New South Wales Auditor-General's Report
Performance Audit

Reducing ambulance turnaround time at hospitals

Ambulance Service of NSW
NSW Ministry of Health

audit office
OF NEW SOUTH WALES

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In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled **Reducing ambulance turnaround time at hospitals: Ambulance Service of NSW, NSW Ministry of Health.**

Peter Achterstraat.

Peter Achterstraat
Auditor-General
24 July 2013

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Executive summary

Background

The Ambulance Service of New South Wales plays an important role in our health system. Its paramedics provide frontline emergency care to the community. They treat sick and injured patients at the scene of an emergency, and if necessary, take them to hospital emergency departments.

However ambulances sometimes get delayed at hospitals. Most often it is because paramedics are unable to move their patient into a bed in the emergency department. When this happens they wait with their patient on the ambulance stretcher until a bed becomes available.

There are many causes of ambulance delays. Increasing demand for hospital services, both emergency and inpatient care, can limit hospital capacity and cause overcrowding in the emergency department, particularly during winter. The Ministry of Health reports that since 2005-06 emergency department presentations have grown at almost three times the population rate. And ambulance arrivals have grown more, at over four times the population rate.

Furthermore, there are often patients in the emergency department who are waiting for beds to become available in hospital wards. This limits the number of beds in the emergency department making it harder for paramedics to off-load their patients when they arrive.

It is important that paramedics spend as little time as possible at emergency departments so they can respond to other triple-zero calls in the community. Even a five minute delay might mean the difference between life and death for someone waiting for an ambulance.

The Ministry of Health, Ambulance Service, and Local Health Districts acknowledge the problem and have put a number of strategies in place to reduce delays. A key aim of the Minister for Health's 2012 ambulance reforms, Reform Plan for NSW Ambulance, is to release ambulances more promptly.

NSW Health requires hospitals to off-stretcher or transfer 90 per cent of ambulance patients into their care within 30 minutes. The total time spent by ambulance crews at emergency departments is called turnaround time, and also includes the time spent by paramedics getting ready to respond to the next job.

This audit assessed whether there are effective strategies in place to reduce the time spent by ambulance crews at emergency departments. We answered the following questions:

- do NSW Health's strategies to reduce ambulance delays at emergency departments free up ambulances to respond to other incidents?
- do the Ambulance Service's demand management strategies limit the number of patients it takes to emergency departments?

To help us answer these questions we analysed key performance data and reviewed statewide policies and procedures relevant to this issue. We interviewed over 100 staff across six hospitals and five ambulance sector offices to get their views on ambulance delays and observe how strategies to reduce delays work in practice. We also examined approaches in other jurisdictions.

Conclusion

We found that ambulances wait longer at hospital emergency departments today than in previous years. Each day the Ambulance Service loses an average of 18 ambulances on the road due to hospital delays greater than 30 minutes, potentially costing $13.6 million annually to replace. This is an increase from six ambulance crews seven years ago. NSW Health has never met its target to offload 90 per cent of ambulance patients in 30 minutes. Therefore initiatives to reduce delays have had limited impact statewide.

However the results for individual hospitals varied. In 2011-12 just over a quarter of NSW hospitals met the off-stretcher target. Others did not meet the target, but recently improved performance. Therefore strategies put in place by some hospitals to reduce delays are working.

We found that the Ambulance Service's demand management strategies limit the number of patients transported to emergency departments. However these strategies are not used to their full potential. There is further scope for the Ambulance Service to reduce unnecessary transports to hospitals.

Supporting findings

Do NSW Health's strategies to reduce ambulance delays at emergency departments free up ambulances to respond to other incidents?

Although the Ambulance Service and hospitals have put a range of strategies in place to reduce ambulance delays, average statewide performance has declined. In 2011-12, one in three ambulances was delayed more than 30 minutes at hospital emergency departments. We found that over the last seven years:

- average off-stretcher time, the time to offload ambulance patients, rose from 24.4 to 31.6 minutes
- average turnaround time, the total time spent by ambulances at hospitals, rose from 30.5 to 42.1 minutes
- the proportion of ambulance patients offloaded in 30 minutes fell from 77 to 65 per cent
- the number of hospitals not offloading 90 per cent of patients in 30 minutes rose from 34 to 64
- the median response time for the highest priority emergency calls rose from 9.5 to 10.9 minutes.

Although statewide performance is declining, some hospitals perform better than others. In 2011-12 just over one in four hospitals met the off-stretcher target. These were mainly small regional hospitals. Reducing ambulance delays is more challenging for larger, busier hospitals, particularly in metropolitan areas. None of the 20 hospitals with the highest number of ambulance presentations met the target during the last seven years. Rising demand for hospital services during this period may have contributed to the problem.

There is some good news. Performance has improved in some of the larger hospitals. Of the six hospitals we visited, two had improved off-stretcher performance. Both had put a range of strategies in place to improve patient flow in the hospital and reduce overcrowding in the emergency department. The key strategies they believe improved off-stretcher performance were:

- moving emergency department patients admitted to hospital to temporary beds in the wards (over-census inpatient beds)
- rapid triage and early assessment of emergency department patients by senior doctors.

Other strategies that release ambulances include calling in additional paramedics to care for patients on stretchers at the hospital (Ambulance Release Teams), moving patients to the waiting room, and moving patients to dedicated ambulance treatment areas (ambulance bays). However while these strategies free up ambulances, they do not reduce overcrowding in the hospital. Performance may improve in the short-term, but may not be sustainable.

It is important that strategies to reduce delays and emergency department overcrowding involve the whole hospital. Initiatives like temporary beds on the wards, although not a long-term solution, attempt to address this by focusing on one of the key causes of delays – access to inpatient beds. Ideally, hospitals should focus on sustainable solutions involving the hospital wards, such as better discharge planning. This requires all hospital staff to accept responsibility for ambulance delays.

Another issue relates to inter-hospital transfers by ambulance. Paramedics and hospital staff told us that patients stable enough to be admitted straight to the wards, were instead admitted through the emergency department. This means there are potentially more transports to the emergency department than necessary, further contributing to overcrowding and delays.

In 2012, the Ministry replaced off-stretcher time with transfer of care as its key measure of hospital performance in reducing delays. It puts the onus on hospitals, not paramedics, to record when patient handover has occurred. This is a positive development as it gives hospitals more ownership of the performance measure and therefore more incentive to reduce delays.

In the 11 months from April 2012 to February 2013, 83 per cent of patients were transferred into hospital care within 30 minutes. We cannot directly compare this result to off-stretcher performance because patient handover is recorded earlier in the process, yet the Ministry uses the same the 30 minute benchmark. The Ministry advises that the change management process it put in place when implementing transfer of care may have given hospitals a renewed focus on transfer of care. However more time is needed to see whether hospitals will improve against this new measure. Other ways to release ambulance crews are needed. Change needs to occur in the wards, where a key part of the problem lies.

In 2011-12, nearly one in ten ambulances waited longer than an hour to offload their patients. Under current practice, paramedics can wait indefinitely until a bed becomes free. In the meantime, there may be sick and injured people in the community waiting for ambulances. NSW Health needs to decide the maximum time it will let paramedics wait with patients before they can move them from the ambulance stretcher and into a hospital bed or treatment area. The Ambulance Service should not become a surrogate hospital ward.

Although hospital overcrowding is a key cause of ambulance delays, some ambulance crews can take a long time to leave hospital after they hand over a patient. It is important that the Ambulance Service understands the main reasons paramedics are delayed. For example, paramedics said that it could take a while to prepare an ambulance after a trauma, or to print a patient's medical record. Addressing unnecessary delays after patients have been offloaded will also help to reduce turnaround time and improve paramedics' capacity to respond to other calls in the community.

Do the Ambulance Service's demand management strategies limit the number of ambulance patients it takes to emergency departments?

Currently four in five emergency calls result in patients being taken to hospital by ambulance. This is higher than in previous years. Meanwhile, demand for emergency transport has been rising by an average of 4.1 per cent each year.

Given increasing demand and an ageing population, it is important that only patients who require emergency treatment are taken to the emergency department. In response to these pressures, the Ambulance Service has put in place a number of strategies to limit the number of unnecessary transports to hospital. These include:

- diverting non-urgent triple-zero calls to a telephone advice line
- allowing paramedics to treat less complex conditions and refer patients to health services in the community.

Although the Ambulance Service does not routinely monitor unnecessary transports, the results for these specific initiatives are promising. We found that:

- telephone advice lines reduce the number of ambulances sent out to incidents
- in 2011 one in four incidents where patients were treated under new low acuity protocols, did not result in hospital transport
- in 2010 two in five incidents attended by Extended Care Paramedics, who are trained to treat a range of less complex conditions, did not result in hospital transport.

However these results could have been even better if these initiatives were used to their full potential. We found that only two in five eligible calls are transferred to the telephone advice line. Also two-thirds of the workload of Extended Care Paramedics is currently high priority response work rather than patients who may be treated and referred to alternate care.

Unrealistic public expectations about the role of the Ambulance Service also result in inappropriate calls and transports. For example, calling to get a script renewed or blood pressure checked is inappropriate. Some patients also think that calling an ambulance will fast-track them into a hospital bed. Current protocols require paramedics to take patients to hospital if they insist on transport, even if their clinical assessment indicates that hospital treatment is unnecessary. This needs to change.

The Ambulance Service aims to prevent about 125,000 hospital transports a year by 2021. To meet this goal the Ambulance Service needs to optimise current demand management strategies. It also plans to implement new initiatives including nursing home in-reach programs, and paramedics playing a role in preventative health. We agree with this approach but the Ambulance Service cannot do it alone. It will need the support and assistance of Local Health Districts and the Ministry of Health.

The Ambulance Service is a key entry point to the health system. Redirecting patients to the most appropriate care is an important, and necessary, demand management strategy. But it should not lose focus on its core role: providing an emergency response to sick or injured people. The Ambulance Service says inadequate resources in the face of growing demand will continue to put pressure on response times. Its challenge will be to achieve the right balance between its emergency response and demand management role.

Recommendations

Reducing transfer of care time

1. Regarding its performance measure for transfer of care, the Ministry of Health, in consultation with the Ambulance Service of NSW and Local Health Districts, should:
   a) by December 2013, clarify the tasks which should occur before transfer of care is complete (page 18)
   b) by July 2014, consider reducing the benchmark for transfer of care from 30 to 20 minutes in line with most other Australian state and territories (page 30).

2. By July 2014, the Ministry of Health and Agency of Clinical Innovation, in consultation with Local Health Districts, should provide guidance and advice on the development of hospital escalation plans to ensure they include:
   a) ambulance delays as a response trigger
   b) a whole-of-hospital response involving wards and other hospital services
   c) what actions should occur, who is responsible for them, and within what timeframe (page 19).

3. By July 2014, Local Health Districts should evaluate the effectiveness of strategies to move emergency department patients to hospital wards, ie in line with National Emergency Access Targets, in reducing transfer of care time (page 24).

4. By December 2014 NSW Health should make hospitals more responsive to ambulance delays by:
   a) determining the maximum time paramedics should wait with patients at emergency departments before hospitals must move patients from the ambulance stretcher and into their care
   b) phasing out Ambulance Release Teams and redirecting resources to patient flow strategies in the hospital that help reduce transfer of care time (page 25).

5. By July 2014, to reduce ambulance turnaround time, the Ambulance Service of NSW:
    a) review the main reasons for delays that occur after a patient has been off-loaded at hospital and introduce strategies to address these
    b) introduce benchmarks for make-ready time and monitor performance against these (page 25).

Improving the patient flow of booked ambulances

6. By December 2013, the Ministry of Health should re-enforce compliance with its policy on inter-facility transfers for patients requiring special care, to ensure Local Health Districts admit patients direct to inpatient beds and not through the emergency department (page 32).

7. By December 2014, NSW Health improve the patient flow of booked emergency ambulances, especially inter-hospital transfers and bookings made by health staff in the community, by:
    a) reviewing the volume, type, and distribution of booked ambulance patients presenting to NSW hospitals
    b) reviewing the process for booking ambulance patients by hospitals or health staff in the community to identify any problems which may need to be addressed
    c) introduce strategies to address any gaps and improve patient flow of booked ambulance patients (page 32).

Reducing unnecessary hospital transports

We recommend that the Ambulance Service of New South Wales:

8. By December 2014, reduce unnecessary ambulance responses by:
    a) increasing the proportion of eligible calls referred to the telephone advice line *healthdirect*
    b) stop assigning ambulances to calls transferred to *healthdirect*
    c) in conjunction with NSW Health, review the impact of telephone advice referrals on ambulance and emergency department activity (page 36).

9. By December 2014, increase the non-transport rate by enabling paramedics to treat more patients at the scene by:
    a) optimising the use Low Acuity Pathway protocols by removing any barriers that prevent paramedics from using them
    b) improving the tasking arrangements of Extended Care Paramedics to ensure they are not automatically used for high priority emergency work (page 38).

10. Enable paramedics to determine, based on their clinical assessment, that hospital transport is not required. This may include:
    c) by December 2014, introducing a process where paramedics can refuse to transport a patient to a hospital emergency department where it is clear that transport is not warranted
    d) by July 2015, in consultation with relevant stakeholders, investigating alternate referral options or transport destinations, such as outpatient clinics and medical centres (page 39).

11. By July 2014, regularly monitor and report on the non-transport rate of its demand management initiatives to determine the success of its strategies to reduce unnecessary hospital transports (page 41).

Response from the NSW Health

NSW GOVERNMENT Health

Trim No: D13/637-3

Mr Peter Achterstraat
Auditor-General
Audit Office of NSW
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Dear Mr Achterstraat

Thank you for your letter dated 4th July 2013 providing a copy of the final report of the Audit Office performance audit on Reducing Ambulance Turnaround Time at Hospitals.

Please find attached NSW Health's formal response for inclusion in the audit report.

I appreciate the extra time and effort that your team has invested in developing a revised version of the audit report based on the feedback received from the Ministry and NSW Ambulance.

The issue of timely access to public hospitals is a critical focus of NSW Health. The timely transfer of care between NSW Ambulance and public hospital emergency departments is an important element in improving access while the solutions often require a whole of hospital response to improve flow of patients through the hospital and effective support for patients in the community so as to avoid the requirement for an ambulance transfer to the emergency department.

NSW Health is committed to three major areas of service reform to address these issues:

- Reform Plan for NSW Ambulance

  In December 2012, NSW Government released its Reform Plan for NSW Ambulance which encompasses five key strategic directions to improve operations of NSW Ambulance. NSW Health is committed to implementing the recommendations of the Reform Plan and it should be acknowledged that many of this Audit report's recommendations align with and reinforce the objectives of the Reform Plan and, as such, are in the process of active implementation. Our response makes references to the relevant sections of the Reform Plan.

- Whole of Hospital Program

  NSW Health has also initiated a 'Whole of Hospital Program' aimed at supporting Local Health Districts in driving the strategic change needed to improve access to care and patient flow in New South Wales. Improvements in process indicators such as the National Emergency Access Target and Transfer of Care for patients arriving at hospital by ambulance are already evident across our system as a result of hospital-wide focus on appropriate access to care.

- Hospital Avoidance Initiatives

  Local Health Districts are developing a range of innovative initiatives to work closely with residential aged care and with general medical practitioners and primary health care organisations to better support patients in the community, thus avoiding the need for emergency hospital admission.

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While NSW Health acknowledges there is room for improvement, our comments also note the level of achievement of earlier initiatives in the face of rising demand for hospital services and the more patient centric measures and benchmarks we have developed which show significant improvement in times for transfer of clinical care between Ambulance paramedics and the hospitals.

