

*Performance Audit Report*

**Ambulance Service  
of New South Wales**

**Readiness to respond**

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## **Glossary of terms and abbreviations**

<b>AMROS</b>	An automated, computerised rostering program designed within the Ambulance Service of NSW.
<b>AEC</b>	Ambulance Education Centre.
<b>AVL</b>	Automatic vehicle location technology which shows an ambulance's position on a map on the dispatcher's computer screen to permit quicker and more accurate allocation of the closest or most appropriate vehicle.
<b>CAD</b>	The Ambulance Service's Computer Aided Dispatch system.
<b>CEO</b>	Chief Executive Officer.
<b>FACS</b>	Family and Community Service leave.
<b>GP</b>	General Practitioner.
<b>HREA</b>	Health and Research Employees' Association of New South Wales.
<b>IAB</b>	IAB Management Services, in-service contracted provider of internal audit services for NSW Government clients.
<b>IC</b>	Intensive Care. Queensland ambulance officers' clinical qualifications equivalent to Level 5 Paramedic qualifications in NSW.
<b>ICAC</b>	Independent Commission Against Corruption.
<b>LAH</b>	Living Away from Home allowance paid to officers temporarily working at a station other than their usual one.
<b>LTO</b>	Life threatening only. When a particular hospital goes on LTO, its emergency department only accepts patients with life threatening conditions.
<b>MAS</b>	Metropolitan Ambulance Service (in Victoria).
<b>MDT</b>	Mobile data terminal. A transceiver, similar to those used in taxis, for transmitting incident information from the Operations Centre to ambulances and updates from the ambulance crew back to the Operations Centre.
<b>MICA</b>	Mobile Intensive Care Ambulance. Victorian ambulance officers' clinical qualifications equivalent to Level 5 Paramedic qualifications in NSW.

<b>MIS</b>	Management information system.
<b>MOL</b>	Minimum Operating Level. Staffing levels introduced in Sydney in 1996 following industrial negotiations between the Service and HREA, and intended to ensure that rosters in Sydney provide sufficient officers at agreed stations.
<b>MRU</b>	Medical Retrieval Unit.
<b>Paramedic</b>	In NSW, an ambulance officer who has completed Level 5 clinical training. Equivalent to a MICA Paramedic in Victoria and an IC Paramedic in Queensland.
<b>PTO</b>	Patient Transport Officer. An ambulance officer with training appropriate to non-emergency patient transport.
<b>QAS</b>	Queensland Ambulance Service.
<b>RAV</b>	Rural Ambulance Victoria.
<b>SAAS</b>	South Australian Ambulance Service.
<b>SEC</b>	Sporting events coverage, an allowance paid to ambulance officers attending sporting events such as race meetings.
<b>SES</b>	State Emergency Service.
<b>SLA</b>	Service Level Agreement <sup>1</sup> .
<b>UHU</b>	Unit hour utilisation. A measure of productivity of ambulance crews.

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<sup>1</sup> “A service level agreement is both a process and a document. The service level agreement process involves the customer and service provider agreeing on suitable targets for particular services. This process is also treated as a commercial transaction... A service level agreement document is like a contract. It formalises an agreement between two parties by setting out a minimum level of service”, *Service Level Agreements: Guidelines for Public Sector Organisations*, NSW Premier's Department, Corporate Services Reform Team, 1999

# **Executive Summary**

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## Executive Summary

### **The performance audit**

This performance audit examines the efficiency and effectiveness of staff deployment practices and systems within the NSW Ambulance Service (the Service).

The audit considers, inter alia, the extent to which resources are managed to meet variations in demand for services. It also examines resource modelling, rostering, aspects of leave and work practices, training, structural matters and alternate resource options. Governance and ethics issues are canvassed, as is the key issue of how effectively ambulance operations are integrated within the NSW health system.

### **Audit Opinion**

**This performance audit indicates that the Service has considerable work to do to reach its aspirations of being recognised amongst leading examples of best practice services<sup>2</sup>.**

**The commitment of the Service to serving the community and the professionalism of the Service's officers is not in question. It is, however, apparent that a number of barriers to performance will need to be overcome for the Service to perform as well as it would wish.**

**The Service has not been static and has taken steps to improve its services. Setting up of the Medical Retrieval Unit with NSW Health<sup>3</sup> is an example of best practice. Nevertheless, considerable challenges remain. Some of the changes required to be addressed are outlined in this report.**

**NSW was the last major ambulance service in Australia to implement a computerised dispatch system. Even so, the CAD system, introduced over 2½ years ago, is yet to deliver the full range of expected benefits and improvements. The effective use of CAD information is not yet widespread, and the Service has recently received a consultant's report which raises a number of concerns about data reliability.**

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<sup>2</sup> The Service's vision statement: "Together we will be the world leader in ambulance services providing a shield of protection to our community", *Annual Report 1999-2000*, Ambulance Service of NSW

<sup>3</sup> The MRU coordinates all medical retrievals and intensive care beds across NSW and manages tasking and job allocation of the State's nine medically accredited helicopters, the four air ambulance fixed wing aircraft and, more recently, the Royal Flying Doctor Service aircraft at Dubbo. The MRU also provides a "bed finding" service for rural practitioners wishing to transport patients to city-based intensive care units as well as providing on-line clinical advice and support and coordinating complex clinical cases such as those associated with neo-natal intensive care.



**Several aspects of the Service's resource management methods do not reflect best practice. Moreover, its overall performance appears not to be keeping pace with improvements in response times nationally and internationally. This report seeks to assist the Service in identifying impediments to improvement and realising opportunities.**

**The audit opinion is based on the following findings.**

**Effectiveness**

Ambulance services worldwide use response time to emergency calls as a measure of their performance and effectiveness. The Audit Office thus sought to develop an opinion about the Service's responsiveness (measured by its *activation* and *response* times).

The Audit Office was advised that at the time of audit fieldwork, very limited CAD data on responsiveness were available, and accuracy issues were still being resolved. Pre-CAD statistical reports were based on manually completed case sheets. These are still being used by the Service to publicly report its performance. However, changes in data collection techniques with the introduction of CAD have made the use of case sheet data unreliable for performance benchmarking or to examine performance trends.

Reliable, continuous performance measurement for an activity such as ambulance service responsiveness is of extreme significance to the community, perhaps more than for many other government services. Given this, it is disappointing that as a consequence of implementing CAD the Service has lost the ability to track reliably changes in performance over recent years, or to accurately report current performance.

As a consequence, the Audit Office is not in the position to comment authoritatively on the Service's performance. Current performance reporting by the Service remains heavily qualified and unreliable, and will continue to be so until July 2001.

Whilst definitive data are unavailable, the Service has agreed that overall responsiveness has not improved on 1997 performance (despite the investment of \$34 million in new communications and dispatching technology). The Service has also agreed that in certain areas of the State performance is not keeping pace with improvements in response times being achieved by best practice ambulance services. Table 2 and Table 3 in the report provide more detail on the analysis performed by the Audit Office.

### **Efficiency and Economy**

In terms of efficiency and economy, the Service has agreed that in many parts of the State demand is growing and the Service has not adjusted historical deployment practices to ensure that resources are able to be deployed appropriately to the locations and times of highest demand for ambulance care. As a consequence of not being able sufficiently to roster resources to best meet demand, overtime levels are consistently high, and growing as a cost factor for the Service (up 23% in 1999-2000).

Resource modelling is a complex issue, but is fundamental to effective resource management and deployment for the Service. The Service's present practices require enhancement to measure overall resource requirements better, and to improve its ability to take action to measure workload, utilisation and responsiveness by station and by shift. With this greater knowledge, action will be required to ensure that required resources for roster positions are available. Action will also be required to enable greater flexibility in resource deployment so that resources can be deployed for maximum efficiency and patient benefit.

The Service experiences considerable efficiency and economy penalties from its interaction with other elements of the NSW health system. Problems with ambulance diversion and extensive waiting at some hospitals to transfer patients to emergency departments continue to represent significant obstacles for an efficient operation. For example, time lost by patients and crews in restricted access to Sydney and Central Coast hospital Emergency Departments increased by 11% to 8,234 hours in 1999-2000. There is an urgent need to address these and other difficulties with the health system which are affecting the Service's efficiency, revenue streams and resource management.

Operationally, there is a range of improvements which the Service should consider to enhance its flexibility and economy. Various internal procedures and arrangements warrant attention to facilitate smoother and more effective operating arrangements.

**Report Structure**

This report details a range of barriers to performance which the Audit Office observed, viz.:

- strategic barriers to performance
- structural barriers to performance
- operational barriers to performance.

The more of these barriers which can be overcome, the more performance can be improved. The challenge is considerable.

To assist in this challenge, this report outlines many ways in which resource deployment and utilisation can be improved. It seeks to serve as a catalyst to open up the issues to be resolved, and to provide insights into the nature of existing difficulties and the means by which they might be addressed.

The Ambulance Service has responded positively to the findings and suggestions of this report, which were reported progressively to management throughout the course of the audit. A number of initiatives were put into effect immediately, and more continue to be considered and examined.

## **Recommendations**

### **1. Enhance the accountability framework for the Service**

- the governance framework for the Service should be simplified to reinforce direct lines of accountability of the Service to its Board, and of the Board to the Minister
- expand the range of key performance indicators for performance measurement
- review relationships and accountabilities between Area and Operations Centres in the new Metropolitan/Rural structure
- consider additional change management techniques to address more effectively barriers and impediments to the effective implementation of new technologies and structures.

### **2. Enhance public performance reporting**

- re-establish public reporting of reliable responsiveness data and trends
- finalise deliberations with the Convention of Ambulance Authorities to benchmark and report the comparative performance of ambulance services.

### **3. Work towards a "whole of Health" delivery of ambulance services**

- clearly set out future directions and clinical relationships and networks within the Health system
- identify external relationships to ensure interchange of information and consistency of standards
- review the Service's revenue sources and charging structures
- develop an appropriate package of non-emergency transport services for hospitals
- review strategies for the deployment of Paramedics
- review the contribution the Service makes to the State's rescue capabilities.

**4. Further develop management information capabilities to support decision making**

- ensure that the Board regularly receives reports which address issues of levels of activity, staffing levels/utilisation and significant equipment deficiencies
- fully implement rostering automation software for all roster preparation
- develop and implement resource modelling tools to determine optimal staffing levels and deployment strategies
- develop capabilities to analyse workload, utilisation and responsiveness at station and shift level.

**5. Identify and remove barriers to flexibility of resource deployment**

- review interpretation and application of current Award conditions
- improve flexibility of Award conditions
- review management and work practices contributing to inflexibility
- monitor developments in best practice within the Service and elsewhere.

**6. Enhance consultation with external stakeholders**

- implement means of regularly identifying customer and stakeholder expectations and perceptions of the Service's performance
- develop means of keeping the broader community informed of the Service's progress, directions and plans.

**7. Review recruitment and development strategies**

- implement enhanced management training and development programs
- maximise opportunities for workplace-based distance learning and training
- review arrangements and strategies for Retained and Honorary Officers, Patient Transport Officers and communications staff.

**8. Continue to place a high priority on addressing issues relating to culture and ethics**

- increase ethics training and awareness activities
- review and update previous risk assessments and control reviews, including approval of overtime.

## **Response from the Ambulance Service of New South Wales**

*Thank you for the opportunity for the Ambulance Service to respond to the performance audit conducted by your office. This letter provides a broad response to the key issues arising from the audit along with our response to the report's specific recommendations.*

*The report identifies that the Ambulance Service of NSW is emerging from a period of executive and organisational change at a time when, world wide, ambulance services are addressing industry changes driven by technology, rising skills as ambulance officers emerge as health professionals and an increasing emphasis on accountability, quality and efficiency of services.*

*Many of the challenges associated with these changes have been recognised during the audit and the recommendations contained in the report are consistent with the significant reform agenda developed by the Ambulance Service Board.*

*While the report seeks to recognise current changes facing the ambulance industry, it is important to note that for the Ambulance Service of NSW. These changes can be charted back to 1996 with the reforms to ambulance officer training and planning for the new computerised dispatch system that began in that year. The subsequent implementation of the AmbCAD system triggered a substantial restructure of operational ambulance services during 1998, which was followed by a review of financial systems and controls initiated by the Board early in 1999. More recently, the Service has restructured the senior executive and recruited a new executive team.*

*Against this background, the Ambulance Service welcomes the broad thrust of the recommendations arising from the performance audit. The Service is moving to further drive improvements in the timeliness and quality of care delivered to patients by focusing on better use of improved information collection systems, management development and working with staff to develop more responsive and flexible management practices and workplace procedures. The recommendations from the Performance Audit provide a strong endorsement of this approach.*

*Similarly, recommendations encouraging ambulance participation with the broader health system support the ongoing commitment of the Service to further developing the role of the Service within NSW Health. The report highlights the recently enhanced Medical Retrieval Unit, which coordinates aero-medical services and retrievals across the State, as a best practice example. Further opportunities are currently being pursued through the rural reforms within the “Government Action Plan for Health”, including co-location of ambulance services with other health related service providers at 13 “Multi-Purpose Service” sites across rural NSW.*

*The Service will also examine opportunities within the various health community forums to consult on ambulance issues. Ambulance services are always of great interest to the community and the Service recognises the need to find efficient and effective ways of improving community consultation and participation across the State.*

*During this period of reform, the Service has been assisted in maintaining high quality ambulance care while managing substantial increases in workload, technology and costs through significant funding increases and capital investment. However, the Service recognises the need to continue efforts to align current cost structures to funding levels and review historical insurance and levy arrangements.*

*The recommendations about the governance structure of the Ambulance Service must be considered in the light of the broader health system and are not accepted by the Service. Clear lines of accountability exist and are consistent with those of other NSW Health agencies.*

*The report carefully acknowledges the risks inherent in attempting comparisons between data sets with different counting conventions and definitions and that international standards are not rigorously defined. Nonetheless comparisons are drawn and it is important that one point is reinforced. Under the manual system, response times were measured from the completion of the “000” call. With the introduction of AmbCAD, response times are now measured from the commencement of the “000” call. Consequently the call-taking component of activation of an ambulance was not previously measured. This difference is estimated to be approximately one minute.*



*It is not correct to expect the AmbCAD system in itself will improve overall response times. Although activation times have improved, overall response time improvement will only be realised when the information available from the AmbCAD system is used to target the deployment of ambulances to the places and times where and when they are needed most.*

*The Service remains confident that following full implementation of AmbCAD and the achievement of targeted deployment of ambulances, expected improvements in performance, including response times where appropriate, will be realised.*

*Overall the Report is of assistance to the Service in assessing the changes that have occurred and identifying what remains to be done. The Service will use the recommendations as a reporting framework against which progress can be measured.*

Yours sincerely

Greg Rochford  
Chief Executive Officer

Letter received by the Audit Office of New South Wales:  
28 February 2001

Attachment 1	Response to Recommendations
Attachment 2	Factual Corrections



# 1 Introduction

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## 1.1 Introduction

### About the audit

This performance audit examines the efficiency and effectiveness of staff deployment practices and systems within the Ambulance Service of New South Wales (the Service), with a major focus on how resources are managed to meet variations in demand for services.

The audit reviewed systems and practices at selected locations across the State, and formed an audit opinion based on the adequacy of actual operations against the following audit criteria:

- response times, activation times, patient condition and other performance measures
- the extent to which best value is achieved in the organisation and deployment of resources
- capabilities and effectiveness of management information and control systems
- clarity of accountability and effectiveness of service planning and resource allocation systems and protocols
- quality of communication between call centres, stations, vehicles, hospitals and trauma centres.

## 1.2 Audit objectives and scope

### Issues addressed by the audit

Issues to be examined during the audit were initially identified as:

- clarity of accountability within the management structure
- comprehensiveness and effectiveness of management information reporting and follow-up
- flexibility of staff deployment and resource allocation practices.

During the audit other issues emerged as important factors in determining the Service's ability to deploy and utilise its officers efficiently and effectively, viz:

- the health system and hospitals can have a significant effect on the Service's ability to respond. Issues include: the level of access to emergency departments; non-emergency transport; and nurse escorts
- the Service's clinical structure and relationships have a critical influence on staff deployment practices and performance.

### 1.3 Methodology and report structure

#### Report structure

In evaluating the effectiveness of the Service's staff deployment practices, the audit identified barriers to improvement at several levels:

- there are *strategic barriers* in the Service's relationships with the Health system
- there are *structural barriers* in the Service's own structure and style of management
- there are *operational barriers* in many of the Service's systems and processes.

This report is structured accordingly. The report seeks to serve as a catalyst to provide insights into the nature of existing difficulties and the means by which they might be addressed.

The audit:

- reviewed relevant documentation and undertook a literature review
- interviewed Ambulance Service managers and employees and observed systems and procedures in practice
- conducted consultation with Area Health Service and hospital management
- interviewed representatives of interstate ambulance services to observe their approaches to issues in common.

**Scope and timing of audit fieldwork** The Audit Office visited 17 ambulance stations and five Operations and Communications Centres, interviewing over 80 officers and managers between May and October 2000. The selection of stations aimed to capture the experiences of ambulance staff in rural and metropolitan areas serving communities with different levels and types of demand.

Two Area Health Services and two hospitals were also visited, as was one Police Local Area Command and four interstate ambulance services.

**Use of benchmarking** The audit includes discussion of practices of other ambulance services and some benchmarking of performance. The use of external comparisons and benchmarking is an established means of seeking continuous improvement towards best practice. It is thus a key element of performance audit methodology.

**Limitations of benchmarking** However, reference to interstate and overseas practice should not be taken to imply that other services have found all of the right answers. Their approaches have not been audited or critiqued by this audit for gaps or flaws, which are bound to exist. Consultation with interstate services was confined to senior management, and did not extend to soliciting the views and practical experiences of their operational level officers as it did in NSW.

Neither is the use of comparisons intended to suggest that the NSW Service has not explored a range of initiatives. However, some of the practices observed elsewhere appear meritworthy, and the Audit Office considers that some of those practices deserve consideration. For example, initiatives concerning better data, flatter management structures, lower level accountability, responsibility for decision making, and communications.

**Allegations of corruption** Another source of influence on the audit was a number of written allegations, received before and during this audit. Some were received through Members of Parliament, and some were received directly. These allege the existence of a range of problems within the Ambulance Service. Similar allegations are also known to have been received by the Independent Commission Against Corruption (ICAC) and the Ombudsman.

Some allegations have referred to policy and procedural issues, such as the “roorting” of rosters and overtime to benefit small groups of officers. These allegations have been considered as part of this audit.

A number of other matters have also been raised in complaints which concern the culture and ethics within the Service. Those complaints have alleged issues of a serious nature which are difficult matters to address, and fall outside the ambit of this audit.

**Action taken has steps reduced the level of formal complaints**

Management of the Service has advised the Audit Office that all allegations have been properly investigated, and that in only a few isolated cases has disciplinary action been justified. In response to the level of complaints being received in recent years, management has taken a number of steps, including revising the Code of Conduct and establishing a Professional Standards and Conduct Unit.

The Service advises that there has been a substantial reduction in the volume of formal complaints. This is encouraging.

**Ongoing efforts are needed to entrench ethical culture**

However, during the audit there were indications of continuing concerns from some quarters within the Service. This does not detract from the efforts made to date, but does reinforce the need for ongoing work to continue to address the underlying causes of allegations. Without such action, continuing unrest (whether justified or not) has the potential to undermine the credibility of the Service with the community, with stakeholders and with its employees. Recently issued material on ethical culture developed by ICAC may be of assistance to the Service. Its research publication<sup>4</sup> on ethical culture issues is very informative and helpful. As a corollary, ICAC has also developed an Ethical Culture Survey Kit which agencies can use.

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<sup>4</sup> *What is an Ethical Culture? Key Issues to Consider in Building an Ethical Organisation*, Independent Commission Against Corruption, November 2000.

## **1.4 Acknowledgments**

The Audit Office gratefully acknowledges the cooperation and assistance provided by representatives of the Service and of the Department of Health, NSW Police Service and the ambulance services of Victoria, Queensland and South Australia.

