

Managing demand for ambulance services

13 DECEMBER 2017



NEW SOUTH WALES AUDITOR-GENERAL'S REPORT

PERFORMANCE AUDIT

THE ROLE OF THE AUDITOR-GENERAL

The roles and responsibilities of the Auditor-General, and hence the Audit Office, are set out in the *Public Finance and Audit Act 1983*.

Our major responsibility is to conduct financial or 'attest' audits of State public sector agencies' financial statements. We also audit the Total State Sector Accounts, a consolidation of all agencies' accounts.

Financial audits are designed to add credibility to financial statements, enhancing their value to end-users. Also, the existence of such audits provides a constant stimulus to agencies to ensure sound financial management.

Following a financial audit the Audit Office issues a variety of reports to agencies and reports periodically to parliament. In combination these reports give opinions on the truth and fairness of financial statements, and comment on agency compliance with certain laws, regulations and government directives. They may comment on financial prudence, probity and waste, and recommend operational improvements.

We also conduct performance audits. These examine whether an agency is carrying out its activities effectively and doing so economically and efficiently and in compliance with relevant laws. Audits may cover all or parts of an agency's operations, or consider particular issues across a number of agencies.

As well as financial and performance audits, the Auditor-General carries out special reviews and compliance engagements.

Performance audits are reported separately, with all other audits included in one of the regular volumes of the Auditor-General's Reports to Parliament – Financial Audits.



GPO Box 12
Sydney NSW 2001

The Legislative Assembly
Parliament House
Sydney NSW 2000

The Legislative Council
Parliament House
Sydney NSW 2000

In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled **'Managing demand for ambulance services' - NSW Ambulance, NSW Ministry of Health.**

A handwritten signature in black ink, appearing to read 'I. Goodwin'.

Ian Goodwin

Acting Auditor-General
13 December 2017

© Copyright reserved by the Audit Office of New South Wales. All rights reserved. No part of this publication may be reproduced without prior consent of the Audit Office of New South Wales. The Audit Office does not accept responsibility for loss or damage suffered by any person acting on or refraining from action as a result of any of this material.

contents

Managing demand for ambulance services

Section one – Managing demand for ambulance services

Executive Summary	1
Introduction	4
Demand for ambulance services	6
Initiatives to improve demand management	11
Implementation of demand management initiatives	19

Section two – Appendices

Appendix one – Response from agency	29
Appendix two – About the audit	32
Appendix three – Performance Auditing	35

Section one

Managing demand for
ambulance services



Executive summary

Demand for ambulance services is increasing. Demographic factors including population growth and ageing have contributed to this and ongoing growth in demand is likely. It is important that NSW Ambulance finds ways to respond to this demand more efficiently, while maintaining patient safety standards and meeting community expectations.

Most triple zero calls to NSW Ambulance do not involve medical issues that require an emergency response. NSW Ambulance has introduced a range of initiatives to change the way it manages these less urgent requests for assistance. Its major demand management initiatives include using a telephone advice line, referring some patients to services other than hospital emergency departments and using specialist paramedics to respond to less urgent cases.

The role of NSW Ambulance has changed in recent years. It is aiming to become a 'mobile health service' that identifies the needs of patients and provides or refers them to the most appropriate type of care. This change involves a significant expansion of the clinical decision-making role of paramedics. Considerable strategic and organisational efforts are required to make this work. The successful implementation of demand management initiatives is important to NSW Ambulance's ability to continue to meet demand for its services.

This audit assessed NSW Ambulance's major demand management initiatives that aim to reduce unnecessary demand for ambulance responses and unnecessary transport to hospital emergency departments. It aimed to assess the extent to which these initiatives have improved the efficiency of its services.



Conclusion

NSW Ambulance has introduced several initiatives that aim to manage demand for its services from less urgent cases more efficiently. There is no overall strategy for these initiatives and NSW Ambulance's data systems do not measure their outputs or outcomes. As a result, we are unable to assess the impact of NSW Ambulance's demand management initiatives on the efficiency of ambulance services. More focus is needed to ensure these initiatives achieve the efficiency improvements necessary to help NSW Ambulance meet future increases in demand.

Increasing demand for ambulance services is a key issue for NSW Ambulance. Demand has increased at a faster rate than population growth in recent years and continued growth is expected. NSW Ambulance has introduced several initiatives that aim to manage demand for its services from people with less urgent medical issues more efficiently and align its approach with the rest of the health system in New South Wales.

These individual initiatives lack a broader strategy to guide their development. NSW Ambulance's demand management initiatives also lack clear goals and performance targets, with insufficient organisational resources allocated to support their implementation. NSW Ambulance does not have a data system that allows it to conduct accurate routine monitoring of the activity and performance of these initiatives.

More effort is required to make demand management initiatives a core part of NSW Ambulance's work. Key relationships with other health services to support demand management initiatives have only recently been established. NSW Ambulance has not communicated proactively with the public about its demand management initiatives. To ensure paramedics are as well prepared as possible for their expanded roles, they need better professional development and up to date technology.



1. Key findings

Demand for ambulance services has increased

Since 2012, demand for ambulance services has grown at a rate higher than the population growth rate. The increase in demand is likely to continue as the population continues to grow and age. NSW Ambulance has assessed trends and forecasts for demand for its services. Several recent changes removed sources of demand for NSW Ambulance's services, including moving non-emergency patient transport to a separate agency and changing the way triple zero calls are prioritised. These changes have not improved performance as expected. If demand increases as

forecast, NSW Ambulance will need to find more efficient and effective ways to manage demand to maintain its performance.

NSW Ambulance has several initiatives to manage less urgent demand

NSW Ambulance has introduced several different approaches over the past decade that aim to reduce the number of unnecessary ambulance responses and unnecessary transports to hospital emergency departments. This report assessed the three main initiatives NSW Ambulance has introduced: the Healthdirect telephone advice line; the introduction of non-emergency department options for paramedics to use; and Extended Care Paramedics. The development of these initiatives indicates that NSW Ambulance has looked for ways to improve the way it manages less urgent demand for its services.

NSW Ambulance does not monitor the impact of demand management initiatives routinely

NSW Ambulance monitors its emergency ambulance response time performance and NSW Health has recently begun detailed public reporting on this. However, NSW Ambulance does not monitor the impact of its demand management initiatives routinely. This is despite the demand management initiatives examined in this report being in place for between five and ten years. Our ability to quantify the efficiency impact of these initiatives was limited by the absence of reliable information about the activity and performance of the initiatives we examined.

NSW Ambulance lacks key information about the health outcomes of patients referred for telephone advice and the reasons some patients are returned to its call centre after being referred. NSW Ambulance does not have a reliable way of measuring non-transport decisions made by paramedics, despite identifying this as a key demand management strategy in 2011. The activity and performance of Extended Care Paramedics, which have been operating since 2007, is still not monitored routinely. In addition, Extended Care Paramedics still use paper-based records which limits their ability to share data with the rest of NSW Ambulance and other health services.

NSW Ambulance has not given priority to demand management initiatives

NSW Ambulance does not have an overarching strategy for its demand management initiatives. The initiatives do not have key performance indicators, which means there are no clear incentives for operational managers to focus on them. Project management of new initiatives has not been consistent, with most projects lacking key documentation and evaluations. NSW Ambulance has not evaluated its approach to using telephone referrals for less urgent demand for services. In many cases, dedicated project managers were not appointed to oversee projects. NSW Ambulance has not clearly explained to the public the reasons for making changes to the way it manages demand or the benefits of these changes for patients.

Links between NSW Ambulance and the broader health system are under-developed

NSW Ambulance's demand management initiatives rely heavily on effective working relationships with other parts of the health system, including local health districts and providers of primary healthcare such as general practitioners. Building these relationships is important because they can help provide paramedics with more options for referring patients with non-urgent medical issues.

NSW Ambulance has recently begun work with Primary Health Networks, which are responsible for overseeing primary healthcare including general practitioners. A new program that affects general practitioners was introduced in 2011. At the time of the audit, NSW Ambulance had only contacted four of the ten Primary Health Networks in New South Wales regarding this program.

NSW Ambulance has established relationships with Local Health Districts across New South Wales and joint initiatives to improve demand management have been trialled in all areas. However, most of the work NSW Ambulance staff have done with Local Health Districts has focused on the transfer of patients from ambulances to hospital emergency departments to reduce delays. We found relatively little evidence of collaboration on demand management initiatives.

Staff development and technology need improvement to support demand management initiatives

Demand management initiatives require paramedics to make more decisions. This increases the need for strong systems to support paramedic development and decision making. There are weaknesses in NSW Ambulance's use of staff performance and development systems.

Most paramedics do not have access to mobile technology and some still use paper-based systems for medical records. Up to date technology would give paramedics better access to decision-making support and would improve NSW Ambulance's ability to monitor paramedic decision-making.

NSW Ambulance recruits and trains some of its paramedics through its in-house Vocational Education and Training system, as well as recruiting paramedics who have completed a university degree. The NSW Ministry of Health argues the Vocational Education and Training qualification provides an equivalent level of clinical skills to a university degree in paramedicine. Experts we consulted told us that the more comprehensive clinical education offered in university degrees provides the best preparation for the role of contemporary paramedics. The Vocational Education and Training qualification provided by NSW Ambulance is an accepted qualification for national paramedic registration. However, no other comparable jurisdictions continue to provide their own Vocational Education and Training for paramedic recruits.



2. Recommendations

By December 2018, NSW Ambulance should:

1. Develop a demand management strategy that outlines its approach to managing demand. This strategy should include:
 - Clear objectives and key performance indicators for demand management initiatives.
 - Input from stakeholders in the health system and a continuing plan for collaboration with stakeholders.
 - Planned approaches to communication with the public about demand management initiatives.
2. Determine the data system improvements required to provide accurate oversight of demand management initiatives. This should enable routine monitoring and reporting of the activity and performance of these initiatives.
3. Develop a strategy to guide the continued use of Extended Care Paramedics. This should include planning for how they are used and how their performance is measured.
4. Evaluate its approach to using telephone referrals for managing less urgent demand for services.
5. Ensure paramedics are as well prepared as possible for their contemporary role by:
 - a) Strengthening staff performance and development practices to help paramedics develop their decision-making and communication skills. This could include introducing formal mentoring programs for paramedics.
 - b) Determining the mobile technology needs of paramedics to support their expanded decision making and assessment roles.