I would like to thank you and your team for a considerable effort in undertaking the audit process and preparing the report.

Yours sincerely

Dr Mary Foley
Director General

15-7-2013

Response from the NSW Health

NSW Health welcomes the opportunity provided by this Performance Audit to consider ways in which improvements can be made to resolve delays for ambulance patients arriving at hospital; and views the report and recommendations as timely. This is with specific regard to the current Health Reform environment and the NSW system wide focus on improving access to care for all patients in NSW.

NSW Health's critical focus in relation to improving access to care involves three key areas of service reform:

- Implementation of the Reform Plan for NSW Ambulance
- Whole of Hospital Program and
- Investment in out-of-hospital care models and hospital avoidance initiatives

The Reform Plan for NSW Ambulance

In December 2012, NSW Government released its Reform Plan for NSW Ambulance which encompasses five key strategic directions to improve operations of NSW Ambulance. These include

1. Integrating NSW Ambulance within the broader health system
2. Separating non-emergency patient transport (NEPT) from urgent medical retrieval patient services so that NSW Ambulance is able to focus on its core role – attending to emergencies
3. Developing new models of care and investing in new providers to effectively manage demand, have a positive impact on response time, reduce paramedic fatigue and improve the operating costs of NSW Ambulance
4. Ensuring that NSW Ambulance has effective infrastructure and has a funding model that will ensure financial sustainability in the future
5. Strengthening the leadership, workforce and governance structure of NSW Ambulance and embracing the CORE values of Collaboration, Openness, Respect and Empowerment

The NSW Government is committed to the recommendations of the Reform Plan and it should be acknowledged that many of this Audit report's recommendations align with and reinforce the objectives of the Reform Plan and, as such, are in the process of active implementation.

Whole of Hospital Program

Early in 2013, the Ministry of Health initiated a 'Whole of Hospital Program', which is designed to support Local Health Districts in driving the strategic change needed to improve access to care and patient flow across NSW Health. The fundamental feature of this Program is local leadership, where the Ministry of Health and the other health agencies work together to support and facilitate local Program teams to deliver results. This approach will support long term sustainable change in the health system.

NSW Health clearly recognises that the approach to addressing ambulance delays lies within whole of hospital strategies to better manage demand for hospital services and optimise the use of hospital capacity and resources. While a review of whole of hospital strategies was not the focus of this audit, we are pleased that the report recognises the importance of this approach; as this is in line with NSW Health's focus on improving access to care for patients.

Out-of-hospital care models and hospital avoidance initiatives

NSW Health is funding and implementing a range of strategies to improve access to care and reduce the demand on Emergency Departments, in particular relating to alternative models of care and hospital avoidance:

- NSW Ambulance Clinical Assessment and Referral (CARE) Program involves ambulance paramedics treating and referring selected patients to non-emergency department avenues of care, avoiding presentation to hospital.
- Hospital in the Home (HITH) services provide acute care to children and adults residing outside hospital, as a substitution of in-hospital care. HITH delivers equivalent or better outcomes, at better value compared with inpatient care.
- The Aged Care Emergency Program supports residential aged care facilities to provide clinical care for their residents to avoid the need to send them to an emergency department.

- The ComPacks Program has been developed to facilitate safe and early discharge of eligible patients from hospital by providing access to a short-term package of care designed to help them gain independence and prevent re-admission to hospital.
- Connecting Care is a program for people with diabetes and chronic respiratory and cardiac conditions who are at risk of unplanned hospital stays or Emergency Department visits. The program provides an integrated, multidisciplinary approach to patient centred chronic disease management.

Contextual and Measurement Issues

Demand for hospital services in NSW is significant and continues to increase. The NSW population has grown by 8% since 2005; Ambulance arrivals to NSW emergency departments have grown by 45% in this same period. Overall patient attendances at NSW emergency departments have increased at almost three times the population rate since 2005-06. During the same time period, average ambulance 'off-stretcher' time has increased from 24.4 minutes to 31.6 minutes and has leveled off between 2010-11 and 2011-12 (Exhibit 11, page 20). This demonstrates that strategies designed and implemented by NSW Health have been successful in dampening the effect that the relentless growth in demand for hospital services would otherwise have had on ambulance turnaround times.

The audit predominantly used the historical ambulance-based measures of 'Off Stretcher Time' and 'Ambulance Turnaround Time'. These measures are important from the operational management viewpoint of the Ambulance Service and provide useful information on how ambulance resources are utilised and what factors might be limiting more timely release of ambulance vehicles and crews, including any factors that are not related to hospitals. However, these are not patient-centred measures of how the actual clinical care of patients is transferred from ambulance to hospitals. Off stretcher time in particular measures the length of time from Ambulance's arrival at the emergency department to the paramedics returning to their vehicle and 'stopping the clock'; having completed a range of tasks to prepare the ambulance for the next job assignment.

To provide a more patient-centric view, NSW Health has designed a Transfer of Care indicator, which measures the time from ambulance vehicle's arrival to the point when patient's care is transferred to the emergency department staff. Transfer of Care therefore places the responsibility for recording the time when the transfer has occurred with the hospital staff.

The new Transfer of Care indicator was introduced in April 2012 and, for this reason, there was only a limited time series available to the Audit Office to use in the audit process. We are pleased to report, however, that NSW Health has achieved an average result of 79% of patients transferred within 30 minutes so far in the 2012/13 financial year (year to date May 2013), with results being consistently in the range of 80-83% since October 2012, in spite of continuing increases in the number of ED attendances across the NSW health system. NSW Health looks forward to this patient-centred performance information being publicly reported by the Bureau of Health Information in the next Hospital Quarterly report.

Response to Recommendations

The audit report includes a range of recommendations to NSW Health, many of which we support in principle including the timeframes for their achievement.

A more specific response to each of the recommendations is as follows:

Reducing transfer of care time

1. Regarding its performance measure for transfer of care, the Ministry of Health, in consultation with the Ambulance Service of NSW and Local Health Districts should:
   a) by December 2013, clarify the tasks which should occur before transfer of care is complete.
   b) by July 2014, consider reducing the benchmark for transfer of care from 30 to 20 minutes in line with most other Australian state and territories.

Response:
Recommendation 1a) is supported. A review of this data definition is currently in progress to ensure the end point of transfer of care is clear to all staff. Additional information regarding this definition will be communicated to the Health System prior to December 2013.

Recommendation 1b) is noted. There is no national standard or definition for the Transfer of Care indicator. As the Audit report states, transfer of care benchmarks vary greatly across Australian jurisdictions; ranging from 15-40 minutes and the indicator itself varies from measuring a "transfer of care" concept to measuring total turn-around time.

NSW Health will review what other jurisdictions are currently doing in relation to performance measurement in this area to compare NSW Health's approach to measurement and reporting to those used in other jurisdictions.

2. By July 2014, the Ministry of Health and Agency for Clinical Innovation, in consultation with Local Health Districts, should provide guidance and advice in the development of hospital escalation plans to ensure they include:
   a) ambulance delays as a response trigger
   b) a whole-of-hospital response involving wards and other hospital services
   c) what actions should occur, who is responsible for them, and within what timeframe

Response: This recommendation is supported and reflects the current operational framework already implemented in NSW. Demand Escalation and the use of escalation plans within hospitals form one of the 7 essential elements of NSW Health's current Patient Flow Systems framework for achieving effective patient flow in our hospitals. Continued implementation of the Patient Flow Systems framework is one of the key strategies of NSW Health's "Whole of Hospital Program".

3. By July 2014, Local Health Districts should evaluate the effectiveness of strategies to move emergency department patients to hospital wards in line with National Emergency Access Targets, in reducing transfer of care.

Response: The evaluation of these strategies is supported and ongoing evaluation is an integral part of the "Whole of Hospital Program". As part of the program, hospitals and Local Health Districts are required to identify issues related to performance in line with the National Emergency Access Target; develop local solutions to address these issues and then evaluate the effectiveness of the implementation of solutions.

4. By December 2014 NSW Health should make hospitals more responsive to ambulance delays by:
   a) determining the maximum time paramedics should wait with patients at emergency departments before hospitals must move patients from the ambulance stretcher and into their care
   b) phasing out Ambulance Release Teams and redirecting resources to patient flow strategies in the hospital that help reduce transfer of care time.

Response:
Recommendation 4a) is noted; however, as this is based on a strategy in operation in the ACT, a very different system to NSW, detailed investigation will be required to determine a possible application of this exact model in NSW hospitals. The priority for NSW in this regard is the implementation of Low Acuity Pathways for patients, as indicated in Strategic Direction 3 of the Reform Plan for NSW Ambulance. This will provide a greater range of alternate pathway options for ambulance patients.

Recommendation 4b) is supported. This recommendation is already part of the strategic direction outlined in the Reform Plan for NSW Ambulance. NSW Ambulance, with the Agency for Clinical Innovation, is leading the continued implementation of new models of care to improve the release of ambulance crews. Implementation of the Whole of Hospital Program specifically aims to improve the flow of patients through our hospitals – therefore reducing the need for solutions such as Ambulance Release Teams in emergency departments.

5. By July 2014, to reduce ambulance turnaround time, the Ambulance Service of NSW:
   a) review the main reasons for delays that occur after a patient has been off-loaded at hospital and introduce strategies to address these
   b) introduce benchmarks for make-ready time and monitor performance against these (page 17).

Response:
Recommendation 5a) is supported and reflects the objectives of the Reform Plan for NSW Ambulance that is currently being implemented by NSW Health.

Recommendation 5b) Regular monitoring of make-ready time and its reporting within Ambulance NSW is already in place. Further analysis to determine the frequency and reasons behind the variability of make-ready time should be undertaken before any specific benchmarks are considered.

Improving the patient flow of booked ambulances

6. By December 2013, the Ministry of Health should re-enforce compliance with its policy on inter-facility transfers for patients requiring special care, to ensure Local Health Districts admitted patients direct to inpatient beds and not through the emergency department (page 24).

Response: This recommendation is supported as it reflects current NSW Health policy and will be re-enforced as part of the Whole of Hospital Program.

7. By December 2014, NSW Health improve the patient flow of booked emergency ambulances, especially inter-hospitals transfers and bookings made by health staff in the community, by:
   a) reviewing the volume, type, and distribution of booked ambulance patients presenting to NSW hospitals
   b) reviewing the process for booking ambulance patients by hospitals or health staff in the community to identify any problems which may need to be addressed
   c) introduce strategies to address any gaps and improve patient flow of booked ambulance patients.

Response: This recommendation is supported in principle, however is a significant body of work and will be addressed as part of the review of demand management strategies within the Reform Plan for NSW Ambulance. In particular, the Reform Plan focuses on a range of methods aimed at reducing bookings for emergency ambulances from residential aged care facilities.

Four Local Health Districts already had programs in place to address this issue, and based on the success of those programs, a further 10 hospitals were given funding in 2012/13 to establish outreach services to Residential Aged Care Facilities. Going forward, more Local Health Districts are implementing similar programs based on this model.

Building on these successes, further work will involve a significant number of stakeholders, including the Agency for Clinical Innovation, Medicare Locals, General Practitioners and Medical Specialists, and will require considerable analysis of a range of patient flow issues and alternate patient pathways especially between general medical practices and hospitals. By December 2014, NSW Health will have analysed this data which will inform further clear strategies for implementation.

Reducing unnecessary hospital transports
We recommend that the Ambulance Service of New South Wales:

8. By December 2014, reduce unnecessary ambulance responses by:
   a) increasing the proportion of eligible calls referred to the telephone advice line *healthdirect*
   b) stop assigning ambulances to calls transferred to *healthdirect*
   c) in conjunction with NSW Health, review the impact of telephone advice referrals on ambulance and emergency department activity.

Response:

These recommendations are supported and reflect those detailed in Strategic Direction 3 of the Reform Plan for NSW Ambulance. Ambulance has undertaken considerable work to enhance the referral of calls to *healthdirect* and has implemented a "no send" policy to calls that have been referred for secondary triage.

9. By December 2014, increase the non-transport rate by enabling paramedics to treat more patients at the scene by:
   a) optimising the use Low Acuity Pathway protocols by removing any barriers that prevent paramedics from using them
   b) improving the tasking arrangements of Extended Care Paramedics to ensure they are not automatically used for high priority emergency work.

Response:
These recommendations are supported and form part of the development of new models of care detailed in Strategic Direction 3 of the Reform Plan for NSW Ambulance. There will need to be further analysis on the current Low Acuity Pathway protocols to identify improvement opportunities while avoiding risks to patients and their clinical safety.

10. Enable paramedics to determine, based on their clinical assessment, that hospital transport is not required. This may include:
    a) by December 2014, introducing a process where paramedics can refuse to transport a patient to a hospital emergency department where it is clear that transport is not warranted
    b) by July 2015, in consultation with relevant stakeholders, investigating alternate referral options or transport destinations, such as outpatient clinics and medical centres

Response:
Recommendations 10a) and 10b) are noted. The focus for NSW Health is the continued implementation of Strategic Direction 3 of the Reform Plan for NSW Ambulance. The recommendations identified in this Audit report should be addressed with caution due to previous instances of adverse events and subsequent Coroner's investigations; however ensuring patients are directed to the most appropriate place for their care is an area of continuing development. Ongoing consultation with stakeholders such as Medicare Locals, General Practitioners, Medical Specialists and other community based care organisations is also required to achieve these recommendations

11. By July 2014, regularly monitor and report on the non-transport rate of its demand management initiatives to determine the success of its strategies to reduce unnecessary transports.

Response:
This recommendation is supported – NSW Ambulance has already implemented regular monitoring and reporting of non-transport rates in line with the development of new demand management strategies and models of care. This is in line with Strategic Direction 3 of the Reform Plan for NSW Ambulance.

Introduction

1.1 What is ambulance turnaround time and why is it important?

Turnaround time is the time spent by paramedics at hospital emergency departments. It is measured from the time an ambulance arrives at a hospital to when it is ready to respond to other incidents.

Ensuring turnaround time is as short as possible means that ambulances can respond more quickly to other triple-zero calls in the community. If ambulances are delayed at hospitals, sometimes called trolley block, there are less ambulances in the community to respond to incidents. This may place the public at risk, especially those in need of urgent care and transportation.

There are many reasons for delays in emergency departments. Increasing demand for emergency care has put pressure on emergency departments' and hospitals' capacity to manage peak periods. Accessing inpatient beds is a key problem with patients often waiting in the emergency department for a bed in the hospital ward. Almost half of all emergency department admissions arrive by ambulance.

Ambulance delays at emergency departments are an issue for the whole health system. This includes emergency, inpatient and community health services. The demand on our hospitals is exacerbated by our ageing population. The older we are the more likely we will have chronic disease and complex conditions which may require hospital services. Almost half of all ambulance patients are aged 65 years or older.

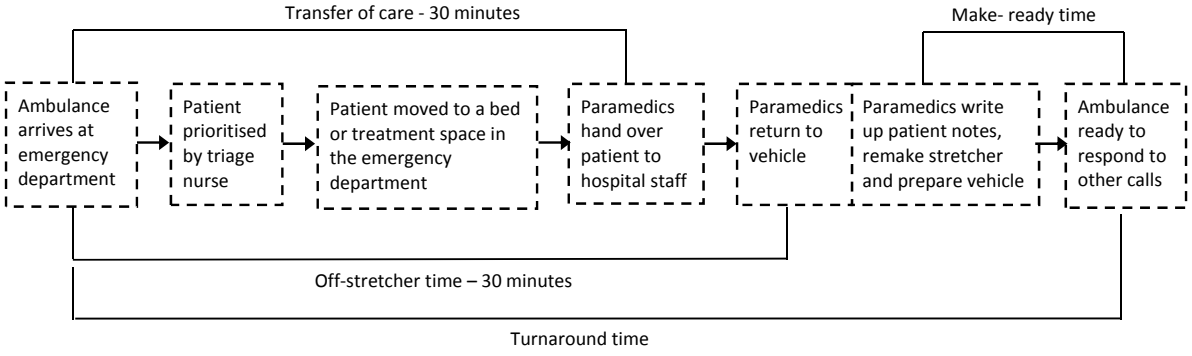
Given increasing demand and an ageing population, it is important that only patients who require emergency treatment are taken to the emergency department. Patients with less serious and non-urgent health concerns should be diverted from emergency care. They could be treated at the scene of the incident, or referred to other services in the community.