Specifically, the Audit Office wishes to acknowledge the contribution made by Ambulance Service officers and managers at each station and office visited.

### **Audit team**

The team which conducted this audit was Ai-Binh Phu, Geoff Moran and Stephen Horne.

## **1.5 Cost of the audit**

### **Audit costs**

The cost of the audit was \$334,542. This includes an estimated \$9,800 for printing.



## **2 Performance and outcomes: a comparison**

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## 2.1 Introduction

The Service has invested heavily<sup>5</sup> in implementation of its Computer Aided Dispatch System (CAD) in the expectation that its responsiveness will be improved. Notwithstanding such investment, overall responsiveness is not yet showing any significant improvement. It remains similar to 1997 levels, and does not appear to be keeping pace with improvements in response times by other ambulance services nationally and internationally.

Data measurement and comparison issues owing to the implementation of CAD have resulted in a loss of ability to reach an agreed basis for examining performance trends over recent years. Public reporting of performance data has been heavily qualified by the Service for some time, and this will continue until July 2001.

Responsiveness data and performance reporting issues for the Service are examined below.

## 2.2 Responsiveness of the Ambulance Service

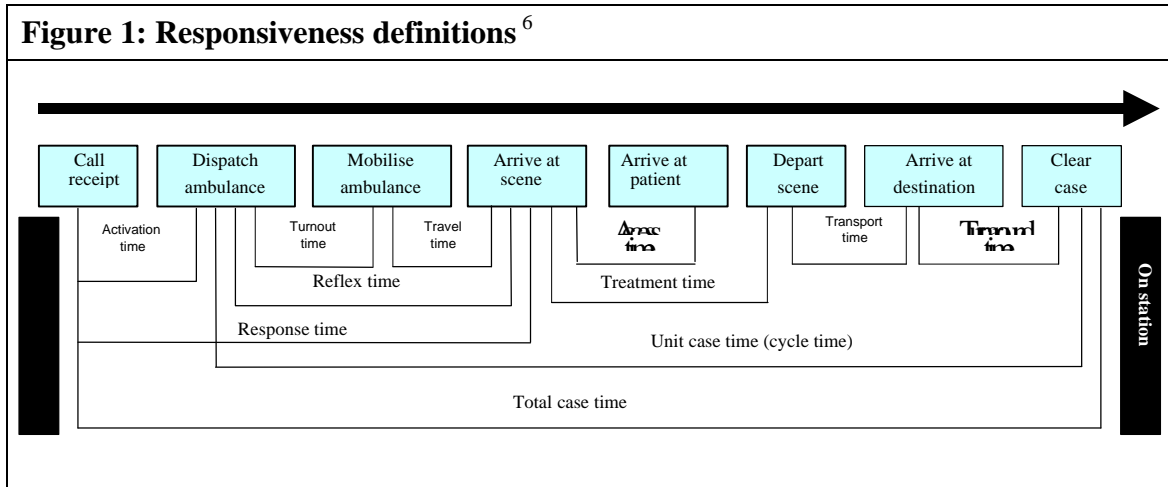
### Performance measures

Arguably the single most important performance indicator for any ambulance service is how quickly it responds to an incident and places the patient in the care of skilled ambulance officers. Two measures are often used to address this: *activation time* (time taken to dispatch an ambulance following an emergency call), and *response time* (time from when a call is received until the arrival of an ambulance at the scene). The following diagram breaks down the total time taken for each case into various components.

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<sup>5</sup> "The implementation of the Service's Computer Aided Dispatch System (CAD) was substantially completed during the year (9 months behind schedule). The cost of this project was approximately \$28.0 million and included the construction of a new Sydney Ambulance Centre", *Auditor-General's Report to Parliament 1999 Volume Three*.

The Ambulance Service advised in December 2000 that "cost of the AmCAD project was \$20 million with \$14 million spent on associated communications costs (radio expansions)."



Responsiveness standards, widely referred to as the ORCON standards and established over two decades ago, are used as the basis of targets by many ambulance services worldwide, including the NSW Service<sup>7</sup>.

**Table 1: NSW Ambulance Service responsiveness targets for emergency calls**<sup>8</sup>

	Activation time	Response time	
	95% of calls within	50% of calls within	95% of calls within
<b>Urban</b>	3 mins	8 mins	14 mins
<b>Rural</b>	3 mins	8 mins	19 mins

At the time of the audit, the responsiveness statistics reported by the Service were based upon data taken from the case sheets completed by officers each time a patient is transported. Accurate measurement of responsiveness from case sheets has always been difficult. It requires synchronisation of

<sup>6</sup> *Ambulance Services Australia Report 1998–1999*, The Convention of Ambulance Authorities. These definitions are not yet consistently used by all services. In the measures reported under “Operational Performance” in the Auditor-General’s Report to Parliament, the NSW Ambulance Service uses “time on scene” (equivalent to “Treatment time”) and “case cycle time” (no equivalent).

<sup>7</sup> Despite the clarity of Figure 1, international standards are not necessarily as rigorously defined as this may imply. In particular, the time from when activation and response times are measured varies between ambulance services. With manual systems the information from the caller was written on a card, and measurement of activation time commenced on completion of the card. Many services still measure activation times this way, whereas the NSW Service now measures from the “first ring” of the incoming call. The difference, while small, will affect comparison of activation times more than it will comparison of response times.

<sup>8</sup> *Annual Report 1998–99*, Ambulance Service of NSW, and Board Reports

timekeeping between call takers, dispatchers and officers on the road. It also depends on the officers, under the pressures of attending to patients, completing paperwork promptly, legibly and accurately. Data collected by the CAD system should be more accurate than case sheet data, and thus was sought by the Audit Office. However, the Audit Office was advised that very limited CAD data on responsiveness were available, and accuracy issues were still being resolved.

In the absence of readily available CAD data, case sheet data were used to examine longitudinal trends in responsiveness. Case sheet data have been the principal means by which Service management and the Board monitor and report responsiveness. This was still the case at the time of finalising this report.

### **Responsiveness Trends 1997-2000**

Analysis of the case sheet data reported by the Service indicates that its responsiveness, as measured by activation and response times (Table 2), has varied across the State since 1997<sup>9</sup>. Northern and Southern Operations Centres demonstrated deteriorating activation and response times prior to CAD. Responsiveness of Sydney and Western Operations Centres was static before CAD.

The change in procedure when CAD was implemented has added, according to the Service, one minute to reported activation and response times. However, as this estimate does not appear to have been based on rigorous analysis, it cannot be assessed whether or not performance has altered significantly since this change.

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<sup>9</sup> The Service states that the apparent deterioration is largely due to a change in reporting: “activation and response times have increased primarily due to the introduction of the Computer Aided Dispatch system because timing of calls is measured from when the call takes place rather than from when the call is complete” (*Auditor-General’s Report to Parliament 1999 Volume Three*). The difference due to this change in method of measurement occurred when the Operations Centres went on line: Sydney in July 1999, Northern in August 1999, Western in July 1998 and Southern in May 1999.

**Table 2: NSW Ambulance Service responsiveness indicators<sup>10</sup>**

Indicator	Sydney				Northern				Western				Southern			
	1996-97	1997-98	1998-99	1999-2000	1996-97	1997-98	1998-99	1999-2000	1996-97	1997-98	1998-99	1999-2000	1996-97	1997-98	1998-99	1999-2000
<b>Activation Time<sup>a</sup></b>																
Average (mins)	2.58	2.41	2.61	3.42	2.95	3.05	3.24	3.76	3.13	3.31	4.48	4.26	2.33	2.24	3.37	3.02
% ≤ 3 mins	83%	85%	80%	64%	71%	70%	67%	58%	69%	66%	42%	47%	80%	80%	68%	73%
<b>Response Time<sup>b</sup></b>																
Average (mins)	10.06	9.79	9.84	10.89	10.25	10.41	10.92	11.69	8.92	8.82	10.05	9.96	9.96	10.05	11.78	11.46
% ≤ 8 mins	41%	44%	44%	35%	52%	50%	46%	40%	70%	69%	56%	59%	56%	55%	45%	45%
% ≤ 14 mins	86%	87%	86%	81%	n.a.	81%	80%	76%	n.a.	88%	85%	85%	n.a.	81%	74%	76%
% ≤ 18 mins	n.a.	95%	95%	92%	89%	89%	88%	86%	90%	91%	90%	89%	88%	88%	83%	85%

a Time booked to time out.  
b Time booked to time on scene.

### Responsiveness Benchmarks

Benchmark data independently compiled by the Convention of Ambulance Authorities suggests that the NSW Service is not as responsive as most other States. Comparison with interstate response times (Table 3) shows 1999 figures for NSW slower than all States except Tasmania (and, for the 90<sup>th</sup> percentile response time, Victorian rural)<sup>11</sup>.

**Table 3: Comparison of response times<sup>12</sup>**

	NSW	Vic MAS	Vic RAV	Qld	WA	SA	Tas	ACT
Code 1 Emergency Response Times (by percentile):								
Time within which 50% of cases are responded to (minutes)	10	9	7.9	8	8.15	7.21	10.5	6.5
Time within which 90% of cases are responded to (minutes)	18	14	21	16	14.18	12.51	22.05	11.1

The Service says that the data published by the Convention are

<sup>10</sup> Auditor-General's Report to Parliament 1999 Volume Three, updated by the Ambulance Service of NSW

<sup>11</sup> Such benchmarking needs to be interpreted with caution. These data are published by third parties and are not attested to by the Audit Office. Whilst they may inform a general analysis, specific conclusions may be problematic. For example, all States except Victoria report combined metropolitan and rural results, and the Victorian data themselves (and NSW data in Table 2) indicate that there can be dramatic differences between these. The NSW Service reports response times for all "000" calls, whilst some other services report only on those cases identified as serious or life threatening.

<sup>12</sup> Ambulance Services Australia Report 1998–1999, The Convention of Ambulance Authorities (Table 10)

not accurate and advises that the Convention is holding a workshop in March 2001 to address the problems of consistency in data definitions, benchmarks and standards.

A consultant's report obtained by the Service has been relied upon to indicate a likely post-CAD improvement in one component of responsiveness (activation time). This is not disputed by the Audit Office. However, it is hard to be certain of the quantum of such improvement.

How this affects the comparative benchmark data published by the Convention is uncertain, as all Services would need to be measured on the same basis. Table 3 shows that in 1998-99 the Service was ranked in 6<sup>th</sup> position (for response time at the 90<sup>th</sup> percentile). Allowing a raw one minute improvement in NSW responsiveness still leaves it in 6<sup>th</sup> position out of 8.

More recent data for 1999-2000 published by the Productivity Commission<sup>13</sup> give exactly the same result.

**Problems with measuring and reporting responsiveness**

Changes due to the introduction of CAD have not been accompanied by a robust strategy to measure and monitor performance improvement throughout the changeover. Changes in definitions and measurement methods have made comparisons with pre-CAD data uncertain and disputed, and rendered trend analysis ineffective.

A means for resolving data measurement complexities was not instituted beforehand, and it is thus now very difficult to unbundle data for the purposes of analysis (i.e. to compare like with like). It has not been possible to obtain robust, agreed data to provide a simple "before and after CAD" analysis of responsiveness.

The introduction of CAD is a very positive and significant step. However, reliable, continuous performance measurement for an activity such as ambulance service responsiveness is of extreme significance to the community. Perhaps more so than for many other government services. Given this, it is disappointing that as a consequence of implementing CAD the Service has lost the ability to track reliably changes in performance over recent years, or to accurately report current performance.

The Service heavily qualifies its publicly reported performance data, and has done so for some time. The Service has indicated

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<sup>13</sup> *Report on Government Services 2001, Volume 2 Part E (Emergency Management): Table 11A.20, Steering Committee for the Review of Commonwealth/State Service Provision*

that performance data based on CAD will be used for public reporting from July 2001.

Early priorities in implementing CAD were directed at aspects other than providing management information. The Service advises that CAD implementation has now reached the stage where "CAD data is regularly used to produce reports and review trends."<sup>14</sup> Whilst limited evidence was able to be obtained by the Audit Office to validate the widespread use of such reporting, and active overall use of such data, its use by the Service at executive level is not disputed.

However, the Service's CAD review consultant observes that there are hurdles yet to be overcome concerning data reliability and effective use of information, once produced. The consultant has advised that "the system has yet to provide management with satisfactory reporting on which to base its management decisions"<sup>15</sup> (reflecting on data quality issues and potential concerns about source algorithms). The consultant also advises that "it will be necessary for managers to be trained to understand the meaning of reports and how to utilise the reported information to better manage their operations. Information is only as good as the use to which it is put."<sup>16</sup>

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<sup>14</sup> *Report of Staff Deployment in the Ambulance Service of NSW: Comments and Suggested Changes Grouped by "Audit Findings"*, Ambulance Service of NSW, February 2001

<sup>15</sup> *AmbCAD Review*, APA Management Services, January 2001, page 13

<sup>16</sup> *ibid*

## 2.3 Changes in workload

**Workload patterns** The responsiveness of any ambulance service cannot be considered in isolation: it is a function of the workload to which the service must respond, and the utilisation of the resources which it has available.

**Inability to measure changes in workload** Problems with using case sheets as the basis of responsiveness indicators have already been discussed. Similar problems exist when case sheet data are used to measure workload.

At present the Service still uses case sheet data as the basis of its publicly reported workload. The Service actually reported a decline of over 15% in the number of cases handled in 1999-2000 because of its dependence on case sheets for data collection. It also reported a loss of \$1.6 million in revenue due to the same cause<sup>17</sup>.

CAD data, when the system is fully implemented, will provide a valuable tool to analyse and manage resources. Systems and software should be developed to interrogate CAD data in a variety of ways. For example, mapping workload data against response times and against resource deployment data.

The Service needs quickly to move towards exploiting the potential of CAD as a source of management data<sup>18</sup>. Attempts during this audit to obtain accurate and comprehensive workload figures from the Service's readily available sources of data were unsuccessful. The Service accepts this and, since completion of the audit fieldwork, has been moving in this direction.

**Ongoing CAD Implementation requires priority** Whilst accepting that CAD implementation needs ongoing priority attention, the Service expressed the view that "NSW was the last major Ambulance Service in Australia to implement

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<sup>17</sup> "An industrial dispute at the Service during 1999-2000 manifested itself in the introduction of paper bans (i.e. ambulance officers did not create the documents required for billing purposes)...

The Service estimates the paper bans resulted in a loss of revenue of \$1.6 million from emergency transports only.

The Service explained that the decline in the recorded number of cases and recorded kilometres travelled was primarily due to a period of industrial action which resulted in paper bans on all records relating to activity and revenue generation", *Auditor-General's Report to Parliament 2000 Volume Five*.

<sup>18</sup> The call-taking and dispatching functions of the 11 former manual communications centres are being progressively taken over by the CAD-equipped Operations Centres in Sydney, Charlestown, Dubbo and Warilla. Hence some care must be taken with the use of CAD data because of the "step" increases in reported caseload as manual centres are phased out. The manual centres in Wagga Wagga and Albury are still operational, so CAD data for the Greater Murray Area do not include their workloads.

Lismore and Coff's Harbour manual communications centres were closed in the second half of 1999.

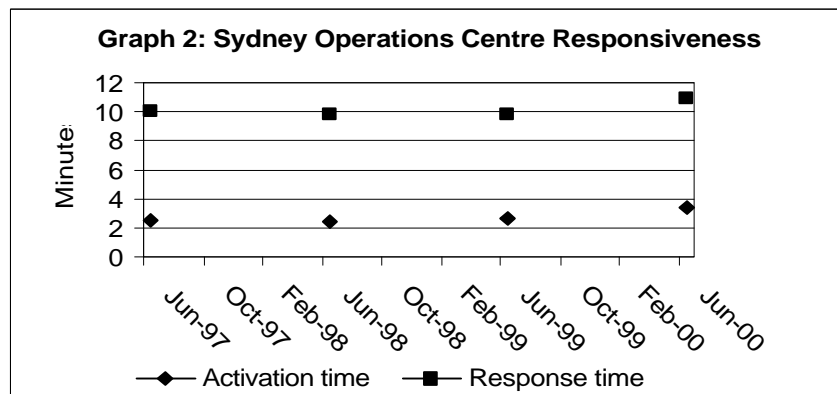
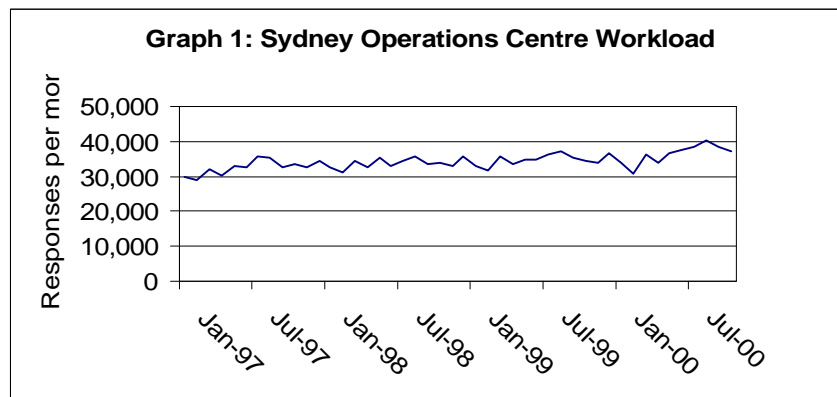


a computerised dispatch system and should be expected to lag behind other states in data use. UK experience shows that 3 to 5 years are required to build sufficient data, and organisational skills."<sup>19</sup>

Without doubt implementing CAD is a major undertaking. Implementation in the Service began around 2½ years ago<sup>20</sup>. Given the benefit of the practical experience of so many other services having already implemented CAD, it might be expected that implementation here could benefit from some fast tracking.

**Demand is growing in Sydney**

Whilst comprehensive CAD data on overall workload may not currently be available, or able to be easily extracted, the Areas covered by the Sydney Operations Centre have not changed since it became operational, so CAD reports of its workload should be accurate.



<sup>19</sup> Report of Staff Deployment in the Ambulance Service of NSW: Comments and Suggested Changes Grouped by "Audit Findings", Ambulance Service of NSW, February 2001

<sup>20</sup> Dubbo went on-line with CAD in July 1998.

For the Sydney Operations Centre, the growth in workload has been accompanied by apparent increases in activation and response times (i.e. declining responsiveness). However, as already noted, changes in procedure mean that trends after July 1999 (when Sydney CAD commenced) cannot be compared reliably to earlier data.

The other element missing from such analysis is the staffing levels available to meet the workload. Adding that element to the above analysis would provide the standard of resource management analysis which the Audit Office considers should constitute the minimum. Even more sophisticated analysis would be desirable and should be explored by the Service.

Since conclusion of the audit fieldwork, the Service appears to have commenced using such tools to monitor workload and staffing levels. It must develop and deploy these throughout its operational management if it is to achieve its target activation and response times. It needs to use more sophisticated analysis, such as correlating monthly response times with workload and staff availability and utilisation for the corresponding period, to understand and control the underlying relationships more effectively<sup>21</sup>. It must also address the CAD review consultant's reservations about data quality.

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<sup>21</sup> The Service originally established the Sydney Staffing Committee in October 1998 to oversee implementation of the Sydney Staffing Review. With representatives of the Service and the union, it has since evolved into a forum in which management and union representatives discuss contentious staffing issues such as roster changes.

The Service has identified more efficient roster options to better align workload with available resources and, in particular, will introduce changes in Northern Sydney and Central Coast area. The Service anticipates that these changes will be implemented in February 2001.

The Rural Staffing Committee was established in August 2000 to oversee the implementation of the Rural Staffing Review. Its composition is similar to that of the Sydney Staffing Committee, and is currently negotiating Minimum Operating Levels on a station-by-station basis, as well as the requirement for on-call officers.