1. Introduction

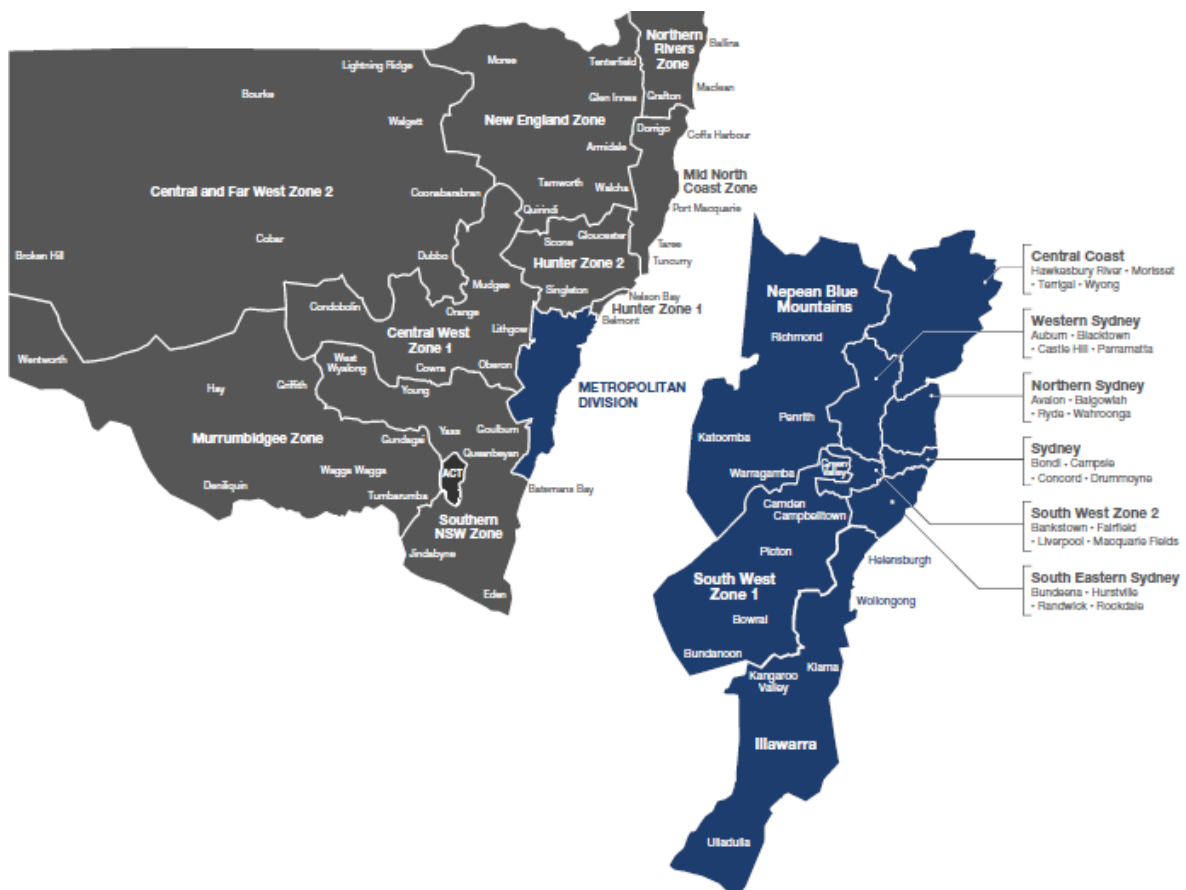
1.1 Overview of NSW Ambulance

NSW Ambulance is a frontline service delivery agency that provides emergency and non-emergency medical care and transport. It is a statutory agency established under the *Health Services Act 1997*. The Chief Executive of NSW Ambulance reports to the Secretary of the NSW Ministry of Health. In 2016–17, NSW Ambulance employed about 3,400 paramedics. Around 80 per cent of employees are in operational roles.

NSW Ambulance received over \$1 billion in NSW Government funding in the 2017–18 Budget, which is around four per cent of the total NSW Health budget. This is made up of about \$890 million funding for service delivery and around \$110 million for infrastructure upgrades.

There are 243 ambulance stations across New South Wales. These are grouped into eight geographic sectors and 18 zones (Exhibit 1). Stations in metropolitan and larger regional areas have 24-hour service, while some stations in rural and remote areas are not open 24-hours but are supplemented by on-call staff. There are four telephone control centres which take triple zero calls and dispatch road ambulances. These are in Sydney, Newcastle, Wollongong and Dubbo.

Exhibit 1: NSW Ambulance geographic zones



Source: Bureau of Health Information, Spotlight on Measurement, 2017.

NSW Ambulance's main role is providing emergency health care and transport. It also provides care and transport for many patients with less urgent medical conditions. NSW Ambulance categorises calls for assistance into nine priority codes (Exhibit 2).

Exhibit 2: Description of NSW Ambulance priority codes

Code	Priority	Description	Example	Response required
1	1A Emergency	Highest priority, life-threatening case	Cardiac or respiratory arrest, unconscious, ineffective breathing	Immediate response <ul style="list-style-type: none">Median within 10 minutesUnder 'lights and sirens'
	1B Emergency	High priority	Unconscious	Emergency response <ul style="list-style-type: none">Under 'lights and sirens'
	1C Emergency	Priority	Breathing problems, chest or neck injury, serious haemorrhage	Emergency response <ul style="list-style-type: none">Under 'lights and sirens'
2	Urgent	Urgent	Abdominal pain	Urgent response without 'lights and sirens' within specified timeframes
3	Time-critical	Time-critical	Medical response requested by medical practitioners	Undelayed response within specified timeframes
4–9	Non-emergency	Non-emergency	Routine transport	Routine

Source: Bureau of Health Information, Healthcare Quarterly Technical Supplement, January to March 2017.

NSW Ambulance historically focused on providing emergency transport, but is moving toward a 'mobile health service' model. Under this model, paramedics are the first provider of medical assessment and care rather than automatically providing emergency transport to a hospital emergency department. This change aims to improve the efficiency of ambulance services by providing the most appropriate response to each patient. It requires paramedics to make more decisions about patient transport and treatment options. Other comparable jurisdictions have made similar changes to the way they manage demand for their services.

NSW Ambulance has introduced several different approaches to responding to less urgent demand over the past decade. The main initiatives are:

- the Healthdirect Australia telephone advice line for referring callers with non-urgent medical issues
- non-emergency department options that give paramedics alternatives to transporting a patient to hospital emergency department
- Extended Care Paramedics, which specialise in responding to less urgent calls.

1.2 About the audit

This audit assessed the extent to which NSW Ambulance's demand management initiatives have improved the efficiency of its services. To make this assessment, we asked whether:

- NSW Ambulance understands demand for its services and plans its operations accordingly.
- Demand management initiatives are integrated with broader NSW Ambulance and NSW Ministry of Health strategies.
- Demand management initiatives have been implemented and monitored well.

Our audit methods included data analysis, document review and meetings with staff from NSW Ambulance, the NSW Ministry of Health, Local Health Districts and other stakeholders. We also conducted a survey of NSW Ambulance paramedics to understand their views on the use of demand management initiatives. Over 500 paramedics responded to this survey.

See Appendix two for more information on our audit methods.



2. Demand for ambulance services



Demand for ambulance services in New South Wales is increasing steadily. Forecast future increases in demand due to population growth and ageing mean that NSW Ambulance must improve its efficiency to maintain its performance.

Demand for ambulance services is growing at a rate higher than population growth. The increase in demand is likely to continue as the population continues to grow and age. NSW Ambulance has made several recent changes to remove large parts of demand for its services, including moving non-emergency patient transport to a separate government agency and changing the way triple zero calls are categorised.

These changes were expected to improve emergency response time performance, but the anticipated improvements have not been achieved. If demand continues to increase as forecast, NSW Ambulance will need to find more efficient ways to manage demand to maintain its performance.

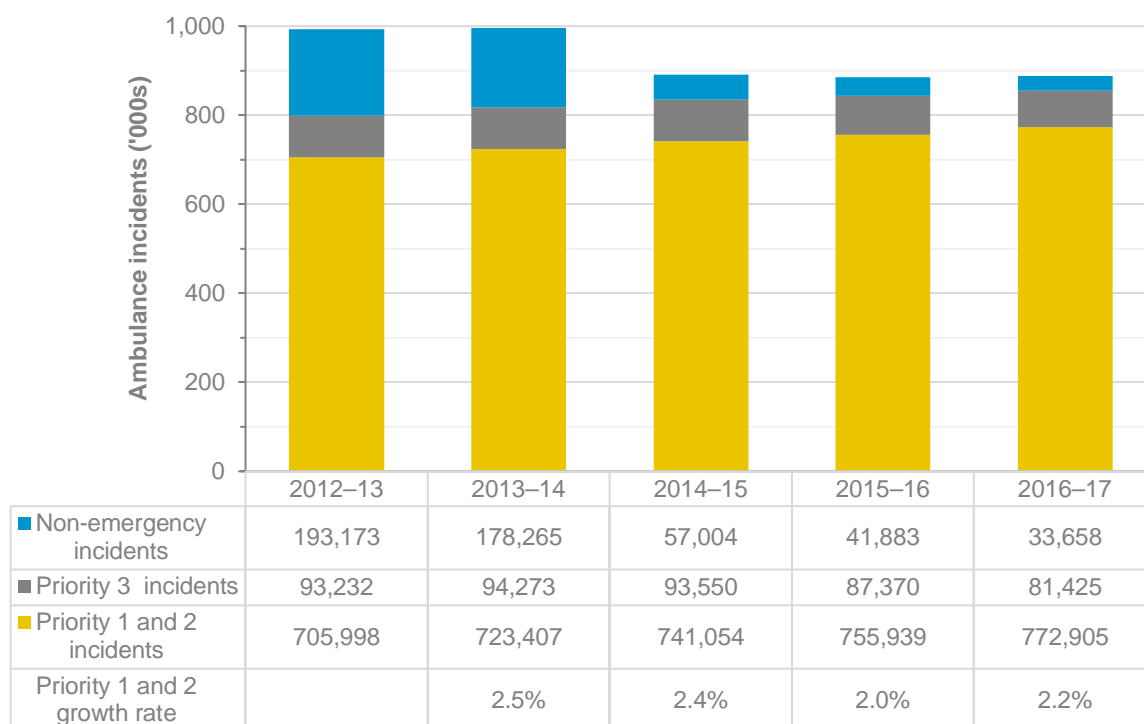
2.1 Trends in demand for ambulance services

Demand for emergency and urgent ambulance services has increased

Demand for ambulance services has increased steadily over the past five years. Annual growth in emergency and urgent incidents (priority one and two) was above two per cent in every year between 2012–13 to 2016–17 (Exhibit 3). This is higher than the annual population growth rate in New South Wales from 2011 to 2016 of 1.4 per cent.

The overall number of ambulance incidents has decreased over the last five years because most non-emergency patient transport has been removed from NSW Ambulance's workload. Some staff were transferred from NSW Ambulance to the new non-emergency transport provider. The number of non-emergency patient transport incidents reduced by almost 160,000, or 83 per cent, between 2012–13 and 2016–17.

Exhibit 3: Ambulance incidents by priority code, 2012–13 to 2016–17



Source: Underlying incident data from Bureau of Health Information Healthcare Quarterly April-June 2017 (unpublished).

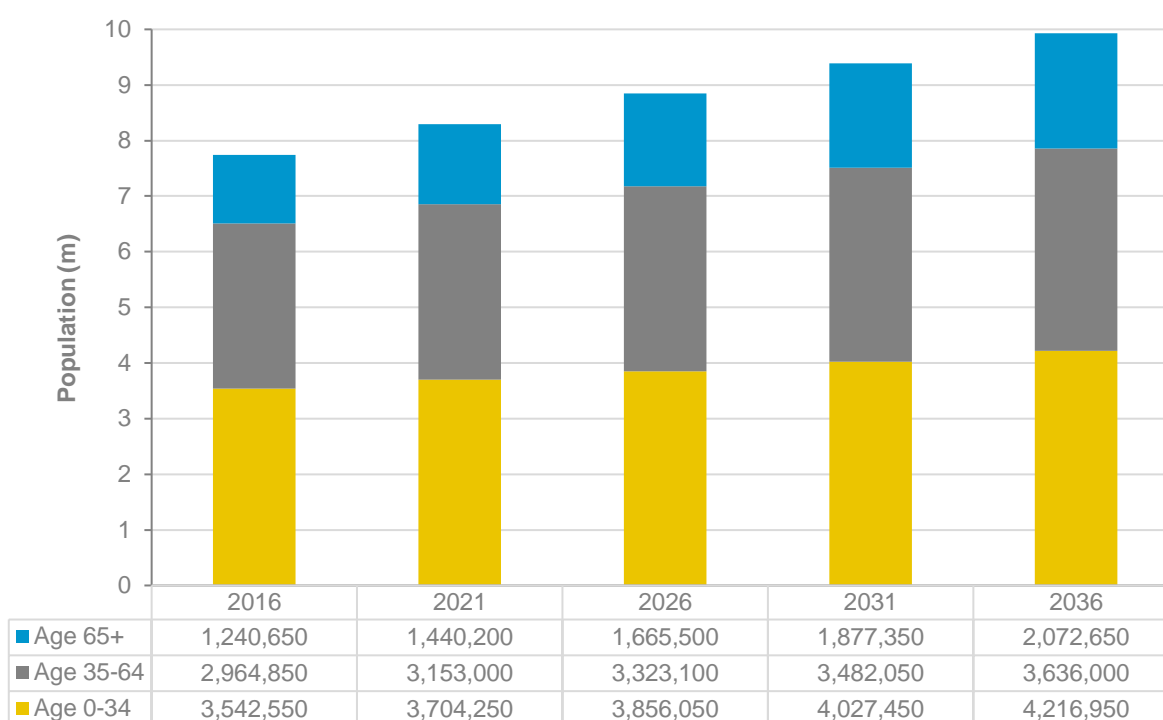
Population growth and ageing are likely to drive further increases in demand

NSW Ambulance has done considerable work to forecast long-term demand for ambulance services and has a solid understanding of the broad patterns of demand for ambulance services across the state. NSW Ambulance has identified population growth and population ageing as the most significant causes of increases in demand for ambulance services.