Hospitals must transfer patients into their care within 30 mins

1.2 What is the benchmark for turnaround time?

There are two main components of turnaround time: off-stretcher time and make-ready time. The Ministry of Health introduced transfer of care in April 2012. It replaced off-stretcher time as the as the key measure of hospital performance in reducing ambulance delays. It puts the onus on hospitals, not paramedics, to record when a patient has been moved to a hospital bed and handover has occurred. Both measures are reported against a 30 minute benchmark. The target for NSW hospitals is for 90 per cent of ambulance patients to be transferred into hospital care within 30 minutes.

Exhibit 1: Key steps in the turnaround process



Source: Audit Office research and discussions with Ambulance Service and Ministry of Health

Transfer of care benchmarks vary between jurisdictions

Note that although transfer of care may not have occurred, Ministry of Health protocols stipulate that hospital clinicians have responsibility for overall clinical management once an ambulance patient enters the emergency department. This is includes the waiting room or ambulance entrance.

The Ambulance Service has not set a benchmark for make-ready time, although it monitors ambulance crews with make-ready time of 30 minutes or more.

Reducing ambulance turnaround time is a challenge for jurisdictions worldwide. Most Australian States and Territories have developed measures to see whether their performance is improving. Transfer of care benchmarks varied considerably from 15 to 40 minutes. This makes it difficult to compare NSW's performance with other jurisdictions.

1.3 How do efforts to reduce turnaround time fit into broader health reforms?

There are many reforms currently taking place in NSW hospitals and the Ambulance Service which aim to improve access to health services by the community.

A key reform was the introduction of the National Emergency Access Target by Commonwealth and State governments in 2011. Its aim is to ensure that 90 per cent of patients leave an emergency department within four hours, either discharged or admitted to hospital. In response to this reform, and building on existing work in this area, the Ministry of Health has initiated many projects aimed at improving patient flow in hospitals. This includes:

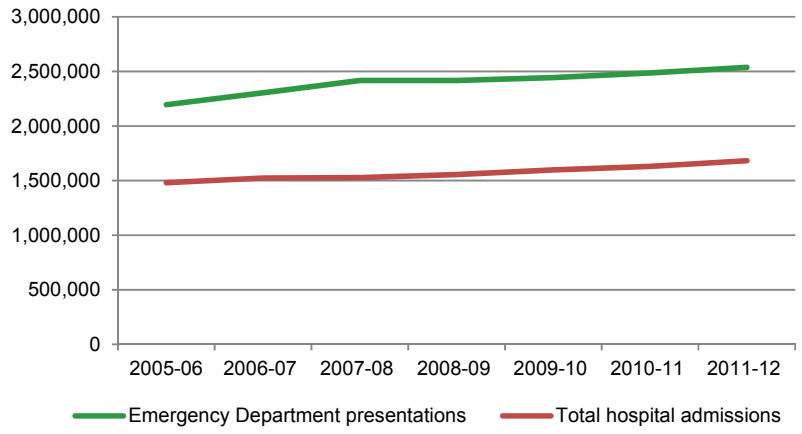
- a patient flow framework identifying the key principles of good patient flow
- a patient flow portal with tools to help hospitals predict and monitor bed status
- new models of care to streamline a patient's journey through the health system.

Activity based funding is also being introduced as part of recent national agreements which will provide more direct funding of public hospital services. It will put pressure on hospitals to deliver services more efficiently.

In 2012 the Minister for Health also released a *Reform Plan for NSW Ambulance.* This sets out the Government's plan for the Ambulance Service of NSW focusing on five strategic areas. One of these focuses on developing new models of care and demand management initiatives to reduce delays at hospitals.

All these reforms have the potential help reduce ambulance turnaround time. It is also important to note that this change is happening in the face of rising demand for health services. The Ministry reports that since 2005-06 emergency department presentations have increased at almost three times the population rate. Demand for inpatient services has likewise increased.

Exhibit 2: Rising demand for hospital services



Source: Ministry of Health

The Ambulance Service also advised that, over the same period, the number of people aged 65 or over increased by more than two and a half times the population rate. The ageing population and rising demand for hospital services will continue to put pressure on health services, making patient flow improvements even more important.

1.4 What is the audit about?

This audit assessed whether there are effective strategies in place to reduce the time spent by ambulance crews at emergency departments. We answered the following questions:

- do NSW Health's strategies to reduce ambulance delays at emergency departments free up ambulances to respond to other incidents?
- do the Ambulance Service's demand management strategies limit the number of patients it takes to emergency departments?

For the purpose of this report, the term 'emergency' as in 'emergency incidents' or 'emergency transport' refers to ambulance response categories P1 to P3, or emergency and time critical cases.

See Appendix 1 for more information on the audit scope and focus and Audit Office site visits.

Key findings

2. Do NSW Health's strategies to reduce ambulance delays at emergency departments free up ambulances to respond to other incidents?

Statewide off-stretcher performance has declined over the last seven years, although some hospitals perform better than others. In 2011-12, just over one in four hospitals met the off-stretcher target. Most of these were small regional hospitals.

Of the six hospitals we visited, two had improved off-stretcher performance. Both hospitals had put a range of patient flow strategies in place to reduce overcrowding. The key strategies they believe improved off-stretcher performance were:

- moving emergency department patients admitted to hospital to temporary 'over-census' beds in the wards
- rapid triage and early assessment of patients by senior emergency doctors.

Other strategies that free up ambulances include Ambulance Release Teams, offloading patients to the waiting room, and a dedicated ambulance bay. However as these strategies do not reduce overcrowding in the hospital, performance may only improve in the short-term.

Initiatives put in place by emergency departments to improve patient flow included fast track areas, short stay units, and replacing beds with recliners. However their effectiveness could be limited by poor hospital layout, or lack of senior doctors and nursing staff. And some hospital staff we spoke to did not accept responsibility for reducing ambulance delays.

Other key findings:

- average off-stretcher time in 2011-12 was 31.6 minutes, up 7.2 minutes from 2005-06
- in the 11 months from April 2012 to February 2013 average transfer of care time, the Ministry's new measure for ambulance delays, was 15.8 minutes
- ambulance and health staff regularly monitored the extent of ambulance delays
- the quality of hospital escalation plans varied.

2.1 Are ambulance delays at emergency departments monitored and analysed?

Finding: The Ambulance Service, Ministry of Health and hospitals monitor and report the extent of ambulance delays. They monitor performance measures to inform strategic planning, and monitor real-time delays so they can escalate incidents. However we found that hospital staff had different views about when transfer of care occurs. This means it may be more difficult to compare performance across hospitals.

The extent of ambulance delays is regularly monitored

Monitoring key performance measures for ambulance delays

Both the Ambulance Service and Ministry of Health have comprehensive systems in place to monitor ambulance delays. The Ambulance Service regularly monitors off-stretcher time, its key performance indicator for time spent by ambulances at hospitals. Managers monitor daily, weekly and monthly performance including:

- average off-stretcher time
- the proportion of ambulance patients offloaded within 30 minutes and other time intervals
- the time spent by crews at hospitals of more than 20 or 30 minutes (lost minutes)
- the time from patient offload to clearance for other calls (make-ready time)
- the time from ambulance arrival at hospital to clearance for other calls (turnaround time).

All six hospitals we visited monitor transfer of care, the Ministry's new measure for ambulance delays, as part of routine management reporting. Managers can monitor daily, weekly or monthly performance against the target for hospitals within their Local Health District or peer group, and trends over time.

There are differing views on when transfer of care is complete

The Ministry holds each Local Health District accountable for its performance in reducing transfer of care time through its service agreement with each district. The Bureau of Health Information publicly reports quarterly off-stretcher performance for each hospital and will soon start reporting transfer of care results.

The NSW Health definition of transfer of care is the transfer of accountability and responsibility for patient care from an ambulance paramedic to a hospital clinician. This is to occur when a patient moves from the ambulance stretcher to a hospital treatment area.

However we found that hospital staff had different views about when transfer of care occurs. Some thought it occurred when paramedics handed over patients to hospital staff at the bedside. Others thought it occurred when a patient was allocated a bed by the triage nurse. In the latter scenario, paramedics said that although a bed had been allocated, they were sometimes unable to unload patients. Hospital staff may be unavailable for patient handover, the bed may not be made, or there is a patient in the bed who must first be transferred to a ward.

Ideally, for transfer of care to have occurred, paramedics should have offloaded their patient from the stretcher and completed patient handover. Defining transfer of care in terms of the tasks to be completed, including patient handover, will help improve data accuracy and ensure transfer of care is a reliable measure of hospital performance.

Although transfer of care is the new measure for hospital delays, the Ambulance Service continues to monitor off-stretcher time. This is because off-stretcher time is also the basis for make-ready time, which includes the time it takes paramedics to complete the patient's notes and prepare the vehicle for the next job. We support this as it is the part of turnaround time which is within the Ambulance Service's control and will assist in managing delays.

We recommend that by December 2013, the Ministry of Health, in consultation with the Ambulance Service of NSW and Local Health Districts, clarify the tasks which should occur before transfer of care is complete, to improve the data integrity of its performance measure for transfer of care.

Real-time monitoring and escalation of ambulance delays

Hospital staff and paramedics also monitor real-time delays using the ambulance status board. The status board displays information on emergency and pre-scheduled ambulances arriving at each hospital and their status. This includes:

- the number of ambulances that have arrived in the last hour
- the number of ambulances en route and their estimated time of arrival
- the status of each incident including its priority code and the time elapsed since arrival.

Ambulance Liaison Officers help reduce delays and free up ambulances

Paramedics and hospital staff said that the status board is an excellent tool to monitor off-stretcher performance real-time and helps hospitals plan for ambulances arrivals. The only issue was that ambulance supervisors could not access it while on the road. This would help them monitor all hospitals in their area and keep them informed of delays at all times.

Real time monitoring helps staff determine whether they need to escalate incidents. The Ambulance Service has an escalation process in place for delays at hospitals. Paramedics report their off-stretcher status to the Control Centre every 30 mins. Ambulance supervisors and Ambulance Liaison Officers (ALOs) then monitor delays and escalate problems to ambulance and hospital management.

Ambulance Liaison Officers play a key role in the escalation process. They work closely with hospital staff to reduce delays and free up ambulances. A large part of their role is to facilitate communication between hospitals and the Ambulance Service, escalate problems, and work with hospital staff to reduce delays. Paramedics and hospital staff said they generally worked well together. In fact most said their relationship had improved recently.

We believe Ambulance Liaison Officers play a key role in managing hospital delays, especially in the current environment. The Ambulance Service should continue to support this role and fill any vacancies as soon as they arise.

All six hospitals we visited had processes in place to notify their executive of the hospital's bed status. Bed managers sent daily text messages or emails about the hospital's bed capacity and any ambulance delays.

Exhibit 3: Bed status text message

"EDJHH … 1 resus bed available, 3 offloaded in ambo bay. Awaiting 2 traumas. Awaiting bed availability wards G1, CCU, H3T, and 1 t/r to RNSH"

Source: John Hunter Hospital

These texts and emails are a useful way of notifying management of an incident. However a notification process also requires action in order for change to occur. All hospitals we visited had escalation plans in place, but we found their quality varied considerably. For example, one hospital had an escalation plan for the emergency department only, not the rest of the hospital. Another had a detailed action plan for only the highest alert level.

Some staff also questioned the effectiveness of escalation plans. Key issues were:

- the hospital was frequently on the highest alert level
- only the emergency department responded when problems arose
- the focus was on notifying people, rather than taking action to fix problems.

Hospital executives we spoke to recognised many of these problems and had recently reviewed or were planning to review escalation plans to make them more effective. Ideally, proactive patient flow management should be routine business in all parts of a hospital. Escalation plans are then an important tool to identify any issues with hospital capacity early.

We recommend that by July 2014, the Ministry of Health and Agency of Clinical Innovation, in consultation with Local Health Districts, provide guidance and advice on the development of hospital escalation plans to ensure they include:

- ambulance delays as a response trigger
- a whole-of-hospital response involving wards and other hospital services
- what actions should occur, who is responsible for them, and within what timeframe.

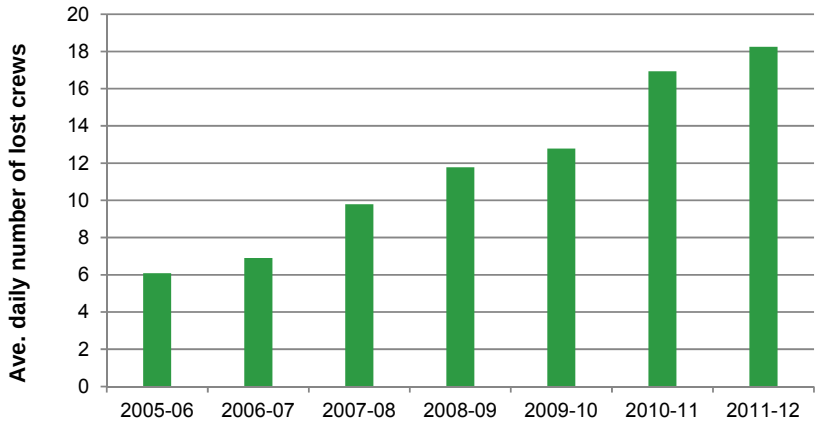
Over the last seven years the average daily number of lost crews has increased from six to 18

Analysis of the impact of ambulance delays

The Ambulance Service analyses the impact of ambulance delays on its services, particularly resource implications and its ability to respond to incidents. For example, area managers and supervisors analyse the impact of delays on crew numbers and redirect crews to areas with limited cover.

The Ambulance Service also analyses the number of lost crews caused by hospital delays. Over the last seven years the average daily number of lost ambulance crews has increased from six to 18. We estimate it would cost $13.6 million annually to replace these crews.

Exhibit 4: Lost ambulance crews due to delays at hospital



Source: Ambulance Service of New South Wales

Note: Lost crews is based on the time spent greater than 30 minutes by crews at emergency departments

The Ambulance Service also reviews how case cycle time, from triple zero call to job completion, affects response times. It found that when case cycle time increases, so do response times. This is why turnaround time, which is part of case cycle time, is so important.

Three of the six hospitals we visited had analysed delays in transfer of care or patient flow. For example, to find out why transfer of care took longer at Gosford than Wyong Hospital, Central Coast Local Health District analysed data on ambulance presentations to see whether the age of patients was a factor. It found that Wyong Hospital had at least the same, if not higher, proportion of elderly patients than Gosford Hospital. Therefore it ruled this out as a contributing factor and is still investigating the cause.

One hospital found that lengthy waits for inpatient doctors was the main reason for emergency department delays

Wagga Wagga Base Hospital had also analysed the causes of delays in the emergency department. It found that lengthy waits for inpatient doctors to review patients was the main reason for delays. The hospital has planned a number of initiatives to address this issue including putting an inpatient doctor in the emergency department to facilitate admissions. This will not directly free up ambulances, but it may improve patient flow through the hospital and therefore reduce overcrowding in the emergency department.