## 2.4 Benchmarking against other services

### Comparative data and practices

For comparison purposes, interstate ambulance services were visited during the conduct of this audit. Data were also obtained from overseas services. However, in view of concerns about data comparability, the Audit Office has tended to limit the use of quantitative comparisons. Comparisons have been used more extensively to examine qualitative issues.

Responsiveness comparisons between ambulance services are facilitated by the use of internationally standardised definitions of activation and response times (although, as noted above, the NSW Service changed its method of measurement on the introduction of CAD).

However, other comparisons, particularly those relating to operating costs, are difficult because of possible inconsistencies in the ways in which different services classify and report their activities.

Annual reports contain data to permit, for example, comparisons of productivity (such as the number of responses attended per ambulance service employee). However, comparison of the number of responses per head of population shows such marked differences between States as to raise queries about definitions and measurements. Widely differing use of volunteer ambulance officers also undermines the reliability of some comparisons.

Whilst care needs to be exercised in its use, comparative information should not be avoided as an aid to analysis. Even with differing bases of data, interesting trends and relativities can be identified. For example, Table 4 shows that: (i) ambulance expenditure increased between 1997–98 and 1999–2000 in absolute and per capita terms for all States; (ii) while it increased markedly in 1999–2000, per capita expenditure in NSW was nonetheless lower than in the other large States, Victoria and Queensland.

	NSW	Vic	Qld <sup>c</sup>	WA	SA	Tas <sup>d</sup>	ACT <sup>e</sup>	NT	Aust
1997-98									
Total (\$ million)	228	166	160	45	50	13	na	8	670 <sup>f</sup>
\$ per person	36	36	47	25	34	27	na	43	36 <sup>f</sup>
1998-99									
Total (\$ million)	234	188	170	45	58	14	na	9	718 <sup>f</sup>
\$ per person	37	40	49	25	39	30	na	48	38 <sup>f</sup>
1999-2000									
Total (\$ million)	272	207	175	58	63	15	9	9	808
\$ per person	42	44	50	31	42	32	30	47	43

The following notes to Table 4 are taken directly from the cited report.

- a Totals may not add as a result of rounding.
- b Expenditure data have been approximated using revenue data in 1997-98 and 1998-99.
- c 1999-2000 expenditure data are provided on an accrual basis and include expenditure on administration of the ambulance subscription scheme, first aid training and clinic transports. A full accrual breakdown of expenditure is not available.
- d Expenditure data are provided on a full accrual basis and exclude expenditure on administration of the ambulance subscription scheme, hospital based transport services, independent ambulance services, first aid training and clinic transport services.
- e For 1997-98 and 1998-99, the expenditure for ACT Ambulance Service was included in the ACT Emergency Services Bureau data and could not be provided separately. Total expenditure included expenditure for all four response agencies under the Emergency Services Bureau.
- f Excludes ACT.
- na Not available.

**Self funding levels for the Service have been lower than for other States**

Funding in the health area is a complex issue. The relative expenditure position of the NSW Ambulance Service shown in Table 4 may, in part, reflect different funding structures between ambulance services (since expenditure is necessarily limited by available funding).

To the extent that funds for the NSW Service are dependent upon the Service being allowed to levy charges and generate income<sup>23</sup>, the Audit Office has previously reported that interstate services have had higher charges and hence access to greater revenue:

The majority of Australian States have similar charging structures. It is notable that, with the partial exception of Western Australia, charges in NSW are lower than elsewhere in Australia, particularly in comparison to Victoria and Queensland<sup>24</sup>.

<sup>22</sup> Report on Government Services 2001, Volume 2 Part E (Emergency Management): Table 11A.24, Steering Committee for the Review of Commonwealth/State Service Provision

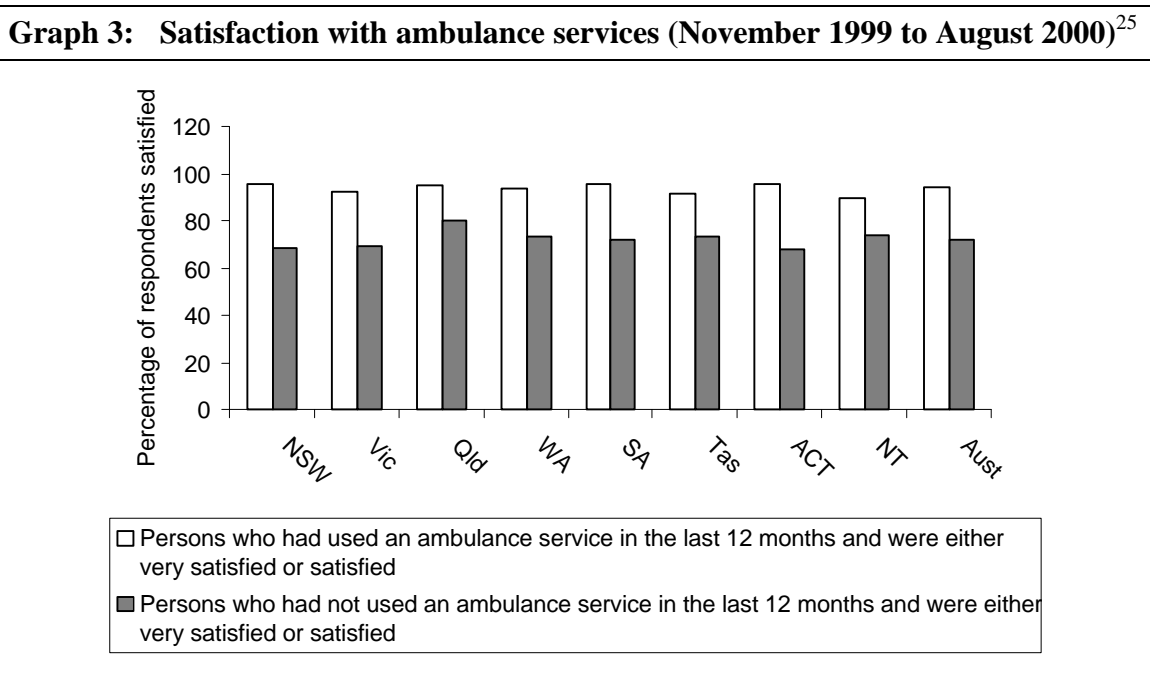
<sup>23</sup> 22% of the Service's total funding for 1998-99 and 1999-2000 came from transport fees, Annual Report 1999-2000, Ambulance Service of NSW

<sup>24</sup> Ambulance Service of NSW: Charging and Revenue Collection, the Audit Office of NSW, 1996

The current situation was not examined by the Audit Office as it was not the focus of this audit. The previous recommendations of the Audit Office in this regard (1996) sought to have various aspects of charging for the Service reconsidered and regularly adjusted. NSW Health has orally advised the Audit Office, however, that the structural difference between NSW and interstate charges has not changed since 1996.

**Benchmarking quality**

Benchmarking can also be useful to measure dimensions of Service quality, for example, patient satisfaction (see Graph 3).



**Community satisfaction measures**

The graph offers a comparison of user and non-user satisfaction with the services. It shows that NSW has amongst the highest community satisfaction ratings for recent users of its ambulance service. This represents an improvement for NSW over the previous result.

Despite the limitations of data comparability, annual reports of the Convention of Ambulance Authorities will become an increasingly powerful benchmarking tool to assist Australian ambulance services to identify and embrace relevant best practice.

<sup>25</sup> Report on Government Services 2001, Volume 2 Part E (Emergency Management): Tables 11A.21 and 22, Steering Committee for the Review of Commonwealth/State Service Provision:

- a. Persons aged over 18 years only included.
- b. Caution should be used where there are small differences in the results, which are affected by sample and estimate size.

Data published by the Steering Committee for the Review of Commonwealth/State Service Provision are of similar value.

**Clinical performance measures are needed**

Perhaps the most difficult performance indicators to develop are those which demonstrate the clinical outcomes of an ambulance service's activities. All services interviewed acknowledged both the importance and the difficulty of measuring the contribution made by ambulance officers to the condition and welfare of their patients.

In Victoria ambulance services are currently developing a clinical information system to improve timeliness and quality of data collection and analysis. The NSW Service has been reviewing its key performance indicators and developing new measures. It has also completed trials of a NSW Health-funded project to integrate case sheet and CAD data systems and revise and expand its clinical performance indicators<sup>26</sup>.

**Performance reporting and benchmarking is vital**

Public performance reporting and benchmarking is integral to performance accountability, and to effective service management. Continued efforts by the Service to produce meaningful performance data, and to become involved with constructive correlation research into performance data, are strongly encouraged by the Audit Office.

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<sup>26</sup> Report of Staff Deployment in the Ambulance Service of NSW: Comments and Suggested Changes Grouped by "Audit Findings", Ambulance Service of NSW, February 2001

## **3 Barriers to performance: strategic**

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### 3.1 A part of the health system

#### **Interaction with emergency health services**

Ambulance services are an integral part of the health system. Ambulance journeys usually start or finish at a hospital: either bringing patients into the system in an emergency; moving them within the system so that they can receive more specialised care or treatment; or taking them home.

#### **Emergency work**

Two types of ambulance journeys can be identified: emergency and non-emergency hospital transport. Emergency ambulance activities are the most visible, and typically account for around 75 per cent of cases handled by the NSW Service. This proportion varies in other States, as their ambulance services are involved to differing degrees in the non-emergency transport of patients within their health systems.

Emergency activities require officers with high clinical skills, equipment for pre-hospital care of patients, and vehicles capable of “lights and sirens” response and recovery of stretcher patients. While the emergency workload may seem random, it is reasonably predictable.

#### **Non-emergency work**

Non-emergency transport includes patient movements from hospital and nursing homes for day treatment, for discharge to home or a convalescent facility, or to another hospital or clinic (perhaps with more specialised facilities). To provide non-emergency transport, officers do not need to be as highly trained clinically. They need less specialist equipment, and their vehicles must handle ambulatory patients as well as those on stretchers. A single officer can be used to transport patients who do not require any monitoring or treatment en-route. If the patient is being administered a drug or treatment for which the ambulance officer or patient transport officer is not trained, the hospital usually provides an appropriately-qualified nurse escort.

Non-emergency work is usually tightly scheduled by hospitals to maximise productivity of facilities such as scanning or x-ray, whether within the hospital or operated by external service providers.



	<b>1996–97</b>	<b>1997–98</b>	<b>1998–99</b>	<b>1998–99 %</b>
Emergency responses:				
Trauma	141,304	154,649	158,847	21
Respiratory	36,975	40,600	39,426	5
Cardiac	52,538	50,990	48,281	7
Neurological	15,861	16,415	16,412	2
General medicine	226,604	254,548	273,109	37
Surgical	26,352	28,609	25,541	3
<b>Subtotal emergency responses</b>	<b>499,634</b>	<b>545,811</b>	<b>561,616</b>	<b>76</b>
Hospital responses	174,213	177,825	179,216	24
<b>Total responses</b>	<b>673,847</b>	<b>723,636</b>	<b>740,832</b>	<b>100</b>

The needs of emergency and non-emergency responses are quite different. It was suggested to the Audit Office that a system designed to respond effectively to emergency cases may not be able to handle non-emergency cases as efficiently as hospitals require. Each of these service areas is examined separately in the following sections.

### **3.2 Coordination of emergency transport with hospital emergency departments**

#### **Problems getting patients into hospitals**

Emergency patients transported by ambulance are taken to hospital emergency departments. It would be a reasonable expectation that all patients delivered to the emergency department would be transferred from the ambulance to the hospital very soon after their arrival. All patients arriving at the emergency department are examined (triaged). However, depending on the result of the triage and the number of cases already in the emergency department, patients may be left for some time on the ambulance trolley. This ties up the crew and the vehicle and prevents them being used for other emergency responses. Indeed, the most frequent complaints of Sydney ambulance staff regarding coordination with hospital emergency departments are longstanding ones: ambulance diversion and “trolley block”:

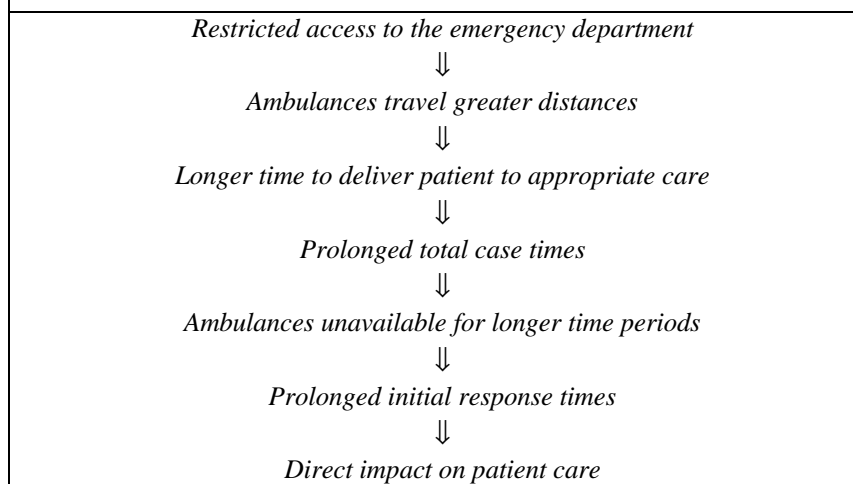
<sup>27</sup> Annual Reports 1997–98 and 1998–99, Ambulance Service of NSW

Available capacity is still a problem in many emergency departments. Some hospitals respond to a lack of capacity by using ambulance diversion as a means to reduce pressures on the emergency department.

Ambulance diversion is used by public and private metropolitan hospitals where ambulances can be diverted to another nearby emergency department. During periods of ambulance diversion, hospitals close their emergency departments to ambulances except those carrying patients with life threatening conditions.

An emerging issue in demand control is the practice of keeping patients on ambulance trolleys while waiting for a bed in the emergency department. When the emergency department is overcrowded, delays in patient hand-over can have the same impact on response times as ambulance diversion.<sup>28</sup>

**Figure 2: Impact of ambulance diversion on the NSW Ambulance Service<sup>29</sup>**



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<sup>28</sup> Hospital Emergency Departments: Planning Statewide Services, the Audit Office of NSW, October 1998

<sup>29</sup> ibid

**Diverting ambulances to more distant hospitals**

Ambulance diversion is referred to within the Service as LTO: life threatening only. Usually the Service is advised in advance that a particular hospital will be restricting access to its emergency department. Any crew carrying a patient with a condition which is not life threatening is then expected to transport its patient to an alternative emergency department. Depending on location, this will usually mean a longer trip for patient and crew. This will make the crew unavailable for the additional time taken to reach the alternative emergency department. However, hospitals do not always advise that they are restricting emergency department access, and the crew may only find out when it arrives. This can result in even greater inconvenience for the patient, and greater inefficiency for the Ambulance Service.

When one hospital “goes LTO” it increases the admissions to the alternative hospitals’ emergency departments. This starts a chain reaction (Figure 3), with other hospitals restricting access as their capacity is exceeded by the influx of cases from hospitals already restricted to life threatening only cases.

NSW Health has orally advised that improved bed management has reduced the levels of ambulance diversion occurring at some hospitals. However, the issue was acknowledged as still representing a significant problem and an ongoing issue of concern.

Emergency Department performance is measured against target treatment times for different degrees of urgency. Since 1996-97, the proportion of patients treated in the target time has increased steadily for the most urgent category, Triage 1 Resuscitation. In the next most urgent category, Triage 2 Emergency, performance has generally improved. However, for the lowest categories, Triage 3, 4 and 5, the proportion of patients seen within target times has decreased markedly<sup>30</sup>. Patients in Triage 3, 4 and 5 categories represent around 95% of Emergency Department presentations<sup>31</sup>. Furthermore, the Service's Board reports reveal that time lost by patients and crews in restricted access to Sydney and Central Coast hospitals increased by 11% to 8,234 hours in 1999-2000<sup>32</sup>.

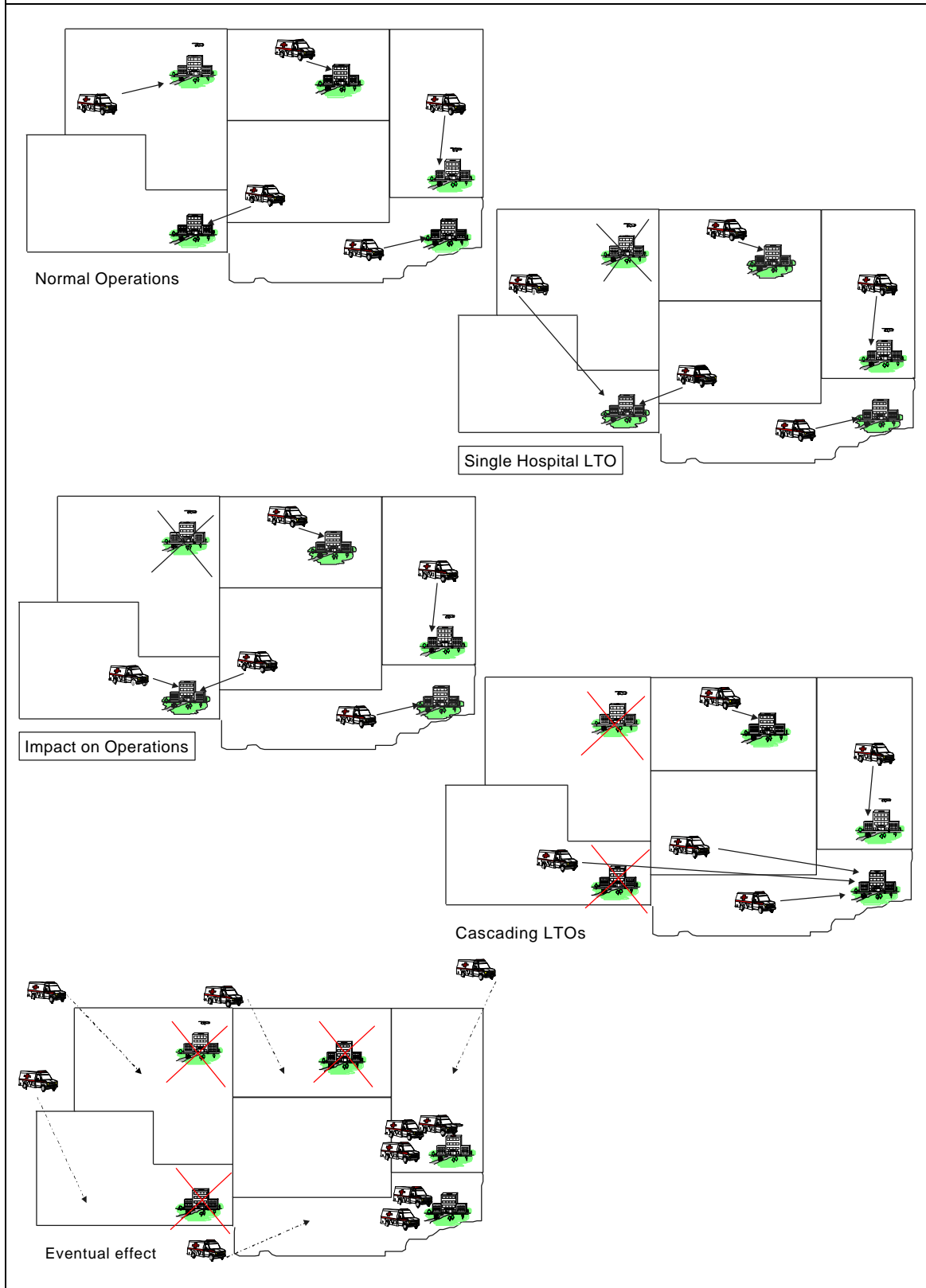
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<sup>30</sup> *Annual Report 1999-2000*, NSW Health

<sup>31</sup> *Hospital Emergency Departments: Planning Statewide Services*, the Audit Office of NSW, October 1998

<sup>32</sup> *Restricted Access to Emergency Departments*, report to end June 2000, Ambulance Service of NSW

**Figure 3: impact of ambulance diversion on the Service**



**Ambulances can be queued at hospitals**

Even when hospitals do not restrict emergency department access and divert ambulances, crews will often be queued with their patient on the ambulance trolley while waiting for a bed. The effect of this “trolley block” on the ability of the crew to respond to another case can be even more severe than when the ambulance is diverted, as the crew can be kept waiting for several hours.