The population in New South Wales grew by about half a million people between 2011 and 2016. It is expected to grow by a further 2.2 million, or 28 per cent, from 2016 to 2036. The highest growth is forecast in the metropolitan areas of Western Sydney and South Western Sydney. This will increase demand for all health services, including ambulance services.

The number of people aged over 65 is forecast to increase by 67 per cent over the next two decades, from about 1.2 million in 2016 to almost 2.1 million in 2036 (Exhibit 4). Around 50 per cent of ambulance calls are from people aged over 65, so growth in this portion of the population can be expected to increase demand for ambulance services.

Exhibit 4: Forecast population growth in New South Wales, by age group, 2016 to 2036



Source: NSW Department of Planning and Environment population projections, 2016.

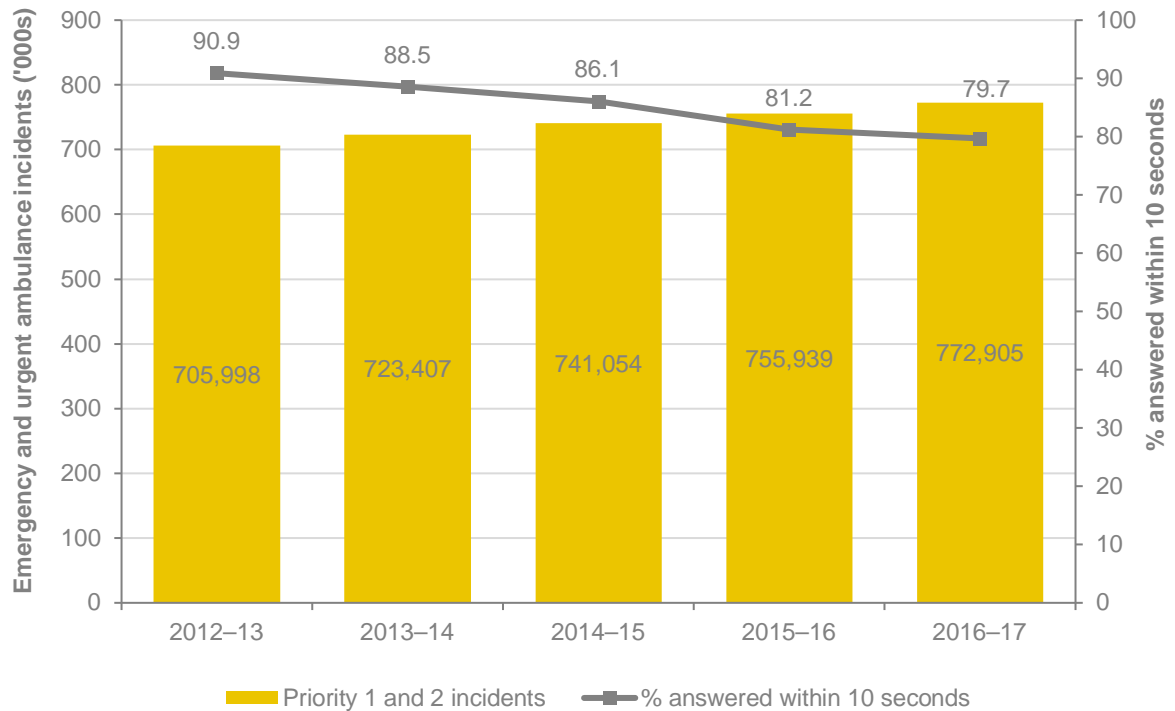
2.2 Trends in ambulance efficiency

Triple zero call answering time performance has declined as demand has increased

NSW Ambulance has a key performance indicator to answer 90 per cent of triple zero calls within ten seconds. Performance against this target decreased by more than eleven percentage points from 2012–13 to 2016–17. The number of emergency and urgent incidents increased by nine per cent during this period (Exhibit 5). The reduction in call answering time performance indicates that NSW Ambulance call centres are not able to meet demand consistently. NSW Ambulance does not have reliable data on the number of triple zero calls it receives. We have used data on emergency and urgent incidents (see Exhibit 2) as a proxy in the absence of reliable data for triple zero calls.

In 2015–16, NSW Ambulance was the only Australian ambulance service that did not meet the 90 per cent benchmark. Its performance was more than ten percentage points worse than every other jurisdiction.

Exhibit 5: Emergency and urgent ambulance incidents and call answering time performance, 2012–13 to 2016–17



Note: NSW Ambulance could not provide us with 2016–17 figures for triple zero call answering time. As a proxy, we used the average triple zero call answering time from NSW Ambulance's monthly reporting for 2016–17.

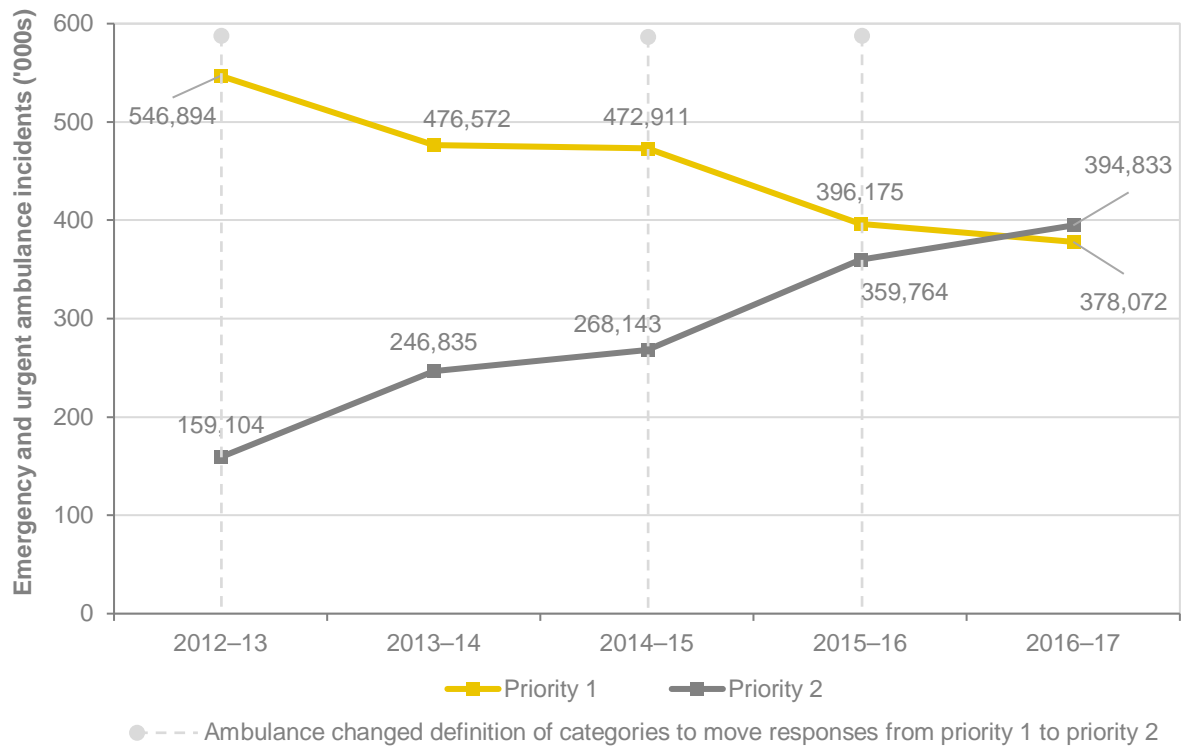
Source: Underlying incident data from Bureau of Health Information Healthcare Quarterly April-June 2017 (unpublished). Call answering time performance data from Productivity Commission, 'Report on Government Services 2017', Volume E, Chapter 11, Table 11A.15 and from NSW Ambulance.

Changes to the way calls are prioritised have helped maintain priority one response times

NSW Ambulance has made significant changes to the way it prioritises triple zero calls over the last five years. It changed the definition of a priority one call by moving about 50 types of medical issue from the priority one incident category to priority two (Exhibit 6). The changes were based on a comparison with the approaches of ambulance services in comparable jurisdictions in 2013 and were reviewed by a NSW Ambulance clinical safety committee.

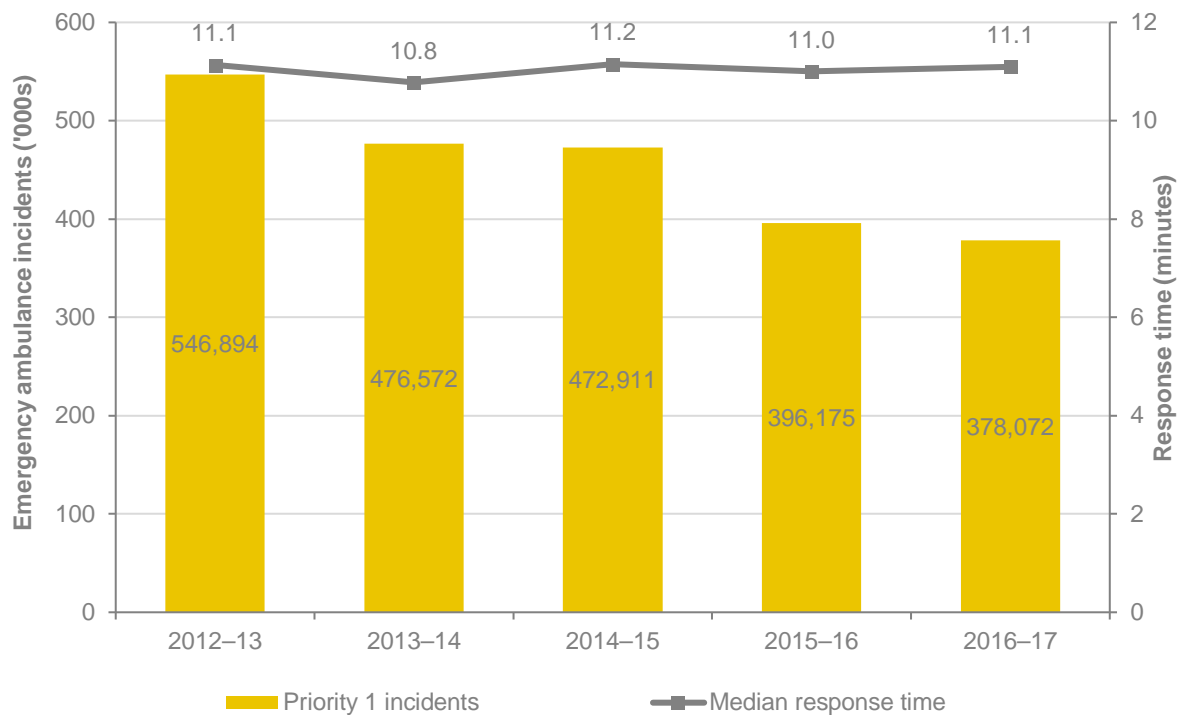
There was a 31 per cent reduction in the number of incidents classified as priority one from 2012–13 to 2016–17 (Exhibit 6). This reduction means about 460 fewer ambulance responses per day are required to respond with lights and sirens. Despite the large reduction in the number of incidents classified as priority one over the past five years, NSW Ambulance's median ambulance response time for priority one incidents has only been maintained, rather than improving. It has remained at around 11 minutes for the last five years (Exhibit 7).

