, general practitioners were also advising patients to call 000 if unwell and could not get appointments.

One of the lessons AV identified as part of this review was that prior to the pandemic it had focused its efforts and campaigns to reduce demand in normal times (business-as-usual). AV recognised that it will be important to have plans in place for future events that focus on connecting people to the right services, the pathways available and messaging to support those pathways.



DH worked with AV to create the COVID Positive Pathways (C+P) model in 2020 and refined it over the duration of the pandemic. This model was designed to provide community-based care to COVID-19 positive individuals, ensuring they receive safe, high-quality care at home, and reduce the risk of an individual requiring inpatient hospital admission. The program has grown since it was established in 2020 and has adapted to meet the needs of a largely vaccinated population in 2022. The C+P program aimed to maintain acute health system capacity, including reducing 000 ambulance calls.

DH sent text messages confirming patients as being COVID-19 positive in early October 2021 with the following text:

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*You have tested positive for COVID-19. We understand this is a difficult time. We can help you get medical assistance and other help you might need.  
In order for us to provide the best support for you and your family, we need you to answer questions: [link to patient survey]  
If you need information in another language visit [link to translated information] or call 1300 651 160 and press 0 for an interpreter.*

*We need you to do two things now:*

- 1. Stay at home until you receive contact from us that you can finish isolation. You can leave home if there is an emergency such as you need to go to hospital, or you are escaping family violence.*
- 2. Answer the questions above so we can get you the help you need and keep us all safe.*

*Thanks for helping us all in Victoria.*

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On receiving notification from pathology providers of positive test results, DH also sent COVID-19 positive patients a survey triage text message. The text message linked to a survey which allowed Local Public Health Units to determine priorities for case interview and clinical triage to COVID Positive Pathways. This also had a simple message:

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*If you are unwell, please call your usual health provider for advice. Call 000 for a medical emergency.*

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Callers who rang 1300 651 160 number and spoke to the telephone triage team also received the same advice.

From 24 December 2021, as part of the initiation of the self-care model, DH text messages began being issued to COVID-19 positive people once allocated to either a self-care or COVID Positive Pathway. These text messages provided multiple options for care including general practitioners, NURSE-ON-CALL, and websites for managing COVID-19 at home for adults and children. These text messages also outline clearly when to call 000 for both adults and children.

While noting the continued efforts to refine the messaging, IGEM found no evidence of DH consulting with ESTA on any of the above matters.

While ESTA had always taken an active role in promoting 000, it was not one of its legislated functions and it did not have the capability to lead community messaging. Therefore, in October 2021 ESTA sought assistance from DJCS and the Emergency Management Joint Public Information Committee, which assisted in a coordinated effort to issue community messaging around appropriate use of 000. SCT COVID discussed the 000 campaign at a meeting on 11 January 2022 where DJCS flagged the ongoing work regarding ESTA communications.

EMV advised that it has learned through the pandemic that coordination of communications and the timeliness of getting approved messages out to the community is an area for improvement.

IGEM notes the community received a range of messages that changed regularly, with a number of different services cited including:

- NURSE-ON-CALL
- the COVID-19 hotline
- healthdirect.gov.au.

IGEM considers that ideally a single number that channelled people to the services they need and can escalate their case to ESTA if required, may have been beneficial and may have had broader applications beyond health.

AV is supportive of an alternative non-emergency number approach, such as NURSE-ON-CALL. Overseas experience reinforced the importance of non-emergency pathways that are integrated to the emergency dispatch system such as the United Kingdom's 111 for non-emergencies that is linked to its 999 emergency system.

IGEM considers that it is important to carefully manage the volume of calls that ESTA must answer, from both a community outcomes and sustainability perspective. Community education and messaging is a means of managing demand. If ESTA is overwhelmed by unnecessary calls to 000, there will be downstream effects on ESOs and the community, as demonstrated by the COVID-19 pandemic.

### **Finding 38**

While all parties actively participated in community messaging, it was not coordinated to the extent necessary to maximise the opportunity to reduce unnecessary demand for ambulance services via 000. While Ambulance Victoria and the Department of Health collaborated well, they did not engage sufficiently with the Emergency Services Telecommunications Authority to benefit from its knowledge.

For the most part, the information and community messaging campaigns did not directly give the public infected with COVID-19, clear information around the use of 000 and alternative pathways for care. However, there was a shift in support after the Victorian Government declaration of a system wide Code Brown in January 2022, where messaging began to directly address the issue of COVID-19 symptoms.

### **Recommendation 6**

The Inspector-General for Emergency Management recommends that the Department of Justice and Community Safety, in consultation with the Emergency Services Telecommunications Authority, emergency services organisations, and relevant Victorian Government departments:

- (a) clarify overall policy responsibility for demand management of 000 calls by service type (that is, ambulance, police, fire services)
- (b) conduct further research into effective 000 community messaging, to inform better targeted community messaging strategies and options that support 000 demand management
- (c) lead the development of a coordinated approach for community information and education about the correct and appropriate use of 000 according to levels of demand and service type.



# 10 ESTA staff health and wellbeing

## 10.1 Overview

Call-takers handle complex and often highly emotional calls for help on a daily basis, therefore there are mental health consequences for ESTA staff. These are different from the additional physical risks that other emergency service personnel face but share some common elements.

Due to the unique nature of ESTA's work, it produced a Mental Health and Wellbeing Plan 2020–2024 to determine its strategy for providing a safe workplace. In its Health, Safety and Wellbeing Policy, most recently approved in August 2021, ESTA states it is committed to:

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*...building a workplace culture and environment that values, promotes, and supports programs focused on improving both the physical and mental health, safety, and wellbeing of our people*

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It lays out methods for doing this through providing a safe environment, integrating risk management into processes, and providing early interventions for staff. The policy also details how ESTA will manage different incidents.

The *ESTA Capability and Service Review* included a short section on ESTA employees' mental health and made a recommendation to review all existing health support available and commit to focus on preventing mental health injury. IGEM broadly agrees with this recommendation and acknowledges that existing policies and resources are comprehensive and widely available to staff.