Ambulance Service officers and managers are acutely aware of the time spent queuing, and 5 or 6 crews can be held up for hours at one hospital. The management at the Central Coast Area Health Service, for example, acknowledged that there can often be 10 or 11 ambulances queued at Gosford Hospital.

**Ambulance diversion causes “knock-on” effects**

An additional consequence of restricted emergency department access is that ambulances progressively “migrate” from their usual stations or locations to the hospitals which are still admitting patients, leaving geographical gaps with no nearby ambulance. Response times become longer as crews have to travel farther to incidents in their usual area of operations, or more distant crews have to respond.

Hospital and Ambulance Service may become caught up in a loop. Ambulances may be queued in an emergency department because there are no free beds. Beds are unable to be freed because the ambulances required to move the patients out of them are queued in the emergency department.

Particularly in the Sydney area, there is a significant amount of emergency department diversion experienced by the Ambulance Service (and previously reported in 1998 by the Audit Office<sup>33</sup>). This means that the Service is frequently compelled to carry patients to more distant hospitals, or to queue at emergency departments. This reduces the availability of ambulance crews for other emergency work (with possible adverse patient outcomes)<sup>34</sup>. It also increases the ambulance overtime needed to maintain the required level of service. From a quality perspective, this situation has the potential to jeopardise the welfare of patients who are unable to be promptly passed into the hospital system.

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<sup>33</sup> *Hospital Emergency Departments: Planning Statewide Services*, the Audit Office of NSW, October 1998

<sup>34</sup> “The most important determinant of successful cardiopulmonary resuscitation is the time interval from cardiovascular collapse to initial intervention. Because most patients are found to be in ventricular fibrillation, the time from onset to defibrillation is the key element in the acute management of the cardiac arrest victim. The chance of survival decreases 7% to 10% for each minute that defibrillation is delayed. The importance of early intervention is reflected in the “chain of survival” concept of emergency cardiac care systems: early access, early cardiopulmonary resuscitation, early defibrillation, and early advanced cardiac life support”, *Saving Lives in the Sky*, Robert A. O'Rourke, MD, *Circulation*, 96 (9), p2775.

Whilst it is the hospital which makes a unilateral decision to restrict access, the Ambulance Service is forced to carry a penalty by shouldering the financial and industrial cost of overtime. The Service's published indicators of responsiveness also suffer through matters beyond its control.

There can be a variety of decisions made by hospitals concerning changes in the level of service which may significantly impact upon the Ambulance Service. Cooma Hospital, for example, progressively withdrew its orthopaedic facilities. This now necessitates snowfields patients having to be transferred to Canberra Hospital. This impacts upon the Service by significantly increasing the length of the trip from ski slope to treatment (and, for the ambulance crew, to return). Costs and availability are affected for the Service, generally without compensation.

The ability of one part of the health system to impact on other parts is one of its fundamental characteristics. This needs better to be recognised and addressed in the consultation, negotiation, and decision making processes employed by all parties within the system, and by the internal funding arrangements in effect within the NSW health system.

### **3.3 Non-emergency patient transport**

#### **Non-emergency services are also important**

There is evidence to indicate that neither the Service nor hospitals are satisfied with existing non-emergency arrangements. Some Ambulance Service officers and managers interviewed by the Audit Office expressed their frustration at being occupied on low-skilled transport work and hence being unavailable for the emergency work for which they were trained. Some hospital staff interviewed complained about the high cost and lack of reliability of the Service as a provider of non-emergency transport. Underlying these comments was evidence of a lack of effective coordination.

**Hospitals are not satisfied with non-emergency services**

The result is that some hospitals are increasingly using outside contractors or their own vehicles to improve control and reduce costs. This in turn deprives the Ambulance Service of a proportion of its revenue.

The times at which hospitals book non-emergency transports often conflict with the efficient running of the Service. For example, a transport booked just before the end of day shift may involve a crew in extended working hours and overtime. Delaying the patient movement to the next shift may, in some cases, have no adverse effect on either bed occupancy or patient welfare.

Hospital staff argue that the high standards of timeliness which they demand of their non-emergency transport service providers are needed to coordinate patient movements with other activities, e.g. tests or treatment at other health facilities.

The Service attempts to maximise the use of Air Ambulance to avoid long road transports which make officers unavailable for other work. However, many hospital staff erroneously believe that Air Ambulance is more expensive than road transport and insist on using road transport.

The challenge for the Service so far has been to offer a high degree of availability of crews to meet the non-emergency transport needs of the hospitals, while still being able to respond to emergencies. However, in practice the necessary priority given to emergency responses appears to have adversely impacted on the Service's reputation as a reliable supplier of non-emergency transport. As a result, some hospitals, such as Gosford, have now established their own non-emergency transport staff, vehicles and organisations, and claim to be doing a better job at lower cost.

**Case Study: interstate practice**

In other States non-emergency transport is viewed, treated and priced as a separate business which is operated on a commercial basis. A package of transport options with differential standards of clinical support is provided by many of these services. This recognises and addresses the needs of health systems and hospitals sensitive to price-competitive private sector alternatives. The pricing of interstate services' packages would seem to reflect sound understanding of their operating costs, and some offer price incentives (reflecting cost savings) for more efficient transport alternatives.

**Improving non-emergency services**

The Service advises that it had proposed a new fee structure to Area Health Services in November 2000 with the intention of moving to the new pricing structure at the start of the 2001-02 financial year<sup>35</sup>.

The Service has been considering the opportunity which dedicated Patient Transport Officers (PTOs) offer to give more reliable and more economic service to hospitals. PTOs would also free up ambulance officers (an expensive resource) to respond to emergency cases.

PTOs have much shorter training times than ambulance officers, and patient transport vehicles are lower cost and do not carry the specialised equipment with which ambulances are equipped. More extensive use of PTOs also offers at least a partial solution to the current problem which hospital restrictions are having on availability of ambulance crews to handle non-emergency and emergency responses. PTOs will also reduce one cause of overtime and excessive working hours for ambulance officers.

Although there have been some delays and changes of strategy, the recruitment of PTOs and the acquisition of patient transport vehicles by the Service is now proceeding, albeit in a limited number. By July 2000 the Service had an establishment of 21 PTOs, with an actual complement of 20<sup>36</sup>.

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<sup>35</sup> *Report of Staff Deployment in the Ambulance Service of NSW: Comments and Suggested Changes Grouped by "Audit Findings"*, Ambulance Service of NSW, February 2001

<sup>36</sup> *Finalisation of the Sydney Staffing Review*, Ambulance Service of NSW, July 2000



### 3.4 Provision of nurse escorts

**Nurses are important for some types of patient transport**

The provision of nurse escorts is another frequent source of friction between the Service and hospitals.

Nurse escorts are apparently regarded as the most appropriate approach for transport cases when patients require monitoring, or are receiving drugs or treatments for which the ambulance officers are not trained.

Where a suitably qualified nurse (usually a Registered Nurse) is available to care for the patient and to assist with patient movement (which protects the ambulance officer from any occupational health and safety risk), only one ambulance officer is required. However, hospital staff limitations often restrict their ability to provide nurse escorts. It was suggested to the Audit Office that the duty of care rests with the hospital initiating the patient movement.

Inability of a hospital to provide a suitable nurse escort usually results in the Ambulance Service sending a second officer. This addresses some of the logistics, but does not necessarily meet the clinical needs of the patient. And in doing so the Service is financially subsidising the hospital (through the cost of any overtime or call-outs).

**Nurse escort arrangements need improvement**

Arrangements between hospitals and the Service for nurse escorts seem to vary in different parts of the State. Judging by the frequency with which the issue was raised by Service staff and managers, arrangements are generally not viewed as satisfactory.

**Communications**

Organisational changes in the Ambulance Service have left some hospital staff unclear about which part of the Service is responsible for dealing with them (for example on matters such as ambulances delayed in emergency departments, or for ordering non-emergency transport). There is evidence of some confusion over whether hospital staff should deal with the Area management representatives from the Service who visit them, or the Operations Centre staff from the Service with whom they book transport.

### 3.5 Funding implications

Area Health Services are expected to seek improvements through more efficient or economical operation. It is for this reason that Gosford Hospital, for example, has ceased using the Ambulance Service for non-emergency transport and has developed its own patient transport capabilities.

#### **The health system funding loop is breaking down**

By replacing the Ambulance Service as its preferred patient transport service provider, Gosford Hospital has generated a budget saving. The Ambulance Service, funded on the assumption of a certain level of income from non-emergency patient transport, now has an equivalent income shortfall.

The Ambulance Service's emergency business is historically not self-funding, and has been cross-subsidised by hospital non-emergency transport, with the difference predominantly coming from Department of Health contributions<sup>37</sup>. If there is a revenue shortfall (because of loss of non-emergency transport business) there are two basic options. The Service may be required to find cost savings in its operations. Alternatively, or in part, Department of Health may need to supplement any funding shortfall.

As the Ambulance Service continues to recruit and equip PTOs for non-emergency patient transports, charges will be lower than at present (to retain the business) and costs will also be lower. There is no indication if this "new" specialised PTO business will generate a larger or smaller surplus over costs than does the current way of doing business.

The Service and Health hence share a funding dilemma. If the Service prices non-emergency transports competitively, and retains its share of hospital business, it will be less likely to be able to cross-subsidise the emergency transport side of its business. If the Service maintains its non-emergency transport prices to retain the cross-subsidy it will lose more hospital business. Either alternative will generate a revenue shortfall for the Ambulance Service. Given the complexities of health funding, this matter may require consideration at various levels.

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<sup>37</sup> "Currently the Service's self generated income does not cover the full cost of its services. There are a number of reasons for this. First, those who are charged by the Service are not asked to pay the full cost of transport. (Charges in NSW are also generally lower than elsewhere in Australia.) Second, the levy on health funds may not reflect full cost recovery for transporting fund members. Third, there is no charge for persons who are treated but not transported. Fourth, it is Government policy that various categories of people, primarily pensioners, should receive free ambulance transportation. Finally, the State Ambulance Insurance Plan has not been well marketed in recent years and realises less income than a similar scheme in Victoria, although there are differences between the States", *Ambulance Service of NSW: Charging and Revenue Collection*, the Audit Office of NSW, 1996

### 3.6 Integrated management and planning: a “whole of Health” approach

#### **Service involvement in Health planning**

The Service is a key health system stakeholder and has a critical role in delivering health-related services to the community. A range of formal and informal communication processes between the Ambulance Service and the Health system exist to assist in coordination. For example:

- the Chief Executives of Area Health Services and the Ambulance Service meet regularly at an Executive Forum
- Area Managers and their staff have regular and ad hoc meetings with Area Health Services management
- each metropolitan Area Manager attends bed management meetings at Area Health Services for the major teaching hospitals to assist in managing short term plans in response to workload trends during the busy winter period.
- the Service is represented on numerous NSW health system committees<sup>38</sup>.

Each Ambulance Service Area has agreements with the relevant Area Health Service and hospitals covering inter-hospital ambulance transports, booking procedures, funding arrangements, the provision of nurse escorts and transporting of mental health patients. The agreements include provision for annual review.

#### **The Service is not effectively integrated as a working part of the health system**

Despite the extensive range of formal consultation and coordination mechanisms which have been established, it is not sufficiently apparent that effective integration has been achieved.

In practice, there are frequent and varied examples of problems arising from failures between elements of the health system to adequately consult and coordinate. In terms of problems generated for the Service, the preceding discussions of ambulance diversion and “trolley block”, non-emergency patient transport and the provision of nurse escorts provide examples. Whilst various agreements may formally exist between the Service and Area Health Services/hospitals, complaints raised by

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<sup>38</sup> These include the Inpatient Data User Advisory Committee, the Integrated Bed Management Committee, the Life Threatening Only Management Committee, the NSW Critical Care Committee, the NSW Rural Critical Care Committee, the NSW Medical Retrieval Committee, the Public Health Emergency Management Committee, and Counter Disaster Management bodies. Local senior ambulance staff are involved on a routine basis with Local Area Health Service clinical committees such as Area Critical Care Committees and Area Trauma Committees.

both sides, and the apparent loss of non-emergency transport business, suggest that the existing agreements are not effective.

From the evidence, the Audit Office has gained a distinct impression that whilst many formal structures and agreements exist, in practice there is not an effective “whole of Health” approach to communication, coordination, strategic planning or budgeting. This issue was also raised by the Sinclair report (in terms of rural health) in 2000.

### **Sinclair Report recommendations**

The NSW Ministerial Advisory Committee on Health Services in Smaller Towns identified in its report of February 2000 (the “Sinclair Report”<sup>39</sup>) that barriers to improvement in delivery of and access to quality health care in small rural communities included:

- lack of coordination and planning between service providers, and
- lack of communication between levels of government, management, health professionals and the community.

This issue was addressed in the Report, where it was recommended that:

...negotiations be initiated by the NSW Department of Health, the Ambulance Service and the relevant unions to define the role of ambulance officers in small rural communities with a view to:

- integrating to a greater degree ambulance officers into health services, into emergency departments and into community health care teams while recognising their separate identity
- where appropriate, co-locating Ambulance Services with health facilities.

In support of this recommendation, the Report noted that:

The role of ambulance officers as part of the health services, emergency departments or community health care teams needs to be considered if small rural communities are to make the most of their limited resources. Co-location and/or integration of ambulance officers with the health service could provide greater opportunities for shared educational opportunities in

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<sup>39</sup> *Report to the NSW Minister for Health: A Framework for Change*, NSW Ministerial Advisory Committee on Health Services in Smaller Towns, February 2000

emergency care, improve professional relations between ambulance officers and other health care providers and greatly assist security for nursing staff and patients. Any such arrangements would need to ensure however that ambulance response times were not jeopardised.

**Communication and coordination are the keys**

Some Service officers and managers expressed concern that changes such as those recommended by the Sinclair Report could mean that the Service may be merged into Area Health Services, which would effectively decentralise it. However, the Report's recommendations on integration and closer cooperation provide a potential catalyst for Area Health Services in rural areas to see the Ambulance Service as a partner. They offer opportunities for a coordinated approach to better use resources and to improve the level of care for the rural populace. This is particularly important in communities which may be too small to economically sustain separate "traditional" Ambulance or Health facilities.

The Sinclair Report gives examples of poor coordination of community transport which, if improved, could reduce the need for the Service to provide some transport services. It places the onus on Area Health Services for "... community education ... to explain patient transport and delivery protocols ..." and to help reduce inappropriate use of ambulance transport. Ambulance Service staff observed that hospital staff and medical practitioners may also need education in the appropriate use of non-emergency transport.

Many managers of the Service have embraced the opportunities offered by the Report, and the Service is involved in planning, with Area Health Services, of many of the Multi Purpose Services being coordinated by NSW Health.

**Coordination mechanisms within the health system need improvement**

However, in general, management in all Ambulance Service Areas and at both Area Health Services and hospitals visited by the Audit Office reported friction and poor coordination between elements of the Health system and the Service.

The Audit Office considers that the Service and Area Health Services need to develop a better understanding of each other's roles and responsibilities, at different levels in their respective organisations, to ensure effective communication and coordination. The review processes provided for by the service agreement with Area Health Services do not appear to be sufficient for this purpose. The Service and Area Health Services should actively work together to this end, and specifically to: (i) review existing arrangements so as to ensure appropriate accountability for the welfare of patients, and (ii) to

establish workable arrangements for equitable allocation of costs.

At a higher level within the Health system, the Service needs to initiate action towards developing:

- a model for planning, budgeting and reporting to specify what the Service will deliver to the Health system and the people of NSW
- the necessary operating and reporting relationships
- the funding required for the Service to deliver its contribution to a “whole of Health” approach.

#### **Case Study: establishment of a Medical Retrieval Unit**

A major and high profile coordination success story is the Medical Retrieval Unit set up by NSW Health and the Service. The MRU coordinates all medical retrievals and intensive care beds across NSW and manages tasking and job allocation of the State's nine medically accredited helicopters, the four air ambulance fixed wing aircraft and, more recently, the Royal Flying Doctor Service aircraft at Dubbo. The MRU also provides a "bed finding" service for rural practitioners wishing to transport patients to city-based intensive care units as well as providing on-line clinical advice and support and coordinating complex clinical cases such as those associated with neo-natal intensive care.

### **3.7 Reporting relationships and corporate governance**

#### **Corporate governance framework is complex**

Formally, the Service reports to the Ambulance Service Board, as shown in Figure 5. However, the Chief Executive of the Service also has other reporting relationships. In addition to being accountable to the Board, the Chief Executive advises that his Performance Agreement is reviewed annually with the Director-General of NSW Health. The Service also has a direct relationship with the Minister. Particularly during industrial disputes, the Minister for Health and senior executives in NSW Health have often been directly involved in negotiations.

#### **Simplification has previously been recommended**

Simplification of the legislative framework which establishes such complex governance arrangements within the NSW health portfolio was recommended in 1995 by the Audit Office in a previous report<sup>40</sup>. At that time, NSW Health indicated that an

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<sup>40</sup> *Department of Health: Same Day Admissions*, the Audit Office, December 1995

overall simplification would need to be considered in a broader legislative review. Current oral advice from NSW Health is that the recommendation for such simplification has not been accepted.

**Governance reform has been commendable at the process level**

Principles for effective governance and accountability in the public sector were issued by the Audit Office in 1997 and guidelines were issued in 1998<sup>41</sup>. NSW Health and the Health Services Association of NSW initiated a licence agreement with the Audit Office to develop a health-specific version of the guide<sup>42</sup>. This was an outstanding response by the health portfolio to promoting best practice governance arrangements at the process level. The Audit Office is advised that action is currently underway to update that guide to keep pace with best practice developments in governance. This is equally commendable, but there is also a need to implement the full range of best practice principles contained in the guide.

**Governance reform at the strategic accountability level remains to be addressed**

The Audit Office would again encourage that the further step be taken of simplifying higher level governance and accountability arrangements across the portfolio to reflect the better practice principles.

The corporate governance framework for the Ambulance Service illustrates some of the shortcomings previously identified by the Audit Office as being common in the NSW public sector, namely:

- blurred roles and responsibilities between Ministers, boards and Chief Executive Officers (CEOs) for securing organisational performance
- multiple control arrangements over resources
- limited board power over the appointment and accountability of the Chair and CEO.

In the opinion of the Audit Office, current arrangements, as observed at the Ambulance Service, are not optimal for securing the strength and clarity of accountability of the Service which all parties seem to agree is desired. However, this issue is beyond the ability of the Service, or any accountable entity within the health portfolio, to address by itself.

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<sup>41</sup> *Corporate Governance - Volume One: In Principle and Corporate Governance - Volume Two: In Practice*, the Audit Office, June 1997 and *On-Board: Guide to Better Practice for Governing and Advisory Boards*, the Audit Office, March 1998

<sup>42</sup> *Corporate Governance in Health: Better Practice Guide*, NSW Health and The Health Services Association of NSW, June 1999.

### 3.8 Where should the Service fit?

#### **Structural arrangements with the health system**

Interstate ambulance services visited have reporting structures different to the NSW Service. However, all services claim to have healthy and constructive relationships with the government departments through which they report, and with their respective health and hospital systems.

#### **Case Study: interstate practice**

In Victoria, MAS and RAV have Committees of Management similar to Boards. They both report through the Ambulance Services Branch of the Acute Health Division of the Department of Human Services. Senior management at both MAS and RAV see this reporting relationship as providing strong high-level advocacy and support through a key interface in a complex and diverse Department (with an overall budget of approximately \$7.2 billion).