Overall, the Ambulance Service and hospitals have ample data at their fingertips to monitor and analyse the extent of ambulance delays at hospitals. They regularly monitor their performance, both real-time and to inform strategic planning. The Ambulance Service also analyses the effect delays have on its service, particularly resource implications. Understanding the extent of a problem is the first step in solving it. Health staff can then develop the most appropriate responses.

2.2 Are there strategies in place to reduce ambulance delays at emergency departments?

Finding: The Ambulance Service and hospitals have a range of strategies in place to reduce ambulance delays at emergency departments. However some strategies are more effective than others. Barriers included shortage of senior front line hospital staff, poor physical layout of hospitals, and hospital staff not accepting responsibility for ambulance delays.

The Ambulance Service and hospitals use a range of strategies to reduce ambulance delays at emergency departments. Some strategies free up ambulances to respond to other incidents immediately. Others are designed to improve patient flow and reduce overcrowding in the hospital, and therefore reduce delays in the emergency department.

Strategies which directly free-up ambulances

We found three strategies which release ambulance crews immediately to respond to other incidents. They include:

- moving suitable patients from the ambulance trolley to the waiting room after triage
- moving patients to beds in a dedicated ambulance bay in the emergency department
- calling in additional paramedics to care for patients on ambulance trolleys at the hospital (Ambulance Release Teams).

Ambulance Release Teams, ambulance bays, and triaging patients to the waiting room directly free up ambulances

The Ambulance Service and hospital staff also organise 'hot swaps' where possible. This occurs when an ambulance crew offloads one patient by swapping them with another patient waiting to be discharged from hospital. This strategy helps to free up hospital capacity, but the ambulance crew is not immediately free to respond to other calls. However they are able to leave the hospital and potentially avoid a lengthy delay.

Two hospitals we visited had an area near the ambulance entrance where patients could be moved to a bed during busy periods. Gosford Hospital used their ambulance bay during peak times in winter. John Hunter Hospital has a dedicated ambulance bay which is a clinical area of the emergency department staffed full-time with nurses, seven days a week.

Exhibit 5: Dedicated ambulance bay at John Hunter Hospital

The ambulance bay at John Hunter Hospital is a clinical treatment area for ambulance patients in the emergency department. It was remodeled in 2011 from a three bed treatment space to an area with five beds with monitoring equipment. Since mid-2012 it has been staffed with two nurses 24 hours a day, seven days a week.

The trigger for the current staff structure was extensive ambulance delays, which left no ambulances to respond to new incidents. The hospital reports that since staffing the ambulance bay full time the Ambulance Service has deployed less Ambulance Release Teams.

Paramedics also said it was now much easier to offload patients at John Hunter Hospital. For this reason, they would prefer to go to John Hunter Hospital than other hospitals in Newcastle.

Source: John Hunter Hospital, Ambulance Service of New South Wales

The Ministry of Health advised that it does not support the use of ambulance bays because they further delay patient treatment and there is a risk patients will be left in an unsupervised area. It advised that that there have been two Coronial enquiries into patient deaths that have occurred in similar treatment areas in NSW emergency departments.

We agree that if an area is not adequately or appropriately staffed there is a risk that a patient could deteriorate unnoticed. John Hunter Hospital attempts to reduce this risk by staffing its ambulance bay full-time with nursing staff, and providing monitoring equipment for each bed. However while this strategy frees-up ambulances it does necessarily address the cause of delays: emergency department overcrowding caused by poor patient flow practices within the hospital.

Ambulance Release Teams (ART) were introduced in 2004 and are used mainly in metropolitan areas. They are made up of two paramedics, generally called in on overtime. Their vehicle is a utility truck which has three stretchers. It does not have cardiac monitoring equipment which means only patients not requiring cardiac monitoring can be cared for by these paramedics. They are triggered in any of the following circumstances:

- two ambulances are delayed more than 30 minutes at an emergency department
- one ambulance is delayed more than an hour at an emergency department
- ambulances may be held up indefinitely ie no immediate plans to offload
- a hospital requests it to help ease pressure on the emergency department.

Since 2005-06 the Ministry of Health has spent $9.5m on paramedics caring for patients at hospitals

Local Health Districts pay for Ambulance Release Teams although the cost of any unused ART is borne by the Ambulance Service. Since 2005-06 the Ministry of Health has spent a total of $9.5 million on paramedics caring for patients at hospital. ART hours have increased over the last few years. This shows ambulance delays in the emergency department continue to be a problem.

Exhibit 6: Ambulance Release Team hours and costs

2009-10		2010-11		2011-12	
Hours	Cost	Hours	Cost	Hours	Cost
7,402	$1.014m	12,031	$1.774m	12,396	$3.010m

Source: Ambulance Service of New South Wales

Like ambulance bays, Ambulance Release Teams free up ambulances but they do not address the causes of delays. Patients remain on stretchers and hospital over-crowding does not necessarily improve. Ambulance Release Teams also reduce the Ambulance Service's overall capacity to respond because it cannot use paramedics who have been assigned to these teams. Most hospital executives we spoke to said they would prefer to use the money spent on Ambulance Release Teams for hospital initiatives. No other Australian State or Territory uses this model of care.

The Ministry of Health acknowledges that while Ambulance Release Teams have helped free up ambulances, they have not improved overall off-stretcher performance. The time taken to transfer a patient into hospital care has actually increased since they were introduced. The Ministry recognises that a better model to release ambulance crews is needed. We agree. The model must make all parts of a hospital accountable for emergency delays.

Hospital strategies to improve patient flow

All hospitals we visited had put in place, or were planning, a range of initiatives to improve patient flow and therefore reduce ambulance delays. Some of these focused on new models of care or improved processes in the emergency department. Others focused on patients in hospital wards.

The following exhibit details some of the key strategies in place at one or more of the six hospitals we visited. We recognise that there may be other hospital strategies being undertaken as part of federal and state initiatives to improve patient flow which are not covered in this report.

All hospitals had patient flow strategies in place to reduce hospital overcrowding

Exhibit 7: Hospital strategies to improve patient flow and reduce overcrowding

Emergency department strategies	Hospital strategies

Current
- starting treatment on the ambulance trolley
- improved triage or waiting room practices such as
  - ensuring patients see the triage nurse before the clerk
  - streamlining triage
  - extra triage or waiting room nurses at peak times
  - quick registration of ambulance patients
- early assessment of patients by senior doctors
- fast track units for less serious patients
- short stay units for admitted patients
- replacing beds with chairs or recliners
- emergency department doctors admitting patients to hospital in certain circumstances
- a medical registrar in the emergency department to facilitate inpatient admissions
	Current
	- temporary or 'over-census' beds in inpatient wards
	- monitoring the Ambulance Service's electronic booking system to reschedule non-urgent patients at more appropriate times
	- ward staff picking up admitted patients from the emergency department
	- direct ward admissions by community doctors
	- buying hospital beds from the private sector
	- preventing unnecessary emergency presentations by nursing home patients ie 'Aged Care Emergency' initiative
	
	Planned
	- 'whole-of-region' inter-hospital booking system for non-emergency patients
	- clinical unit for inter-hospital transfers

Source: Audit site visits to hospitals

Note: The above strategies were used in one or more of the six hospitals we visited.

Some of these strategies, like buying private hospital beds, are stopgap strategies triggered when capacity is reached. Others, like preventing nursing home presentations, aim to have a more lasting effect. However we found that strategies that work well in one hospital, may not work well in others. Barriers included:

- the physical layout of hospital, for example:
  - limited room in wards for temporary 'over-census' beds
  - triage station not close to the ambulance bay
  - short stay unit not co-located with the emergency department
- some initiatives had funding for capital works only, not staffing
- interns taking longer to treat patients than senior doctors
- lack of senior doctors in the emergency department.

A key barrier to reducing ambulance delays was differing views about who owned the problem. We spoke to some hospital staff who did not acknowledge that the hospital had a responsibility to help reduce ambulance delays in the emergency department. This caused tension between paramedics and emergency department staff.

Some hospital practices can also cause unnecessary delays, especially for patients to be admitted to hospital. For example, some staff said inpatient doctors wanted patients 'worked up' in the emergency department before accepting them. This means a patient may receive every possible test and examination, perhaps unnecessarily, before being admitted to a hospital ward. Patients could also be discharged late in the day because they were waiting to see an inpatient doctor or for medicine from the pharmacy.

Exhibit 8: Examples of discharge delays

One ward nurse told us there were two patients on her ward who she had been unable to discharge as planned. The first patient was ready to be discharged but needed wound care at home. The ward nurse was waiting to find out whether there was anyone in the patient's home town who could dress wounds properly.

The second patient had leg surgery and had been waiting two days for the pins in her legs to be removed. Despite leaving messages, the ward nurse had been unable to contact the surgical registrar to find out when this would be done.

Source: Audit interviews with hospital staff

Strategies for reducing delays must involve the whole hospital and address the key causes of delays

Executives in some hospitals we spoke to acknowledged that cultural change was needed to ensure that staff understood that ambulance delays were a whole-of-hospital problem. Ideally, strategies to reduce delays and improve overcrowding should involve all parts of the hospital, including inpatient wards. Liverpool Hospital's inpatient bed over-census policy tries to do this.

Exhibit 9: Liverpool Hospital inpatient over-census policy

In September 2012, Liverpool Hospital introduced over-census beds on its medical and surgical wards. The aim of the policy is to relieve congestion in the emergency department by transferring patients to the hospital wards.

At 6.30 am each day the emergency department Nurse Unit Manager identifies suitable patients for over-census beds. Senior medical staff confirm the selection, and at around 8 am these patients are transferred to the wards. The following conditions apply:

- patients must be medically stable
- a maximum of one patient is transferred to a ward at a time
- patients must be transferred to their home ward (eg surgical patients to surgical wards)
- each ward is responsible for accommodating the patient
- the policy applies Monday to Friday only.

Wards can purchase additional equipment such as mobile screens and hand-held bells. The hospital monitors over-census use daily and also reports daily to the executive.

Since introducing the policy the hospital has reduced ambulance delays and has met the transfer of care target for the first time. The hospital's off-stretcher result also improved significantly. Hospital staff believe that the over-census policy is the main reason for the improvement and a catalyst for more efficient ward practices.

Source: Liverpool Hospital inpatient over-census policy, audit interviews

The use of over-census beds on the wards, while not the only solution, has several benefits:

- it reduces overall length of stay for these patients
- all parts of the hospital share responsibility for addressing delays
- it can facilitate earlier discharge by putting pressure on wards to be more efficient
- it addresses one of the key causes of the problem –– access to inpatient beds.

We recommend that by July 2014, Local Health Districts evaluate the effectiveness of strategies to move emergency department patients to hospital wards, ie in line with National Emergency Access Targets, in reducing transfer of care time.

Mandatory offload policy

Reducing ambulance delays at hospitals is also a challenge in other Australian States and Territories. The ACT Ambulance Service has introduced a mandatory offload time as one means to address this.

Exhibit 10: ACT Ambulance Service mandatory patient offload policy

In 2008, the ACT Ambulance Service introduced a mandatory offload time to ensure there are adequate ambulance resources to respond to emergencies. Paramedics advise the triage nurse they are required to offload patients if:

- they have not offloaded a patient 20 minutes after arrival, or
- they are the closest ambulance crew to a priority one incident.

If there is no bed available in the emergency department, patients are transferred to a spare ambulance stretcher or a temporary hospital bed. Paramedics transfer patient care to the triage nurse then leave the hospital immediately. However they can remain longer than 20 minutes if they think it is unsafe to leave a patient.

Source: ACT Ambulance service Mandatory Patient Offload policy, site visit to The Canberra Hospital

In 2011-12 around 50,000 ambulance patients waited more than an hour to get into an emergency department

In New South Wales paramedics can wait indefinitely until a bed becomes free. Under current practice there is no maximum time paramedics should wait with patients before they must be offload and transferred into hospital care. In 2011-12 nearly one in ten ambulances waited longer than an hour to offload their patients. This is around 50,000 patients. In the meantime there may be sick and injured people in the community waiting for ambulances.

We recommend that by December 2014, NSW Health should make hospitals more responsive to ambulance delays by:

- determining the maximum time paramedics should wait with patients at emergency departments before hospitals must move patients from the ambulance stretcher and into their care
- phasing out Ambulance Release Teams and redirecting resources to patient flow strategies in the hospital that help reduce transfer of care time.

Delays after patient handover

Although hospital overcrowding is a key cause of ambulance delays, some ambulance crews can take a long time to leave a hospital after they had handed over a patient. There could be valid reasons for this. For example, paramedics said that it could take a while to prepare the ambulance after a major trauma, and printing a patient's medical record on their mobile printer was slow.

Since 2012, the Ambulance Service has monitored ambulance crews with make-ready time of 30 minutes or more. This is the time from when a patient has been offloaded until the crew is ready to respond to other calls. Crews are asked to account for any lengthy delays.

Make-ready time is the key part of turnaround time that is within the Ambulance Service's control. It is important that the Ambulance Service understands the main reasons paramedics may be delayed, and consider developing benchmarks to monitor performance.

We recommend that by July 2014, to reduce ambulance turnaround time, the Ambulance Service of NSW:

- review the main reasons for delays that occur after a patient has been off-loaded at hospital and introduce strategies to address these
- introduce benchmarks for make-ready time and monitor performance against these.

2.3 Do strategies reduce time spent by ambulance crews at emergency departments?

Finding: The Ambulance Service, Ministry of Health and hospitals regularly check their overall performance in reducing the time spent by ambulances at hospitals. Statewide off-stretcher performance has declined over the last seven years, although some hospitals have performed better than others. It is too early to know whether performance against transfer of care, the Ministry's new measure of ambulance delays, will improve.

Evaluating strategies to reduce ambulance delays

The Ambulance Service and Ministry of Health regularly review how well they reduce ambulance delays at hospitals. Both monitor state-wide and regional performance against targets, and trends over time.

The Ministry of Health monitors each Local Health District as part of its Performance Management Framework. Each district is reviewed at least quarterly against a range of performance measures, including transfer of care, which are outlined in its Service Agreements with the Director-General of NSW Health. Poor performing Local Health Districts are monitored more frequently and must develop a recovery plan to address any issues.

Two hospitals we visited had recently reviewed strategies to improve patient flow. Wagga Wagga Base Hospital had trialled three initiatives to improve access to hospital wards via the emergency department. These were:

- sending empty ward beds to the emergency department to facilitate patient transfers
- ward staff picking up emergency department patients
- giving mobile phones to staff who made bed allocation decisions.

The hospital found these initiatives increased the proportion of patients reaching the wards within one hour from 24 to 34 per cent. Nepean Hospital had also reviewed its emergency department Waiting Room Acute Care unit, where senior doctors assess patients early in the treatment process. As a result of the review, the emergency department increased its capacity by replacing beds with chairs and creating an internal waiting room.

The Ambulance Service also introduced another way to resource Ambulance Release Teams. When it was first introduced paramedics volunteered for it and were paid overtime as the work was in addition to their standard roster. While this model still exists, in January 2012 the Ambulance Service also introduced 'duty ART', where paramedics agree to be part of an Ambulance Release Team during their normal shift. The Ambulance Service says it uses 'duty ART' when rostered overtime Ambulance Release Teams are unavailable and there are significant delays at hospital emergency departments.

One in three ambulances are delayed more than 30 minutes at hospitals

State-wide results – off-stretcher time performance

We found that statewide off-stretcher performance has declined over the last seven years. The proportion of ambulance patients offloaded within 30 minutes has fallen, and the target has never been met. Average turnaround and off-stretcher times are also increasing.