Exhibit 6: Emergency and urgent ambulance incidents, 2012–13 to 2016–17



Source: Underlying incident data from Bureau of Health Information Healthcare Quarterly April-June 2017 (unpublished).

Exhibit 7: Priority one incidents and median response time, 2012–13 to 2016–17



Source: Underlying incident data from Bureau of Health Information Healthcare Quarterly April-June 2017 (unpublished). Response time data from Productivity Commission Report on Government Services 2017, Volume E, Chapter 11, Table 11A.14 and from NSW Ambulance.

NSW Ambulance has made major changes to reduce demand for its services in recent years. Non-emergency patient transport has been almost completely removed from its workload and the number of calls classified as priority one has reduced by almost one third. NSW Ambulance anticipated that these changes would improve its priority one response times but this has not occurred. NSW Ambulance is unlikely to be able to find significant further efficiency improvements in these areas. This indicates that it will need to find additional ways to deal with forecast increases in demand for services in the future.

NSW Ambulance pays significant overtime and penalty payments to paramedics

NSW Ambulance has done extensive planning work in recent years to identify patterns in demand for its services. Despite this, there are signs of inefficiency in NSW Ambulance's use of resources.

NSW Ambulance has consistently high rates of unplanned overtime payments. In 2016–17, NSW Ambulance paid more than \$36 million in overtime to cover unexpected staff absences and extensions of shifts. More than nine out of every ten NSW Ambulance staff received an overtime payment in 2016–17 and six staff were paid more than \$100,000 in overtime.

When paramedics miss a scheduled meal break because they are required to remain available to respond to calls, they receive a penalty payment in addition to their annual salary. In 2016–17, NSW Ambulance paid more than \$10.5 million to paramedics due to missed meal breaks. This is the equivalent of about 140 full-time first-year paramedic graduate salaries.

The nature of paramedic work means that some unplanned overtime and missed meal breaks are unavoidable. However, the frequency of these issues at NSW Ambulance indicate that staff resources are not being organised as efficiently as possible. In addition to the financial impact, overtime and missed meal breaks can reduce service quality and employee health and safety if employees become fatigued from working too long without adequate breaks. NSW Ambulance has a high sick leave rate. In 2016–17, NSW Ambulance staff took an average of 85 hours of sick leave each. This is the equivalent of more than two standard working weeks and is considerably higher than the NSW Health average of 62 hours.



3. Initiatives to improve demand management



NSW Ambulance has introduced initiatives to change the way it manages demand from patients who have less urgent medical issues. These have the potential to achieve positive results, but we were unable to fully assess their impact because of weaknesses in data systems and monitoring. More needs to be done to demonstrate progress toward the efficiency improvements required.

NSW Ambulance uses a telephone referral system to manage triple zero calls from people with medical issues that do not require an ambulance. This has the potential to achieve efficiency improvements but there are weaknesses in NSW Ambulance's use and monitoring of this system. Paramedics are now able to make decisions about whether patients need transport to a hospital emergency department. NSW Ambulance does not routinely measure or monitor the decisions paramedics make, so it does not know whether these decisions are improving efficiency. Extended Care Paramedics who have additional skills in diagnosing and treating patients with less urgent medical issues were introduced in 2007. NSW Ambulance analysis indicates that these paramedics have the potential to improve efficiency, but have not been used as effectively as possible.

Our 2013 audit of NSW Ambulance found that accurate monitoring of activity and performance was not being conducted. More than four years later, this remains the case.

3.1 Using telephone referrals to reduce unnecessary ambulance responses

Correctly identifying the type of response needed to a triple zero call is one of the most important factors in efficient and safe use of ambulance resources. NSW Ambulance refers some triple zero calls that it assesses as non-urgent to the Healthdirect telephone advice service. Healthdirect is a national provider of health services that is jointly funded by the Australian Government and some state governments including the NSW Government. The Healthdirect telephone service is staffed by registered nurses who provide advice to people about less serious medical issues. This includes advice on whether they can care for themselves or should see another health professional such as a general practitioner or dentist. Using this service is intended to make more efficient use of ambulance and health resources, while also providing more appropriate care to people with less urgent medical issues.

Efficiency gains from telephone referral cannot be assessed reliably

NSW Ambulance reports that in 2016–17, approximately 35,000 calls were sent to Healthdirect which is around four per cent of all triple zero calls received. This is an increase from 2011–12 reported figures, when around 27,000 calls were referred to Healthdirect. We were unable to validate these figures because of weaknesses in NSW Ambulance's data system. This system does not allow accurate routine monitoring of calls referred to Healthdirect. During the audit, we were provided with conflicting information on the use and performance of Healthdirect. This prevented us from assessing its impact on the efficiency of ambulance services.

NSW Ambulance reports that Healthdirect returns about 60 per cent of calls that NSW Ambulance has transferred. We were also unable to verify this figure from the data provided. The large number of returned calls increases the double-handling at ambulance telephone control centres. NSW Ambulance reports that almost one quarter of the calls that are returned from Healthdirect are automatically escalated to an emergency priority one response. This occurs because NSW Ambulance has decided this is the appropriate risk management approach for returned calls, even though not all callers require this level of response. More than half of the calls returned are for patients who do not have an emergency medical issue but are unable to transport themselves to a hospital.

NSW Ambulance staff advised that it pays Healthdirect about \$27 for each call transferred, regardless of whether Healthdirect resolves the patient's medical issue or returns the call for an ambulance response. NSW Ambulance could not provide documentation to verify this figure. NSW Ambulance has not completed detailed analysis of the reasons that calls are returned or whether the call return process is triggering an unnecessary number of emergency responses. Our ability to analyse this in more detail was hampered by the late provision of data relating to Healthdirect by NSW Ambulance.

Systems for monitoring patient outcomes are not comprehensive

NSW Ambulance considers a referral to Healthdirect that is not returned for an ambulance response as a successful referral. However, NSW Ambulance does not know what the health outcomes are for people it refers to Healthdirect. It does not know whether their issue was resolved on the telephone, referred to another health provider, or if the caller later called triple zero again.

A steering committee meets every second month to discuss operational issues including complaints and safety incidents. The committee includes representatives from Healthdirect, NSW Ambulance and other Australian ambulance services that use Healthdirect. NSW Ambulance and Healthdirect review a sample of 50 calls per month that were referred to Healthdirect. This review assesses whether the calls referred were appropriate for transfer to Healthdirect and whether Healthdirect handled the call correctly.

Complaints are one of the main sources NSW Ambulance uses to identify problems with use of Healthdirect. However, complaints about Healthdirect cannot be reliably identified within NSW Ambulance's complaints management system due to inconsistent data entry practices and limitations with the system itself. This means NSW Ambulance does not have a comprehensive way of tracking or reporting on trends in complaints about Healthdirect.

A small number of calls referred by NSW Ambulance to Healthdirect are returned because the Healthdirect nurse assesses the patient as having a life-threatening medical condition. NSW Ambulance advised that it investigates each of these cases individually, but it does not have a system to monitor these incidents. It could not provide us with the number of times this had happened in New South Wales since it started using Healthdirect in 2012.

Other jurisdictions achieve higher referral rates than New South Wales

Several other comparable jurisdictions operate telephone referral systems that have better reported performance than NSW Ambulance's use of Healthdirect. In 2015–16, Ambulance Victoria referred nine per cent of triple zero calls to its telephone referral service. In England, around ten per cent of calls to ambulance services in England are resolved by telephone advice. St Johns Ambulance in Auckland reports referring 19 per cent of emergency calls to its telephone advice system. Each of these jurisdictions uses telephone referral services staffed by paramedics and registered nurses that are employed directly by the ambulance service. In Western Australia, where Healthdirect is used, 13 per cent of triple zero calls for ambulances were referred to Healthdirect in 2015.

Prior to using the Healthdirect service, NSW Ambulance operated an internal referral service for calls from people with less urgent medical issues. Our audit of NSW Ambulance in 2013 found over 50,000 calls were referred to this system in 2010–11, which is around 15,000 more than the reported number of calls referred to Healthdirect in 2016–17. NSW Ambulance did not consider the previous system to be effective, but could not provide any evidence that it evaluated it or considered alternative options to Healthdirect before signing its current contract. NSW Ambulance has a four-year contract with Healthdirect to provide this service until 30 June 2018.

3.2 Avoiding unnecessary transport to hospital emergency departments

Transporting a patient to a hospital emergency department in an ambulance is the most expensive way to respond to a triple zero call due to the time and resources used. It is also expensive for the health system because the estimated cost of treating a patient in an emergency department is higher than treatment by other health providers such as general practitioners.

NSW Ambulance has introduced options for paramedics to avoid transporting a patient to hospital if they do not need emergency medical treatment. These include referral to other health providers such as a general practitioner, treating patients at the scene, or giving patients advice on how to care for themselves if they have a minor health issue. The average time spent on a response where the patient is not transported to hospital is around 35 to 40 minutes less than the time taken in cases where the patient is transported to hospital.

NSW Ambulance reports that it now transports a smaller proportion of patients to hospital emergency departments

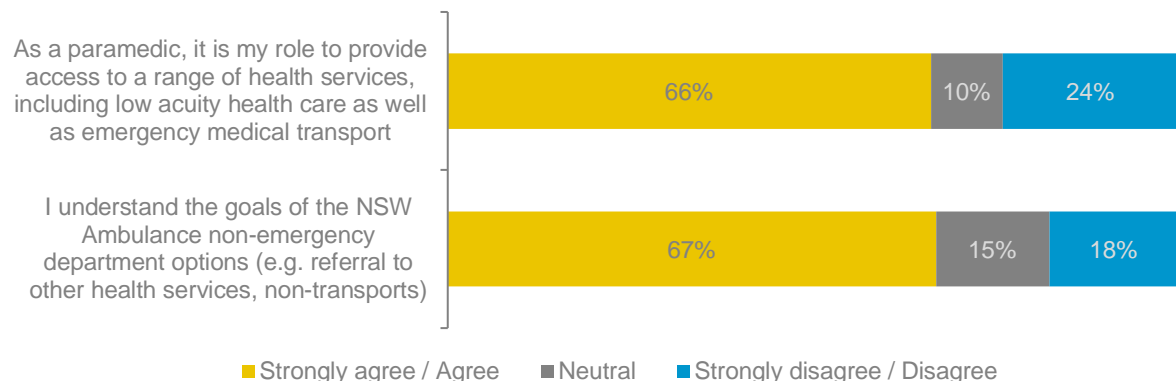
NSW Ambulance reports that the proportion of ambulance patients who were treated at the scene rather than being transported to hospital increased from 14 per cent in 2011–12 to 20 per cent in 2015–16. We were unable to validate these figures because of weaknesses in NSW Ambulance's data system. This system does not allow the routine monitoring of the non-transport rate and changes made to this system over time mean comparisons across years are not reliable.

NSW Ambulance's targets for reducing unnecessary transport to hospital are not clear. Our 2013 audit noted that NSW Ambulance had a goal of reducing unnecessary transports by 125,000 per year, but was not measuring the use of non-transport options by paramedics. NSW Ambulance has still not developed a reliable way of measuring its non-transport rate.