QAS is a statutory authority, and reports through the Director-General, Department of Emergency Services to the Minister for Emergency Services. In South Australia the Ambulance Service reports to the Minister for Emergency Services, and is in the process of clarifying its role and the basis of its funding (following the withdrawal of St John Ambulance from its long term joint venture with the Government).

During the conduct of this audit, a range of views was received on where the Service should fit relative to the health system. Some urged integration at Area Health Service level as a means of forcing a closer relationship. Others believe that the Service's funding and coordination problems would be solved if it reported, as in Queensland and South Australia, to Emergency Services.



**Performance  
accountability is  
the key**

In the final analysis it is likely that the structural relationship between Ambulance and Health is not the main issue. What is an issue, however, is the need for the Ambulance Service to have clear and unambiguous arrangements specifying:

- accountabilities of all parties
- the Service's relationships with Health, hospitals and other organisations
- measures of performance of the Service and hospitals (particularly emergency departments)
- targets and review procedures
- the basis on which the Service is to be funded.

Perhaps even more importantly, the Service's sense of integration into the health system, at both operational and strategic decision making levels, needs to be enhanced.



## **4 Barriers to performance: structural**

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## 4.1 Management challenges

### **Corporate stability issues warrant careful attention**

The Service has had six Chief Executives in nine years, and the key role of State Superintendent has been filled in an acting capacity for over 12 months (though being finalised now). Prior to this, the position of Superintendent had been fairly stable, and the Audit Office was advised that there had been strong stability at the Board level. Whilst there are varying views about the relative impact of the CEO, State Superintendent and Board, the Audit Office considers that such a history has the potential to generate disruption and instability and warrants careful attention.

Each new CEO brings to the job their own priorities and directions for change. This may have both positive and negative consequences. New ideas and enthusiasm for change are always welcome. However, constant upheaval at the strategic level may generate uncertainty and confusion throughout the organisation, which in turn may inhibit long term change processes. Avoiding such pitfalls throughout an extended period of executive change of the sort the Service has experienced is a major challenge.

There is some evidence that this issue warrants attention in the Service so as to better facilitate general commitment to and involvement in the numerous reform efforts being pursued.

Whilst the Audit Office has been advised that much has happened since the 1982 Gleeson Report (which identified significant management challenges for the Service), many similar problems and challenges were observed by the Audit Office as representing relevant issues for today. For example:

### **Longstanding challenges remain**

The Inquiry received many complaints about the management and management structure of the Ambulance Service ... (Some) maintained problems arose out of lack of leadership and management expertise within the Ambulance Service and variation in regional management structures within the [Health system]. The Inquiry believes many of the problems stemmed from blurred lines of communication within the Ambulance Service and between the [Health system] and the Ambulance Service. There has also been a lack of definition of the various responsibilities and duties of senior management of the Ambulance Service.

Whilst the service delivered by individual Ambulance Officers has been consistently of a high standard, the overall delivery of the service has not been as effective as it might have been. Reasons given for this have been

lack of clear operating guidelines, poor techniques for selection and recruitment of personnel, unsatisfactory training and career development ...

The Inquiry found morale had been impaired and frustration of Ambulance Officers had been caused by poor communication, inconsistencies in operational practices adopted by various regions, and delays in implementing policy decisions necessary for the efficient administration of the Ambulance Service.

The Inquiry noted that many officers were keen to obtain qualifications to improve their knowledge and were actively undertaking educational courses. However, it was noticeable that long term planning in staff development has not been carried out which would assist Ambulance Officers to select courses appropriate to the skills needed to meet the future operational and management requirements of the Service.<sup>43</sup>

**Current challenges** Whilst the Audit Office acknowledges that the Gleeson Report is somewhat dated (1982) and that there have been numerous other inquiries into the Service and reorganisations since then, many of the issues raised at that time closely parallel findings by the Audit Office today, such as:

- unclear lines of communication, responsibility and accountability within the Ambulance Service
- problems in practice between the Service and hospitals in provision of nurse escorts, non-emergency transport and turnaround times at Emergency Departments
- need for better integration of Ambulance Service and Health system service delivery, planning and budgeting
- scope for improvements in clinical training and evaluation processes
- scope for improvements in staff planning, development and management training.

**Resilient problems require long range holistic solutions** What this may tend to indicate is the resilience of such problems and the degree of difficulty associated with resolving them.

For example, in addressing the first item above, the Service had a major structural change in 1998, when the four Divisions

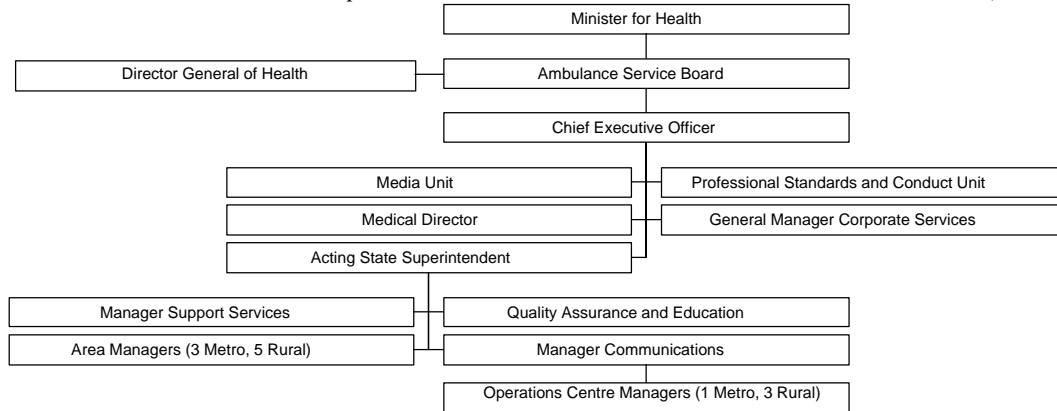
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<sup>43</sup> Report of the Inquiry into the NSW Ambulance Service (“Gleeson Report”), July 1982.

(which covered the State) were broken into eight *Areas*. Eleven manual Communications Centres began to be rationalised into four *Operations Centres*. The Audit Office is not seeking to question the potential merits of this specific action, which appear to have been significant. However, the change, and the contemporaneous implementation of CAD, appears to have had a profound effect on relationships between *Areas* and *Operations*, some of which is not positive. Existing differences appear to have been compounded by the organisational and functional separation of the two groups.

Similarly, in addressing the various other matters shown in the above list, the Service has taken a range of actions since 1982 designed to resolve such issues. Despite this, a considerable number of the findings of the Audit Office today, and the Gleeson report in 1982, match up. As such, the evidence seems to suggest that anything short of a comprehensive, holistic approach to addressing such issues may not have a lasting effect, and the issues will remain or return.

**Figure 5: Organisation structure of the NSW Ambulance Service, 1998**  
 (Ambulance Services Australia Report 1998–1999, The Convention of Ambulance Authorities)



The eight Areas are:

- North Sydney and Central Coast
- Southern and Central Sydney
- Macquarie, Mid and Far Western
- Northern Rivers and New England
- Wentworth, Western and South Western Sydney
- Hunter and Mid North Coast
- Greater Murray
- Illawarra and South Western

The four Operations Centres are:

- Sydney
- Dubbo
- Newcastle
- Wollongong

The role of the Operations Centres is to coordinate communication for the geographical areas.

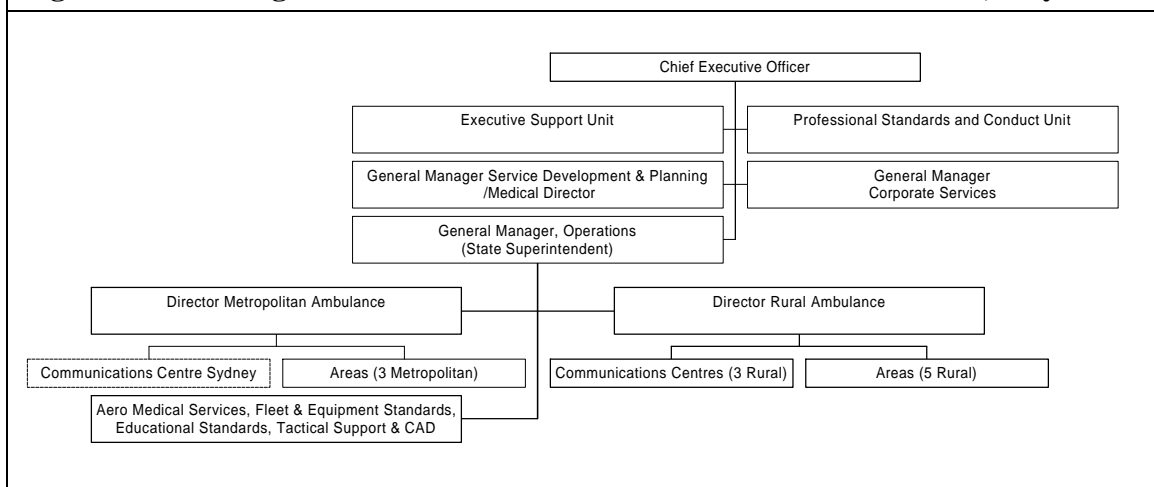
Areas are responsible for service delivery, administrative and business support functions in their geographical areas.

### The new structure may provide a partial solution

In terms of dealing with the accountability issues between Areas and Operations, the Service recently (November 2000) implemented a new State headquarters structure which separates Metropolitan and Rural operations. This new structure will be more readily managed, with the Directors of Metropolitan and Rural Ambulance having a smaller span of control and the ability to focus on either metropolitan or rural issues.

However, as already indicated a holistic approach is needed to address the underlying cultural and communications issues involved here. A new organisation structure alone will not address the problems in the relationships between Area and Operations. There is still the challenge of clarifying accountabilities, relationships and measures of performance, and eliminating the confusion and resultant tension which currently exists.

**Figure 6: New organisation structure of the NSW Ambulance Service, July 2000**



## 4.2 Internal relationships and communications

### Conflict between key internal functions

Ambulance staff interviewed in NSW and other States acknowledge that there has always been potential for conflict between the officers who are performing call-taking and dispatching functions and the officers who are deployed. Those who do the call-taking and dispatching have to make immediate decisions under conditions of stress, and any errors they may make are highly visible.

In addition, interviews in NSW and interstate suggested that working in the communications centre has long been seen by some as second-rate ambulance work. This appears to have been even more prevalent in the past, when the communications centre was considered to be the place to locate officers who were unable to carry out on-road duties because of injury or disciplinary proceedings. This did not always represent an ideal match of the officer's skills and attitudes with the demands of the role, and contributed to a perception that *communications officers'* work was not as valued as that of *road officers*.



Much of the tension and frustration observed between Area and Operations was focused on the clerical and structural deficiencies of rosters, which Area management prepare daily, weekly and monthly and fax to the Operations Centres. In practice, the rosters are not designed to meet a particular caseload, and the productivity of the staff establishment is not actively managed. Given this, it is inevitable that there will often be a mismatch between the caseload on any shift and the number of officers available on roster to meet it. This results in tension, with each group blaming the other when neither is to blame. The system is the problem.

**Unclear responsibilities and accountabilities**

Replacing the Divisional structure (which operated prior to 1998) with one which managed Area and Operations Centres separately is seen to follow international best practice. However, it presented a considerable change management challenge. Whether it was intended or not, such a change concentrated most of the management information (and hence much of the decision making power) in the hands of Operations Centre management. This was a major change in the operational status quo, and requires not just new policies and practices, but the development of new relationships and a new culture if it is to be effectively implemented.

Such a change was not evident from the Position Descriptions of Operations Centre and Area Managers which were developed at the time of implementation.

The position descriptions did not clearly identify, either overall or at a detailed level, how these critical roles are intended to interact, or what specific functions they are expected to perform. The key accountabilities of both positions were expressed in general terms, and there were no performance indicators, either specific to the positions or for the Service generally.

Nowhere in either of the position descriptions was direct communication between Area and Operations mentioned, thus compounding the effects of a management structure which provides no direct relationship between the two functions.

Interviews with Operations Centre and Area Managers confirmed this when they revealed confusion over the boundaries of their positions and their responsibilities and accountabilities.

**Unclear relationships with hospitals**

The resultant blurred lines of communication between Area and Operations have also caused uncertainty within the Service on responsibility for dealing with hospitals, as mentioned earlier.

Some Managers stated that development of a Service Level Agreement between Area and Operations was contemplated prior to the implementation of CAD, but did not proceed. The process of developing such an agreement would have necessitated extensive consultation which would have highlighted many of the issues which are now causing problems. This would have contributed to an improved understanding between Area and Operations.

The recent review of the activity and staffing levels of Ambulance Operations Centres<sup>44</sup> included amongst its recommendations:

Service Level Agreements need to be developed between the Area Manager and the Operations Centre Manager to clearly define their respective responsibilities and accountabilities and key performance indicators. These documents should then form the basis of monthly performance reviews of these senior staff.

**Disagreement on roles and responsibilities is widespread**

Lack of clarity of accountability and poor communications is not confined to Area and Operations. During the audit it became apparent that senior management and Area and Operations Managers sometimes disagree, not only on accountability, but also on basic facts of the business (for example staff levels in Sydney).

Similarly, Area management repeatedly expressed frustration with the inflexibility of roster starting times, while senior management maintain that these are an Area responsibility. This appears to point to an underlying basic issue of delegation of decision making and control. It was apparent that, given the industrial environment for the Service, Area management were unsure about taking decisions which may subsequently be countermanded by Head Office.

It is true that in any organisation it may be possible to find examples of tension and disagreement between executive and operational management. Similarly, communication problems are common to many organisations. The Audit Office encounters these issues regularly in audits of this type. Such a

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<sup>44</sup> *Ambulance Service of New South Wales: Sydney and Newcastle Operations Centres*, IAB Management Services, September 2000

finding is not an end in itself, nor does the Audit Office seek to take sides in such issues or to infer any blame.

Rather, the underlying issue, encountered repeatedly throughout the course of the audit, is the demonstrable need for improved two-way communication and better internal relations between these levels within the Service. This issue appears to be acting as an impediment to the successful implementation of some reforms, and as such warrants a considered strategy to resolve.

The consistency and strength of these problems has led the Audit Office to conclude, with the benefit of hindsight, that such matters warranted significantly greater attention as part of the change management process. Without dealing effectively with such issues, change efforts may continue to be impeded.

The Service does not fully share the Audit Office's strength of view on this matter. However, it implemented the change of structure mentioned above (structurally dividing rural and metropolitan operations) during the course of the audit and redefined responsibilities. The Service believes that these changes will be sufficient to resolve the difficulties observed during the audit.

### 4.3 Availability and use of management information

#### Use of data to manage operations is poor

Throughout this audit a strong theme has recurred: the absence of evidence that the Service effectively seeks and uses management information to improve decision making.

The quality of some key decisions and negotiations with key partners have been affected by difficulties in compiling relevant and credible data.

Area management repeatedly emphasised the lack of data on workload and its variable quality. The availability and quality of financial management information improved markedly during the course of this audit. As noted, the Service claims to be making increasing use of the information capability offered by CAD. However, as related earlier in this report<sup>45</sup>, persistence with the case sheet data system has resulted in loss of revenue and reporting of an apparent substantial reduction in workload. The Service plans to replace case sheet-based reporting during 2000-01.

Area Managers have also emphasised deficiencies in the Service's *Workforce* personnel management software which, despite recent extensive analysis, still appears unable to provide accurate and agreed information on the numbers, location and status of staff (particularly in Sydney). Not only has this been a source of disagreement within the Service's management, but it is materially affecting resolution of the Sydney Staffing Review<sup>46</sup>.

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<sup>45</sup> See 2.3 *Changes in workload*

<sup>46</sup> "The correlation between...staffing levels, funded positions and staff utilisation is a difficult task, made worse by the deficiencies in our past reporting practices...this factor has created extreme difficulties for reviewers in the past...", *Finalisation of the Sydney Staffing Review*, Ambulance Service of NSW, July 2000

### **Case Study: interstate practice**

Interstate ambulance services visited by the Audit Office placed a high priority on the use of technology to improve the availability and quality of management information. For example, in Victoria a joint MAS and RAV pilot project costing \$6.0 million is developing a Clinical Information System to replace manual case sheets by portable electronic data terminals. It is expected that it will also deliver commercial benefits through quicker and more accurate billing.

SAAS makes operational information widely available to staff. Every SAAS station has a PC. SAAS officers can see workload statistics for any station, and it is understood that steps are well advanced to enable them to access and to analyse case data on line. Similarly RAV seems to be in the final stages of rolling out PCs to every permanent station in Victoria to increase the use of e-mail and intranet web-based applications in the day to day conduct of their operations.

With better quality management information comes a better understanding of caseload, and an ability to better plan and deploy resources. MAS regularly produces maps to demonstrate caseload, case priority and response times as an aid to identifying optimum location and staffing of branches.

### **Workload management is impeded by limited data use**

During the conduct of the audit the Service was not readily able to:

- demonstrate whether or not the location or staffing of a particular station reflects its workload
- measure utilisation of staff at any station
- develop and implement alternative staffing arrangements for stations which have excessive overtime or are unable to keep pace with demand.

While the workload of ambulance stations has been reviewed in the past, data have not been applied to formally and scientifically determine where they would best be located to respond to today's level of demand and community expectations.

In 1999 an attempt was made to use a measure known as unit-hour-utilisation (UHU), which is employed by some interstate and overseas services to compare staffing levels to demand on a continuous basis. This can be a powerful tool. However, the data used for that analysis was, at that stage of the implementation of CAD, incomplete. This seems to have damaged the credibility of the UHU tool in the eyes of some within the Service.

The Service has, in recent months, pursued the development of the UHU tool to improve resource management.

**Better use of data would improve accountability**

While management now receives high-quality monthly financial reports, these are not integrated with reports on the level of activity. Area Managers have inadequate information with which to monitor costs, in terms of the workload they must meet and the performance for which they are accountable. It is not possible, for example, to reconcile an increase in fuel costs for a particular vehicle with the distance it has travelled and the number and type of cases it responded to during the period. It is apparently not possible to measure responsiveness by station or by time period. Operations Centre Managers are unable to measure the workload of Operations Assistants, who answer all incoming telephone calls.

**An information-based culture needs to evolve**

The Service has expressed commitment to developing the wider availability of management data from CAD. However, development of an information-driven culture does not depend solely on the availability of suitable information. It also requires a commitment by managers at all levels to use information to improve the business, and to be pro-active in improving the quality and application of the management information itself<sup>47</sup>.

To lead by example, and to enhance further the governance role of the Board, the Audit Office believes that information provided to the Board should be enhanced. It is recommended that the Board regularly receive reports which address issues of levels of activity, staffing levels/utilisation and significant equipment deficiencies.

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<sup>47</sup> The Service's Information Management and Technology Strategic Plan of April 1998 contains recommendations on computer-based training and on making e-mail and Intranet communications available to all staff.

## 4.4 Consultation, participation, and planning

### Teamwork and consultation need greater emphasis

Interstate services appeared to pursue vigorously a commitment to workforce consultation and participation. Team-based organisation structures were being implemented, with increasing autonomy and accountability for developing and managing rosters and budgets at station level. Other services appear to use employee partnering approaches to encourage joint contributions and commitment to achieving broader organisational goals.

#### **A teamwork success story in NSW**

Staffing of Perisher Valley during the recent snow season was a model for how things can be done with consultation and cooperation. Area Management sought applications for the positions and appointed 12 officers. They formed themselves into 4 teams of 3, selecting their own team leaders and meeting certain parameters (e.g. skill mix required, coverage of stations from which crews were drawn). Each team was on duty for 28 hours on living away from home allowance. Management suggests that the arrangements worked very well from both staff and patient points of view.

### **Case Study: interstate practice**

MAS runs a "Team MAS" suggestion scheme "to encourage, recognise and reward the implementation of ideas at all levels of the workforce".

While Areas in RAV are smaller geographically and have fewer employees than their NSW equivalents, RAV Area Managers are expected to have a member of the Area management team visit every station on a monthly basis to maintain close contact with their workforce.

SAAS management encourages suggestions for improvement, and appears to make concerted attempts to make staff comfortable with change.