IGEM notes that ESTA staff are also part of the Victorian community which faced significant challenges during the COVID-19 pandemic and that stressors were not exclusively from their work.

Although this chapter focuses on ESTA, it is important to recognise the welfare of Telstra 000 agents as an integral part of the national emergency call system during the (ongoing) COVID-19 pandemic. Telstra told IGEM it acknowledges that some of its 000 agents worked in a challenging environment, especially when experiencing extreme delays waiting for ESTA to answer calls.

Telstra's actions to support its employees included use of its staff assistance and support provider, in addition to a trauma/crisis support team. These providers engaged in, among other things providing:

- face-to-face counselling with employees
- psychological education and self-care sessions
- various seminars on topics including resilience, energy management, and managing vicarious trauma
- support for the leadership teams
- general walk-arounds and welfare checks.

Telstra's work in this regard was in addition to various actions to increase operational availability, therefore reducing the workload and mental strain on operational employees during times of extreme surge.

## 10.2 Staff health and wellbeing at ESTA

Documentation provided to IGEM indicates that ESTA has a clear understanding of how to manage mental health and prevent psychological injury, and has a strong focus on prevention and early intervention across the organisation. However, there is always room for improvement, particularly given the backdrop of the COVID-19 pandemic and its impact upon the work and private lives of staff.

As call volumes increased in August 2021, ESTA reduced its number of essential training modules in order to maximise the call-taking and dispatch staff available for operational requirements. ESTA also suspended its face-to-face mental health training due to COVID-19 physical distancing requirements and the need to balance operational pressure and infection risk. ESTA replaced this with online mental health training to all staff, including modules on the following topics:

- ESTA Mental Health Awareness Training
- ESTA Mental Health Awareness Training for People Leaders
- Mental Health First Aid - External Course
- How to Improve your Mental and Emotional Health
- How to Care for your Mental Health during Quarantine; and
- Managing Mental Health Conversations.

In September 2021, ESTA recruited and trained an additional 38 peer support staff from its pool of existing operational staff.

In early 2022, ESTA engaged a second onsite provider of psychological support services to supplement those of its existing provider. Combined, both organisations now provide 24 hours of free psychological services across a range of morning and afternoon shifts at all centres so that these services are available to all staff.

ESTA staff also have 24/7 access to counselling, support and resources from their providers respective hotlines and online services. Additionally, ESTA has invested in proactive support for new staff members, with a mandated one-hour one-on-one session with a clinical psychologist at the commencement of their employment, and a follow up one hour session six months later. ESTA intends to progressively roll this program out for all staff.

More than 60 per cent of ESTA's call-taking staff work on a roster of 12 hour shifts, which are long and fatiguing, with just 15 per cent permitted to work on part-time non-standard rosters. The 12 hour shifts also limits the flexibility for rostering staff around peak periods of demand. IGEM notes that ESTA's enterprise agreements allow for a higher wage to be paid when staff accept overtime shifts however due to higher levels of fatigue and mental stress this is less likely to occur.

## 10.3 Resources and interventions

Resources available to ESTA staff to help them manage their health and wellbeing include an employee assistance program providing workplace psychological support, psychological first aid, and counselling services.

There is also provision for Welfare Breaks or Welfare Absences following a challenging call or event. ESTA defines a Welfare Break as no greater than 90 minutes away from the phones, with a form of mental health support and follow-up provided at the end of the shift. A Welfare Absence is for longer than 90 minutes to the end of a shift and also includes a form of mental health support. The break or absence is designed to allow the call-taker or dispatcher to debrief from the event and regroup in order to continue in their role.

ESTA also has a formal debrief process that it uses following a significant event, such as during the 2019–20 bushfires, and the 2020 motor vehicle accident in which four VicPol members were killed. IGEM considers ESTA capable at identifying potentially traumatic events for its staff and providing appropriate resources and support. However IGEM has not directly engaged with operational staff to gauge their views as part of this review.

In response to the COVID-19 pandemic, ESTA implemented additional tools and resources to support staff health and wellbeing, including a check-in program, peer support dogs on loan from AV, and updates to its intranet page detailing resources and tools. This was in addition to indirect initiatives such as coffee facilities, food trucks, and on-site massage therapists.

IGEM notes that ESTA was also working to provide support to two distinct workforces – one on-site in SECCs in a COVIDSafe manner, and one unexpectedly working from home for an indefinite period. The requirements of staff working at home and on-site were quite different and changed throughout the pandemic.

For staff on-site, there were challenges about physical spacing in the workplace, responses if a staff member was exposed to COVID-19 and mask wearing. Staff may also have experienced stress over perceived and actual exposure to COVID-19 if taking public transport and spending time in the workplace with other people. Meanwhile, for the staff working at home the change was rapid with ESTA managing technology and ergonomic setups as required.

In May 2021, ESTA appointed its first Mental Health Wellbeing Program Lead, who led the implementation of the Mental Health Wellbeing Plan to improve safety. ESTA created this role following funding announced in the 2021–22 Victorian State Budget, with prior funding only available on a temporary basis.

### Finding 39

The Emergency Services Telecommunications Authority (ESTA) has a comprehensive health and wellbeing strategy, with a variety of resources and information available to staff. ESTA is adept at providing support to its staff following critical incidents.

## 10.4 Effectiveness of interventions

While it is difficult to quantify the effectiveness of each resource and service available to staff, there are several reports available which indicate staff perceptions of ESTA as a workplace, the services available and the level to which staff used services, or conversely, adverse incidents reported by staff.

In 2018 Beyond Blue conducted *Answering the call* – a study on mental health and wellbeing for police and emergency services (both individual agencies and as a sector). Study findings concluded that ESTA employees experienced mental health illnesses at a higher rate than the overall Australian population and included feedback from ESTA staff that staff shortages and lack of resources caused high levels of stress.

The report found that only 29 per cent of ESTA staff reported accessing an employee assistance program or other provided counselling services. IGEM notes that this statistic refers to just one of several services available to ESTA staff, as well as the possibility that some staff may receive counselling or psychological support outside of the workplace.