We found that one in three ambulance crews were delayed at hospitals more than 30 minutes during 2011-12. Make-ready time, the difference between off-stretcher and turnaround time, has increased from around six to 11 minutes.

Average off-stretcher time is around 32 minutes

Exhibit 11: Statewide off-stretcher time performance

	2005-06	20011-12
% ambulance patients offloaded within 30 minutes	76.8	64.6
Average off-stretcher time	24.4 mins	31.6 mins
Average turnaround time	30.5 mins	42.1 mins
Average daily number of crews lost	6.1	18.3
Number of hospitals with average off-stretcher time ≥ 30 mins	2	28
Number of hospitals not offloading 90% of ambulance patients within 30 mins	34	64

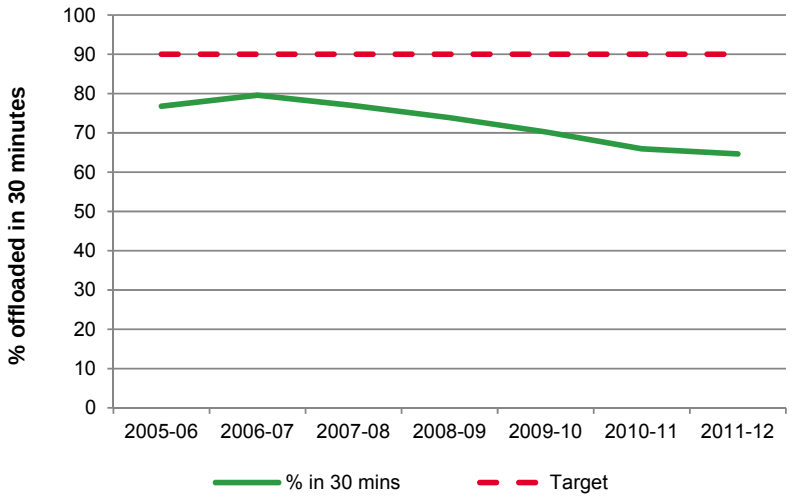
Source: Ambulance Service of New South Wales

Note: 'Lost crews' is based on the time spent greater than 30 minutes by crews at emergency departments.

Exhibit 12: Average off-stretcher and turnaround time

Source: Ambulance Service of New South Wales

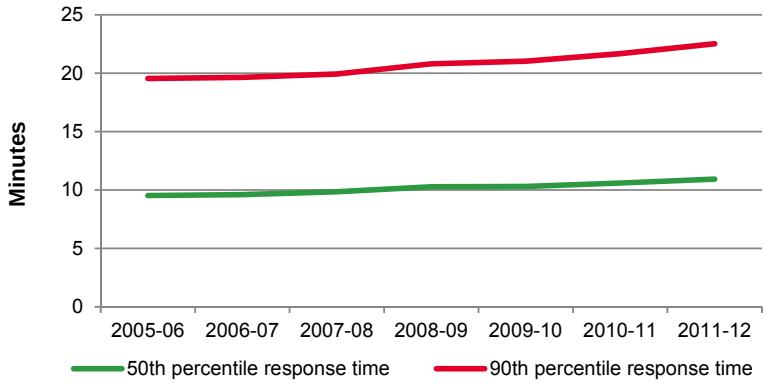
Exhibit 13: Off-stretcher performance: percentage offloaded within 30 minutes



Source: Ambulance Service of New South Wales

We also found that as off-stretcher performance declined, response times increased. Since 2005-06 the median response time for the highest priority emergency calls rose from 9.5 to 10.9 minutes.

Exhibit 14: Ambulance response times



Source: Ambulance Service of New South Wales

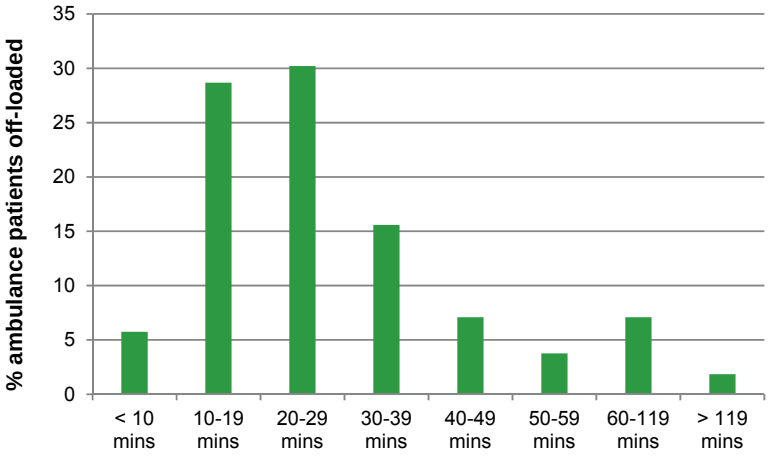
Notes: Graph shows the time by which 50 per cent and 90 per cent of ambulances have responded.

Response time is the time from when a triple-zero call is received to when the first ambulance arrives at the scene.

In 2011-12 around two thirds of ambulance patients were off-loaded within 30 minutes

We also examined off-stretcher performance by time interval. We found that the while the majority, around two thirds, of patients were off-loaded within 30 minutes, nine per cent were waiting on the stretcher more than an hour.

Exhibit 15: Off-stretcher time by time interval, 2011-12



Source: Ambulance Service of New South Wales

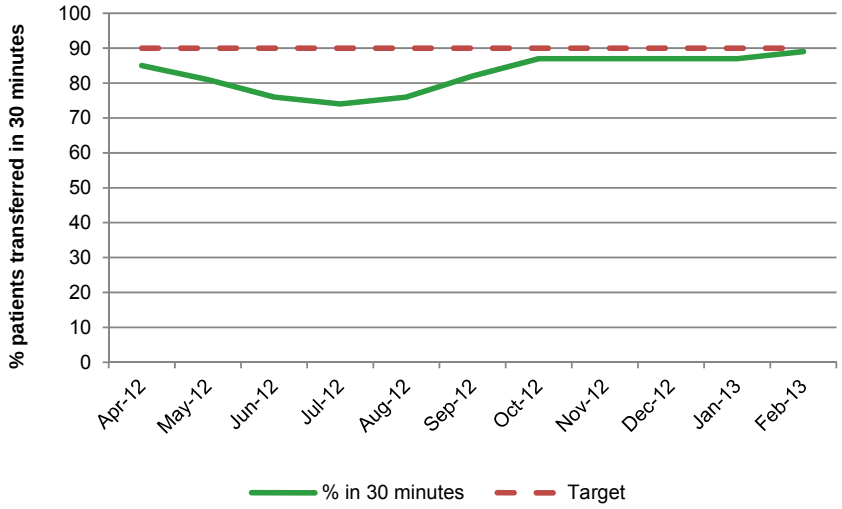
Statewide results – transfer of care performance

The Ministry of Health has been measuring transfer of care since April 2012. It has yet to meet the target but has been getting closer in recent months. In the 11 months from April 2013 to February 2012:

- average transfer of care time was 15.8 minutes
- 83 per cent of patients were transferred into the hospital's care within 30 minutes.

Around 83% of patients are transferred into a hospital's care in 30 minutes

Exhibit 16: Transfer of care performance: percentage transferred in 30 minutes



Source: Audit Office analysis of Ministry of Health data

The Ministry of Health advises that transfer of care performance in recent months is similar. Given the short timeframe it is difficult to know whether these results will be sustained, especially if seasonal changes during the year are factored in. The Ministry says the change management process it put in place when implementing transfer of care may have improved performance. Particularly as hospitals now have a renewed focus on a performance measure over which they have more control.

Transfer of care results differ from off-stretcher performance because patient handover is recorded earlier in the process. This is evident when examining the results for off-stretcher and transfer of care. We found that transfer of care results were better than off-stretcher results for the same period.

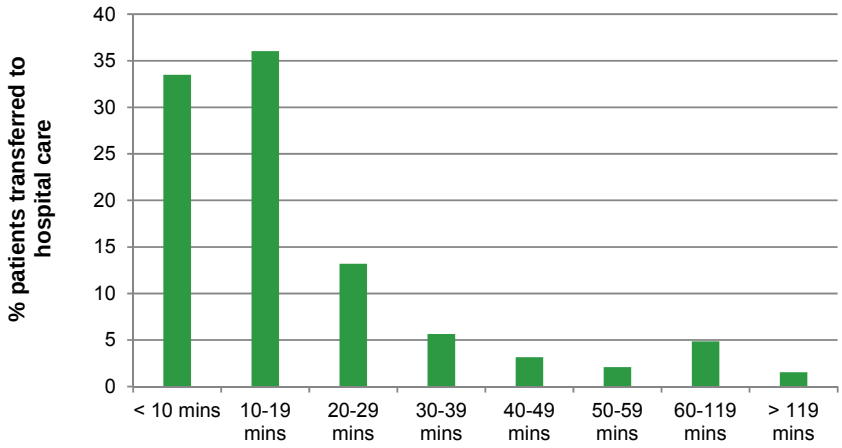
Exhibit 17: Off-stretcher and transfer of care performance

	Off-stretcher time	Transfer of care
	% offloaded within 30 mins	% transferred within 30 mins
April – June 2012	63	81
July – September 2012	57	77
October – December 2012	64	87

Source: Bureau of Health Information, Ministry of Health

Average off-stretcher times will always be slightly longer than transfer of care. This is because off-stretcher time also includes the time it takes a crew to return to their ambulance. This difference is apparent when examining off-stretcher and transfer of care times by time interval. Very few, around six per cent, of ambulance patients are off-stretchered within ten minutes (see Exhibit 15). Yet as expected, the results for transfer of care differ with around 33 per cent of ambulance patients transferred into hospital care within ten minutes.

Exhibit 18: Transfer of care by time interval, April 2012-February 2013



Source: Ambulance Service of New South Wales, Ministry of Health

When the Ministry of Health introduced transfer of care, it also kept the same benchmark - ambulance patients should be transferred into hospital care within 30 minutes. Once the Ministry of Health has more clearly defined transfer of care, it might like to consider reviewing this benchmark in line with other States. Five other States had a transfer of care benchmark of 20 minutes or less. Also, the average transfer of care time for NSW is currently around 16 minutes, well within this benchmark.

We recommend that by July 2014, the Ministry of Health, in consultation with the Ambulance Service of NSW and Local Health Districts, consider reducing the benchmark for its performance measure on transfer of care from 30 to 20 minutes in line with most other Australian state and territories.

Individual hospital results – off-stretcher time performance

None of the six hospitals we visited met the off-stretcher target

Although statewide off-stretcher performance has declined over the last seven years, individual hospital performance varied. We found that:

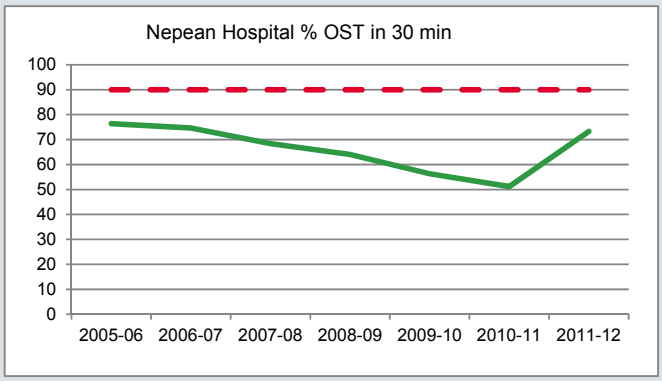
- seven per cent of hospitals improved average off-stretcher time over the last seven years
- 28 per cent of hospitals met the off-stretcher target in 2011-12.

Most of the hospitals that met the target were small regional hospitals. The larger, busier hospitals, many in metropolitan areas, did not perform as well. We examined the results for the 20 hospitals with the highest number of emergency ambulance presentations. None met the target during the last seven years and 18 performed worse in 2011-12 than in 2005-06. See Appendix 2 for off-stretcher results by hospital.

Of the six hospitals we visited none met the off-stretcher target during the last seven years. See Appendices 3 and 4. However one had improved performance during the last financial year.

Some hospitals performed better than others

Exhibit 19: Nepean Hospital's off-stretcher performance



Between 2005–06 and 2010-11 Nepean Hospital's off-stretcher performance had steadily declined from around 76 to 51 per cent of crews offloading patients in 30 minutes.

In 2011-12 the hospital improved its performance significantly, with 73 per cent offloaded within 30 minutes.

The hospital attributes this result to a number of key changes in 2011-12:

- Local Health District executive monitored off-stretcher time more closely and included it as a key performance measure for hospital managers
- the emergency department introduced a waiting room acute care unit, where senior doctors assess patients early in the treatment process
- the emergency department introduced 'rapid triage' to reduce the amount of unnecessary documentation by triage nurses.

Source: Nepean Hospital site visit, Ambulance Service of New South Wales off-stretcher data

Triage is an important part of the off-stretcher process. Nepean Hospital reduced its average time to triage for ambulance patients from 7.1 minutes in 2010-11 to 4.1 minutes in 2011-12. This is lower than the 2011-12 State average time to triage of 6.7 minutes. At the hospitals we visited average time to triage for ambulance patients varied from 1.1 to 22.6 minutes.

Individual hospital results – transfer of care performance

Individual hospital results for transfer of care also vary. Of the six hospitals we visited, Nepean, Liverpool, and John Hunter met the target at least twice during the 11 months since the measure was introduced. See Appendix 5. Improvements in transfer of care in these hospitals coincide with the introduction of key strategies to reduce delays discussed previously.

Managing booked ambulances

Regardless of how well they were performing, staff at all six hospitals we visited said that 'batching' or 'clumping' of ambulances put stress on the emergency department, especially if it was at or near capacity. Batching is when several ambulances arrive at the emergency department at the same time.

While the timing of ambulances resulting from triple-zero calls cannot be controlled, both hospital staff and paramedics thought that bookings for emergency ambulance vehicles could be better planned. There are essentially two types of ambulance bookings:

- inter-hospital transfers made by a hospital wanting to transfer a patient to another facility
- bookings for patients made by general practitioners, aged care facilities, or other health staff in the community.

Hospitals said 'batching' where several ambulances arrive at once puts stress on the emergency department

Common complaints raised by staff were that:

- stable patients were unnecessarily transferred between hospitals after hours
- inter-hospital transfers went through the emergency department rather than direct to wards
- ambulances accepted bookings even though they may be unable to transport at the requested time
- hospitals booked ambulances to transfer patients to other facilities despite limited bed capacity at the receiving hospital
- emergency department staff did not know booked patients were coming until they were en route and showed on the ambulance status board.

Hospital staff said that booked ambulance arrivals could be scheduled at more appropriate times. Staff at two hospitals we visited monitored the Ambulance Service's electronic booking system to reschedule non-urgent patients at more appropriate times. The Victorian Ambulance Service is piloting a dedicated dispatch position responsible for monitoring ambulance arrivals at hospitals. An evaluation of the position found that average case times had decreased and hospitals gave positive feedback on its impact on patient flow.

We believe that more needs to be done to improve the booking system for emergency ambulances. Better communication is needed between hospitals, and between hospitals and health staff in the community, about these patients and the best time to take them to hospital. The Ambulance Service, Ministry of Health, and Local Health Districts must work together to improve the patient flow of booked ambulances at the front end of the emergency care system.

Note that this issue refers to booked emergency ambulances only, not the Ambulance Service's Non-Emergency Patient Transport (NEPT) service which the Ministry plans to separate from its emergency retrieval role.