Station Officer equivalents in Victoria and South Australia are Team Leaders who have available timely management information to facilitate their decision making. They are supported by a program of leadership development training to help them move from a technical environment to a proactive management perspective.

MAS teams comprise 11 or 12 staff, some with a Peak Response Unit and MICA<sup>48</sup> vehicle, based at a 24 hour branch. All MAS branches are on line through the intranet. They have access to budgets and actual performance data, using pro formas for their regular reporting responsibilities and for roster preparation. The Team Leader works on the ambulance officer roster but has 1 to 3 days per fortnight to carry out branch duties such as clinical support, reporting and administration, depending on caseload.

In terms of approaches to command and control structures and management hierarchy, to a varying degree the interstate services visited by the Audit Office have abandoned para-military type systems in favour of flatter, more team-based structures. The SAAS has eliminated rank entirely: its operational officers wear green work dress, and their only badges are of clinical qualification, not of rank. Middle and senior managers wear a corporate-style uniform. NSW approaches appear somewhat less flexible and progressive.

The interstate services visited by the Audit Office also indicated a strong commitment to understanding their processes and to planning. MAS, for example, which is aiming to improve its response times, has an extensive consultative planning process. Its process integrates the requirements of existing rosters with leave, training and secondment commitments, and training capacity. Using this information it seeks to project required staffing levels and recruitment targets several years into the future. The increased staffing levels planned are also intended to reduce overtime (currently at around the same proportion of budget as in NSW).

A mechanism used by SAAS for continuous improvement (and for addressing specific problems such as tensions between call-taking and dispatching staff and ambulance crews) is the use of regular Communications Audits. These review all aspects of cases (either chosen at random or nominated because they represent particular problems). They involve communications staff, ambulance crews and clinical personnel in identifying and solving problems and improving processes. This facilitates better mutual understanding, devolves appropriate management responsibility and reinforces the team approach.

RAV is currently developing a 3 to 5 year Service Delivery Plan for the strategic development and future allocation of resources in rural Victoria. The Plan seeks to take into account factors such as demographic spread, geographic separation, access to health infrastructure and population health profiles, amongst others.

QAS publishes its Strategic Plan annually. It has developed a Resource Allocation Model to demonstrate the combinations of staffing and facilities to respond to different levels and types of demand for emergency response. As part of its planning process it has now conducted the Australian Quality Council's Organisational Self Assessment three times.

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<sup>48</sup> Mobile Intensive Care Ambulance, the Victorian equivalent of a Level 5 Paramedic in NSW.



**Corporate planning is not highly effective**

The Service's current 1998–2003 Corporate Plan “was developed based on input from a vertical cross-section of employees from within the Service ... in an open, consultative approach in an informal workshop”. However, it can be observed that:

- many of the target dates have been missed
- the plan mixes high-level strategic deliverables (“Implement a performance review system, with regular reviews linked to learning needs”) with low level operational ones (“Expand recycling program of paper and paper products to other parts of the State”)
- the Corporate Plan is not supported by implementation plans or business plans, nor does its progress against target dates appear to be periodically reviewed.

While the Service's employees are involved in specific projects and committees, there does not appear to be any regular involvement in planning or in coordination of the outcomes of these committees. Nor does the Service use any means of gathering information relating to employee expectations or perceptions. Interstate services tend to use some mechanism (e.g. employee satisfaction surveys or the Organisational Self Assessment) for achieving this.

Discussion of the practices of interstate services is not intended to imply that they are everywhere more innovative than the NSW Service. However, some of the practices observed elsewhere appear meritworthy, and the Audit Office considers that some of those practices deserve consideration. For example, initiatives concerning better data, flatter management structures, lower level accountability, responsibility for decision making, and communications.

## 4.5 Staffing reviews: changing the way the organisation responds

### **Agreement on staffing levels has been difficult to achieve**

The Service and HREA conducted Staffing Reviews for Sydney, Rural and Hunter Areas between 1996 and 1999. Staffing levels and roster arrangements were reviewed, increases in the number of officers agreed, and some changes implemented.

These reviews had been preceded by a period of industrial disputation over staffing issues. The reviews were highly significant. They were an ambitious attempt to produce a sophisticated and agreed staff deployment plan based upon high quality data on workload, staffing levels and overtime.

However, the reviews operated with certain process limitations, and the proposals generated were, arguably, not optimal. For example:

- the quality of data on workload is now generally acknowledged to have been poor
- the Sydney Review's calculations of relief staff requirements are now acknowledged to have been inappropriate
- significant criticisms have been made of the level of management knowledge and experience in the Sydney Review team and of the lack of consultation during the process
- implementation of CAD has now changed both the way in which staff are deployed and the type and quality of management data now available, making the Review's basis of analysis and subsequent solutions less than optimal
- the Sydney Review lead to more widespread use of 4x4 rosters, with an inherent loss of resource deployment flexibility
- the Rural Review focussed on elimination of single-officer responses and on providing additional resources for high overtime stations, rather than on a better balance between workload and staff levels across all stations.

**Line management feels isolated from staffing negotiations**

Despite these problems, the reviews were an important initiative, given the difficult situation existing at the time with significant industrial disputation occurring over staffing. However, because of this environment, analysis and decision making on staffing matters tended to become centralised. Staffing matters generally were elevated into high-level management and industrial processes, rather than occurring as part of Area and Operations routine resources planning processes.

During the course of the audit it became apparent that a side effect of that situation was that many Area and Operations Centre Managers and their staff felt a loss of responsibility and authority. There appears to have been an ongoing legacy from this period, in two forms. Firstly, lingering uncertainty about where responsibility resides for ongoing review of workload and any subsequent changes required to staffing to improve efficiency. Secondly, in some cases a lack of ownership of the problems and commitment to the solutions. Some Areas and Operations Centres seemed to feel that they were being held accountable for outcomes over which they have had little involvement and little control.

The Audit Office advocates no definitive opinion on the issue of centralisation vs decentralisation. The Service may be well justified in its approach on the grounds that it is a body which has statewide responsibilities. However, it is important that the Service ensures that all employees, and not just managers, be conversant with the Service's delegated decision making processes.

**Staffing levels are an ongoing issue**

For the various reasons outlined above, amongst others, the staffing reviews did not fully realise their potential or improve the overall environment as intended. Current figures indicate that staffing is below the established numbers, and that the staff levels agreed during the review have still not been achieved<sup>49</sup>.

During the audit Area management expressed frustration that they did not have sufficient quality data on workload and leave levels to calculate their staffing requirements. Later it emerged that there was uncertainty over the number of officers actually

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<sup>49</sup> This report will not deal specifically with the issue of Minimum Operating Levels (MOLs). These were introduced in Sydney in 1996 following industrial negotiations between the Service and HREA, and were intended to address the number of unfilled rosters which then prevailed in Sydney. MOLs were intended to reflect the workload across Sydney. However, in common with the staffing reviews, MOL calculations suffer from lack of quality data on workload and staff availability. Improvements in data quality and availability will permit MOL calculations to more accurately reflect workload.

available for road duties (especially in Sydney). It is essential that a common base of understanding should exist on such fundamental aspects of the business.

The Audit Office encountered some difficulty in obtaining confirmation from the Service of staff numbers. Quantification of staffing levels is complex because of factors such as:

- formal establishment levels versus target staffing levels reached in industrial negotiations
- actual staff numbers versus officers unavailable for on-road duties because of leave, secondment, workers' compensation, etc.

**Current staffing levels**

Looking first at staffing for Sydney, the situation is as follows:

<b>Sydney staff numbers as at 9 November 2000</b>	<b>Established positions</b>	<b>Actual staff</b>	<b>(Under)/Over</b>
North Sydney and Central Coast	325.00	315.89	(9.11)
South Eastern and Central Sydney	340.00	313.38	(26.62)
Wentworth, Western and South-Western Sydney	462.00	448.47	(13.53)
<b>Total</b>	<b>1,127.00</b>	<b>1,077.75</b>	
<b>Shortfall against establishment</b>			<b>(49.26)</b>

The Service's figures indicate that Sydney officer numbers are below the established level. However, it is necessary also to consider the staffing review's assumptions on relief staff.

**Adequacy of relief staff provided**

In calculating staffing levels, it is necessary to take account of the leave to which employees are entitled and attendance at training and recertification courses. In the Sydney and Rural Staffing Reviews a number of relief officers was provided to ensure that positions would remain filled while officers took their leave and training entitlements.

However, the relief levels assumed in the Sydney Staffing Review are now acknowledged to be inadequate for present

circumstances<sup>50</sup>. This is highly significant, as if the relief component is inadequate then there will be insufficient officers available for duty.

In discussions with the Audit Office, operational managers indicated that the assumed figure for average leave/training per officer was 8.2 to 8.4 weeks per annum. However, nowhere in the Sydney Staffing Review or *Finalisation of the Sydney Staffing Review* documents is the assumed leave/training component quantified in this way.

The Audit Office was also advised by operational managers that in practice the current level of leave/training per Sydney officer is now assumed to be 12 to 13 weeks per annum. However, the *Finalisation of the Sydney Staffing Review* has measured it as 9.0 weeks (excluding Selected Alternate Duties and secondments) for South Eastern and Central Sydney and 10.7 weeks for the rest of Sydney.

Because of this uncertainty it is not possible to determine whether leave/training levels have increased since the Sydney Review, or whether the relief component allowed for was simply incorrect. However, the result is the same:

...it is impractical to expect to achieve the level of ambulance officer coverage envisaged by the Sydney Staffing Review with the number of ambulance officer positions provided for by that review.

For example where the Sydney Staffing Review calculations anticipate 874 roster positions from an establishment of 1,061 officers, current leave management and roster practices will in fact yield only 813 roster positions<sup>51</sup>.

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<sup>50</sup> “There has been discussion at Area Manager level and amongst members of the Sydney Staffing Review Implementation Committee, that the relief calculation factor utilised in the Sydney Staffing Review did not accurately reflect the absences from rosters the Areas were experiencing ... it becomes obvious that the absence factor utilised for the Sydney Staffing Review no longer pertains”, *Finalisation of the Sydney Staffing Review*, Ambulance Service of NSW, July 2000, pp10-11

<sup>51</sup> *Finalisation of the Sydney Staffing Review*, Ambulance Service of NSW, July 2000, p11

**The effective level of available resources is below target levels**

Because of this issue of relief levels, even if the target staffing levels were to be nominally achieved, the result would be around 60 fewer roster positions (i.e. officers on the road) than the staffing review was intended to deliver.

Normal cyclic vacancy levels also further reduce actual staff available for deployment (given that the Service, like many other organisations, recruits in periodic batches).

These factors have profound implications for resource deployment by the Service. Their effect is that availability of resources to respond will be less than projected. Such shortfalls will affect the performance of the Service either by increasing response times (as officers are drawn from elsewhere to meet demand), or by increasing costs (as officers are called out or work overtime to meet demand).

**Resource modelling studies need to be conducted to determine optimal staff levels and deployment strategies**

Higher staffing levels, to fully cover relief factors and provide the desired level of functional roster positions, would obviously also increase costs. Funding issues thus become relevant, as well as issues of efficiency and economy. This issue requires detailed modelling and analysis to examine both the logistics and economics of a range of options. Less tangible factors also need to be evaluated, such as the long term effects of a high reliance on overtime, and the overall impact on response times.

**Demand levels also need to be factored into resource modelling**

Staffing requirements are of course not an absolute nor a static issue. Required resources need to be considered in light of workload (over which the Service has little control). As shown earlier, the workload in Sydney has been increasing steadily since before the time of the staffing review. The average monthly workload in Sydney has increased by 19 per cent since 1996, so the target staffing levels need to be reviewed to ensure that they are appropriate for this level of activity.

Looking at rural staffing, the situation is similar. During the staffing review, agreement was reached that the number of rural officers would be increased by 108. Service management advises that this has been achieved. However, rural staffing levels are currently 25 below the formal establishment level.

There is at present no evidence that the relief components assumed in the Rural and Hunter Staffing Reviews were inappropriate.

<b>Table 7: Rural staffing levels</b>			
<b>Rural staff numbers as at 21 November 2000</b>	<b>Established positions</b>	<b>Actual staff</b>	<b>(Under)/ Over</b>
Greater Murray	148.5	141.5	(7)
Hunter & Mid North Coast	397.0	400.0	3
Illawarra & South Eastern	266.0	263.0	(3)
Macquarie, Mid & Far West	216.0	203.0	(13)
Northern Rivers and New England	223.0	218.0	(5)
<b>Total</b>	<b>1,250.5</b>	<b>1,225.5</b>	
<b>Shortfall against establishment</b>			<b>(25)</b>

**Matching resources to workload needs to be given priority**

While the above analysis suggests that in both Sydney and rural areas there is a shortfall of officer numbers compared to the Service's establishment, the solution is not necessarily merely to fill the vacancies. If leave levels in Sydney have actually increased, this would represent a serious challenge to better managing resources. Whatever level of resources is available, staffing levels and productivity must be continuously reviewed and matched to workload.

#### **4.6 The Service's clinical capabilities and direction**

**Clinical issues**

The Audit Office observed an apparent contrast in the clinical emphasis at management level between the NSW Service and in its counterparts interstate.

As stated earlier, consultation with interstate services was confined to senior management, and did not encompass lower management levels or officers as it did in NSW. Nor is discussion of interstate practices intended to suggest that the NSW Service has not explored a range of initiatives. However, some of the practices observed elsewhere appear meritworthy, and the Audit Office considers that some of those practices deserve consideration.

In supporting the clinical aspects of their operations, ambulance services in Victoria, Queensland and South Australia seem to network quite extensively with their respective health systems at both the corporate and local levels. This has the objectives of ensuring the exchange of clinical information and skills, and facilitating smoother working together of their organisations.

### **Case Study: interstate practice**

SAAS has a Medical Advisory Committee with around 12 senior medical practitioners representing Intensive Care and Emergency Departments of hospitals to set clinical standards (in conjunction with the service's Medical Director). It has Paramedic-qualified Clinical Team Leaders who focus on continuous education and clinical audit (operating at the equivalent of what would be the Area level in the NSW Service).

RAV and MAS have Medical Standards Committees similar to SAAS, but include ambulance clinicians as well as specialist senior medical practitioners. Both services are also represented on the State Trauma and Ministerial Emergency Critical Care Committees. MAS has four physicians in the roles of Medical Directors, each delivering five fortnightly training sessions. RAV has agreements by which it pays experienced medical physicians as Area Medical Advisers on a sessional basis. They assist in supporting the delivery of its training programs and clinical quality assurance within each operational Area, similar to SAAS. Their equivalents of Area Managers are supported by senior intensive-care trained clinical officers in established positions. Their task is continuously to evaluate the clinical performance of officers and provide them with advice, training and access to a network of clinical peers and mentors.

QAS management has invested heavily in upgrading clinical skills in developing the service from its historical District foundations. Previously, their standards of clinical education and knowledge varied widely. QAS has striven to achieve a balance of clinical and management skills in its workforce. Clinical training was used as an agent of change in developing from the old organisation and culture to the new.

The QAS structure, in metropolitan Brisbane and in some other centres, includes positions to provide clinical support for Area management, and is part of a network within the hospital and health system. In the Greater Brisbane region, a group of experienced specialist physicians provides additional support<sup>52</sup>. Management feels that a consultative and mutually supporting environment has been developed by this means.

### **Priority given to clinical aspects could be enhanced**

The NSW Service has a Medical Advisory Committee and Protocol Committee, and is represented on major NSW Health clinical committees and on hospital committees such as Rural Critical Care and Trauma Quality Review committees. In many areas, local emergency physicians actively participate in case review and education.

It is a notable feature of the overall strategy of some interstate services that they actively strive to encourage local relationships between their Areas and their health and hospital systems. This emphasis on development of relationships not only assists in improving clinical performance but also develops (within these systems) advocates for the ambulance service.

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<sup>52</sup> An intensive care specialist reports to the Regional Director as Senior Resident Medical Officer (on a part-time basis). An emergency department physician (Area Medical Officer) is available in each of the four Areas for approximately 5 hours per week. Their main role is to provide clinical assistance for ambulance officers.



Some Area Managers in NSW have attempted to provide the same support as do interstate services through their District Officers and Station Officers. These officers, along with Sector Managers, appear to spend most of their time on administrative duties (particularly in roster preparation), communication and management. Their main intended clinical contribution is through their quality assurance role.

Sector Managers, District Officers and Station Officers are seen as part of the disciplinary structure in the NSW Service. Some interstate services deliberately seek to separate the clinical structure from the disciplinary. They believe that their officers are more likely to seek advice and assistance in such a structure.

In discussions with the Audit Office, many officers and managers indicated that they felt there would be value in having the Service's clinical directions more clearly articulated. There was a strong view that the Service needs to review this aspect so that it does not lag behind other States in clinical standards and performance.

NSW once held a pre-eminent position in this area. However, other States have caught up with earlier NSW innovations, such as the introduction of Paramedics<sup>53</sup> in 1976. The view expressed to the Audit Office by many officers and managers in NSW was that where their service once used to lead, it is now at best an equal. However, this may be partly perception rather than reality. It was apparent that many officers were not fully aware of ongoing research and initiatives being taken by the Service. Morale and pride in the Service would benefit from greater efforts by executive management to communicate the Service's achievements more widely.

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<sup>53</sup> The title "Paramedic" has different definitions in different services. In Victoria and Queensland, for example, all ambulance officers are called Paramedics. In NSW only officers qualified to Level 5 are called Paramedics. Interstate officers of equivalent training and skill to the NSW Paramedics are called MICA (Mobile Intensive Care Ambulance) Paramedics in Victoria and IC (Intensive Care) Paramedics in Queensland.

Throughout this report, "Paramedic" means an ambulance officer of the equivalent level to a Paramedic in the NSW Ambulance Service.

## 4.7 Stakeholder involvement

### Stakeholder management needs improvement

Interstate services visited seem to demonstrate an outward-looking approach to community liaison and involvement.

#### Case Study: interstate practice

RAV has a Community Reference Committee. Its purpose is to assist the Chief Executive to understand and incorporate the needs and perceptions of the mostly-rural communities which it serves. Area management is expected to manage stakeholders locally.

MAS regularly measures stakeholder and customer perceptions. It recently ran 35 workshops with 100 community members (who had been customers of the service) and 330 ambulance officers to better understand community expectations of the service. It emphasised, in its extensive process mapping, its "moments of truth". These are the points at which it interacts with the community, and at which it thus has a chance to influence community perceptions.

QAS, having developed from 96 independent community-based ambulance services over the last decade, has more than 160 Local Ambulance Committees. Their purpose is: "gathering feedback from and providing information to the communities about their local service, providing information and advice to the QAS management at all levels, and raising funds for vital equipment for the Ambulance Officers in their communities"<sup>54</sup>.

The *NSW Ambulance Services Act 1990* includes among the functions of the Ambulance Service:

12. (1) (e) to consult and co-operate with individuals and organisations (including voluntary agencies, private agencies and public or local authorities) concerned with the provision of ambulance services;
- (f) to co-ordinate and plan the future development of ambulance services, and towards that end:
  - (i) to consult with the Department of Health; and
  - (ii) to support, encourage and facilitate the organisation of community involvement in the planning of those services.

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<sup>54</sup> *Annual Report 1998-99, Queensland Ambulance Service*

**Community  
consultation is not  
systematic**

In its evolution from a service managed by 56 individual District Committees in 1972 (responsible for the raising of finance, the control of expenditure and the employment of staff), the Service appears not to have maintained its mechanisms for community involvement. While the Service is currently represented on a multiplicity of consultative committees, it has no specific mechanism for consultation with local communities.

All services visited acknowledged, to greater or lesser degree, the potential mismatch between where ambulance stations have historically been located, and where high-quality management information now indicates that they should be located. Likewise, there was general agreement about the difficulty of relocating resources to give more effective and efficient response. This is a problem shared by all emergency services.