Following Beyond Blue's *Answering the call*, ESTA engaged a consultant to evaluate its workplace. FBG Group's 2019 report recommended developing a mental health education program and promotion of available services and resources. This work also led to the development of a mental health strategy and a survey to measure employee wellbeing and psychosocial risk factors. IGEM notes that Recommendation 10 from the *ESTA Capability and Service Review* aligns to these recommendations and agrees that there are opportunities for improvement.

More recently, data provided to IGEM showed that there was an increase in use of Welfare Breaks and Welfare Absence, as well as WorkSafe claims, during the COVID-19 pandemic. ESTA reported a higher use of Welfare Breaks and Welfare Absences between October and December 2021 when compared to the same period the year prior, and when compared to July to September 2021, with most of these instances associated with emergency ambulance call-takers.

The People Matters Survey conducted by the Victorian Public Sector Commission provides further insights. It is a standardised survey conducted across the Victorian Public Sector to help organisations develop a positive workplace culture aligned to public sector values. In 2021, the survey presented ESTA's results within a 'comparator group' of similar organisations, comprising AV, VicPol and VICSES, though as mentioned previously, the working environments and risks are quite different.

In the 2021 survey, 44 per cent of ESTA staff reported 'high to severe work-related stress', higher than the comparator group (29 per cent) and the Victorian Public Sector overall (26 per cent). Some 93 per cent of ESTA staff reported some 'work-related stress' during 2021, with most reporting it from 'workload' (72 per cent) or 'time pressure' (34 per cent).

The high proportion of ESTA staff describing work-related stress is concerning, and IGEM considers that ESTA could have resolved these in part by having more staff available to assist in answering the surge of calls for ambulance.

IGEM notes that the majority of ESTA's call-taking and dispatch workforce work 12 hour shifts. While IGEM requested evidence from ESTA and other emergency agencies about health and wellbeing, it did not receive any information about the effects of such shifts on employee health and wellbeing. It is possible that the shift length and roster structure contributes to a poorer perception of health and wellbeing, but further research is required.

Recommendation 8 of the *ESTA Capability and Service Review* recommended that ESTA work with stakeholders toward an industrial strategy that addresses limitations in flexibility, particularly in surge demand. IGEM broadly agrees with this recommendation, noting that restrictions on 12 hour shifts meant that ESTA was unable to ramp up quickly to meet demand during the COVID-19 surge.

### **Recommendation 7**

The Inspector-General for Emergency Management recommends that the Emergency Services Telecommunications Authority, in consultation with the emergency services organisations and Emergency Management Victoria, conduct research into optimal shift patterns and rostering arrangements. This research should include recommendations for change and consider:

- (a) existing research literature regarding the effects of different shift patterns
- (b) consultation with other emergency telecommunications services
- (c) consultation with health professionals
- (d) consultation with workplace leaders and operational staff
- (e) the need to balance staff wellbeing with operational requirements
- (f) existing sector guidelines relating to employee health and wellbeing.

This recommendation supports Recommendation 8 of the *Emergency Services Telecommunications Authority Capability and Service Review*.

# 11 Previous lessons and recommendations

## 11.1 Introduction

This chapter reflects upon the lessons identified from past events, relevant recommendations from associated reviews, and whether opportunities have been grasped or missed during the COVID-19 pandemic.

Following the 2016 thunderstorm asthma event, IGEM undertook a review of the sector's response and completed a separate investigation of ESTA's management of patients who did not survive their medical emergency associated with the event.

There are lessons and recommendations arising from IGEM's review into that emergency that have some parallels with the experience and approach taken by ESTA during the COVID-19 pandemic. Although the 2016 thunderstorm asthma event lasted just two days, the lessons and recommendations made in the review are in some cases applicable.

On 27 September 2021, calls to ESTA peaked at 3250, the second highest single day call volume after the thunderstorm asthma event when ESTA received 3452 calls. From September 2021 onwards the COVID-19 pandemic call volume continued to rise to a new record of 3849 calls on 2 January 2022.

IGEM also considered real time lessons that were available to ESTA and AV, from interstate counterparts through their membership of NECWG-A/NZ. IGEM also sought input from two comparable jurisdictions, the Queensland Ambulance Service and NSW, to gain insights from their experiences.

IGEM also considered international lessons available through NECWG-A/NZ's relationship with the Collaborative Coalition for International Public Safety (CCIPS), a group consisting of Emergency Number Associations across the world such as the Association of Public-Safety Communications Officials, Canada (APCO Canada), the European Emergency Number Association (EENA), the British Association of Public-Safety Communications Officials (BAPCO), and NENA: The 9-1-1 Association.

IGEM found there were three particularly relevant findings or recommendations arising from the thunderstorm asthma event relevant to ESTA and AV management of the surge in emergency ambulance calls resulting from COVID-19:

- ESTA or AV staff providing callers with estimated times of arrival for the ambulance
- the use of an Urgent Disconnect procedure that authorised ESTA call-takers to disconnect early and have post-dispatch instructions given via a recorded message
- enabling Telstra to advise callers waiting in the 000 call queue of high demand via an Extreme Event Recorded Voice Announcement (RVA).

Both IGEM and the Coroner identified issues with ESTA not providing callers with an ETA for the ambulance which might enable them to make their own decision on whether to wait for the ambulance or take alternative action. AV's internal Debrief and Review of Thunderstorm Asthma also covered the issue, proposing that it approach ESTA to develop a policy to provide information to callers at times of high demand. AV had identified:

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*... there is a requirement to provide ambulance consumers with accurate, personalised and patient-centred information regarding the estimated time of arrival (ETAs) of ambulance services, at the time of a call to Triple Zero.*

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## 11.2 Providing estimated times of arrival via surge scripts

ESTA's CIRP health sub-plan subsequently addressed the activation of modified exit scripts for ESTA call-takers during periods of surge. ESTA revised and ratified the surge exit script with AV in May 2017. The revised script informed 000 callers of extremely high demand for ambulance services and suggested the caller may consider seeking alternative medical assistance if possible.