We recommend that by December 2013, the Ministry of Health should re-enforce compliance with its policy on inter-facility transfers for patients requiring special care, to ensure Local Health Districts admit patients direct to inpatient beds and not through the emergency department.

We recommend that by December 2014, the NSW Health improve the patient flow of booked emergency ambulances, especially inter-hospital transfers and bookings made by health staff in the community, by:

- reviewing the volume, type, and distribution of booked ambulance patients presenting to NSW hospitals
- reviewing the process for booking ambulance patients by hospitals or health staff in the community to identify any problems which may need to be addressed
- introduce strategies to address any gaps and improve patient flow of booked ambulance patients.

3. Do the Ambulance Service's demand management strategies limit the number of patients it takes to emergency departments?

Demand management strategies such as referring suitable triple-zero calls to advice lines, and developing protocols allowing paramedics to treat patients, limit the number of patients taken to emergency departments. However they are not being used to their full potential. For example:

- only two in five eligible calls are transferred to the telephone advice line
- two-thirds of the workload of Extended Care Paramedics is high priority response work, rather than patients who may be treated and referred to alternate care
- paramedics take patients to emergency departments if they insist on transport, even if their clinical assessment suggests that hospital treatment is unnecessary.

Unrealistic public expectations about the role of the Ambulance Service also results in inappropriate calls and transports. In particular, some patients think that calling an ambulance will fast-track them into a hospital bed.

Other key findings:

- demand for emergency transport has increased by an average of 22,000 transports for each of the last seven years
- currently one in five ambulance responses does not result in a hospital transport
- in 2011 one in four incidents where patients were treated under new low acuity protocols, did not result in hospital transport
- in 2010 two in five incidents attended by Extended Care Paramedics did not result in hospital transport
- there is no routine monitoring of non-transport rates or unnecessary hospital transports.

The number of emergency transports has risen by an average of 22,000 for each of the last seven years

3.1 Is demand for emergency services monitored and analysed?

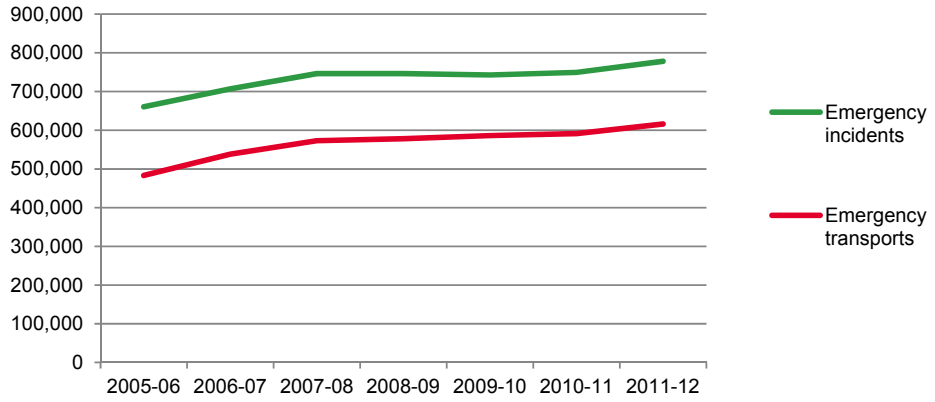
Finding: The Ambulance Service monitors and analyses information on demand including future projections and its impact on service provision.

The Ambulance Service monitors and analyses demand for emergency services at a statewide and local level. Each sector office monitors monthly activity data on the number of incidents, responses and transports to hospitals, and reviews trends over time.

Demand for ambulances has continued to increase steadily. Over the last seven years:

- incidents requiring an emergency ambulance increased 18 per cent from around 661,000 to 778,000 which is an average of 2.8 per cent a year or almost 20,000 incidents
- emergency hospital transports increased by 28 per cent from around 483,000 to 616,000 which is an average of 4.1 per cent a year or 22,000 transports.

Exhibit 20: Number of emergency incidents and hospitals transports



Source: Audit Office analysis of data provided by the Ambulance Service of New South Wales

As well as monitoring current demand, the Ambulance Service has projected growth in demand for its services over a ten year period. While it predicts growth in incidents to be similar to current levels, it expects demand for hospital transports to be slightly less.

Exhibit 21: Growth in demand for emergency ambulances

	Current average annual increase	Projected average annual increase
Years	2005-06 to 2011-12	20010-11 to 2020-21
Incidents	2.8%	-
Patients	-	2.4%
Transports	4.1%	3.2%

Source: Draft Health Service Plan, 2012-2017, Ambulance Service of New South Wales and Audit Office analysis of data provided by the Ambulance Service.

Note: Refers to P1 to P3 priority categories

The Ambulance Service also receives weekly reports on hospital demand and patient flow capacity from the Ministry of Health. These include ten day bed management predictions and actions to be taken by hospitals to reduce any problems. The Ministry of Health advised that it will soon give the Ambulance Service real-time access to this patient flow information. The Ambulance Service says this will help it to schedule Ambulance Release Teams when predictions indicate there may be delays.

The Ambulance Service aims to prevent over 125,000 unnecessary transports a year by 2021

The Ambulance Service also reviews how demand affects performance. For example, it has analysed the impact of increasing demand on response times. It found a correlation between the number of incidents and response time. When incidents increase, so do response times.

The Ambulance Service hopes to avoid over 125,000 unnecessary transports a year by 2021. To do this it plans to optimise current demand management initiatives and, with the assistance of Local Health Districts, develop new strategies to reduce hospital transports.

3.2 Are there strategies to limit the number of patients taken to emergency departments?

Finding: The Ambulance Service has a range of demand management strategies in place to limit the number of patients taken to emergency departments. However, they are not used to their full potential.

The Ambulance Service has two key strategies in place to limit the number of patients taken to emergency departments. They are:

- diverting less serious triple-zero calls to a telephone advice line
- allowing paramedics to treat less serious conditions and refer patients to health services in the community ("treat and refer" initiatives).

Telephone advice service

In 2011-12 almost 27,000 calls were transferred to a telephone advice line or about 3 per cent of total incidents

In 2003 the Ambulance Service introduced a telephone advice service, Health Access Coordination which operated from 7 am to 10 pm. Triple-zero call takers redirected less urgent and non-serious calls to the advice service to free up ambulance crews for more urgent cases. Calls referred to the advice line related to minor ailments such as coughs, colds, muscle and limb pain.

In 2011, the Ambulance Service engaged *healthdirect*, a national telephone advice service, to receive calls when Health Access Coordination (HAC) was not operating. In April 2013, HAC was disbanded and all calls are now referred to *healthdirect*.

In 2011-12, the Ambulance Service referred almost 27,000 triple-zero calls to the telephone advice lines. This was a third of all calls eligible for telephone advice. This is less than previous years where up to 73 per cent of eligible calls were transferred.

Exhibit 22: Calls to telephone advice lines

	2008-09	2009-10	2010-11	2011-12	2012-13 YTD (7 mths)
Operating environment	Sydney	Sydney	Statewide	Statewide	Statewide
	HAC	HAC	HAC	HAC/ *healthdirect*	HAC/ *healthdirect*
	7am-10pm	7am-10 pm	7am-10pm	24 hours	24 hours
Number of eligible calls	40,629	65,763	90,149	81,340	68,654
Number of calls transferred	25,336	47,684	50,600	26,720	28,027
Eligible calls referral rate	62%	73%	56%	33%	41%

Source: Ambulance Service of New South Wales

Notes: Eligible calls meet an approved list of telephone triage criteria.

The Ambulance Service agrees that there is more scope to improve the referral rate. It says that the referral rate in previous years was affected by:

- the advice line hours of operation
- geographical coverage ie Sydney or statewide
- changes in the telephone advice line criteria.

In addition, the Ambulance Service says that calls that meet the criteria but are made by a third party, such as police officers, will never be transferred. If this is the case, perhaps these calls should be removed from the referral process altogether. A 2012 review of the Ambulance Service's use of *healthdirect* found that it needs better systems to check that call takers refer all possible eligible calls.

Another potential issue relates to ambulances being assigned to *healthdirect* calls. When a call was transferred to Health Access Coordination, an ambulance was also dispatched to the caller's location. It was only cancelled when the call was complete and staff knew the patient no longer required one. This meant an ambulance could arrive at the scene even though the advice line was satisfactorily managing the call. The Ambulance Service says it no longer routinely dispatches an ambulance, but we found that in 2012 an ambulance was assigned to 51 per cent of calls eligible for *healthdirect*. Given the aim of referrals is to reduce ambulance responses, the Ambulance Service should review this practice so that it optimises its use of *healthdirect.*

The Ambulance Service wants advice line referrals to play a larger role in demand management. To do this it needs to reduce unnecessary dispatches of ambulances and look for new ways to increase the referral rate of eligible calls. It should also consider setting a benchmark for an appropriate referral rate.

Ambulance Victoria runs its own telephone advice service. It advised that the service currently manages around ten per cent of all triple-zero calls. In 2011-12, the NSW Ambulance Service referred around three per cent of total incidents to telephone advice lines.

We recommend that by December 2014, the Ambulance Service reduce unnecessary ambulance responses by:

- increasing the proportion of eligible calls referred to the telephone advice line *healthdirect*
- stop assigning ambulances to calls transferred to *healthdirect*
- in conjunction with NSW Health, review the impact of telephone advice referrals on ambulance and emergency department activity.

Paramedics can treat patients and refer them to their local doctor

Treat and refer initiatives

Not all patients need to be taken to an emergency department. Treat and refer initiatives allow paramedics to treat less serious conditions at the scene of the incident and recommend non-transport alternatives. This might include advice about self-care or referral to their local doctor or community health provider. The Ambulance Service has two treat and refer schemes in place:

- Extended Care Paramedics (ECPs) who treat a broad range of health conditions at the scene of the emergency and refer to alternate health care where appropriate
- Low Acuity Pathways (LAP protocols) for treating currently around 13 low acuity conditions.

ECP and LAP share common goals which are to provide appropriate care at the scene of the emergency and reduce the number and frequency of hospital transports. However they differ in terms of paramedic training and education requirements, and the nature and complexity conditions which may be treated.

Exhibit 23: Treat and refer initiatives

	Extended care paramedics (ECPs)	Low acuity pathways (LAP)
Number of paramedics	Dedicated role 91 paramedics trained for 41 funded positions	All paramedics receive LAP training
Hours of work	Dedicated position: 7 am to 7 pm, 7 days a week	LAP protocols can be used by any paramedic at anytime
Training	Ten week course, plus 36 weeks supervised clinical practice. Training received in a wide range of illness and injuries.	Initially a 2 day course. Now part of graduate training.
Scope of work	Work involves: • comprehensive patient assessment • providing recommended care for example: - treatment of minor injury or illnesses - catheter care - wound care - abdominal feeding tubes - falls screening - aged care screening - administering medicines • providing relevant referrals.	Work involves: • assessing patient against LAP pathways • providing recommended care • providing relevant referrals.
Patient follow-up	Patients who are not transported are reviewed and eligible for a follow-up call within 72 hours of the incident. ECP clinical governance framework in place.	No formal patient follow-up. Uses standard organisational clinical governance framework.
Non-transport options	Advice on self-care, local doctor, allied and community health care	Advice on self-care, local doctor
Vehicle	1st responder car, no stretchers, single paramedic	Standard ambulance with stretchers and two paramedics

Source: Ambulance Service of New South Wales

The Ambulance Service does not routinely monitor the number of ECP responses, or number of incidents where paramedics use LAP protocols. It advised that its capacity to monitor these programs has been affected by data quality issues and also because the programs were under development and had changed over time. Therefore they were unable to provide recent data on ECP or LAP activity. However an evaluation of ECPs in 2011 found that the number of ECP responses was increasing. This could be partly due to more paramedics being trained since the program started in late 2007.

Ambulance Service analysis of LAP protocols found that in 2011 paramedics recorded at least one LAP protocol in over 140,000 incidents. This is almost 15 per cent of all incidents. Given that not all paramedics were trained until June 2012, this rate may have increased.

Exhibit 24: ECP responses			
	2008	2009	2010
ECP responses	4,215	6,923	14,224

Exhibit 25: LAP use	
	2011
Incidents with at least one LAP protocol	142,041

Source: Ambulance Service of NSW, ECP Evaluation of the first three years of the scheme 2011
Ambulance Service of NSW, State-wide review of non-transport disposition, July 2011 to June 2012

The ECP and LAP schemes work well for patients with less serious conditions where non-transport may improve the patient's experience. For example, it is preferable for elderly dementia patients needing minor wound care to remain in their home than be treated at hospital. The schemes allow paramedics to deliver the most appropriate care to patients, and avoid unnecessary and potential lengthy delays at emergency departments.

However, neither scheme is currently used to capacity. ECPs are regularly used for emergency response work. This could be because they are closest to an incident, or all other ambulances are responding to incidents or held up at emergency departments. The Ambulance Service estimates that currently around two thirds of ECP workload is high priority emergency work. While some of this work might result in ECP appropriate cases, the Ambulance Service agrees that better tasking of ECP jobs is needed.

We also found that paramedics' use of LAP protocols varies. The Ambulance Service says some paramedics are more willing to use LAP than others. This could be caused by their fear of reprisals should something go wrong. Or they might simply prefer to take patients to hospital because it is easier than following the protocol. Some paramedics say that regional differences can limit LAP use. For example it may be less effective in an area with a large non-English speaking population due to communication difficulties.

Paramedics cannot refuse to transport a patient to hospital

One of the largest barriers relates to patients' asking to be taken to hospital. Paramedics we spoke to believe that if a patient insists on being taken to a hospital they must comply with this request, even if they believe the patient's condition is not appropriate for the emergency department. Current protocols support this view. However, given paramedics' increasing role in treating patients and avoiding unnecessary transports, the Ambulance Service should review this practice in the current environment.

We recognise that any decisions by paramedics to leave patients at home must be based on clinical risk. These patients must have conditions that are clearly inappropriate for hospital treatment. The Ambulance Service may also consider alternate referral options and transport destinations for these patients. Currently paramedics can only take patients to emergency departments at public hospitals. Yet there may be other options such as outpatient clinics or medical centres.

The Ambulance Service has proposed a number of emergency patient pathways, including transport to other providers. It is not an easy solution as there are many stakeholders to consult, and patient handover protocols must be developed. But we think it is worth investigating, especially for patients with less complex conditions.

We recommend that by December 2014, the Ambulance Service increase the non-transport rate by enabling paramedics to treat more patients at the scene by:

- optimising the use of Low Acuity Pathway protocols by removing any barriers that prevent paramedics from using them
- improving the tasking arrangements of Extended Care Paramedics to ensure they are not automatically used for high priority emergency work.

We recommend that the Ambulance Service enable paramedics to determine based on their clinical assessment, that hospital transport is not required. This may include:

- by December 2014, introducing a process where paramedics can refuse to transport a patient to a hospital emergency department where it is clear that transport is not warranted
- July 2015, in consultation with relevant stakeholders, investigating alternate referral options or transport destinations, such as outpatient clinics and medical centres.

Other demand management initiatives

The Ambulance Service is also developing initiatives to manage two high demand client groups, specifically:

- palliative care patients in aged care facilities
- patients calling the ambulance service more than ten times a year (frequent callers).

Programs are in place to care for palliative care patients and frequent callers

Paramedics are sometimes called out to aged care facilities to attend palliative care patients. Transporting these patients to hospital may not be the most appropriate care nor meet the wishes or goals of the patient and their family.

To help address this issue, the Ambulance Service recently piloted Authorised Palliative Care Plans for residents at an aged care facility on the Central Coast. Each plan is developed by the patient, their relatives and treating clinicians. The plans allow paramedics to provide care, administer medicine, and perform procedures which may not be in standard ambulance protocols. Each plan also outlines the circumstances under which the patient should not be taken to an emergency department. The Ambulance Service is now rolling out this initiative statewide.