Communities desiring a local ambulance presence sometimes begin publicity and fundraising campaigns to obtain one. If mishandled, such campaigns can become acrimonious and can diminish community respect for the Service and for the Department of Health. The Service needs formal links with communities so that it has an early and comprehensive understanding of community expectations and a mechanism for evaluating these. The Service's strategic plans should recognise the needs of different communities and reflect these in its plans for development.

## **4.8 Management training and development**

**Management  
development needs  
improvement**

The pressures under which managers operate have become increasingly complex in recent years. The management task, with the implementation of computer-aided call-taking, dispatching and communications, has become more technologically-oriented and demanding. The management of the clinical aspects of the business, with continuing worldwide innovation in treatments, drugs and equipment, remains complex and intellectually challenging. Hospitals and the health system have also become increasingly demanding as stakeholders.

### **Case Study: interstate practice**

Representatives of interstate services emphasised that their consultative team-based approach needs to be supported by a lot of resources. The 68 MAS branch team managers, for example, have attended a leadership course at Mt Eliza, and approximately 45 others have attended front line management courses. RAV has invested in progressively sending Area Managers to extended residential senior management development programs, such as the Australian Fire Authorities Council management development program.

QAS offers, in its Education Service Guide, professional development courses such as: Executive Leadership Development Program, Advanced Diploma Health Administration (Practical Ambulance Leadership and Management), Australian Competent Management Program, Mentor Course and Peer Support Training.

### **Changing staff profiles need careful change management**

In addition, trends to the increasing employment of civilians in specialist and management roles have the potential to cause conflict in organisations which have traditionally been uniformed. This highlights the need for development programs to inculcate broader management and supervisory skills, which may differ from those required to deliver “front line” patient care.

### **Information needs and skill needs are growing**

The Service has committed to implementation of the initial stages of a management development program<sup>55</sup>. The more highly skilled management becomes, the greater will be the demands on the management information system. This will be particularly critical for improving the performance of the Service. It will necessitate upgrading skills to provide managers with the tools to fully analyse and understand their part of the business and to measure its performance.

The Service also needs to consider the future of management/clinical training and development needs of all officers if it is to follow the path of devolution of management accountability and responsibility to teams, as has been done elsewhere.

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<sup>55</sup> The Service has recently retained an external agency to implement a tailored management development program for the Service's Area and Operations Centre Managers. The agency will work with each of these managers to identify where their skills can be improved and to provide support in relation to each of these identified areas.

The Service's previous management development initiatives have included the Superintendent's Diploma program and training in specialist skills such as grievance handling and complaint investigation.

## 4.9 Adequacy and appropriateness of performance indicators

### **Performance indicators are complex but vital**

As mentioned previously, because of the time-critical nature of much of their activity, responsiveness is the standard by which all ambulance services are judged. However, there is broad recognition within ambulance services (not necessarily shared by the broader community) that there cannot be one single standard of responsiveness against which all services and all activities should be measured. The Service's responsiveness targets are different for urban and rural services, and response time performance will vary between inner urban, urban, regional and remote locations.

Representatives of interstate services visited emphasised the inadequacy of response times as the critical performance indicator: "a 12 minute response time is too late for a cardiac arrest, but a waste of resources for a sore thumb". Many services, in Australia and overseas, employ or are implementing means of prioritising incoming emergency calls to identify those cases which are time critical. Funding has been approved by NSW Health to implement the CAD ProQA call prioritisation module in 2001.

All services visited are also striving for improved clinical performance indicators and for a better understanding of how the community perceives their performance. The Annual Reports of ambulance services in other States contain indicators which give a more comprehensive overview of performance than does the NSW Annual report. Of particular interest are those indicators which relate cost and operational data. For example, the QAS annual report includes statistics on operating cost per case attended and per case trip kilometre.

The Service has been reviewing and redeveloping its key performance indicators, developing new measures, and trialing integration of case sheet and CAD data.

**Public reporting of performance is essential**

For the purposes of accountability, transparency and better community relations, the Service should act to improve its public performance reporting. The Audit Office recently published two documents on performance reporting by agencies<sup>56</sup>. These may be of assistance to the Service.

#### **4.10 Extending the use of best practice innovations**

**Varying policies and practices**

Considerable variability has developed over time in local level operational policies and decisions on key resource management matters. This is not of itself significant. However, some of the issues identified were considered unusual by the Audit Office. For example, effective staffing targets (with shortfalls to be filled by overtime) vary in some Areas from formal statewide agreements.

Less unusually, flexibility in the staffing of rosters, in starting times, and in the use of overtime instead of some allowances, were also observed to differ from Area to Area.

Whilst local variations may suit local conditions and be necessary in some cases, greater consistency across the State in some key matters might be expected (such as agreed staffing levels and the use of overtime). But more generally, steps should be taken to identify and share information about various innovative practices which may be developed in one location so that others may benefit. Continuous improvement techniques should be explored to address appropriate ways in which such benefits can be shared.

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<sup>56</sup> *Judging Performance from Annual Reports* (performance audit report) and *Reporting Performance* (better practice guide), the Audit Office of NSW, 29 November 2000.

## **5 Barriers to performance: operational**

## 5.1 Management procedures for controlling overtime

### Overtime is high and growing

The Service recognises the high cost of overtime. It is keen to explore ways to improve staff deployment practices both for performance improvement and to assist in reducing avoidable overtime costs.

While total operating expenses of the Service increased by over \$13.0 million in 1999–2000, employee-related costs increased by over \$8.5 million. Within these employee-related costs, overtime increased by nearly \$5.0 million, a 23 per cent increase.

In 1998–99 overtime in the Service represented 12 per cent of total employee-related expenses. In 1999–2000 it had increased to 14 per cent.

**Table 8: NSW Ambulance Service employee-related costs<sup>57</sup>**

	1998–99 \$m	1999–2000 \$m	Increase \$m	Increase %
Salaries	117.0	121.0	4.0	3
Superannuation	13.5	14.4	0.9	7
Overtime	21.7	26.7	5.0	23
Leave and Other	31.9	30.5	(1.3)	(4)
Total Employee Related	184.0	192.6	8.6	5
Total Expenses	248.5	261.6	13.1	5

### Factors underlying overtime

A proportion of this overtime (estimated by Service management as being between \$1.2 and \$1.5 million) was approved and funded by the Department of Health. This was an interim arrangement pending completion of the increase in staffing levels arising from the Rural Staffing Review. The remainder of the increase in overtime has various causes. Key factors, however, are growing demand, limited resources, and the effects of being unable adequately to deploy resources to match workload patterns.

<sup>57</sup> *Net Cost of Service Comparison* management report, Ambulance Service of NSW



Overtime is unavoidable in services which have to respond to fluctuating demand. However, increasing levels of overtime are a signal to management to review the ability to meet demand. This requires consideration of alternatives which may reduce total costs without reducing responsiveness.

**Opportunities to better manage overtime are impeded by poor data and poor analysis tools**

It is difficult to determine whether overtime or call-out costs are avoidable without the ready ability to match staffing levels with caseloads. Alternative staffing configurations need to be evaluated: additional roster lines to cover periods when overtime or call-out costs are high, or different shift starting times. However, these options cannot be assessed without caseload, overtime and call-out information. While payroll information has been readily available from the Service's systems, attempts to obtain caseload information for the present audit have been protracted and time-consuming. More to the point, such data were not, during the audit, routinely available or used by management for ongoing resource management analysis.

**Case Study: interstate practice**

SAAS uses a simulation model (which now holds over 5 years of history) to test different scenarios or the effect of changes in key parameters. It was used recently, for example, to evaluate the effect of permitting average response times to increase by one minute. The model conclusively demonstrated that this relatively small change had the potential to cause up to 50 responses per week which would have adverse patient outcomes.

Interstate representatives acknowledged that their own rosters did not always provide a flexible and economic response to demand. They were also concerned, to varying degrees, with levels of overtime. However, some interstate services seem to have better information on workload, and more highly-developed measures of the effectiveness of their resources.

**Overtime controls are not adequate**

Ambulance officer overtime totalled nearly \$27.0 million in 1999–2000. Despite the sensitivity to the cost of overtime within the Service, basic procedures for verifying and approving payments for overtime and call-outs do not appear to have been in place.

Area management have all the information necessary to organise, verify and approve claims for planned overtime. However, most Area Managers interviewed by the Audit Office indicated that they did not receive timely information on unplanned overtime which has been authorised by the Operations Centres. This relates to issues such as shift extension, late meals or call-outs. Area Managers were thus sometimes unable to approve timesheets.

**Lack of basic controls and checks**

From discussions with both Area and Operations, the Audit Office developed a view that in general neither was fully playing its part in ensuring accurate and timely authorisation of all overtime. The Service does not share this view.

Whilst detailed transaction testing was not carried out by the Audit Office, discussions with the relevant officers clearly indicated that some basic checks which the Service expects to be carried out were often not being adequately performed.

Regardless of formal policy and accountability directives, it was not evident that clear accountability existed in practice between Area, Operations Centres and pay office for verifying and approving timesheets. This must be urgently addressed. With neither Area nor Operations accepting accountability for verifying claims for unplanned overtime payments, it appears that the chief safeguard against possible fraudulent or erroneous claims are random checks conducted by pay office personnel.

Some Operations Centres produce reports which could be used to approve claims for overtime. However, with one exception, these do not appear to be made available to Area management. A standardised Operations Centre report should be developed from those currently being produced, in consultation with Area and pay office management. Rather than introducing a paper system, it may be possible to introduce some degree of automation to overtime control processes.

**Case Study: interstate practice**

MAS also have problems with approval of overtime claims and also rely on random checks by their pay office, and are developing an on-line timesheet which will be completed over the Intranet and will permit checking of 100% of timesheets. In RAV all employee claims for overtime are verified at Area level against manual records from each of their operations centres, prior to being submitted to Head Office for payroll processing.

**Allegations of manipulation of overtime**

During this audit there were allegations by some NSW officers of manipulation and unequal distribution of planned overtime. The Audit Office subsequently sought to establish that all Areas have at least basic systems and procedures to ensure management oversight and approval of planned overtime. This appeared to be the case (although the efficacy of controls was not tested). However, as outlined above, unplanned overtime is not adequately controlled.

The Audit Office also sought to establish that processes were in existence to ensure that overtime is equitably shared. Processes in the past may not have been adequate. Processes do appear presently to exist, however, their rigour and efficacy is difficult to determine. A lingering perception appears to exist in some Areas that processes are not adequate.

**More checks and transparency for overtime are warranted**

In view of this, it is recommended that all processes to organise, authorise and to approve payment for overtime and call-outs should be reviewed as part of the Service's ongoing internal audit control review activities. To ensure transparency it is also suggested that lists of overtime hours worked should be openly displayed for viewing by all staff in the Area.

## **5.2 Restrictions in flexibility**

**Matching resources to workload is impeded by inflexibility**

The Audit Office encountered a variety of views amongst ambulance officers and management concerning the barriers to effective deployment of staff to match demand patterns. Some felt restrictive work practices were the problem. Others spoke of an overall lack of resources. There is evidence that both issues require attention. Overall resource levels have been examined in previous sections. The issue of deployment flexibility also warrants comment.

For any given level of resources, achieving optimal deployment requires two basic elements:

- knowledge of where and when they should be deployed
- the ability to deploy resources as and when required.

To achieve desired results, it is also necessary to maximise the efficiency of resources, once deployed, in performing required tasks.

**Work practices present obstacles to flexibility**

There is evidence of difficulties with each of these elements in the Service. For example:

- meal break arrangements for Sydney officers are costly (and increased by \$1.2 million in 1999–2000). Arrangements are also ineffective in ensuring that officers do not have to work a shift without an appropriate meal break
- call-out costs represent a major expense in rural Areas, and increased by \$6.7 million in 1999–2000 (despite the outcomes of the Rural Staffing Review). The lack of flexibility in the Award leads to multiple call-outs and call-outs of short duration<sup>58</sup>
- officers are often reluctant to fill vacancies at other stations on living away from home allowance (LAH) but will do so on overtime. Similarly some will only work sporting events coverage (SEC) duties on overtime, and will decline to do them on the lower SEC allowance
- lengthy advance notification is required under the Award to move officers to cover vacancies
- roster starting times are generally viewed as having limited flexibility (which need not be so, but seems to be an accepted limitation in many cases). At some country stations the number and cost of call-outs could be reduced by advancing or delaying shift starting times by an hour or so.

With increasing availability of better quality management information, it should become easier to measure the number of and utilisation of staff at different times for all stations. This will suggest where alternative working arrangements are needed to more equitably and economically balance the workload.

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<sup>58</sup> Other states have similar arrangements, albeit less costly than in NSW. The particular problem for the NSW Service is the unavailability of management information with which to review the levels of overtime worked at different stations, and the systems and flexibility to develop and test alternative staffing arrangements which will meet the community's needs at lower total cost.

**Attitudes also hinder flexibility**

Some impediments may be more imagined than real, having their basis in accepted culture and practice. These can be changed by education and proactive management. Other impediments may be the result of misunderstanding or misinterpretation of the Award or operating procedures. These can also be resolved. Some perceived impediments may be able to be solved simply by discussing and addressing them and searching for agreed solutions. Some impediments may require changes to the Award. And some impediments may not be able to be overcome, at least in the short term.

Whatever the situation for any given issue, the process for overcoming impediments to flexibility is similar. It requires discussion, attitude changing, problem solving, constructive negotiation and a commitment to implementation.

### **5.3 Management of leave and workers' compensation**

**Leave is a growing management issue**

The earlier discussion on the relief component in the Sydney Staffing review indicates that leave needs to be more actively managed within the Service as a critical component of resource management.

The lack of consensus on current leave levels is partly because accurate data have not been available on the overall extent of leave. It is essential for management to be able to determine whether or not actual leave taken has increased and to take appropriate action.

Deficiencies in the *Workforce* personnel management software mentioned earlier have contributed to the difficulties in determining current leave levels.

**Have leave levels increased?**

While it was unable to be established whether or not actual levels of leave had increased since the Sydney Staffing review, some Area managers (both Sydney and rural) believe that they have. Some expressed a view that the increases in leave were largely due to increases in Family and Community Service (FACS) leave, but this is not borne out by the evidence. Leave statistics (Table 9) show that FACS leave represents only 1 per cent of the total leave taken. Furthermore, the maximum FACS leave entitlement, according to the NSW Government Personnel Handbook, is only 2½ working days per 12 month period.

	<b>Hours</b>	<b>%</b>
Annual leave	539,208	40
Long service leave	411,540	31
Sick leave (paid)	199,927	15
Workers' compensation	77,243	6
Leave without pay	33,339	3
Maternity Leave (paid, on half pay, unpaid)	30,834	2
Family and Community Service leave	19,491	1
Sick leave (unpaid)	8,509	1
All other types of leave	12,436	1
<b>Total</b>	<b>1,332,527</b>	<b>100</b>

**Management of leave needs to be recognised as achievable and important**

Any increase in leave represents a significant loss of productivity and efficiency to the Service. Analysis of leave levels, causes and patterns must be an integral part of resource management. Vigilance is needed in this area to maximise productivity of the staff establishment. The Audit Office's performance audit report on managing sickness absence<sup>60</sup> may be of assistance to the Service in this regard.

Benchmarking of the Service's levels of leave with those of other similar organisations would also be a sound step in seeking potential improvements.

Leave systems also need to be reviewed for accuracy and reliability, and integrated with overall resource management systems (i.e. CAD).

<sup>59</sup> *Leave Hours Taken 1999–2000 Financial Year By Cost Centre & Employee*, management report, Ambulance Service of NSW

<sup>60</sup> *Management of Sickness Absence*, the Audit Office of NSW, August 1998.

**Managing workers' compensation is a key issue**

Workers' compensation is another area of concern, not only for its own sake, but because of the flow-on effect it can produce on overtime. Since an Internal Audit Bureau study of the Service's workers' compensation in 1999<sup>61</sup>, the Service has developed an action plan to address problems identified.

However, workers' compensation still needs to be more actively managed within the Service, both for resource management reasons and for officer welfare. In some cases, workers' compensation cases can unavoidably drag on for several years. However, under current arrangements the officer's position is unable to be filled during that time. The Service needs to recognise and factor-in the effect of drawn-out cases on staffing levels.

## **5.4 Roster preparation processes**

**Efficiency improvements are needed in roster administration**

Until very recently, the roster administration process was manual, and quite inefficient. The quality of the rosters which Areas regularly fax to the Operations Centres has been a source of friction between them. Roster problems consume Operations Centre staff time in rectifying or reconciling errors and can impede their ability to deploy officers. Even if the rosters are accurate, loading the information into their computer takes Operations Centre staff around an hour at the start of each shift.

Alternatives to automate roster preparation and improve quality and timeliness have been considered by the Service, and Service-wide adoption of the AMROS software is intended. Implementation is currently partially completed. This will be of considerable benefit and should continue to receive priority.

To maximise the potential benefit of the new system, as previously mentioned action needs to be taken to integrate leave systems with overall resource management systems. It is noted that this will be possible with the new AMROS software.

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<sup>61</sup> *NSW Ambulance Service: Review of issues related to Workers Compensation*, IAB Management Services, November 1999

## 5.5 Training of officers

### **Training and skill development required further attention**

In response to observations made during the audit, the Service has emphasised the development of the Ambulance Education Centre's educational programs and capabilities. The latest Annual Report records that:

... the Centre successfully became a Registered Training Organisation through the Vocational Education and Training Advisory Board ... Curriculum development is ongoing ... A new Skills Manual and student workbook will soon be available ... The AEC also introduced distance education program, primarily in core courses, giving officers the opportunity to study at their own pace in their own workplace.<sup>62</sup>

These actions appear to give effect to recommendations previously made by the Audit Office encouraging the greater use of self-paced workplace-based distance learning methods<sup>63</sup>.

However, whilst the initiatives are welcomed, observations during this audit indicate that these initiatives have yet to significantly impact upon many operations staff. The Service's capacity to deliver appears to be constrained by a quite limited technological infrastructure. Personal computers, for example, are not widely available to staff in Ambulance Stations.

## 5.6 Communications staff

### **New specialisations are emerging**

Recruitment and training of call-taking and dispatching staff for Operations Centres appears to be a problem for the Service.

Communications has developed into a specialist field, and some civilians are now being recruited into communications positions both here and interstate. Ambulance services generally appear to be finding difficulties attracting and retaining skilled communications staff. It is generally believed that the chief cause of this is that market rates are not being paid for this work.

Given the importance of communications functions to any modern ambulance service, this issue should be reviewed and appropriate employment conditions examined.

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<sup>62</sup> *Annual Report 1999-2000*, Ambulance Service of NSW

<sup>63</sup> *Training and Development for the State's Disciplined Services: Stream 2 - Skills Maintenance Training*, the Audit Office of NSW, December 1993.



## 5.7 Patient Transport Officers

**New service delivery strategies are requiring new staff categories**

Some ambulance services are increasingly using the Patient Transport Officer (PTO) position as an entry point for potential ambulance officers. PTO training is much quicker than ambulance officer training. Once PTOs have learned the vehicles, the Operations Centre, the radio system, the hospitals and the personnel, they have a sound foundation of basic skills if they wish to pursue a career as an ambulance officer. However, they have been recruited for a specialised (non-clinical) purpose and may not wish to proceed into clinical roles.

The Service has encouraged PTOs to enter the ambulance officer training scheme in times of shortage of trainee ambulance officers. Whilst there is sense in this, it produces a shortage of PTOs. This in turn places greater strain on ambulance officer resources to carry out the tasks for which PTOs were created.

The use of the PTO position as an ambulance officer entry point is a valid part of the Service's overall resourcing strategy. However, care needs to be taken to consider, and address, the overall effects.

## 5.8 Skill mix and Paramedics

**The Paramedic debate needs to be finalised**

The issue of skill mix – whether Paramedics should work alone or in pairs – appears to be hotly debated in many ambulance jurisdictions in Australia and around the world. At issue is ensuring that expensive Paramedic training and equipment is deployed where it is of most benefit to the community.