Most paramedics support the use of non-emergency department options, but many lack confidence in using them

Responses from paramedics to our survey indicate that there is support for and understanding of the use of non-emergency department options for suitable patients. Around two thirds of paramedics who responded to our survey agreed that they consider less urgent care to be a part of their role as paramedics, and that they understand the goals of these pathways (Exhibit 8).

Exhibit 8: Paramedic perceptions of non-emergency department options

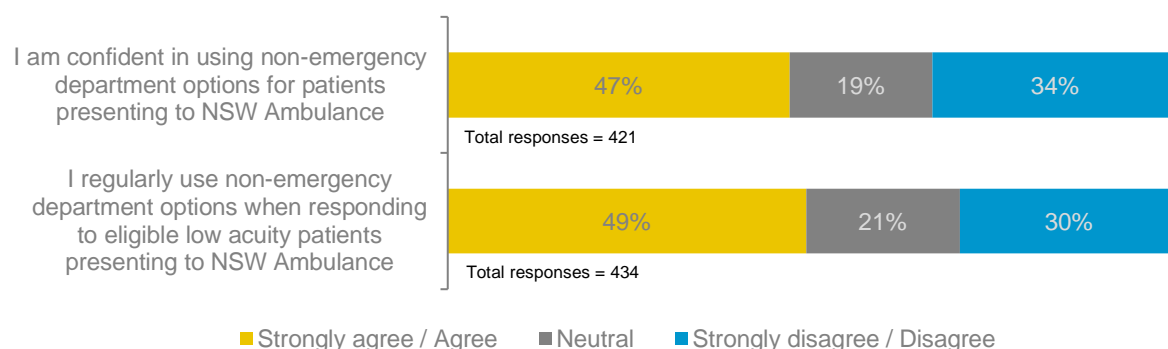


Note: excludes Extended Care Paramedics, managers, control centre staff, paramedic educators and paramedic trainees.

Source: NSW Audit Office survey of NSW Ambulance paramedics, July 2017. Total responses = 440.

However, fewer than half of respondents said they were confident using alternatives to emergency department transport, or that they used these pathways regularly (Exhibit 9). Over one third of respondents indicated they do not feel confident in using non-emergency department options for potentially suitable patients.

Exhibit 9: Paramedic confidence and use of non-emergency department options



Note: excludes Extended Care Paramedics, managers, control centre staff, paramedic educators and paramedic trainees.

Source: NSW Audit Office survey of NSW Ambulance paramedics, July 2017.

Paramedics report multiple barriers to using non-emergency department options

Making assessment and referral decisions requires significantly more judgement on the part of paramedics compared to transporting all patients to hospital emergency departments. NSW Ambulance gives paramedics guidelines which they must use to decide whether to transport a patient to a hospital emergency department.

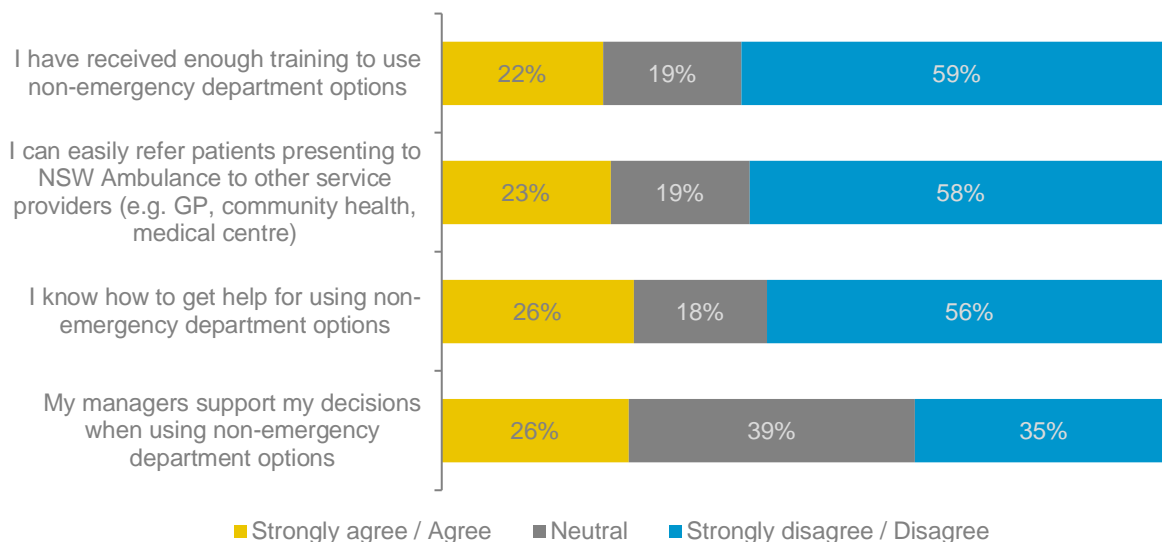
Training courses for using these guidelines to assess patients and make referral decisions were provided to paramedics. NSW Ambulance operational managers told us that paramedics do not have consistent on the job training or structured opportunities for feedback about using non-emergency department options. NSW Ambulance operates a clinical advice line that paramedics can call for advice on decision making, but this is rarely used.

Many paramedics who responded to our survey indicated they did not have adequate support to use non-emergency department options. Less than a quarter agreed that they had received enough training or could easily refer patients to services other than hospital emergency departments. Only 26 per cent agreed that their manager would support their decisions when using non-emergency department options for patients (Exhibit 10).

The most commonly cited examples that would help paramedics to make better use of non-emergency department options were more training and information or resources about referral options. This was raised by over 40 per cent of the paramedics who responded to our survey. The next most common area for improvement identified by paramedics was better support by managers for the decisions made by staff.

These findings are consistent with similar surveys conducted by NSW Ambulance in 2013 and 2016. NSW Ambulance has made some effort to address these issues, including changing the wording of some guidance documents and circulating more information about the use of non-emergency department options. Responses to our survey indicate more comprehensive strategies are required to change paramedic attitudes to using non-emergency department options.

Exhibit 10: Paramedic perceptions of support for using non-emergency department options



Note: excludes Extended Care Paramedics, managers, control centre staff, paramedic educators and paramedic trainees.

Source: NSW Audit Office survey of NSW Ambulance paramedics, July 2017. Total responses = 434.

Paramedics do not always have access to suitable referral options for patients

A 2016 NSW Ambulance evaluation found that of those patients who were not transported to hospital, around 85 per cent received self-care advice with no further medical services required. The remaining 15 per cent were referred to other service providers, such as general practitioners or a community health service.

In our survey, paramedics noted the limited availability of after-hours services. This is evident in data from NSW Ambulance showing a decline in the number of referrals to other services outside business hours. Despite formal agreements in place with after-hours general practice services, the most recent NSW Ambulance analysis has shown that these services are rarely used, averaging one referral per day in 2015.

Several local projects are exploring ways to reduce unnecessary transport to hospital

Over the past five years, NSW Ambulance regions have trialled new approaches to provide paramedics with alternatives to unnecessary transport to hospital emergency departments, including transporting or referring patients to other facilities. Transport to other facilities (such as a general practitioner or specialist practitioner) represent less than one per cent of patients assessed as not requiring transport to an emergency department.

These initiatives largely focus on demographic groups where demand is expected to increase, such as mental health and aged care. Some trial projects have shown promising early results, but evidence on their effectiveness is limited and most have not been rolled out beyond a small local area (Exhibit 11).

Exhibit 11: NSW Ambulance programs providing alternatives to unnecessary transport to emergency departments

Program	Description
Frequent Users Management program	This program aims to reduce the number of unnecessary triple zero calls from frequent users of NSW Ambulance services. Internal evaluation of the program estimated a reduction in the number of calls from program participants. This program stopped accepting new participants in 2017 due to lack of capacity.
Integrated Paramedic Screening and Streaming	This project involves patients being transported to one of two Urgent Care Centres instead of the Emergency Department at their local public hospital. Internal evaluation found some positive effects for reducing the number of transports to the emergency department, also showing benefits for reducing the total time spent per patient. The project has not been rolled out in other areas.
Mental Health Acute Assessment Team	This project targets patients experiencing an acute mental health crisis. Internal evaluation reported a small increase in the number of patients bypassing the emergency department. However, the crew allocated to this program was only utilised about 50 per cent of the time.
Police and Ambulance Early Access to Mental Health Assessment via Telehealth	This project recently commenced in the Hunter New England region, led by the Hunter New England Local Health District. This project provides paramedics with tablet devices to access resources and telehealth specialist support for managing patients in acute mental health crisis.
Authorised Care Plans	NSW Ambulance has introduced general authorised care plans as well as palliative care plans. These plans assist paramedics in supporting patients' wishes and general practitioner instructions for managing chronic or terminal conditions, and avoiding unnecessary transport to emergency departments. Over 3,000 plans have now been registered across the state.
Aged Care initiatives	NSW Ambulance is working with Local Health Districts and Primary Health Networks to establish a range of local aged care initiatives such as referral pathways to geriatric outreach services, and building capability within residential aged care facilities to reduce transports to hospital.

Source: NSW Audit Office research

3.3 Using specialist paramedics to avoid unnecessary transport to hospital emergency departments

As of June 2016, NSW Ambulance had 77 Extended Care Paramedics who have additional training in patient assessment and can perform treatments such as dressing wounds, changing catheters and giving a wider range of medications. They are expected to make use of treatment and referral options where possible to avoid transport to hospital emergency departments for people who do not need emergency medical care. Most are based in metropolitan areas.

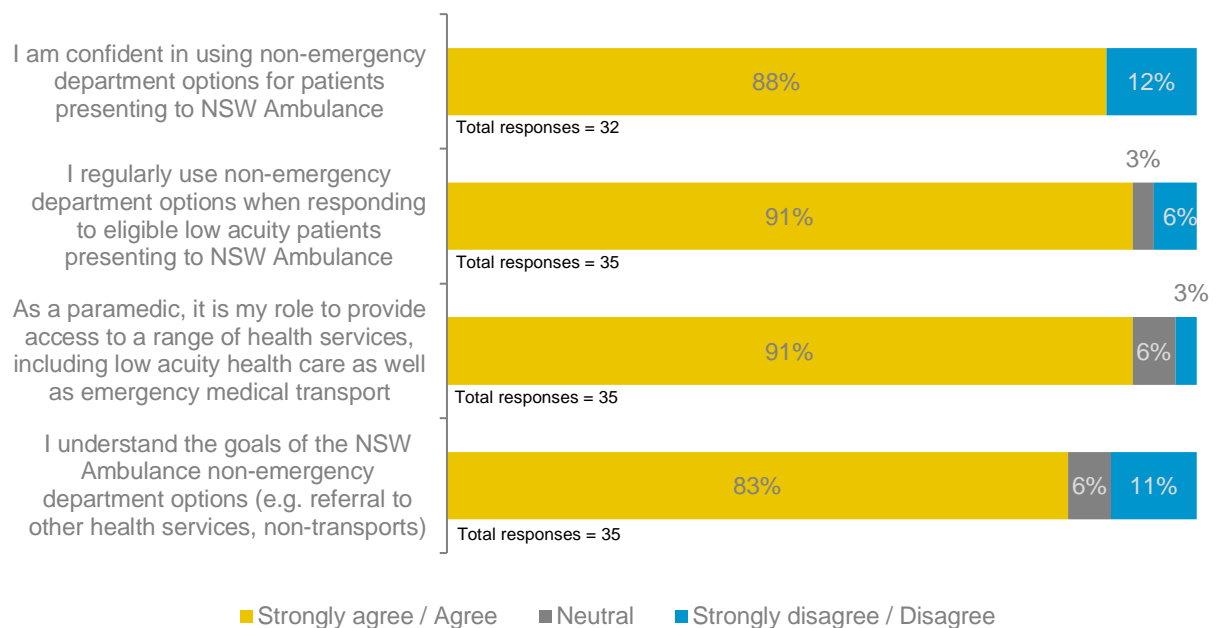
Using Extended Care Paramedics can potentially reduce unnecessary transport to hospital

The use of Extended Care Paramedics has the potential to reduce the number of unnecessary transports to hospital emergency departments. NSW Ambulance analysis of Extended Care Paramedics found their overall non-transport rate was 65 per cent. Ambulance services in several other Australian jurisdictions also use Extended Care Paramedics and evaluations have found they achieve higher non-transport rates compared to regular paramedics.