The Ambulance Service advised that other patients in aged care facilities may be treated by ECPs, and it is developing programs to facilitate this with Local Health Districts.

The Ambulance Service also advised that it is working on a project to manage its frequent callers more efficiently. In 2011-12, the 500 most frequent callers made around 10,000 calls. Each caller used an average of 20 ambulances, resulting in 15 trips to the emergency department. The Ambulance Service has been targeting the top 18 most frequent callers who make an average of 86 calls each a year. It reports that in the initial three month period, intervention targeting these callers resulted in an average call reduction of 45 per cent. The project initially focused on mental health patients but now includes all frequent callers irrespective of diagnosis.

In addition to these statewide projects, managers in some regional offices said they had developed or proposed local demand management initiatives. This included working with a local aged care facility or general practitioners to improve patient care.

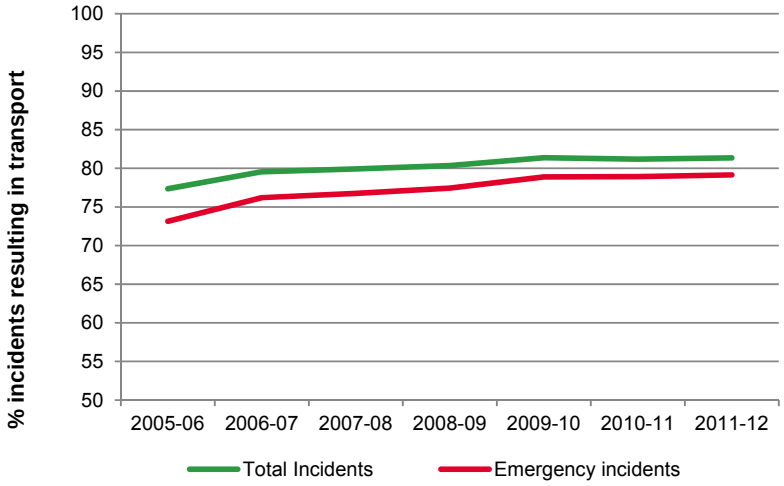
3.3 Has the number of unnecessary transports to emergency departments reduced?

Finding: The Ambulance Service analyses its demand management strategies to see whether it transports less patients to hospitals. The results are encouraging, with the ECP non-transport rate gradually increasing, and less ambulances are now dispatched when calls are referred to telephone advice lines. However there is no overall trend data to determine whether unnecessary transportations have reduced.

In 2011-12, four in five emergency calls result in a patient being taken to hospital. This is more than in previous years, which means patients are more likely to be transported to hospital today. This trend is similar for both total incidents and emergency incidents.

In 2011-12 four in five emergency calls resulted in hospital transport

Exhibit 26: Ambulance hospital transport rates



Source: Audit Office analysis of Ambulance Service data

This increase might be entirely appropriate if, for example, ambulance patients present with more acute and complex conditions. On the other hand, some patient transports may have been avoidable. The Ambulance Service does not routinely monitor unnecessary transports. However it has reviewed or monitored the effectiveness of its key demand management strategies, in terms of reducing ambulance responses or transports.

The results for Health Access Coordination show an increase in the proportion of ambulances that were cancelled en route. In the three years to 2011-12 it rose from ten to 23 per cent. Despite this increase, a high proportion of ambulances are still dispatched. With the move to *healthdirect*, more responses are being avoided, around 53 per cent in early 2013. This is a better result.

A quarter of LAP jobs in 2011 resulted in non-transport. This is better than the Ambulance Service's overall non-transport rate which was around 20 per cent in 2011-12. As there is no trend data for LAP we cannot comment on whether the non-transport rate has since improved. However as all paramedics have now been trained in LAP protocols the number of patients not transported may increase. Although the Ambulance Service does not have recent data on ECPs, the results are positive, with the non-transport rate increasing gradually from 38 per cent in 2008 to 41 per cent in 2010.

The non-transport rate for frequent callers increased over a three year period and was around 23 per cent in 2011-12. The Ambulance Service hopes to see further improvements as these results are prior to their most recent project on frequent callers.

So overall, these results are encouraging. However they could be even better given that these initiatives are not being used to their full capacity. As discussed previously, the Ambulance Service must optimise its use of ECPs and LAP protocols by removing any barriers preventing their use. This will help the Ambulance Service will reduce transports even further.

Another problem paramedics commonly raised was the inappropriate use of ambulances. They said they responded to many inappropriate calls.

The Ambulance Service receives inappropriate calls

Exhibit 27: Examples of inappropriate calls

In the following examples an ambulance was sent to the caller's location. Paramedics found the caller's condition was less serious than indicated by the dispatch system. For example, the caller:

- had bed bugs
- wanted a script renewed
- wanted a light globe to be changed
- wanted her blood pressure checked
- had been bitten by a leech a few hours earlier
- had been bitten by a bee although had no symptoms
- had vision problems due to mascara in her eye
- said he had a knee injury, was transported to the emergency department, then disappeared
- grazed her knee near the hospital, called an ambulance and insisted on transport.

In the following examples, the call taker found that the patient's condition was less serious than initially indicated and the ambulance was cancelled before it was dispatched or when it was en route. For example, the caller:

- wanted assistance as he had locked himself out of his house
- had no phone credit and wanted to be put through to other services
- had a large splinter under a nail and wanted to be taken to hospital
- wanted a doctor to come and give her husband a pill to calm him down
- wanted an ambulance to collect an oxygen tank from the hospital
- wanted a transcript of a previous call to satisfy his bail conditions
- wanted an ambulance to take him to from one emergency department to another as he had not been treated.

Source: Ambulance Service of New South Wales triple-zero calls and audit interviews with paramedics

The Ambulance Service does not monitor inappropriate calls, so we cannot determine the extent of the problem, that is, what proportion of its workload these calls represent. However paramedics believed that inappropriate calls were a key issue for the Ambulance Service.

Paramedics and hospital staff said that inappropriate calls resulted from some people's unrealistic expectations about the role of the Ambulance Service. These include:

- there is an unlimited supply of ambulances
- taking an ambulance will fast-track people into hospital
- some cultures expect to be transported regardless of their condition
- people on welfare from lower socio economic groups are entitled to an ambulance
- ambulances can be called for minor ailments.

The Ambulance Service has run statewide public education campaigns in the past to address some of these perceptions. While these campaigns may prevent some inappropriate calls, paramedics were concerned that people genuinely needing an ambulance may not call. Perhaps campaigns targeting specific groups might be more appropriate.

The Ambulance Service has proposed a number of strategies to reduce demand. These include nursing home in-reach programs, and paramedics playing a role in preventative health. To reach its target, and reduce 125,000 hospitals transports a year, it needs to both optimise current strategies and propose new ones.

The Ambulance Service is a key entry point to the health system. Redirecting patients to the most appropriate care is an important, and necessary, demand management strategy. But it should not lose focus on its core role: providing an emergency response to sick or injured people. Paramedics should not become substitute primary health care providers. The Ministry of Health and Ambulance Service need to ensure they achieve the right balance.

We recommend that by July 2014, the Ambulance Service regularly monitor and report on the non-transport rate of its demand management initiatives to determine the success of its strategies to reduce unnecessary hospital transports.

Appendices

Appendix 1: About the audit

Audit objective

This audit assessed whether there are effective strategies in place to reduce the time spent by ambulance crews at emergency departments.

Audit lines of inquiry and criteria

Question 1: Do NSW Health's strategies to reduce ambulance delays at emergency departments free up ambulances to respond to other incidents?

- Criteria 1.1: The Ambulance Service and Ministry of Health monitor and report the extent of ambulance delays at emergency departments and their impact on service delivery.
- Criteria 1.2: The Ambulance Service and Ministry of Health have strategies in place to reduce ambulance delays at emergency departments.
- Criteria 1.3: The Ambulance Service and Ministry of Health review these strategies to check whether time spent by ambulance crews at emergency departments has reduced and enabled them to respond to other emergency incidents

Question 2: Do the Ambulance Service's demand management strategies limit the number of ambulance patients it takes to emergency departments?

- Criteria 2.1: The Ambulance Service monitors and analyses information on demand for emergency services and its impact on off-stretcher time.
- Criteria 2.2: The Ambulance Service has demand management strategies in place to limit the number of patients taken to emergency departments.
- Criteria 2.3: The Ambulance Service reviews its demand management strategies to check whether the number of inappropriate or unnecessary transportations to emergency departments has reduced.

Audit scope

For the purpose of this audit 'delays at emergency departments' is any time spent beyond the 30 minute target. By 'reducing time spent' we mean:

- a reduction in average time spent at the emergency department, and
- performance targets for transfer of care/off-stretcher time have been met and/or performance is improving.

By 'demand management' we mean initiatives which reduce both:

- the need for an ambulance crew to be dispatched to an incident, and
- the need for an ambulance crew to take a patient to an emergency department.

By 'limiting the number of patients taken to emergency departments' we mean:

- reduced number of inappropriate or unnecessary transports to emergency departments
- treat at scene initiatives are used to full capacity
- increased proportion of patients referred to the helpline or treated at the scene, where appropriate.

Audit exclusions

We did not assess:

- ambulance responses by helicopter
- the overall effectiveness of patient flow strategies in hospitals
- the appropriateness of clinical decisions made by health staff
- the adequacy of ambulance/hospital resources and rostering practices.

However we commented on these issues where they affected our findings or to provide context.

Audit approach

We acquired subject matter expertise by:

- interviewing paramedics and hospital staff responsible for implementing strategies to reduce delays at hospitals
- interviewing ambulance staff responsible for implementing demand management strategies
- reviewing policies and procedures on delay minimisation and demand management strategies
- observing ambulance crews responding to calls and transporting patients to hospitals
- analysing relevant key performance data
- examining approaches in other jurisdictions.

Fieldwork visits

We visited six hospitals and five ambulance sector offices to speak to staff about ambulance delays at hospitals. We based this selection on:

- a mix of metropolitan and rural hospitals
- hospitals with poor off-stretcher performance ie less than the State average
- hospitals where Ambulance Relief Teams are regularly deployed
- ambulance stations from which Extended Care Paramedics are deployed
- hospitals that had recently improved off-stretcher performance to identify better practice.

Exhibit 28: Case study hospitals – background data 2011-12

Hospital	Local Health District	Ambulance Sector	Number of ED ambulance presentations	Total number of ED presentations	Number of hospital admissions
Liverpool	South Western Sydney	Illawarra ad South Western Sydney	23,735	65,750	70,714
John Hunter	Hunter New England	Hunter New England	21,476	69,435	77,112
Gosford	Central Coast	Central Coast and Northern Sydney	18,961	56,811	49,433
Nepean	Nepean Blue Mountains	Western Sydney Nepean Blue Mountains	17,328	55,559	56,643
Blacktown	Western Sydney	Western Sydney Nepean Blue Mountains	12,091	35,843	27,277
Wagga Wagga	Murrumbidgee	Southern Murrumbidgee	8,766	34,026	28,948

Source: Data from Bureau of Health Information website

ED: Emergency Department

We interviewed over 100 people at our site visits.

Exhibit 29: Site visit interviews

Hospital visits	Ambulance sector visits
At most hospitals we spoke to the: • General Manager • Director of Nursing • Medical Director • Patient Flow Manager • ED Director / staff specialist • ED Nurse Unit Manager (NUM) / Clinical NUM • ED triage nurse / clerk. At some hospitals we spoke to: • ward nurses • allied health staff • the hospital bookings clerk • data manager • NEAT project manager • patient transport unit.	We spoke to: • Zone Managers • Duty Officer Managers • Ambulance Liaison Officers • Extended Care Paramedics • Intensive Care Paramedics • Paramedics. Members of the audit team also went on two ambulance ride-alongs in metropolitan Sydney.

Many hospital and ambulance staff we spoke to had worked in other Local Health Districts or NSW Ambulance Sector Offices. Therefore they were able to speak of their experiences in the health system in general.

Note that references to Local Health Districts in this report also include NSW Health's Specialist Health Networks – Sydney Children's Hospitals Network and St Vincent's Health Network.

Audit selection

We use a strategic approach to selecting performance audits which balances our performance audit program to reflect issues of interest to Parliament and the community. Details of our approach to selecting topics and our forward program are available on our website.

Audit methodology

Our performance audit methodology is designed to satisfy Australian Audit Standards ASAE 3500 on performance auditing, and to reflect current thinking on performance auditing practices. Our processes have also been designed to comply with the auditing requirements specified in the *Public Finance and Audit Act 1983*.

Acknowledgements

We gratefully acknowledge the co-operation and assistance provided by the NSW Ministry of Health and Ambulance Service of New South Wales. In particular we wish to thank our liaison officers and staff who participated in interviews and provided material relevant to the audit.

Audit team

Tiffany Blackett and Lucy Stedman conducted the performance audit. Jane Tebbatt provided direction and quality assurance.

Audit cost

Including staff costs, printing costs and overheads, the estimated cost of the audit is $280,760.

Appendix 2: Off-stretcher performance: NSW Hospitals

Exhibit 30: Percentage of ambulance patients offloaded in 30 minutes

Hospital	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Statewide total	**76.8**	**79.6**	**76.9**	**73.9**	**70.3**	**66.0**	**64.6**
Liverpool Hospital	70.1	74.9	61.8	59.4	61.0	51.8	49.8
Royal Prince Alfred Hospital	65.5	68.1	62.1	61.6	60.4	55.8	59.3
Westmead Hospital (all units)	77.8	79.6	72.7	65.5	53.4	45.4	53.5
John Hunter Hospital	70.0	78.5	74.8	69.5	63.4	57.3	50.5
St George Hospital	68.4	71.2	59.3	58.0	66.8	59.0	58.8
Wollongong Hospital	70.9	69.6	69.5	56.7	56.5	53.5	61.3
Gosford Hospital	69.4	67.5	72.5	65.6	69.2	61.1	51.9
Royal North Shore Hospital	56.0	68.1	71.9	62.7	57.2	65.9	63.0
Nepean Hospital	76.4	74.6	68.4	64.0	56.3	51.2	73.3
Bankstown / Lidcombe Hospital	71.7	73.8	65.1	79.8	79.1	73.4	64.9
St Vincent's Hospital, Darlinghurst	54.8	69.4	71.0	69.0	63.3	52.3	56.5
Wyong Hospital	77.4	73.4	74.2	66.4	69.9	68.9	59.9
Campbelltown Hospital	68.5	71.1	71.4	70.8	72.1	67.5	58.8
Prince of Wales Hospital	70.4	74.5	70.0	62.3	52.9	51.7	55.9
Sutherland Hospital	73.2	77.6	63.5	67.1	62.5	65.5	69.0
Blacktown Hospital	85.3	86.2	83.2	75.5	60.7	45.8	45.0
Calvary Mater Newcastle	75.8	79.2	76.5	68.8	55.2	56.6	56.1
Concord Hospital	78.4	82.6	80.7	80.4	76.3	69.6	70.1
Shoalhaven and District Memorial	87.4	85.4	83.7	77.4	71.5	71.6	65.7
Canterbury Hospital	70.2	69.0	69.6	72.4	72.7	67.8	67.1
Coffs Harbour Base Hospital	94.4	90.8	86.4	82.6	71.9	67.1	72.7
Mount Druitt Hospital	90.9	88.3	87.4	82.2	73.4	60.1	64.4
Port Macquarie Base Hospital	82.3	77.1	71.9	67.9	60.5	57.9	55.1
Wagga Wagga Base Hospital	79.0	77.9	71.1	70.0	66.6	64.4	49.4
Maitland Hospital	87.6	78.9	84.6	84.1	73.7	56.6	49.7
Hornsby and Ku-Ring-Gai Hospital	81.7	80.2	78.4	73.3	71.2	73.9	77.2
Lismore Base Hospital	89.1	86.9	82.9	79.4	75.8	68.7	63.3
The Tweed Hospital	94.3	87.2	83.1	82.0	74.1	70.8	76.4
Manning Base Hospital	86.3	89.2	86.0	78.6	66.9	68.4	64.6
Fairfield Hospital	76.9	84.3	86.9	89.1	87.4	74.8	61.1
Ryde Hospital	83.6	81.1	86.6	80.8	79.8	89.7	89.7
Tamworth Base Hospital	95.8	96.3	93.2	89.8	84.9	81.0	73.9
Mona Vale and District Hospital	76.0	73.5	83.5	89.1	92.7	93.8	88.9
Dubbo Base Hospital	95.8	93.1	88.8	89.0	88.6	79.1	75.3
Shellharbour Hospital	88.2	79.3	76.2	72.8	67.3	65.9	54.6
Belmont Hospital	83.4	84.3	80.7	78.9	73.7	74.8	65.8
Auburn Hospital	93.1	93.2	89.3	85.2	68.8	58.5	69.8
Orange Base Hospital	91.4	88.0	84.4	82.2	78.7	76.1	69.8
Manly District Hospital	81.4	81.9	89.7	90.5	89.0	91.8	91.3
Children's Hospital Westmead	94.7	95.4	96.1	95.1	93.5	89.7	90.8
Hawkesbury District Health Service	77.5	80.1	77.7	65.3	55.7	47.5	43.1
Sydney Hospital	91.9	93.9	92.4	93.4	89.7	89.3	90.7
Bowral and District Hospital	88.7	92.5	92.1	90.9	85.2	82.0	82.5
Bathurst Base Hospital	97.1	95.7	93.2	89.5	84.8	70.2	80.2
Kempsey Hospital	95.4	97.3	96.6	91.1	83.3	84.2	80.0
Goulburn Base Hospital	91.2	94.3	92.4	90.2	87.0	79.8	63.5