This change did not give the caller an ETA for an AV crew. Following the coronial inquest into the 2016 thunderstorm asthma event, AV made a change request to ESTA in January 2019 to update the call taking script to provide an ETA to AV patients.

As part of IGEM's ongoing monitoring, ESTA provided further evidence of improvements related to Recommendation 11 of IGEM's *Review of response into the thunderstorm asthma event of 21-22 November 2016*, showing that ETAs were now included in call closure scripts based on AV standard response times. IGEM considered this and advised ESTA that this still did not fully address the issues identified by the Coroner.

The delivery of a complete solution for provision of ETAs was one of AV's priorities for the 2019–20 financial year.

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*The purpose of this change request is to enable ESTA to commence scoping the necessary changes to technology, systems, processes, and training that would be required in order to introduce ETA provision within the ESTA emergency call taking environment.*

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This was to be a three-stage approach, with the first stage being based on AV response times, the second on a system-generated estimate based on actual travel times for ambulances, and the final stage accounting for changes to ETAs due to ambulances being diverted.

In May 2020 AV identified this change as its highest priority initiative among its open change requests, as part of its response to the COVID-19 pandemic, and in planning for times where ambulance response would be heavily constrained.

In early 2021 as the call and case volumes continued to increase, AV highlighted at a joint performance improvement forum that this change could benefit both it and ESTA. Despite this there was no timeline for delivery by ESTA. Indications from ESTA were that internal resourcing deficits and continued focus on the stabilisation of the CAD platform impeded delivery.

In October 2021, AV accepted ESTA's suggestion to amend the call closure scripting to include ETA for some 000 callers based on event priority as an interim solution in lieu of ESTA's development of an ETA technology-based solution. Data shows that from 1 January to 13 April 2022, ESTA received 24,000 ambulance 000 calls asking for an ETA for an active event. This equates to about eight per cent more calls per day requesting an ETA.

IGEM appreciates the complexity of implementing this solution within a short timeframe and amid a pandemic environment, however notes it has been five years since AV and ESTA learned of the recommendations from the thunderstorm asthma review and investigation. Potential adverse events associated with ETAs not being provided are continuing into mid-2022 following the interim scripting change.



**Finding 40**

Ambulance Victoria (AV) and the Emergency Services Telecommunications Authority (ESTA) learned that providing an estimated time of arrival for the ambulance was important to callers to assist them in making decisions on whether to wait for an ambulance or take alternative action during a surge event.

However, there was a lengthy delay in AV making a formal change request to ESTA after the issue was identified. Thereafter, the change request was pending with ESTA for several months before the onset of the COVID-19 pandemic. This was an opportunity missed by both agencies to resolve the issue before the onset of the COVID-19 pandemic.

**Observation 9**

Ambulance Victoria has prioritised the development of a technological solution to provide estimated time of arrival for ambulance during surge events and the Emergency Services Telecommunications Authority has commenced work on it.

## 11.3 Urgent Disconnect and post-dispatch instructions via recorded message

In February 2017, AV approved an updated version of its CSOPs. The amendment approved variations to structured call-taking for use by ESTA call-takers. IGEM reflected on this in its review of response to the 2016 thunderstorm asthma event.

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*ESTA Ambulance Operators were required to remain on the phone for a significant number of patients. ProQA has an optional functionality called 'Urgent Disconnect' which is not currently approved by AV for use by ESTA call-takers in cases where there are calls waiting. Approval of an Urgent Disconnect policy would have freed operators to take other calls while providing sufficient instructions for callers to self-manage patients. It is recommended that ESTA investigate implementation of this protocol as part of CIRP protocol.*

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AV's revised CSOPs now state the following:

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*Urgent Disconnect - Designed to allow operators to disconnect from calls such as stable not alert patients when a specified number of calls are waiting in the queue or when invoked under agreed criteria such as DISPLAN or catastrophic events (Emergency Rule) - AV authorises the use of Urgent Disconnect and the Emergency Rule by ESTA under the authorisation of the AV Communications and Referral Manager or delegate.*

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From October 2021, ESTA used urgent disconnect for stable Priority 1 patients to manage the COVID-19 surge. This enabled call-takers to disconnect from a caller sooner, in order to take the next call in the queue.

Call-takers used urgent disconnect for Code 2 or 3 events, in situations where the call-taker is not required to remain on the phone to provide urgent lifesaving advice or instruction such as CPR or childbirth. In this circumstance, call-takers could disconnect but connect the caller with an RVA that provided the post-dispatch instructions (such as instructing the caller to secure pets, turn on a light, or meet the ambulance outside).

ESTA put forward a proposal to AV on the introduction of RVAs to deliver post-dispatch instructions in July 2021. However, AV did not support this until further review, risk analysis and approval via its relevant governance bodies, citing prevention of unintended negative impact and maintaining best care practices.



It was not until 29 October 2021 that ESTA was able to implement this change with AV's approval as part of the updated urgent disconnect process. This reduced call waiting times by 14 per cent on average between 16 October and 7 November 2021.

### 11.3.1 Extreme event Recorded Voice Announcement

Following the 2016 thunderstorm asthma event, ESTA proposed to its Advisory Committee a change to the RVA scripts in order to align with Victoria's 'all emergencies, all communities' approach and be applicable to any emergency event (including fire and severe weather) that results in a significant increase in calls to 000.

As a result, in December 2016, ESTA updated its extreme event RVAs with Telstra to include a general extreme event RVA (for emergencies other than fire and storm) as follows:

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*Emergency triple zero in Victoria is extremely busy due to a major incident. If you need police, fire or ambulance attendance please stay on the line.*

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Telstra suggested ESTA consider requesting activation of the general extreme event RVA for Victoria some weeks prior to the activation of a new customised extreme event RVA on 7 October 2021. AV has decision-making authority to approve all RVAs. ESTA and AV requested Telstra activate the new customised extreme event RVA, using the following wording:

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*Emergency triple zero for ambulance in Victoria is extremely busy. If you require police, fire, or urgent ambulance attendance, please stay on the line. If your health need is not urgent, please call Nurse on Call on 1300 60 60 24.*

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This had an immediate effect, reducing the number of calls waiting to zero in some periods.