Our 2013 audit noted that NSW Ambulance did not routinely monitor the activity or performance of Extended Care Paramedics because its data system did not allow this. NSW Ambulance has conducted several reviews analysing activity and performance for short time periods. Our review of NSW Ambulance's data system for this audit confirmed that these issues have not been addressed. NSW Ambulance is still unable to routinely monitor the activity or performance of Extended Care Paramedics. This means we are unable to conclude on the impact of Extended Care Paramedics on the efficiency of ambulance services in New South Wales.

Extended Care Paramedics who responded to our survey reported high levels of confidence in and use of non-emergency department options. This was markedly higher than responses from general paramedics to the same questions. This indicates the introduction of Extended Care Paramedics has successfully created a cohort of paramedics who are confident in considering options other than hospital emergency departments for patients who have less urgent medical issues (Exhibit 12).

Exhibit 12: Extended Care Paramedic confidence and use of non-emergency department options



Note: Includes Extended Care Paramedics only.

Source: NSW Audit Office survey of NSW Ambulance paramedics, July 2017.

Extended Care Paramedics are most effective when suitable patients are identified

The efficient use of Extended Care Paramedics relies on having a dedicated resource to identify the right cases for them to attend. They are unable to transport most patients because they drive cars rather than ambulances. If they are allocated to cases that require transport in an ambulance vehicle, they will not improve efficiency because a separate ambulance will still need to attend and transport the patient.

Trials in the Sydney call centre found that when an Extended Care Paramedic was working in tandem with a dedicated dispatcher who allocates suitable calls to Extended Care Paramedics, they were used better. This led to an increase in the proportion of cases where an ambulance was not needed from 47 per cent in 2013 to 78 per cent in 2016.

NSW Ambulance data from 2016 shows that these positions were filled only one third of the time, due to lack of available staff. Since August 2017, there have not been any Extended Care Paramedics working in the call centre. Full staffing of call centre resources would ensure Extended Care Paramedics are sent to appropriate cases as often as possible.

Some Extended Care Paramedics have reported being used as informal 'rapid responders' for emergency calls. When Extended Care Paramedics are used in this way, they can help achieve

faster priority one response times, but will often have to wait for an ambulance to arrive to transport the patient to hospital.

Extended Care Paramedics receive significant additional training and are paid at a higher rate. If paramedics trained under the Extended Care Paramedic program are not used for their intended function, they are not an efficient use of resources because they cost more without creating savings or improving patient outcomes.

Planning for and use of Extended Care Paramedics has been inconsistent

Analysis of likely demand for the services Extended Care Paramedics provide was done for metropolitan areas in 2016. This included developing guidelines to show when there would be enough work to justify employing an Extended Care Paramedic. Similar planning work was completed for regional and rural areas in May 2017. Prior to this, there were no clear guidelines for allocating Extended Care Paramedics to ambulance regions. In some cases, practical factors such as whether there was space at an ambulance station for an extra vehicle influenced the location of Extended Care Paramedics.

Internal analysis of 2014–15 data shows that while NSW Ambulance should have been able to operate 14 Extended Care Paramedic vehicles per day based on the positions funded, this was never achieved. This indicates that Extended Care Paramedics were not always used for their funded roles and were used as a part of a regular paramedic crew. Previous analysis by NSW Ambulance indicated that Extended Care Paramedics were responding to around 8,000 cases in 2015–16, which is less than one per cent of all ambulance responses.

Governance and oversight of the Extended Care Paramedic program is not clear

Extended Care Paramedics have been used for more than ten years, but there is still a lack of clarity about where they fit within NSW Ambulance's operations. Formal responsibility for Extended Care Paramedics was moved from NSW Ambulance head office to operational managers in regions in 2011. Most regional managers we consulted agreed that they offer benefits, but reported variations in the way they were used. An internal NSW Ambulance review found there was inconsistency across regions in the way Extended Care Paramedics are used. A central program manager was appointed in July 2017 to improve coordination of the program. This position will also coordinate other specialist paramedic programs.

When Extended Care Paramedics were introduced in 2007, there was a system to manage the risks associated with decisions not to transport patients to hospital. This included a register of all non-transport decisions made, a call back system to check on patients who were not transported to hospital, and a telephone support line that Extended Care Paramedics could call if they needed advice to help make a patient assessment. A dedicated committee met regularly to oversee the quality and safety of Extended Care Paramedics.

The committee has not met since 2016 and an internal review of the Extended Care Paramedic program in 2016 found that some quality and safety systems were not operating, including patient call backs and the telephone support line. Maintaining safety structures becomes more important when rolling out a program beyond a smaller trial phase.



4. Implementation of demand management initiatives



NSW Ambulance has recognised the need to change the way it manages demand and has developed initiatives that have the potential to improve efficiency. However, there are significant weaknesses in the strategy for and implementation of its demand management initiatives.

NSW Ambulance has identified the goal of moving from an emergency transport provider to a mobile health service and developed several initiatives to support this. Its demand management initiatives have the potential to contribute to the broader policy directions for the health system in New South Wales. However, there is no clear overall strategy guiding these initiatives and their implementation has been poor.

NSW Ambulance's reasons for changing its approach to demand management have not been communicated proactively to the community. Demand management initiatives that have been operating for over a decade still do not have clear performance measures or targets. Project management of new initiatives has been inadequate, with insufficient organisational resources to oversee them and inadequate engagement with other healthcare providers.

NSW Ambulance uses an in-house Vocational Education and Training course to recruit some paramedics, as well as recruiting paramedics who have completed a university degree. No other Australian ambulance services continue to provide their own Vocational Education and Training qualifications. Paramedics will need more support in several key areas to be able to fulfil their expanded roles in providing a mobile health service. Performance and development systems for paramedics are not used effectively. Up to date technology would help paramedics make better decisions and improve NSW Ambulance's ability to monitor demand management activity.

There are gaps in NSW Ambulance's oversight of the risks of some of the initiatives it has introduced, particularly its lack of information on the outcomes for patients who are not transported to hospital. Weaknesses in the way NSW Ambulance uses its data limit its ability to properly assess the risks of the demand management initiatives it has introduced.

4.1 Prioritising demand management initiatives

NSW Ambulance has recognised the need to change to meet future demand

NSW Ambulance's move from emergency transport provider to mobile health service is a significant change. It involves considerable adjustments to established practices. This is especially challenging given that NSW Ambulance has a large and dispersed workforce that is responsible for providing frontline health services across the state. The commitment to modernising ambulance services and improving demand management is evident in NSW Ambulance's key planning documents such as its strategic plan. This was also evident in our discussions with senior executives at NSW Ambulance and the Ministry of Health. NSW Ambulance was one of the first ambulance jurisdictions to introduce an Extended Care Paramedic program and was an early adopter of telephone referral systems.

NSW Ambulance's demand management approaches are broadly aligned with the Ministry of Health's 'integrated care' agenda. Integrated care is a key priority for the Ministry of Health. It aims to provide seamless healthcare to people as close to their home as possible. NSW Ambulance's initiatives to manage demand for less urgent care can contribute to this policy direction by providing care to patients directly, or helping people find suitable healthcare providers if they do not need to attend a hospital emergency department. NSW Ambulance needs to give priority to these initiatives to ensure its approach is consistent with the direction of other parts of the health system in New South Wales.

Incentives for using demand management initiatives are not strong enough

There are no key performance indicators for the use of Healthdirect, non-transport protocols, or Extended Care Paramedics. Our audit in 2013 found that there were no key performance indicators or benchmarks for demand management initiatives. We recommended then that NSW Ambulance regularly monitor and report on the non-transport rate achieved from its demand management initiatives. NSW Ambulance has not done this. It did introduce key performance indicators for the frequent user management program in 2016–17, which is a relatively small demand management program (see Exhibit 11). It has not started reporting against this because it does not have reliable data on the program.

The absence of key performance indicators for Healthdirect, non-emergency department transport options, and Extended Care Paramedics means they are less likely to be prioritised than other areas of NSW Ambulance's operations. For example, operational managers do not have a formal incentive to use Extended Care Paramedics for their intended function, but do have incentives to use them to help in other areas where they have clear targets such as emergency response times.

NSW Ambulance's most prominent key performance indicators relate to its emergency response times. A fast response time is important for patients with life-threatening medical issues. Between 2012–13 and 2016–17, on average fewer than half of all ambulance incidents were classified as priority one emergency responses. Within this, only about one per cent were categorised as priority 1A, which covers the most serious cases involving life-threatening medical issues. The shift to a mobile health service providing a wider range of care means NSW Ambulance needs to balance its priorities better so its performance indicators reflect the breadth of its activities.

NSW Ambulance has not communicated its demand management approach proactively

NSW Ambulance has not explained the reasons for the changes to the way it responds to less urgent demand proactively. New approaches to managing demand involve significant changes to the traditional role of ambulance services. It is important that these are clearly explained to the community and other health service providers.

Many people who call triple zero for an ambulance do not have an urgent medical issue and could be better helped by another service. Since 2014, NSW Ambulance has run the 'Is Your Urgency an Emergency' campaign which aims to influence people to consider alternatives to an ambulance before calling triple zero. However, this campaign has been interpreted in media articles as discouraging people from calling triple zero rather than focusing on the alternative options that NSW Ambulance can provide or refer people to.

NSW Ambulance does not know whether its community education campaigns have any impact on community behaviour or understanding of the role of ambulance services. There has been no analysis of campaign outcomes other than social media 'reach' figures. The 'Is Your Urgency an Emergency' campaign was developed internally and was not informed by research into existing levels of community understanding about ambulance services or general health literacy in the community. It had no budget for research, evaluation or advertising placements, other than the salaries of NSW Ambulance staff who developed the campaign. Without evaluation, NSW Ambulance cannot know whether its campaigns are reaching their target audience, communicating their messages effectively, or changing behaviour.

Other jurisdictions communicate changes to their operations more actively. Ambulance Victoria recently published a detailed report explaining several changes to its operations including the way it prioritises triple zero calls and its use of telephone referral for less urgent calls. This includes details of the changes made and an evaluation of the impact of these changes on ambulance performance.

Ambulance Victoria has also used social media to promote the benefits of its telephone referral system, using real life examples of people who had been referred and had their medical issue resolved satisfactorily. The Queensland Ambulance Service has actively promoted its Low Acuity Response Unit, which has a similar role to NSW Ambulance's Extended Care Paramedics.

4.2 Providing resources for demand management initiatives

Project management and coordination have been inadequate

A lack of coordination in the implementation of demand management initiatives has limited their effectiveness. The absence of an overall strategy for managing demand meant that NSW Ambulance introduced multiple demand management initiatives without a consistent framework for project development, implementation or monitoring. This means there is no single source of information to guide the development of projects across the state.

NSW Ambulance advised that it did not have business cases or project plans for its major demand management initiatives. Several other documents relating to Extended Care Paramedics and non-emergency department transport options were provided very late in the audit process, including an internal evaluation of Extended Care Paramedics completed in 2016 and a project monitoring template for non-emergency department transport options.

There is no project manager or executive sponsor responsible for the implementation of NSW Ambulance's demand management initiatives. A small team at NSW Ambulance head office is responsible for coordinating approaches to managing less urgent demand. This team has not been able to maintain regular contact with all regional managers and does not have a clear view of the status of all initiatives in regions across the state. NSW Ambulance does not have a comprehensive register of information on all demand management projects. Some ambulance demand management initiatives have been established in regional areas without oversight from staff at NSW Ambulance head office. For example, several frequent user management programs have run in parallel to the centrally coordinated program.