Hospital	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Blue Mountains District Anzac Memorial	98.0	97.5	97.5	94.7	94.9	88.3	89.2
Armidale and New England Hospital	98.1	98.2	96.2	95.0	95.2	92.6	92.3
Griffith Base Hospital	98.1	96.4	96.1	96.2	92.4	88.3	85.3
Grafton Base Hospital	93.7	94.2	90.8	90.9	86.8	83.5	88.2
Broken Hill Base Hospital	98.1	95.5	93.5	92.8	93.0	88.9	86.4
Ballina District Hospital	96.4	96.4	95.8	95.4	94.1	91.1	88.3
Sydney Children's Hospital	95.7	96.7	96.9	95.1	93.9	94.1	93.4
Lithgow Health Service	95.5	97.7	96.5	91.8	94.8	91.3	91.2
Bega District Hospital	96.3	96.9	95.2	94.9	94.3	93.0	86.7
Bateman's Bay District Hospital	98.1	97.6	98.0	96.9	96.9	97.1	89.3
Cessnock District Hospital	97.5	97.6	97.1	94.6	93.6	91.8	88.0
Milton and Ulladulla Hospital	93.5	92.7	92.8	88.4	85.8	83.3	77.2
Inverell District Hospital	98.9	98.5	98.7	97.2	96.4	91.6	87.0
Murwillumbah District Hospital	92.6	96.2	95.1	94.1	94.6	93.0	91.0
Nelson Bay and District Polyclinic	95.6	95.5	95.3	95.6	92.1	92.6	88.8
Muswellbrook District Hospital	96.6	94.6	92.2	92.3	90.3	88.3	83.5
Singleton District Hospital	96.3	97.2	97.4	97.0	95.2	96.3	93.0
Moree District Hospital	97.7	98.5	98.2	97.6	98.1	96.8	94.9
Newcastle Mental Health	na	na	na	na	72.4	75.2	68.6
Gunnedah District Hospital	99.4	99.6	99.1	97.8	98.2	97.7	96.7
Glen Innes District Hospital	97.1	98.3	93.3	90.8	91.3	86.7	86.1
Narrabri District Hospital	95.1	95.7	96.5	97.4	95.2	95.8	92.3
Concord Centre - Mental Health	na	na	83.3	90.6	84.8	79.1	82.4
Scott Memorial Hospital, Scone	96.9	95.8	97.3	98.2	93.9	88.5	90.0
Quirindi Community Hospital	100.0	89.5	100.0	95.2	94.3	94.7	91.8
Gloucester Soldier's Memorial Hospital	95.2	95.3	94.0	92.8	91.5	90.8	83.7
Prince Albert Memorial, Tenterfield	98.1	98.0	98.1	98.0	96.0	96.2	94.4
Kurri Kurri District Hospital	97.4	96.2	96.1	95.6	93.5	91.2	88.3
Manilla District Hospital	97.1	97.0	93.1	95.6	91.2	84.3	86.5
Bingara Multi-Purpose Service	98.6	97.4	99.5	98.3	96.8	95.2	96.0
Wee Waa District Hospital	97.9	99.2	96.2	99.2	99.0	98.0	97.1
Barraba Multi-Purpose Service	93.7	96.2	95.7	96.4	94.9	94.9	90.7
Dungog District Hospital	96.8	94.1	95.6	93.3	86.2	93.8	90.5
Warialda Multi-Purpose Service	98.6	93.9	96.4	96.8	96.4	93.3	92.1
Walcha Multi-Purpose Service	95.3	97.8	98.8	97.5	97.9	95.7	94.0
Merriwa Multi-Purpose Service	93.8	95.5	87.3	93.0	96.5	94.7	92.0
Wilson Memorial Hospital, Murrurundi	93.5	92.9	85.7	93.8	91.7	86.4	91.8
Sydney Eye Hospital	94.0	87.9	94.0	94.0	80.5	80.0	90.9
Boggabri Multi-Purpose Service	95.9	96.6	94.4	95.9	94.5	93.8	95.5
Bulahdelah District Hospital	97.0	92.5	93.9	90.5	92.3	94.1	87.2
Camden Hospital	90.0	94.0	92.3	80.5	93.5	88.9	90.0
Bulli District Hospital	92.9	100.0	95.8	100.0	100.0	100.0	66.7
Denman Multi-Purpose Service	100.0	93.3	90.5	100.0	100.0	100.0	80.0

Source: Ambulance Service of New South Wales

Note: Hospitals are listed in order of the number of emergency ambulance presentations for 2011-12

Key: Target met; Target not met

Appendix 3: Quarterly off-stretcher performance: case study hospitals

Exhibit 31: Percentage of ambulance patients offloaded in 30 minutes, Jan-Mar 2011 to Oct-Dec 2012

Hospital	Jan-Mar 2011		Jul-Sep 2011	Oct-Dec 2011	Jan-Mar 2012	Apr-Jun 2012	Jul-Sep 2012	Oct-Dec 2012
Liverpool	50		45	54	57	44	46	63
John Hunter	58		50	50	53	50	40	46
Gosford	64		48	54	53	52	44	56
Nepean	50		52	74	87	79	71	78
Blacktown	44		41	45	49	44	37	45
Wagga Wagga	64		46	45	51	55	44	52
NSW total	**66**		**61**	**65**	**69**	**63**	**57**	**64**

Source: Bureau of Health Information

Note: No data available for Apr-Jun 2011

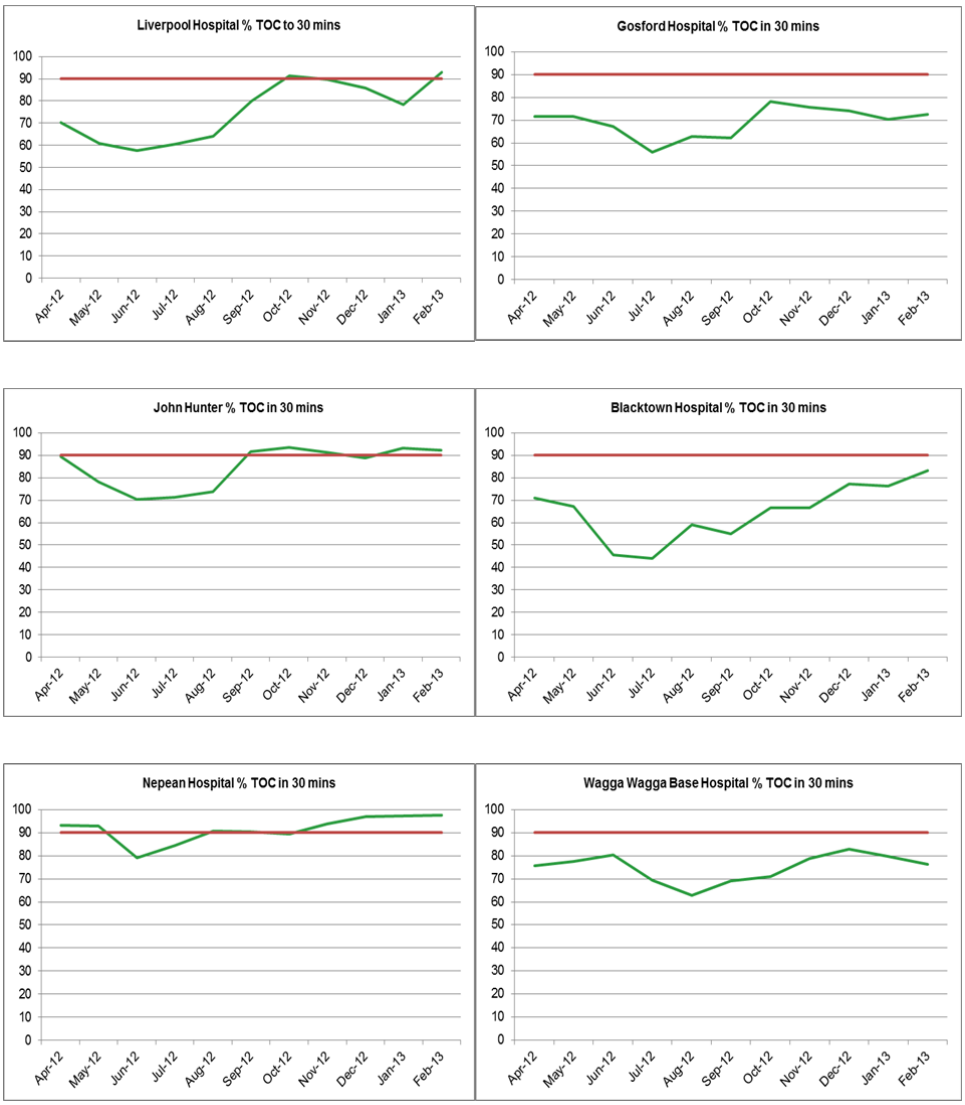
Appendix 4: Annual off-stretcher performance: case study hospitals

Exhibit 32: Percentage of ambulance patients offloaded within 30 mins 2005-06 to 2011-12

Source: Ambulance Service of New South Wales

Appendix 5: Monthly transfer of care performance: case study hospitals

Exhibit 33: Percentage of patients transferred into hospital care in 30 minutes April 2012 to February 2013



Source: Audit Office analysis of Ministry of Health data

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.

Performance audit reports

No	Agency or Issues Examined	Title of performance Audit Report or Publication	Date Tabled in Parliament or Published
233	Ambulance Service of NSW NSW Ministry of Health	*Reducing ambulance turnaround time at hospitals*	24 July 2013
232	NSW Health	*Managing operating theatre efficiency for elective surgery*	17 July 2013
231	Ministry of Health NSW Treasury NSW Office of Environment and Heritage	*Building energy use in NSW public hospitals*	4 June 2013
230	Office of Environment and Heritage - National Parks and Wildlife Service	*Management of historic heritage in national parks and reserves*	29 May 2013
229	Department of Trade and Investment, Regional Infrastructure and Services – Office of Liquor, Gaming and Racing Independent Liquor and Gaming Authority	*Management of the ClubGRANTS scheme*	2 May 2013
228	Department of Planning and Infrastructure Environment Protection Authority Transport for NSW WorkCover Authority	*Managing gifts and benefits*	27 March 2013
227	NSW Police Force	*Managing drug exhibits and other high profile goods*	28 February 2013
226	Department of Education and Communities	*Impact of the raised school leaving age*	1 November 2012
225	Department of Premier and Cabinet Division of Local Government	*Monitoring Local Government*	26 September 2012
224	Department of Education and Communities	*Improving the literacy of Aboriginal students in NSW public schools*	8 August 2012
223	Rail Corporation NSW Roads and Maritime Services	*Managing overtime*	20 June 2012
222	Department of Education and Communities	*Physical activity in government primary schools*	13 June 2012
221	Community Relations Commission For a multicultural NSW Department of Premier and Cabinet	*Settling humanitarian entrants in NSW* *services to permanent residents who come to NSW through the humanitarian migration stream*	23 May 2012
220	Department of Finance and Services NSW Ministry of Health NSW Police Force	*Managing IT Services Contracts*	1 February 2012
219	NSW Health	*Visiting Medical Officers and Staff Specialists*	14 December 2011
218	Department of Family and Community Services Department of Attorney General and Justice Ministry of Health NSW Police Force	*Responding to Domestic and Family Violence*	8 November 2011
217	Roads and Traffic Authority	*Improving Road Safety: Young Drivers*	19 October 2011

No	Agency or Issues Examined	Title of performance Audit Report or Publication	Date Tabled in Parliament or Published
216	Department of Premier and Cabinet Department of Finance and Services	*Prequalification Scheme: Performance and Management Services*	25 September 2011
215	Roads and Traffic Authority	*Improving Road Safety: Speed Cameras*	27 July 2011
214	Barangaroo Delivery Authority Department of Transport NSW Treasury	*Government Expenditure and Transport Planning in relation to implementing Barangaroo*	15 June 2011
213	Aboriginal Affairs NSW Department of Premier and Cabinet	*Two Ways Together - NSW Aboriginal Affairs Plan*	18 May 2011
212	Office of Environment and Heritage WorkCover NSW	*Transport of Dangerous Goods*	10 May 2011
211	NSW Police Force NSW Health	*The Effectiveness of Cautioning for Minor Cannabis Offences*	7 April 2011
210	NSW Health	*Mental Health Workforce*	16 December 2010
209	Department of Premier and Cabinet	*Sick leave*	8 December 2010
208	Department of Industry and Investment	*Coal Mining Royalties*	30 November 2010
207	Whole of Government electronic information security	*Electronic Information Security*	20 October 2010
206	NSW Health NSW Ambulance Service	*Helicopter Emergency Medical Service Contract*	22 September 2010
205	Department of Environment, Climate Change and Water	*Protecting the Environment: Pollution Incidents*	15 September 2010
204	Corrective Services NSW	*Home Detention*	8 September 2010
203	Australian Museum	*Knowing the Collections*	1 September 2010
202	Industry & Investment NSW Homebush Motor Racing Authority Events NSW	*Government Investment in V8 Supercar Races at Sydney Olympic Park*	23 June 2010
201	Department of Premier and Cabinet	*Severance Payments to Special Temporary Employees*	16 June 2010
200	Department of Human Services - Ageing, Disability and Home Care	*Access to Overnight Centre-Based Disability Respite*	5 May 2010

Performance audits on our website

A list of performance audits tabled or published since March 1997, as well as those currently in progress, can be found on our website www.audit.nsw.gov.au.

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