Telstra in consultation with ESTA, activated this customised extreme event RVA on 153 occasions between October 2021 and March 2022, an average of six times a week. This is evidence of the number of times that 000 demand overwhelmed ESTA's emergency ambulance operations.

In assessing the use of the extreme event RVA in October 2021, ESTA reported:

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*[a]nalysis has indicated that the deployment of the RVA suppressed volumes to around 3000 calls per day thereafter [15 October 2021]. Forecasts indicated that without this treatment we would regularly be expecting 3500 calls by the end of October [2021].*

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ESTA has further advised IGEM that more recent analysis indicated that the deployment of the extreme event RVA continued to suppress call volumes in April 2022.

#### **Finding 41**

In October 2021 the Emergency Services Telecommunications Authority (ESTA) introduced a customised extreme event Recorded Voice Announcement (RVA) to callers on hold to triple zero. ESTA already had approval from Ambulance Victoria (AV) for a general extreme event RVA for events other than fire and storm but did not activate this. Once activated, the customised RVA assisted to reduce call demand. Both AV and the ESTA would have benefited from earlier implementation of the customised extreme event RVA.

**Recommendation 8**

The Inspector-General for Emergency Management recommends that the Emergency Services Telecommunications Authority in consultation with emergency services organisations:

- (a) review the extreme event Recorded Voice Announcements (RVAs) for Victoria
- (b) ensure there are appropriate scripts that address known emergencies
- (c) develop a formal mechanism to rapidly customise extreme event RVAs for unanticipated emergencies.

## 11.4 Lessons from other jurisdictions

### 11.4.1 International

In March 2020 CCIPS developed a document to help public safety organisations and emergency communications professionals across the world to navigate the COVID-19 pandemic. This document included recommendations based on the experience of countries that had an earlier onset of COVID-19. Recommendations addressed issues such as non-emergency numbers, public messaging, RVAs, and increasing staff numbers. ESTA advised that it adopted some of these recommendations where it felt they were within its capacity to do so and they were relevant to Victoria.

CCIPS also released a lessons learned document during the COVID-19 pandemic that talks to the effects of establishing and promoting a non-emergency number. It shows that in areas where non-emergency numbers were not established or barely known by the public, a large volume of additional calls were made to traditional emergency numbers. In some cases 80 per cent of calls made to emergency lines were callers seeking COVID-19-related information and were non-emergency in nature.

Australia put in place a COVID-19 helpline number and website early in the pandemic and directed callers seeking COVID-19 information to these alternative pathways via its national RVA. This RVA was first implemented in April 2020 but was not requested to be activated until January 2022.

Victoria used the pre-existing NURSE-ON-CALL service as an alternative pathway to give callers a non-emergency alternative to 000. Additionally, there was healthdirect.gov.au. While these were useful interventions, they were not optimised for COVID-19.

The COVID-19 pandemic affected emergency communications systems worldwide and there were valuable lessons – especially given there was a delay in Australia and Victoria experiencing the full impacts of the pandemic by 12 months, compared to Europe for example. A common theme was recruitment as demonstrated by the following examples:

#### **United Kingdom – Call handling recruitment drive**

Some UK Ambulance Services adopted an accelerated program to bring in new staff for call handling and control room support. They targeted furloughed airline flight attendants due to the individuals' rare, combined experiences in communication, customer service, as well as first aid and the ability to work under pressure. Additionally, these professionals had recognised security clearances which quickened the recruitment process.

#### **United States of America – Staffing procedures**

Some 911 public safety answer points split their shifts between the backup centre and the primary location (or splitting shifts between physically separate locations inside the same building or on the same site) in order to limit potential exposure. Some reduced the minimum size of their shifts to preserve the number of healthy, unexposed staff (based on call volumes). Those with extended high call volume periods recruited/retrained retired staff and staff who worked in adjacent areas (for example, easily activated medical staff, light duty field responders).

### Europe – Staffing procedures

Some countries used medical students or call-takers currently under training to increase capacity of call centres or to assist in supporting roles, for instance in France, Slovenia, and Finland. In Malta, non-government organisations have called for volunteers to operate the COVID-19 hotline. In Portugal, nurses are reinforcing the COVID-19 helpline.

### 11.4.2 National

NECWG-A/NZ kept agencies informed during the COVID-19 pandemic about what was happening across the 000 network and what individual agencies were doing in anticipation of the increase in call volumes. NECWG-A/NZ shared information with a working group from all agencies via presentations.

AV and ESTA were regularly engaged with the working group throughout the COVID-19 pandemic, via meetings, and through informal information sharing arrangements. Meetings of the ambulance stream provided a platform for sharing information and strategies relating to the identification of COVID-19 patients, the implementation of surge management strategies, as well as intelligence regarding the impact of COVID-19 on ambulance and 000 demand.

The NECWG-A/NZ ambulance stream worked on a national 000 advertisement to assist with managing demand, particularly as the Omicron wave began to affect many jurisdictions.

On 14 January 2022 Telstra was requested by emergency services nationally, and government, to implement a national extreme event RVA that was played to all callers at the start of their 000 call, and before they were queued for answering. The message callers heard was:

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*You have dialled Emergency triple zero. If you require information in relation to COVID-19 please visit [healthdirect.gov.au](https://www.healthdirect.gov.au) or call the National Coronavirus Helpline on 1800 020 080. If you require emergency assistance from Police, Fire or Ambulance please stay on the line.*

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NECWG-A/NZ had recommended complementing the RVA with public information and media campaigns, including through television commercials, to reinforce the importance of leaving 000 for an emergency. NECWG-A/NZ advised IGEM that NSW took the lead with developing the media campaign alongside the national RVA. NSW shared the campaign with the other ambulance agencies and jurisdictions, with some choosing to use it as part of an intense media campaign and as a supplement to the RVA.