There is no individual accountability for the implementation of demand management initiatives in NSW Ambulance regions. The position description for Health Relationship Managers, which are located in each NSW Ambulance sector, states they are responsible for the 'promotion' of demand management initiatives, but not for their implementation or use. Other senior operational managers are not formally responsible for demand management initiatives, although several we interviewed have taken a lead role in their development. Operational managers have day to day service delivery responsibilities that can override project management responsibilities. The absence of clear accountability at local levels makes it difficult for staff at NSW Ambulance head office to coordinate demand management initiatives. Most local-level programs have not progressed beyond pilot phases (See Exhibit 11).

Relationships with Primary Health Networks are under-developed

NSW Ambulance introduced guidelines that encouraged paramedics to transport or refer patients to other health service providers including general practitioners, instead of transporting them to hospital emergency departments. However, paramedics were not given consistent information about which services were available in their area. This meant that while paramedics were given the authorisation to refer patients to other services, many did not have the knowledge or connections to access these.

Primary Health Networks are funded by the Australian Government to coordinate the primary healthcare system, including general practitioners. They are key stakeholders for new programs that affect general practitioners and other primary health care providers. NSW Ambulance made changes that have an impact on general practitioners and other primary health services in 2011. During 2017, NSW Ambulance approached some Primary Health Networks to improve its communication with general practitioners about the introduction of non-transport and referral options for paramedics. At the time of this audit, it had only contacted four of the ten Primary Health Networks about this program. NSW Ambulance received advice on the importance of engaging with Primary Health Networks from its Advisory Council in 2015.

The Hunter New England Primary Health Network employs an Ambulance Liaison Officer who oversees projects that involve NSW Ambulance working with primary health providers in the region. Given the benefits of this role to the successful implementation of demand management initiatives, NSW Ambulance should consider establishing similar roles in other regions to strengthen links between NSW Ambulance and primary health providers. This could be done by seconding staff from NSW Ambulance to Primary Health Networks.

NSW Ambulance employs Health Relationship Managers who are formally responsible for building relationships with other health service providers. The position description for Health Relationship Managers specifies responsibility for building relationships with Local Health Districts and hospitals, but does not refer to Primary Health Networks or general practitioners. Operational managers told us Health Relationship Managers spend a lot of time managing delays in transferring patients from ambulances to hospital emergency departments. This day-to-day work tends to take priority over longer-term work to build broader relationships with other health care providers.

NSW Ambulance's links with Local Health Districts are better developed than its work with Primary Health Networks. All operational managers gave examples of projects that involved work with Local Health Districts. We spoke to staff from several Local Health Districts who confirmed they had been increasing their collaboration with NSW Ambulance in recent years.

Recruitment and training needs to support the expanded role of paramedics

Paramedics need to have a higher level of clinical skill to support the implementation of the demand management initiatives assessed in this report. Paramedics are required to make clinical decisions about the assessment and treatment of patients and the referral of patients to other health services. There is an adequate supply of university-qualified paramedic applicants across Australia. NSW Ambulance uses an in-house Vocational Education and Training course to recruit some paramedics, as well as recruiting paramedics who have completed a university degree. In all other Australian jurisdictions, ambulance services no longer provide their own Vocational Education and Training courses for paramedics.

Paramedicine university degrees were introduced over a decade ago in Australia. Most of these degrees take three years to complete and include a significant focus on clinical decision making and the broader health system. The degrees also include on the job clinical placements. The Vocational Education and Training diploma course takes around one year to complete and is followed by up to two years of on the job training. The NSW Ministry of Health argues this course provides an equivalent level of clinical skill to a university degree. The Vocational Education and Training course provided by NSW Ambulance is an approved qualification for national paramedic registration under the *Health Practitioner Regulation National Law Act 2009*. We consulted experts including paramedic representative organisations, university researchers and NSW Ambulance staff. All experts we consulted said university degrees offer the most comprehensive form of clinical education for the modern role of paramedics. Recent qualitative research also suggests that a university degree equips paramedics with a stronger foundation in evidence-based practice and clinical decision making.

The NSW Ministry of Health argues that maintaining the Vocational Education and Training system for paramedic qualification is justified because it helps retain diversity in its workforce, including indigenous applicants. This is important, but workforce diversity can also be supported through a university qualification system. For example, other professions use scholarships and targeted placements for under-represented cohorts.

Continuing to operate a Vocational Education and Training system creates additional work and cost for NSW Ambulance. Previous analysis done within NSW Health indicated the cost to NSW Ambulance of training a paramedic through the Vocational Education and Training system was almost twice that of a degree-qualified paramedic trainee. Vocational Education and Training-qualified staff require significantly more face-to-face training from NSW Ambulance staff and have a longer period of supervised work before becoming fully qualified.

NSW Ambulance does a large amount of education and training for its staff to ensure they maintain their skills. It spends around \$11 million per year on staff training and monitors the training needs of around 3,400 paramedics. Maintaining a dual recruitment and training system adds to the complexity of this work because staff who qualify through the Vocational Education and Training system have different training needs to those who have completed a university degree. The staff time and money spent on the Vocational Education and Training system could be put toward general training for paramedics in areas including those related to demand management initiatives.

Staff performance and development systems are not used effectively

Paramedics have limited options to receive feedback and guidance from managers in their day-to-day work. Station managers do the same response work as paramedics and are not allocated time within their shift to complete people management tasks. Senior operations managers based in ambulance stations do not see all paramedics regularly. For example, staff on night shifts would rarely be in stations at the same time as senior managers.

Most ambulance regions do not have structured mentoring systems for paramedics, despite ambulance regional managers having formal responsibility for staff mentoring. Mentoring is particularly important in a role that involves a lot of autonomous work. The paramedic role is increasingly professionalised, including the recognition of paramedicine as a registered profession under the National Registration and Accreditation Scheme from late 2018. This change heightens the need for strong performance and development systems to ensure paramedics are supported to develop the wider range of skills they require. This is particularly important given that paramedics are now expected to use more discretion and judgement when making decisions about a patient's need for transport.

The use of formal performance and development systems at NSW Ambulance is very low. Ambulance regional managers are formally responsible for ensuring staff have current performance and development plans. In June 2017, 31 per cent of NSW Ambulance employees had completed a Performance and Development Plan. Only around one third of staff had completed a performance review in the past 12 months. NSW Ambulance has targets of 100 per cent for each of these.

NSW Ambulance has made recent efforts to invest in its management capability by offering more professional development courses for managers. In 2016–17, 137 staff had completed an accredited management course.

Lack of access to technology limits the effectiveness of some new initiatives

To support the planned move to a mobile health service, NSW Ambulance should give its staff the technology that will allow them to perform this role. Some fundamental technology has not been provided for Extended Care Paramedics. For example, they operate on a paper-based system rather than the electronic medical records system used by other paramedics, because their vehicles are not fitted with the technology required to use the electronic system.

Most paramedics do not have access to mobile devices with internet access, so use their personal devices if they want to access information other than hard copies of treatment protocols. Better access for paramedics to mobile technology would give them more support when making complex decisions about patient treatment or referral. For example, a tablet device with internet access would allow better access to online health information and would facilitate telehealth options. Some demand management initiatives, such as the mental health trial in Hunter New England (Exhibit 11), have included giving tablet devices to paramedics working on the trial.

Better linking of health data would benefit NSW Ambulance by allowing tracking of the health outcomes of patients treated by paramedics. Better access to information about a patient's health history would also allow paramedics to make more informed decisions about the best treatment or referral options. The NSW Government has recognised the importance of sharing health information and has funded a range of initiatives to digitise health records and allow them to be linked across health service providers. Additional work is needed to allow paramedics to share medical information with general practitioners.

4.3 Managing the risks of new demand management initiatives

NSW Ambulance did not conduct risk assessments for demand management initiatives

Many of the demand management initiatives introduced increase organisational risks for NSW Ambulance. Some involve deciding not to send an ambulance to someone requesting one. Others require paramedics to make a broader range of decisions about the needs of patients, which increases the chance of mistakes being made.

NSW Ambulance did not conduct risk assessments for the demand management initiatives assessed in this report. The impact of major changes such as introducing an external telephone referral system and non-transport protocols for paramedics were not considered at an organisational level. NSW Ambulance has an advisory council that provides advice to the Secretary of the NSW Ministry of Health on the provision of ambulance services. The advisory council did not meet between September 2013 and February 2015. The NSW Ministry of Health has advised that a legislation amendment bill proposes to change the name of the existing Ambulance Services Advisory Council and may also enable a review of membership and process to support a more active role for the council.

NSW Ambulance does not monitor its demand management initiatives routinely

NSW Ambulance monitors its emergency ambulance response time performance closely. The Bureau of Health Information, a NSW Health agency, started detailed public reporting of NSW Ambulance's emergency response time performance in 2017. This has improved transparency about NSW Ambulance's performance.

However, NSW Ambulance does not routinely monitor the activity or performance of Extended Care Paramedics or general paramedics using non-emergency department transport options. These activities are not recorded in data systems reliably and the methods of capturing this information have changed regularly in recent years. NSW Ambulance does not have an agreed way of measuring the non-emergency department transport rate of Extended Care Paramedics and cannot report reliable data on non-transport decisions over time. Extended Care Paramedics have been used for ten years and non-emergency department transport options have been available to paramedics for more than five years.

Referrals to the Healthdirect telephone line are not followed up and NSW Ambulance does not know whether advice given by Healthdirect staff resolved the health issues of patients who called NSW Ambulance. NSW Ambulance also has a limited view of the reasons for calls being returned to it from Healthdirect. No information is collected on outcomes for people who were not transported to hospital after a paramedic responded to their call. For example, NSW Ambulance does not know whether patients who were referred to another health service attended the health service, or if they subsequently called triple zero again.

NSW Ambulance's inability to monitor paramedic activity and performance when using demand management initiatives limits its ability to properly assess the risks and benefits of these initiatives. Some other jurisdictions do more to monitor patient outcomes associated with demand management initiatives. For example, ambulance services in England reports on the number of patients who were not transported or referred for telephone advice and subsequently contacted the ambulance service within 24 hours.

Complaints about demand management initiatives are not tracked systematically

NSW Ambulance executives and managers said monitoring of complaints from ambulance patients was one of their main sources of information on emerging clinical risks associated with demand management initiatives. Audits of selected clinical records are done, but these do not focus on the use of demand management initiatives. NSW Ambulance's use of its complaints database does not allow it to monitor trends easily. NSW Ambulance conducted reviews of complaints in 2015 and 2016 to assess the impact of the introduction of non-transport protocols on complaints. To do this, staff read every complaint individually and summarised the content manually. NSW Ambulance advised it uses its complaints system to make changes to demand management initiatives when warranted, but did not provide documents to support this.

NSW Ambulance's internal complaints reviews indicated complaints were increasing and that this was related to the use of demand management initiatives. Some operational managers we interviewed were concerned about a perceived increase in complaints related to the use of non-transport options. We were not able to conduct detailed analysis of the number and types of complaints relating to the use of non-transport protocols because NSW Ambulance does not distinguish between types of complaints when entering information into its complaints database.

Around half of the paramedics who responded to our survey said they do not feel confident that NSW Ambulance management would support them if something went wrong when they had used a non-transport initiative.

Section two

Appendices



Appendix one – Response from agency



Health

Ms Margaret Crawford
Auditor-General
Audit Office of NSW
GPO Box 12
SYDNEY NSW 2001

Your ref PA 6594
Our ref S17/575


Dear Ms Crawford

Final Performance Audit report - Managing Demand for Ambulance Services

Thank you for your letter of 16 November 2017 providing a copy of the final report for the performance audit on *Managing Demand for Ambulance Services*.

