National Audit Office

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Department of Health

Transforming NHS ambulance services

Summary

1 In England, urgent and emergency healthcare and patient transport services are provided by 11 regionally-based ambulance services, with separate arrangements for the Isle of Wight. In 2009-10, the cost of ambulance services was £1.9 billion, of which around £1.5 billion was for urgent and emergency services.

2 In 2009-10, 7.9 million emergency '999' calls were received by the ambulance service, which resulted in 6.4 million ambulance incidents and 4.7 million emergency or urgent patient journeys. The number of emergency or urgent calls that the ambulance service receives has increased by about 4 per cent each year since 2007-08.

3 Until 1 April 2011, ambulance responses were split into three categories: A – immediately life-threatening; B – serious but not immediately life-threatening; or C – not immediately serious or life-threatening (**Figure 1**). For category A incidents, the service has a target of an emergency response arriving at the scene within eight minutes in 75 per cent of cases, and a vehicle able to transport the patient in a clinically safe manner, if required, to attend within 19 minutes in 95 per cent of cases. There was a similar 19-minute target for category B incidents. Category B responses and the associated target were abolished by the Department of Health (the Department) from 1 April 2011, and a set of clinical quality indicators were introduced to complement the response time target for category A incidents.

4 The Government has embarked on a fundamental reform of the NHS, which will see the responsibility for the commissioning of ambulance services transfer from primary care trusts to GP consortia. These reforms are being introduced at a time when the NHS faces the tightest financial settlement in many years and when the Government aims to deliver up to £20 billion of efficiency savings in the NHS by the end of 2014-15. The ambulance service is expected to play a part in achieving these savings by identifying a minimum of 4 per cent efficiency savings within its budget (around £75 million per year).

Figure 1
Response time targets and performance for the ambulance service, 2009-10

Call category	Response time	Target (%)	National performance (%)	Variation across ambulance services (%)
A	Within 8 minutes	75	74.3	70.8 to 78.3
A	Within 19 minutes	95	96.8	92.7 to 98.8
B	Within 19 minutes	95	91.0	85.9 to 95.8
C	Locally set targets			

Source: Department of Health and National Audit Office analysis of ambulance service data

5 This study examines whether ambulance services provide a cost-effective service to patients seeking urgent and emergency care. It also considers whether they and other parts of the emergency care system operate in such a way as to minimise costs to the wider health service. The ambulance service cannot provide a cost-effective service in isolation from the rest of the NHS.

6 Outputs, such as speed of response, were the dominant performance measure throughout the time period covered by this report. Lack of data means we cannot comprehensively assess value for money in terms of outcomes (see below). Instead, we have set out our view of the requirements for a cost-effective ambulance service (**Figure 2** overleaf). We assessed value for money against these requirements, by comparing between ambulance services and by comparing the ambulance service as a whole against NHS-wide performance. We have not assessed the value for money of individual services. This report does not cover patient transport services, air ambulance services or ambulance services on the Isle of Wight, which are provided by the primary care trust. We have worked within the current consensus on clinical good practice in emergency care. A summary of our methodology can be found in the Appendix.

Figure 2

Requirements for a cost-effective ambulance service

	Inputs	Processes	Outputs	Outcomes
Within ambulance services	Good understanding of demand Good understanding of staff, skills requirement and capabilities	Optimal deployment of resources to meet demand Optimal response model to manage demand through the call cycle	The Department of Health's targets are met cost-effectively	Appropriate clinical outcomes for patients are achieved High levels of customer satisfaction
Between ambulance services	Consistent, accurate and timely data (for example, measures of resource utilisation, costs, outputs and outcomes) to manage and improve performance, and to allow commissioners to benchmark and performance manage ambulance services Good practice is understood, agreed and applied in a consistent manner			
The wider NHS (some require collaboration with ambulance services)	Commissioning of, and funding for, ambulance services incentivises the delivery of cost-effective ambulance services			
	Accurate data on availability and capacity of alternative services is available	Processes of other providers enable optimal ambulance service performance – for example, hospital handovers	Ambulance output targets that are consistent with cost-effective delivery of outcomes	Timely, accurate data on outcomes at individual patient level to allow ambulance services to improve is available

Source: National Audit Office analysis

Key findings

7 The ambulance service has a pivotal role to play in the performance of the entire urgent and emergency care system. Traditionally, the ambulance service has been seen primarily as a call-handling and transportation service, encompassing some aspects of patient care. Increasingly, however, it is recognised as having a wider role, as a conduit to other NHS services and in ensuring patients can access the facilities they need, close to their home.