Evidence indicates that the call reduction following the activation of the national extreme event RVA was attributable to the concurrent educational and media campaigns conducted in some jurisdictions. Some ambulance services saw reductions of between 200–500 calls per day.

### Finding 42

The Emergency Services Telecommunications Authority (ESTA) and Ambulance Victoria actively sought lessons information from interstate and overseas to improve their preparedness for the COVID-19 pandemic. ESTA did this insofar as it was able to do so within the constraints of its funding capacity, relevance to Victoria's operating environment, and the requirements of the emergency services organisations.

## 12 Conclusion

ESTA's staff, working on the frontline, like many across the emergency management sector, have endured a heavy burden during the COVID-19 pandemic and continue to do so at the time of this report.

As part of this review, IGEM has made 42 findings and eight recommendations that present opportunities for improvement. IGEM has made nine observations, with most acknowledging recommendations contained within the *ESTA Capability and Service Review*, aimed at adding value where relevant.

The possibility remains of a new variant of COVID-19 or some other future disease that will challenge the health and emergency management sectors in similar ways. The improvements proposed here will not only strengthen ESTA's ability to better respond to future pandemics, but other emergencies and surge events of any type, some of which climate scientists predicted will increase in both severity and frequency.

IGEM considers the most critical reform must be a revision of ESTA's funding arrangements. This is to ensure that ESTA and any successor organisation has the capacity and means to fulfil its role and Victorians' expectation that their calls for emergency assistance are answered quickly.

Another priority is improving community understanding of the emergency call service, including when to call 000. Demand management of 000 calls should be high on the agenda of all stakeholders, not just the call-taking agency.

The recommendations made through this review aim to provide a foundation for restoring public confidence in Victoria's emergency call-taking and dispatch system.



(Source: Shutterstock)

# Appendices

## Appendix A: Glossary of terms

TERM	DESCRIPTION / DEFINITION
Administrative arrangements	The Administrative Arrangements pursuant to the <i>Emergency Services Telecommunications Authority Act 2004</i> (Vic.) are arrangements agreed to by ESTA and the ESOs to whom it provides services, including call-taking and dispatch services. These arrangements include responsibilities and accountabilities of ESTA for delivery of services, responsibilities and accountabilities of ESOs in collaborating with ESTA, and performance standards.
AQUA®	AQUA is the audit tool that ESTA uses to review compliance against the call-taking management of emergency ambulance events created using Medical Priority Dispatch System/ProQA. This audit differs from the service delivery audits ESTA performs as part of its service delivery requirements under the Administrative Arrangements.
Call answer performance	A measure that indicates the percentage of calls ESTA answers over a defined period, normally one month, as defined in the standards for ESTA.
Call answer speed	The time taken by ESTA to answer a call measured from when it becomes available for ESTA to answer it within its telephony system to when a call-taker answers the call.
Calling Line Identification	For emergency calls, it is the data that displays the caller's phone number and where available, location information. For a fixed phone, this is the billing address. For mobile phones, it provides the billing address and may provide an approximation of the handset's location.
Call-taker	The function of the call-taker is to answer emergency or non-emergency calls, identify what the emergency or non-emergency situation is, then collect and record all relative information in the Computer-aided Dispatch system, then send it to a dispatcher to ensure the appropriate agencies are notified of a need for their attendance. Call-takers also provide approved, scripted advice to callers such as scene safety, or first aid instructions, where relevant.
Cardiac arrest	Cardiac arrest is a sudden cessation of the functioning of the heart.
Cardiac Pulmonary Resuscitation	CPR (short for cardiopulmonary resuscitation) is a first aid technique that can be used if someone is not breathing properly or if their heart has stopped.
Clinical Response Model (CRM) / dispatch grid	The table written by AV that specifies the type and numbers of ambulance resources that ESTA should endeavour to dispatch to each event type, and the associated response codes that AV crews should apply, when responding.
Clinician	The clinician is an AV Mobile Intensive Care Ambulance paramedic within the State Emergency Communications Centre responsible for ensuring the clinical needs of the patient are met.



TERM	DESCRIPTION / DEFINITION
Code 1 (Ambulance Victoria)	Code 1 is an AV code that signifies a unit is required to respond to an urgent, potentially life-threatening patient, using 'lights and sirens'.
Code 2 (Ambulance Victoria)	Code 2 is an AV code that signifies a unit is required to respond to an urgent, but not life-threatening patient, suitable for travel under 'normal road conditions unless the crew is unduly delayed'.
Code 3 (Ambulance Victoria)	Code 3 is an AV code that signifies a unit is required to respond to a non-life-threatening patient, suitable for travel under 'normal road conditions and can normally wait up to 60 minutes.
Code Brown (system wide)	An alert or response code put in place to activate a formal emergency management structure to make the best use of hospital resources as Victoria battled a COVID-19 Omicron outbreak. Normally Code Brown is used in an individual hospital setting and aims to ease the burden on health services by streamlining emergency management systems when there is an influx of patients over a short period of time.
Code Orange (Ambulance Victoria)	A code used to active special management strategies under AV's Emergency Response Plan when it is experiencing major impact on its normal operations.
Code Red (Ambulance Victoria)	A code used to active special management strategies under AV's Emergency Response Plan when it is experiencing severe impact on its normal operations.
Communications Standard Operating Procedures (CSOPs)	Communications Standard Operating Procedures (CSOPs) are issued to ESTA by the emergency services organisations (for example, AV). CSOPs provide the requirements required by an organisation in order for ESTA to provide its services.
Computer-aided Dispatch (CAD)	ESTA's Computer-aided Dispatch (CAD) system refers to the equipment, the software, any necessary interfaces and all other ancillary items which enable call-taking and dispatch services in Victoria.
Critical Incident Response Plan (CIRP)	ESTA's Critical Incident Response Plan defines a critical incident as an event that is predicted to affect the public resulting in a need for heightened emergency response requirements by one or more emergency services organisations, or an event that is predicted to have a substantial effect on ESTA's service delivery capability and requires additional staff to be rostered.
Dispatch speed	The time taken by ESTA to dispatch emergency services resources to an event. It is measured from when the event becomes available for the ESTA dispatcher to dispatch until the first resource is dispatched within the CAD system, or ESTA determines that there is no resource available within a predetermined distance set by AV.
Dispatcher	ESTA dispatchers select, review, prioritise, and dispatch emergency and non-emergency events. Dispatchers use a range of technology such as radios, data terminals, pagers, and telephones to dispatch events to emergency resources.
Duty Manager	The AV Duty Manager is an on-duty paramedic, co-located within the ESTA State Emergency Communications Centres. Duty Managers (like Fire Services Victoria Fire Services Communications Controllers, and Victoria Police Communications Liaison Officers) work with ESTA's operators, make operational decisions about fleet resource management, and provide command and control directives, especially to ESTA ambulance dispatchers. Duty Managers supervise AV Communications Support Paramedics, receive (and make their own) notifications about specific incident types, and liaise with other emergency services personnel to support ambulance emergency, non-emergency, and operational communications.
Emergency Call Person	The emergency call person is the recognised person who operates an emergency call service for the emergency service numbers 000 and 112. Telstra currently provides this function.