NSW Health supports the recommendations in the final report and recognises that increasing demand for ambulance services is a key concern for our Health System. As your report states, this demand has increased at a faster rate than population growth in recent years and continued growth is expected. To manage this demand, NSW Ambulance has introduced various initiatives and the opportunity now is to draw from these insights to develop a strategic and integrated demand management model.

Within the content of the report, I note the observations made on NSW Health's offering of a Vocational Education and Training (VET) pathway for paramedics to earn their qualification in addition to the university degree pathway. The Ministry is of the view that the NSW Ambulance VET program produces fit-for-purpose paramedics and has proven important to NSW Health in strengthening our workplace diversity and in supporting NSW Government workforce commitments. As part of the ongoing strengthening of our Health System, the Ministry and NSW Ambulance will continue to review the effectiveness of current training and qualification streams.

The attached table provides NSW Health's response to the recommendations in the final audit report.

Yours sincerely


Elizabeth Koff
Secretary, NSW Health


NSW Ministry of Health
ABN 92 697 899 630
73 Miller St North Sydney NSW 2060
Locked Mail Bag 961 North Sydney NSW 2059
Tel: (02) 9391 9000 Fax: (02) 9391 9101
Website: www.health.nsw.gov.au

Audit Office Recommendation	NSW Health's Response
By December 2018, NSW Ambulance should:	
<p>1. Develop a demand management strategy that outlines its approach to managing demand. This strategy should include:</p> <ul style="list-style-type: none"> • Clear objectives and key performance indicators for demand management initiatives. • Input from stakeholders in the health system and a continuing plan for collaboration with stakeholders. • Planned approaches to communication with the public about demand management initiatives. 	<p>Supported</p> <p>NSW Health supports the development of a demand management strategy for NSW Ambulance.</p> <p>NSW Ambulance will develop a demand management strategy that reflects the range of clinical demand management strategies, including:</p> <ul style="list-style-type: none"> • Working with internal and external stakeholders to ensure appropriate KPI's are developed; • Continuing to expand the number of LHD, PHN and NGO collaborators in developing demand management initiatives; • Developing a communication plan for the public on demand management initiatives.
<p>2. Determine the data system improvements required to provide accurate oversight of demand management initiatives. This should enable routine monitoring and reporting of the activity and performance of these initiatives.</p>	<p>Supported</p> <p>NSW Ambulance will further develop the clinical Qlikview reporting tool to ensure it can report on the range of clinical demand management initiatives.</p>
<p>3. Develop a strategy to guide the continued use of Extended Care Paramedics. This should include planning for how they are used and how their performance is measured.</p>	<p>Supported</p> <p>NSW Ambulance will convene an ECP Workgroup to clarify the role of the ECP and how this critical position is incorporated. This will include both planning and measurement perspectives.</p>
<p>4. Evaluate its approach to using telephone referrals for managing less urgent demand for services.</p>	<p>Supported</p> <p>NSW Ambulance will evaluate the approach to secondary triage in the first quarter of 2018.</p>
<p>5. Ensure paramedics are as well prepared as possible for their contemporary role by:</p> <p>a. Strengthening staff performance and development practices to help paramedics develop their decision-making and communication skills. This could include introducing formal mentoring programs for paramedics.</p>	<p>Supported</p> <p>NSW Ambulance will develop a training package to be included into paramedic schedule training commencing January 2018. This program will focus on non-transport and patient referral clinical decision making supported by a prerequisite on line video and support materials.</p> <p>NSW Ambulance will strengthen Paramedic protocols to provide paramedics with an intuitive and realistic treatment and referral framework to support clinical decision making for managing patients with low acuity conditions</p>

Audit Office Recommendation	NSW Health's Response
b. Determining the mobile technology needs of paramedics to support their expanded decision making and assessment roles.	Supported NSW Ambulance will develop clinical Information, Communication and Technology (ICT) Strategy. This Strategy will provide a "High Level Requirements and Design Components" to support development of an ICT solution for NSW Ambulance.



Appendix two – About the audit

Audit objective

This audit assessed the extent to which NSW Ambulance's demand management initiatives have improved the efficiency of ambulance services.

Audit questions

The audit questions and criteria for this audit were:

1. Are demand management initiatives integrated with broader NSW Ambulance and Health strategies?
 - a) Demand management initiatives are integrated with relevant NSW Ambulance strategies and programs
 - b) Demand management initiatives align with relevant NSW Health strategies and programs
 - c) KPIs for demand management initiatives are clear and measurable and drive the efficient use of ambulance resources.
2. Does NSW Ambulance understand demand for its services and plan its operations accordingly?
 - a) NSW Ambulance's workforce profile matches expected demand for services
 - b) NSW Ambulance has the resources and technology to manage demand for ambulance services
 - c) Ambulance services are organised to respond to expected demand.
3. Are demand management initiatives implemented and monitored well?
 - a) Dispatch systems support good decision making about responses to requests for ambulance services
 - b) Paramedics have enough guidance and skills to make decisions about patient referral or treatment
 - c) The impact of referrals to other health or human services on efficiency is monitored effectively
 - d) NSW Ambulance's demand management initiatives compare well with other similar jurisdictions.

Audit scope

The audit assessed:

- Ambulance call and dispatch systems
- NSW Ambulance and NSW Health strategies and programs for demand management
- Key performance indicators for demand management initiatives
- NSW Ambulance workforce profile, resources and technology for responding to ambulance demand
- Ambulance process for referrals to other services
- Paramedic skills and decision making for responding to ambulance demand
- Demand management initiatives in other ambulance jurisdictions.

The audit did not assess:

- transfer of care of patients at hospital emergency departments
- clinical outcomes for ambulance patients
- aeromedical services (helicopter and aeroplane ambulance services).

Audit approach

Our procedures were:

1. Reviewing documents that cover topics including:
 - Organisational objectives, strategic plans and performance targets
 - Long-term and short-term operational planning
 - Demand management initiatives, including any business cases, evaluations, etc.
 - Workforce management and training
 - Resource management, e.g. ambulance stations, vehicles, equipment and technology.
2. Analysing data including:
 - Ambulance response times, by triage category, time and location
 - Number and type of ambulance dispatches and calls referred to other telephone service, by triage category, time and location (including data on changes to triage category and outcome of the referral)
 - Number and type of cases involving treatment at the scene or referral to another service, by triage category, time and location (including data on length of time taken to treat/transfer and outcome of the referral)
 - workforce data that relates to demand management initiatives
 - other relevant service data relating to demand management initiatives.
3. Interviewing staff including:
 - NSW Ambulance and Health executive staff
 - NSW Ambulance and Health management staff involved in ambulance strategic planning and policy
4. Surveying NSW Ambulance paramedics on issues including:
 - changes to their role in providing a wider range of services for patients
 - their level of confidence in using non-emergency department options such as referring patients to other health services
 - barriers preventing them from using non-emergency department options
5. Consultation with NSW Ambulance operational managers (including site visits) to identify frontline staff views on:
 - parts of ambulance response processes where efficiency improvements are most needed
 - positive and negative impacts of demand management initiatives.
6. Consultation with other stakeholders including:
 - other government departments that provide services that connect with ambulance services
 - paramedic representative groups, including professional bodies and unions
 - academics with expertise in ambulance and emergency health services
 - other jurisdictions for comparison and good practice examples.

The audit approach was complemented by quality assurance processes within the Audit Office to ensure compliance with professional standards.

Audit methodology

Our performance audit methodology is designed to satisfy Australian Audit Standards ASAE 3500 on performance auditing. The Standard requires the audit team to comply with relevant ethical requirements and plan and perform the audit to obtain reasonable assurance and draw a conclusion on the audit objective. Our processes have also been designed to comply with the auditing requirements specified in the *Public Finance and Audit Act 1983*.

Acknowledgements

We would like to acknowledge the assistance of our audit liaison officers at NSW Ambulance and the NSW Ministry of Health. The Bureau of Health Information shared unpublished data from its analysis of NSW Ambulance performance data which underpinned important parts of the analysis in this report. We also thank staff at NSW Ambulance, the NSW Ministry of Health, Local Health Districts and other stakeholders who gave their time to participate in interviews and provide documents and data.

Audit team

The audit was conducted by Alex Kaiser and Alana Shepherd Cooper. Expert advice and data analysis was provided by the NSW Data Analytics Centre. Oversight and quality assurance was provided by Kevin Hughes and Claudia Migotto.

Audit cost

The cost of the audit was approximately \$410,000 including overheads and travel costs.



Appendix three – Performance auditing

What are performance audits?

Performance audits determine whether an agency is carrying out its activities effectively, and doing so economically and efficiently and in compliance with all relevant laws.

The activities examined by a performance audit may include a government program, all or part of a government agency or consider particular issues which affect the whole public sector. They cannot question the merits of government policy objectives.

The Auditor-General's mandate to undertake performance audits is set out in the *Public Finance and Audit Act 1983*.

Why do we conduct performance audits?

Performance audits provide independent assurance to parliament and the public.

Through their recommendations, performance audits seek to improve the efficiency and effectiveness of government agencies so that the community receives value for money from government services.

Performance audits also focus on assisting accountability processes by holding managers to account for agency performance.

Performance audits are selected at the discretion of the Auditor-General who seeks input from parliamentarians, the public, agencies and Audit Office research.

What happens during the phases of a performance audit?

Performance audits have three key phases: planning, fieldwork and report writing. They can take up to nine months to complete, depending on the audit's scope.

During the planning phase the audit team develops an understanding of agency activities and defines the objective and scope of the audit.

The planning phase also identifies the audit criteria. These are standards of performance against which the agency or program activities are assessed. Criteria may be based on best practice, government targets, benchmarks or published guidelines.

At the completion of fieldwork the audit team meets with agency management to discuss all significant matters arising out of the audit. Following this, a draft performance audit report is prepared.

The audit team then meets with agency management to check that facts presented in the draft report are accurate and that recommendations are practical and appropriate.

A final report is then provided to the CEO for comment. The relevant minister and the Treasurer are also provided with a copy of the final report. The report tabled in parliament includes a response from the CEO on the report's conclusion and recommendations. In multiple agency performance audits there may be responses from more than one agency or from a nominated coordinating agency.

Do we check to see if recommendations have been implemented?

Following the tabling of the report in parliament, agencies are requested to advise the Audit Office on action taken, or proposed, against each of the report's recommendations. It is usual for agency audit committees to monitor progress with the implementation of recommendations.

In addition, it is the practice of Parliament's Public Accounts Committee (PAC) to conduct reviews or hold inquiries into matters raised in performance audit reports. The reviews and inquiries are usually held 12 months after the report is tabled. These reports are available on the parliamentary website.

Who audits the auditors?

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards.

Internal quality control review of each audit ensures compliance with Australian assurance standards. Periodic review by other Audit Offices tests our activities against best practice.

The PAC is also responsible for overseeing the performance of the Audit Office and conducts a review of our operations every four years. The review's report is tabled in parliament and available on its website.

Who pays for performance audits?

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament.

Further information and copies of reports

For further information, including copies of performance audit reports and a list of audits currently in progress, please see our website www.audit.nsw.gov.au or contact us on 9275 7100.

OUR VISION

Our insights inform and challenge government to improve outcomes for citizens.

OUR MISSION

To help parliament hold government accountable for its use of public resources.

OUR VALUES

Purpose – we have an impact, are accountable, and work as a team.

People – we trust and respect others and have a balanced approach to work.

Professionalism – we are recognised for our independence and integrity and the value we deliver.

Level 15, 1 Margaret Street
Sydney NSW 2000 Australia

PHONE +61 2 9275 7100

FAX +61 2 9275 7200

mail@audit.nsw.gov.au

Office hours: 8.30am-5.00pm,
Monday to Friday.