8 Performance over the last decade has been driven by response time targets and not outcomes. The category A 8-minute response time target, which is one of the most demanding in the world, has served to focus action on improved outcomes for some immediately life-threatening conditions, and meet public expectations for a consistently fast response. Performance has been maintained in recent years despite increased demand, supported by trained community volunteers. Its existence in isolation from more direct measures of patient outcomes has, however, created a narrow view of what constitutes 'good' performance, and skewed the ambulance services' approach to performance measurement and management. The target, and the 'call connect' system introduced to standardise the way performance against the target was measured and incentivise the service to take calls immediately, created unintended consequences including over-allocation of vehicles where, for example, more than one vehicle is deployed and then the surplus stood down.

9 From 1 April 2011, the category A response targets will be part of a range of indicators designed to encourage a much broader, outcome-led, performance regime. We agree that this regime should be more fit-for-purpose but note that the accurate measurement of patient outcomes will rely on acute trusts and accident and emergency departments sharing data with the ambulance service.

10 There is scope for improved efficiency as evidenced by variations between ambulance services in costs per call, the way resources are deployed to meet demand, the take-up of different approaches to responding to calls and reliance on overtime.

- The cost per call across ambulance services varies between £144 and £216, and the cost per incident varies between £176 and £251, indicating scope for efficiency. Our analysis suggests these variations reflect, at least in part, factors within the control of ambulance services.
- The most qualified staff, advanced practitioners, are used in different ways by different ambulance services and are often not used in ways that make full use of their skills.
- Ambulance services are now handling more calls over the phone by providing clinical advice to callers (known as 'hear and treat'), treating patients at the scene ('see and treat') and conveying patients to a wider range of care destinations. However, the percentage of calls treated in these ways varies considerably across services, because some services started to undertake these changes earlier than others and some have developed a closer relationship with NHS Direct, which provides clinical telephone advice. We estimate indicative financial savings to the NHS from increased take-up of these new response models of £100 million to £280 million a year. Realising these savings will depend on reconfiguration of services by commissioners.
- Services currently rely on overtime, at a cost of nearly £80 million per year, partly due to difficulties in matching staff availability with demand, and sickness absence rates, often the legacy of previous ambulance delivery bodies. High sickness absence rates contribute to poor resource utilisation and reliance on overtime and sickness rates for ambulance staff varies by 60 per cent between ambulance services.

11 Ambulance services need to take more opportunities to learn from each other. Coordination across services has improved substantially over the last few years, with effective collaboration in a number of key areas such as procurement and emergency planning. However, differences between the services in culture and data definitions have inhibited the take-up of some good practice. There are also inconsistent performance measurement criteria, meaning performance cannot always be compared across the sector. For example, ambulance services need to have a clear understanding of the extent to which ambulance crews are utilised. However, there is no consensus among ambulance services on the best way to measure resource utilisation, or what 'good performance' looks like. The sharing of best practice and the achievement of economies of scale may be inhibited if services envisage being in competition with one another in the future.

12 A lack of alignment of objectives between urgent and emergency care providers, including ambulance services, means that work remains to achieve cost-effective integrated emergency care.

- Over one-fifth of patient handovers at hospital accident and emergency departments (the time taken from arrival at a hospital to handing over the responsibility for care to a hospital healthcare professional) take longer than the 15 minutes recommended in guidance. If ambulances are queuing outside hospitals they are not available to respond to other calls. There is also scope to reduce the time taken by ambulance crews from patient handover at the hospital to being available for their next job. Commissioners can encourage services to focus on these issues if progress is not being made – some commissioners, but not all, have built financial incentives into hospital contracts to reduce handover and turnaround times.
- Effective triaging and assessment relies on there being other services available that the patient can access. Primary care trusts, which currently commission ambulance services, are at different stages of developing an electronic directory of local services, which can be used by health service staff to identify appropriate services that are available for their patients.
- The commissioning of ambulance services has until recently focused on the day-to-day management of contracts. The National Ambulance Commissioning Group is working to incentivise demand management and to develop a more strategic approach to ambulance commissioning, and assisting the Department in its development and implementation of a national system of tariffs for ambulance services. However, as the NHS moves towards GP-led commissioning, there is a danger that accumulated knowledge will be lost in the transition to the new arrangements.