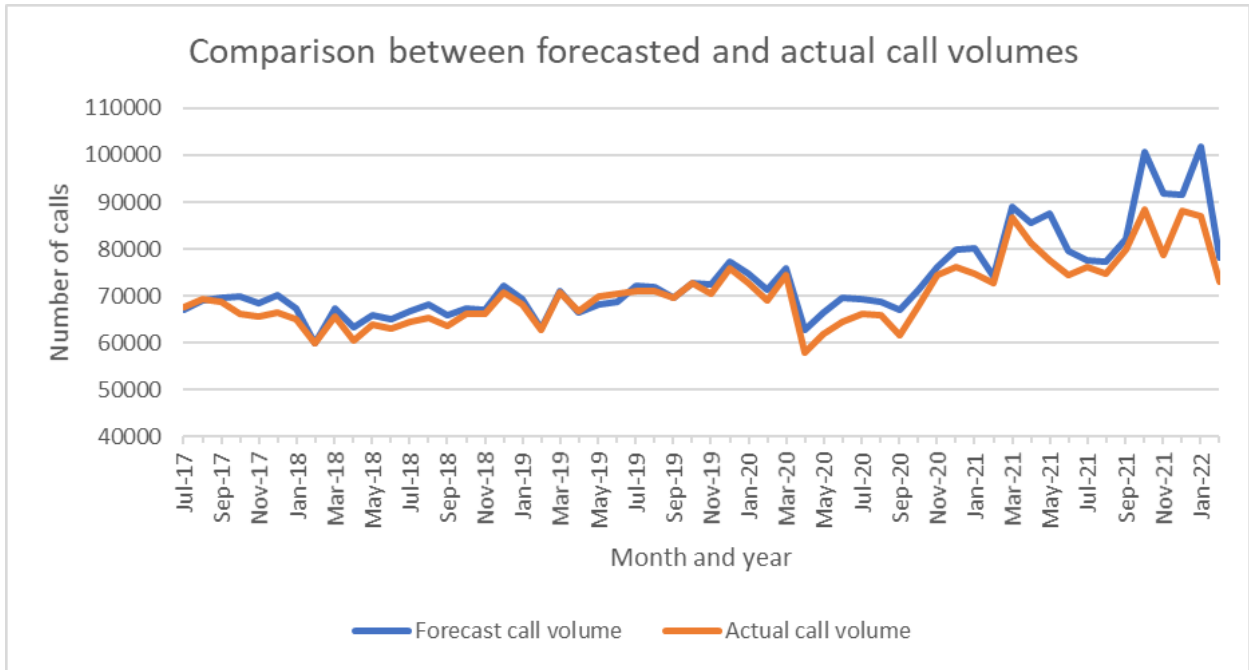
TERM	DESCRIPTION / DEFINITION
Emergency Call Service	The telecommunications networks and systems that allow for the public to make emergency calls using the emergency numbers, 000, 112 and 106.
Emergency services organisations (ESOs)	Collective term for those agencies to whom ESTA provides call-taking and dispatch services namely, Ambulance Victoria, Country Fire Authority, Fire Rescue Victoria, Victoria Police, and Victoria State Emergency Service.
ESTA Capability and Service Review	A review commissioned by the Minister for Emergency Services and conducted by Mr Graham Ashton, AM APM into ESTA’s capability and service.
ESTA standards	Performance standards for the services ESTA provides to the emergency services organisations, consisting of quantitative and qualitative measures.
Event	Means a record created in Computer-aided Dispatch or written on a manual event card in response to a request for assistance. This includes both emergency and non-emergency requests from the public, health sector, or emergency services organisation members.
Event type	A code used in the Computer-aided Dispatch system that classifies an event. It includes the default event priority and prescribes the default agencies that ESTA is required to dispatch resources to. The emergency services organisations determine the event types and associated response priorities.
Medical Priority Dispatch System (MPDS®)	The Medical Priority Dispatch System is the proprietary structured call-taking system owned and developed by the International Academies of Emergency Dispatch. MPDS is approved by AV for use by ESTA to record details and prioritise emergency ambulance calls for dispatch.
Multi-agency event	A multi-agency event is an emergency that involves more than one emergency services organisation. For example, an automobile crash in which patients are injured, and fuel is leaking from a vehicle, therefore requiring the attendance of paramedics, firefighters, and police.
Multiple agency event	A multiple agency event is an emergency that commences with the requirement/request for one emergency services organisation (ESO) but requires a second or more ESOs at a later time. For example, an event in which an ambulance initially attended for a medical emergency, but then requested police from the scene, after suspecting a criminal cause of the patient's complaint.
National Emergency Communications Working Group of ANZ	The National Emergency Communications Working Group – A/NZ (NECWG–A/NZ) has existed since 1995 at which time emergency communications organisations established a forum in which to discuss coordination of cross jurisdiction response and develop collective positions in relation to emergency communications issues such as calls from SIMless mobile phones and Voice over Internet Protocol (VoIP).
Pre-Arrival Instructions (PAIs)	Pre-Arrival Instructions (PAIs) are a series of Medical Priority Dispatch System protocol instructions and questions that emergency call-takers use interactively with emergency callers; each specific instruction leads the call-taker onto the next in sequence. Cardiopulmonary resuscitation instructions are an example of PAIs.
Priority (CAD)	An event priority in CAD indicates to ESTA dispatchers the order of precedence they must follow when dispatching events. For Ambulance Victoria, Priority 0 is the highest most urgent event type and Priority 3 is typically the lowest emergency events. If there is more than one event pending dispatch, dispatchers must dispatch them first in order of priority, then on length of time the event has been pending dispatch.
Priority 0 (Ambulance Victoria)	Priority 0 is the highest priority assigned to emergency ambulance events and requires a Code 1 response.