13 The ability to improve performance is limited by a lack of data on patient outcomes and a lack of comparative information that can be used to benchmark performance. Being able to assess the impact of delays described in paragraph 12 and the accuracy of paramedics' diagnoses could help services to measure the safety and quality of patient pathways, and ensure that these pathways are tightly managed. But at present, data on clinical outcomes are available for only a few key conditions such as stroke and cardiovascular disease. Services have been unable to track most patients after they arrive at hospital as ambulance and hospital information systems are not linked. Better measurement of outcomes will drive up clinical quality.

14 The ambulance service collects a wide range of performance data. But different interpretations of data requested by the NHS Information Centre and in the way services define some of the metrics make it hard for commissioners to benchmark the services they receive.

Conclusion on value for money

15 The ambulance service provides a life-saving service to some patients, is highly regarded by the public, and rightly remains committed to providing a rapid response to urgent and emergency calls at a time of steadily growing call volumes. But, until April 2011, the Department's emphasis on response time as a measure of performance rather than on a more rounded view of clinical outcomes, meant that the incentive structure did not encourage resource optimisation.

16 In addition, limitations in management information and benchmarking prevent the Department, commissioners and the ambulance service driving improvement – as demonstrated by the wide variations in the efficiency of resource use across the ambulance services, even after allowing for external factors such as geographic variations. These differences indicate that value for money is not being achieved across the entire network. The introduction of a new outcome measurement regime, together with our recommendations, may begin to address these problems and help deliver better value for money in the future.

Recommendations

17 A coordinated approach across the health sector will be required if the full benefits of ambulance service transformation are to be realised. Our recommendations are aimed at the ambulance service, commissioners and the Department.

a **The ambulance service has a pivotal role to play in the performance of the entire urgent and emergency care system to improve its integration, cost-effectiveness and consistency.** The Department, and in future the NHS Commissioning Board, has a role in helping to bring about a better model by ensuring that existing specialist knowledge of ambulance commissioning is not lost. Commissioners should increase the use of the levers within contracts to develop an integrated emergency care response model which incentivises service improvements, reduction in demand and reduction in conveyance rates to accident and emergency departments and places the ambulance service at the heart of this model. These arrangements should operate within an overarching urgent and emergency care strategy to encourage integrated and consistent services. In particular, commissioners need to ensure that:

- work to develop local directories of services continues at pace; and
- alternative destinations to accident and emergency departments are available.

b **Response time targets have been the major priority for ambulance services for over a decade but outcome indicators have now been introduced.** The ambulance services are a clear example of what gets measured gets done. The new clinical quality indicators show that the Department recognises that change is needed. The new measures and the performance regime need to be carefully thought through to deliver the right balance to preserve rapidity of response, but as one element of a more rounded response model. The Department needs to establish how the 'call connect' process during call initiation can be adjusted to allow more flexibility within the model. Ambulance services and commissioners will have to decide quickly how to balance these indicators and to what extent resources will have to be deployed in different ways.

c **Achieving efficiencies across the ambulance service will require strong leadership.** The Department, and later the NHS Commissioning Board, should provide leadership to the emergency and urgent care sector by putting in place a robust measurement and monitoring regime for the new clinical quality indicators, ensuring NHS ambulance services and commissioners have information which allows them to benchmark performance, and compare outcomes, in order to deliver the best performance and value for the system overall. It needs to ensure that hospitals provide good quality rigorous outcome data and that ambulance services have the means to escalate data quality issues, otherwise the effort to re-orientate to more sophisticated outcome measures will fail.

d **Ambulance services' greatest challenge over the next four years will be to improve efficiency in their resource bases while managing demand in a different way.** Ambulance services should work more closely together to identify opportunities to drive efficiency improvements in the way their resources are utilised and identify operational efficiencies. In particular, ambulance services should share best practice:

- on the understanding of staff capacity and demand to better deploy staff in a way that maximises the opportunity to reduce journeys to accident and emergency departments through better triaging; and
- on managing sickness absence.

e **Objectives are not consistently aligned to ensure that the performance of the ambulance service can be maximised.** Commissioners should:

- apply appropriate incentives in contracts for ambulance services and hospitals to ensure patient handover times at hospital do not systematically exceed 15 minutes and turnaround times of ambulance crews are optimised; and
- incentivise health providers to establish and then maintain up-to-date information on local directories of services.

f **A lack of comparative information is available to benchmark performance alongside clinical quality indicators.** NHS ambulance services, in conjunction with commissioners, should develop a minimum data set, including staff utilisation, with agreed definitions that services and commissioners can use to benchmark performance and to monitor service improvements in the 'see and treat' and 'hear and treat' categories.