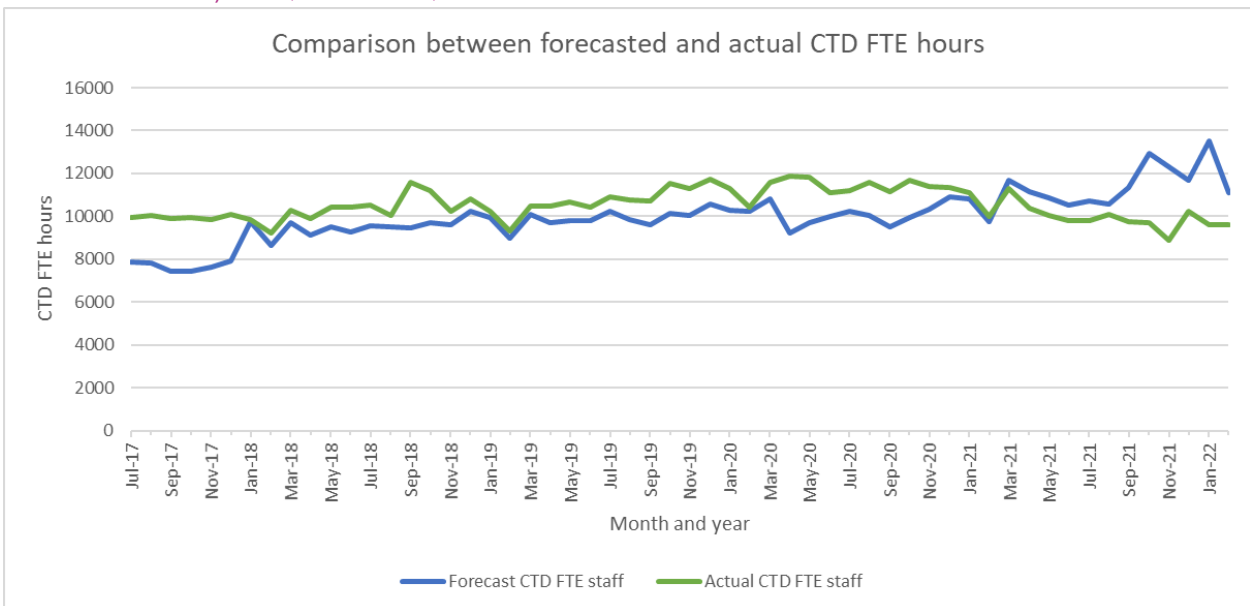
TERM	DESCRIPTION / DEFINITION
Priority 1 (Ambulance Victoria)	Priority 1 is the second-highest priority assigned to emergency ambulance events and requires a Code 1 response.
Priority 2 (Ambulance Victoria)	Priority 2 is the third-highest priority assigned to emergency ambulance events and requires a Code 2 response.
Priority 3 (Ambulance Victoria)	Priority 3 is the fourth-highest priority assigned to emergency ambulance events and requires a Code 3 response (without lights and sirens)
ProQA®	ProQA® is the computer software version of the Medical Priority Dispatch System. ProQA is integrated with the Computer-aided Dispatch system.
Protocol	A protocol is a set of structured call-taking instructions and guidance under the Medical Priority Dispatch System. For example, Protocol 6 is used for breathing problems, and Protocol 9 is used for cardiac/respiratory arrest or suspected death.
Recorded Voice Announcement	A recorded voice announcement or (RVA) is a recorded voice message played to callers to provide automated information. They commonly provide information about issues effecting calls to a call centre or to provide advice while the caller waits to be answered.
Service Delivery Audit (SDA)	Service Delivery Audits (SDAs) are the primary quality system ESTA uses across all of its centres and agencies to audit its call-takers and dispatchers. There are different types of SDAs audits that focus on the various functions (call-taking, dispatch, call-back workflows, non-emergency calls), including a measure to check if employees are identifying and using correct event types. ESTA performs SDAs as part of its service delivery requirements under the Administrative Arrangements.
Standard Operating Procedures (SOPs)	ESTA Standard Operating Procedures (SOPs) specify how its operational staff must operate and the manner in which they must undertake specific tasks. ESTA's SOPs operationalise the emergency services organisations' Communications Standard Operating Procedures.
State Health Emergency Response Plan	The State Health Emergency Response Plan (SHERP) describes the arrangements for the management of health emergencies in Victoria.
Service Delivery Requirements	Service Delivery Requirements incorporate Parts B and C (the Inspector-General for Emergency Management-determined performance standards) of the Administrative Arrangements pursuant to the <i>Emergency Services Telecommunications Authority (ESTA) Act 2004 (Vic.)</i> , and the emergency services organisations' Communications Standard Operating Procedures.
Team Leader	A Team Leader is attached to each team within ESTA State Emergency Communications Centres. ESTA Team Leaders are responsible for workload management, monitoring of call-takers and dispatchers, and maintenance of system integrity and referral.

## Appendix B: Graphical comparisons of forecast and actual call volumes and staffing

**Figure 18:** Comparison between forecast call volumes and actual call volumes between July 2017 and February 2022. (Source: ESTA)



**Figure 19:** Comparison between forecast and actual operational call-taking and dispatch hours between July 2017 and February 2022. (Source: ESTA)



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