Paramedics (Level 5 officers) in most parts of NSW work in pairs, and have generally resisted attempts to team them with Level 3 or 4 officers. Such teaming could give more of the community access to their higher skills (by spreading them out further). It could also offer other officers the opportunity to work alongside the highly-skilled and admired Paramedics.

In some other States and overseas services Paramedics do work with lower skill level officers, apparently successfully. However, there is no wide consensus, as in other services Paramedics hold views similar to their NSW counterparts.

The 1982 Gleeson report expressed reservations about the cost effectiveness of Paramedics, and recommended that no further expansion of Paramedic activities be undertaken until an evaluation had been conducted. This evaluation was also to address specifically the issue of skill mix. While Paramedic

activities in NSW and other states have expanded markedly since then, no such formal evaluation has been conducted in NSW. QAS completed a *Paramedic Review Report* in October 1998.

## 5.9 Honorary and retained officers

### Volunteer officers are a vital resource

The Service uses only a small number of *honorary officers*, yet the provision of ambulance coverage in some small communities is entirely dependent upon them. The Sinclair Report recommended more extensive use of honorary officers for PTO duties<sup>64</sup>, and the position is included in the *NSW Ambulance Services Act 1990*:

(1) The Ambulance Service may appoint such persons as it thinks fit to be honorary ambulance officers

(2) Honorary ambulance officers:

(a) may carry out, without remuneration, such of the functions of the Ambulance Service as the Ambulance Service may from time to time direct; and

(b) are subject to the control and supervision of the Ambulance Service.

Other States use honorary or volunteer officers much more extensively than NSW.

	NSW	Vic MAS	Vic RAV	Qld	WA	SA	Tas	ACT
Ambulance officers	84	--	346	392	1,687	1,477	432	--

<sup>64</sup> "Another issue canvassed with the Committee was the problem for the hospitals in small rural towns when a registered nurse is required to escort a patient. In other instances a second ambulance officer provides the escort. In both instances this puts pressure on available staffing in smaller country towns. Training volunteers to serve as honorary ambulance officers in this role may be a solution.

Recommendations:

31 That the Ambulance Service expand the honorary Ambulance Officers Scheme in rural areas to assist patient transport including appropriate indemnity arrangements and patient protocols", *NSW Ministerial Advisory Committee on Health Services in Smaller Towns ("Sinclair Report")*, February 2000

<sup>65</sup> *Ambulance Services Australia Report 1998-99*, The Convention of Ambulance Authorities (Table 3)

### **Case Study: interstate practice**

All services have concerns about the availability and quality of honorary or volunteer officers, and some address these in a very proactive way. SAAS, for example, with nearly 1500 volunteer officers, actively recruits volunteers, then trains them through a 120 hour TAFE course. RAV has developed a 200 hour training course and separate clinical practice guidelines for honoraries. One of RAV's themes is "Community in Ambulance; Ambulance in Community". RAV management sees the voluntary system as making a significant contribution to delivering ambulance services in rural and remote locations in Victoria that do not have sufficient demand to support the allocation of full time ambulance officers.

The Rural Staffing Proposal of April 1999 recommended development of Retained Officers, which are similar to the SAAS and RAV concept of volunteers. However, in NSW the scope for wider employment of honoraries is limited by the industrial issue and by the Act's provision that honorary officers perform without remuneration.

### **Impediments need to be examined**

Given the importance of this issue to the overall resource deployment capabilities of the Service, it is recommended that action be taken to review existing impediments to the effective use of honorary or retained officers. A consultative and inclusive approach to examining this issue will be necessary if success is to be achieved.

## **5.10 Availability and performance of equipment**

Implementation of CAD was originally intended to be accompanied by the use of mobile data terminals (MDTs) in vehicles. MDTs would transmit to officers a written set of instructions, removing the need for voice communications. The MDTs were to incorporate automatic vehicle location (AVL) which would show the vehicle's position on a map on the dispatcher's CAD computer screen. This would permit quicker and more accurate allocation of the closest or most appropriate vehicle.

Both of these capabilities have been retarded by a combination of industrial and technical difficulties, but progress is now being coordinated through a Joint Consultative Committee.

**Supply and facilities problems**

Many officers and managers interviewed highlighted supply and facilities problems such as:

- problems because of suppliers who would no longer deal with the Service
- stores and equipment in short supply
- stores and equipment of inferior quality and performance
- buildings which are in poor condition with inadequate facilities.

Reports from the Audit Office reveal that the Service has had “a liquidity problem”<sup>66</sup> and “cash flow difficulties”<sup>67</sup>. These problems appear to have been alleviated recently<sup>68</sup>. However, the Service’s financial position has limited its ability to fund the acquisition of new equipment and the upgrading of buildings and facilities.

**Quicker assessment of needs and acquisition of equipment is desired**

The equipment provided for officers is fundamental to the quality of clinical care patients receive. Given concerns identified during the audit, the Service should review the adequacy, and the speed, of the process by which it selects and acquires equipment.

Reflux glucometers, for example, are no longer manufactured and cannot readily be repaired. Trials of alternatives have been conducted and a replacement unit has been selected, but insufficient supplies were available to equip all vehicles.

Pulse oximeters are very expensive to repair and replace, and spare parts and new units are not being purchased. The Equipment Review Committee<sup>69</sup> is currently considering replacement devices, but some stations were without useable units.

The Laerdal Heartstart defibrillators (which represent the majority of defibrillators in the Service) are now approximately

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<sup>66</sup> Auditor-General’s Report to Parliament 1998 Volume Three.

<sup>67</sup> *ibid*

<sup>68</sup> “...the average length of creditor payment at 30 April and 31 May 2000 was 80 days from receipt of invoice. At 30 September 2000, creditors are being paid within 42 days of receipt of invoice”, Auditor-General’s Report to Parliament 2000 Volume Five.

<sup>69</sup> “This Committee oversees the research, development and evaluation of new and current operational equipment.” The Committee comprises 3 Ambulance Officers, 3 Station Officers, 4 Superintendents and the Service’s Risk Management Coordinator and Stores Manager, *Annual Report 1998–99*, Ambulance Service of NSW

10 years old, and are probably approaching the end of their useful lives. A replacement semi-automatic defibrillator has been under consideration for several years, and purchase is expected to commence in the current financial year.

It was also observed that devices and equipment used for recertification are often different to equipment used in the field.

**Facilities need review**

Some of the ambulance stations visited by the Audit Office appeared to have poor facilities and access, or were in poor condition. However, decisions on changes or improvements to stations need to be made as part of a more fundamental review of where all stations should ideally be located to respond to current and future demand.

**Vehicle availability needs to be monitored**

Vehicle maintenance was also raised as an issue in some locations. Managers and officers in Wentworth, Western and South-Western Sydney Area claim that vehicle downtime can be as high as around 25 per cent of the fleet. Service management has been unable to produce data to either verify or refute this claim, but expects that the introduction of 200 new Mercedes Sprinter vehicles by 30 June 2001 will alleviate any problems with vehicle downtime. Even so, reports on vehicle availability and operating costs should be given high priority in the development of management information capabilities and processes.

## **5.11 Utilisation of Ambulance rescue units**

Rescue units in NSW are accredited and coordinated by the State Rescue Board. The Ambulance Service operates 14 Ambulance Rescue units, seven of which are in the Sydney metropolitan area, but over 75 per cent of rescue units in NSW are operated by either the Fire Brigade or the State Emergency Service.

Service	General Rescue		Vertical Rescue
	Primary	Secondary	
Police Service	9	0	9
Ambulance Service	14	0	6
Fire Brigades	37	123	12
State Emergency Service (SES)	78	11	34
Volunteer Rescue Association (VRA)	52	0	28
Australian Federal Police	0	0	1
Totals	190	134	90

During this audit, some officers and managers strongly supported the Service's continued role in rescue. This was based on the grounds that only ambulance-trained rescue operators were able to ensure appropriate patient care during rescue operations.

However, many more officers felt that the Service had no natural role in rescue, which also requires additional expensive equipment and training. It was argued that other rescue organisations always defer to ambulance officers on the scene to ensure that the patient's welfare is not compromised.

**Rescue unit activity is very low in some cases**

Review of the workload of the Ambulance Service's rescue units (Table 12) reveals that some units have extremely low levels of activity. Others, although busier, are only performing a small number of rescues.

When not responding, some rescue crews and vehicles are available for stand-by ambulance work. However, this practice appears to vary by station.

<sup>70</sup> State Rescue Board Vertical & General Land Rescue Accreditations: Accreditation Breakdown by Service (as at 25 August 1997): [http://www.oes.nsw.gov.au/Accred\\_L.html](http://www.oes.nsw.gov.au/Accred_L.html)

	<b>Total rescue responses</b>	<b>Total actual rescues</b>	<b>Rescues as % of responses</b>
Bankstown	3,033	225	7.4
Parramatta	2,993	316	10.6
Caringbah	1,863	242	13.0
Pt Clare	1,698	165	9.7
Camden	1,166	123	10.5
Hamilton	1,041	137	13.2
St Ives	970	114	11.8
Rutherford	522	104	19.9
Wollongong	329	143	43.5
Wagga Wagga	73	35	47.9
Bomaderry	43	31	72.1
Tamworth	40	23	57.5
Singleton	35	21	60.0
Cowra	10	6	60.0

The least active units (at Wagga Wagga, Bomaderry, Singleton, Tamworth and Cowra) between them responded only 201 times in one year, and made 116 rescues. There are alternative first or second response rescue teams for each of these localities.<sup>72</sup> However, some units are very active. The ambulance rescue crew at Parramatta made 3033 responses in the 12 months (but only effected 225 rescues).

### **The role of rescue units should be examined**

Because of the wide range of activity and productivity of its dedicated rescue facilities, and its relatively small presence (compared to the fire brigade and SES), the Service should review the contribution it makes to the State's rescue capabilities, both broadly and locally.

<sup>71</sup> NSW Ambulance Service data

<sup>72</sup> Cowra, whose ambulance rescue crew made only 10 responses and 6 rescues in 12 months, has alternative accredited rescue facilities in Cowra (fire brigade), at Canowindra (SES and fire brigade) and Eugowra (SES). Wagga Wagga, whose ambulance rescue vehicle responded 73 times for 35 rescues, also has a VRA crew, and can draw on rescue crews from Coolamon (fire brigade), Junee (VRA and fire brigade), The Rock (SES), Lockhart (fire brigade) and Turvey Park (fire brigade).





## **Attachments**

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**Recommendation 1:**            *Enhance the accountability framework of the Service*

With the exception of the initial comment on the accountability arrangements for the Service, the points within this recommendation are consistent with the Service's own direction and will be addressed as part of current developments.

For example:

- Expanded indicators for performance measurement are being developed within the Service. The advent of the AmbCAD system along with the current project to integrate information from patient case records and the dispatch system will enable a new set of indicators for both organisational performance and clinical quality to be derived. The new reporting processes are expected to be introduced from 1 July 2001, following the achievement of statewide coverage for the AmbCAD network.
- One of the specific purposes behind establishing the new rural and metropolitan directorates was to address relationship, accountability and communication issues for staff in both Operations Centers and Area structures. The issues set out in the report are consistent with many of those already identified by the Service and are being addressed by the new executive team.

The Service has long recognised the need to develop a range of additional skills and experience, including change management techniques within the organisation. The selection of external candidates to the four most senior executive posts within the Service over the last 2 years, including that of Chief Executive Officer, is evidence of this recognition. The management development program identified by the Service will also assist in improving the range of skills and techniques utilised by middle managers.

However, the Service does not accept the recommendation that its governance framework should be changed. The Audit Office's comments on the Service's accountability arrangements are similar to those made by the Audit Office in previous reports concerning corporate governance within the public sector. The recommendations of these previous reports have not been actioned by Government, nor accepted as an appropriate public sector model for New South Wales.

Current arrangements clearly set out that the Ambulance Service through the Board, is subject to the direction and control of the Minister (see Section [7] Ambulance Services Act, 1990). In addition, the Health Administration Act 1982 establishes the Health Administration Corporation as the employer for industrial purposes of all public health service personnel. The Corporation has the statutory power and public duty to intervene in industrial disputes between local management and unions in the public health sector where the safety of the public may be involved.

These arrangements are consistent with those applying to other entities within the NSW health system and are not subject to change by the Ambulance Service. It is relevant to note that corporate governance is an expression used to describe how the owners of a



business to share with others their power to decide the destiny of the business. There is no international best practice model. In both public and private sectors, corporate governance arrangements take many shapes with many structures. These very different arrangements reflect the response of owners to their environment.

There is no evidence on the international stage to justify support for any single model including the advocated by the Audit Office.

***Recommendation 2: Enhance public performance reporting***

The thrust of this recommendation is consistent with current changes within the Service and is accepted.

Standard reporting formats for ambulance responsiveness and workload trends continue to be available to the public through routine publications. A wider range of indicators will become available as the AmbCAD system becomes fully operational and linked to other information systems such as the WorkForce personal system and patient case records. In light of the advances in ambulance data and information systems, the Service has established a Performance Information Unit for the ongoing development and reporting of performance and clinical quality indicators.

Similar changes are occurring across the ambulance industry worldwide. In Australia, the Convention of Ambulance Authorities has established a working group to improve the standardisation of definitions and develop a common set of core indicators to enable more meaningful comparative analysis to be undertaken.

Until such time as this project is complete, however, it is not possible to directly compare activation and response time statistics between the different ambulance services within Australia. Footnote 11 on page 19 of the Report outlines the primary reasons why such comparisons can not confidently be drawn. Most prominently, it is noted that whilst “[t]he NSW Service reports response time for all “000” calls ... some other services report only on those cases identified as serious or life threatening”. It should also be noted that the “ORCON standards” initially developed in 1976 are no longer considered relevant as a method of measuring modern ambulance service performance.

In addition, careful interpretation is required when reviewing the Service’s activation and response time data since the introduction of AmbCAD. It must be remembered here that prior to the implementation of AmbCAD, the time taken to dispatch an ambulance did not include the time required to answer the telephone call and obtain the required details from the caller. The commencement of activation and response time measurements began at the completion of the call. Response times are now measured from the time a call is picked up.

Despite the acknowledged difficulties in comparing available data, the Ambulance Service accepts that response times have not improved over recent years and as a consequence steps are being taken to improve the responsiveness of ambulances.



**Recommendation 3:** *Work toward a “whole of health” delivery of ambulance services*

This recommendation is consistent with the Service’s long standing commitment to develop specialised ambulance and pre-hospital care as an integral part of the NSW health system.

One of the underlying principles of the 1998 organisational restructure was to align the Service’s eight Area management administrative boundaries with those of the NSW Health Area Health Services.

As a result of this decision, the Service now carries a very clear role in the State’s “Critical Care Networks” and in coordinating medical retrieval services both on the ground and amongst aero-medical providers. These relationships are well established and understood by all parts of the health system involved in critical care and retrieval.

The Service is also working closely with metropolitan area health services to manage peak workload demands. On this point, it is noted that the analysis of restricted access to emergency departments presented in the report is somewhat misleading.

For example, although restricted access hours increased in the whole of 1999/00 (over the whole of 1998/99), there was an improvement in the latter half of 1999/00 over the half of the previous year (by 1,408 hours or 34%). This culminated in the restricted access over winter in 2000 being over 60% less than in winter of 1999. This is a very significant improvement.

This noticeable improvement in restricted access continued into 2000/01. In the first seven months of the year, restricted access decreased by 2,709 hours or 44% over the same period last year. The Service is also continuing to work with the NSW Health and the metropolitan Area Health Services to enable prompt hand-over of patients and turn around of ambulance at hospital emergency departments.

In rural areas, the Service is actively involved in 13 of the 16 Multi-Purpose Services projects that will see the collocation of ambulance and health services within the one facility. While more detailed analysis and consultation will be required to develop integrated service delivery models, the discussion document “A Vision for the Future” already identifies the goal of allowing ambulance officers to take on a greater role in broader health delivery in rural communities by providing them with additional skills and responsibilities.



Current Collocations	Collocations Planned 2001-2002	
Baradine	Barraba	Berrigan
Walgett	Boggabri	Coffs Harbour
Warren	Collarenebri	Coolah
Brewarrina	Denman	Gilgandra
	Gulargambone	Holbrook
	Lightning Ridge	Tullamore

The Service has had the benefit of significant funding increases since 1995 / 1996 as indicated in the following table.

90/91	91-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01
\$85.1m	\$84.2m	\$82.3m	\$85.8m	\$87.8m	\$94.9m	\$101.9m	\$111.8m	\$138.3m	\$145.8m	\$159.2m

However the current arrangements for ambulance charging and insurance arrangements have been in place for many years and the Service agrees that these structures require review.

Changing relationships are developing in the area of non-emergency transport. The need for change is driven in part by growing demand, the need for greater efficiency and the need to ensure emergency response ambulances are available for emergency cases and not distracted by non-emergency work. The Service is currently trialing the impact of having a greater proportion of its resources dedicated to non-emergency “Patient Transport Services” to assist in determining the most appropriate mix of ambulance resources across emergency and non-emergency duties.

As part of the ongoing review of deployment practices, the Service will consider options for improving utilisation of officers with specialist rescue and paramedic training.

**Recommendation 4:** *Further develop management information capabilities to support decision making*

The take-up of new technologies has become a commonplace feature of the Ambulance Service of NSW in recent years.

Implementation of Computer Aided Dispatch system (AmbCAD) and the sophisticated data it is able to produce has had a significant impact on the manner in which the Service thinks about its operations and resource deployment. Although in the early stages of development, the opportunities revealed by the more sophisticated AmbCAD data has already led to the current active discussion on options for more efficient rostering of ambulance crews.



While the Service has appropriately focused on bedding in the operational aspects of the core AmbCAD functions, it has more recently moved to apply information derived from the system.

- A Performance Information Unit has been established to expand upon and improve analysis and utility of key performance indicators currently reported
- AmbCAD System Support Unit to develop further the core AmbCAD data base and user skills to enable predictive analysis of workload patterns and travel time information including analysis of traffic flow patterns
- A trial of “point of care patient information system” with the capacity for real time links with hospital specialist and core patient systems and treatment protocols. The trial is linked with Concord Hospital and will be developed over the next 6 months.
- Integration of the old paper based case record system with the AmbCAD data base for more efficient and timely analysis of activity and clinical quality information.
- Introduction of a telephone triage system to medically prioritise the dispatch of ambulances to assist rapid responses to the most urgent of case. This system will be progressively introduced during the 2001 calendar year.

***Recommendation 5: Identify and remove barriers to flexibility of resource deployment***

The thrust of the recommendations under this heading are accepted by the Service and are consistent with the current change agenda. However, practical suggestions on what can or should be changed are not provided. Nonetheless, the report does provide an endorsement of the broad direction of changes currently being pursued.

Existing workplace arrangements were agreed with staff some 15 years ago, prior to the ready availability of information about workload fluctuations during the day, from day to day, during the week and seasonal variations during the year. Current staff deployment arrangements focus on maintaining a constant level of staff, mostly at a home station during core shifts running from 08:00 to 18:00 and from 18:00 to 08:00.

While some efforts have been made to address higher weekday workloads in some locations with additional day shifts from 09:00 to 17:00, information now available shows that more can be done to make a greater number of ambulances available when they are needed most.

The Service intends to trial a revised roster format for three ambulance stations in Northern Sydney involving greater use of afternoon shifts.

The Service is committed to negotiating appropriate workplace changes that will provide a better service to patients while at the same time addressing the needs of ambulance officers. It is vital that that such changes occur in consultation with staff to ensure the best outcomes in responsiveness and patient care.



**Recommendation 6:** *Enhance consultation with external stakeholders*

While acknowledging the logistical issues of community consultation on a statewide basis, the Service accepts the need to upgrade community consultation and participation frameworks. Recent reforms in the broader health system arising from the Government Action Plan for Health provide new opportunities to work within consultative forums for the broader health system and to engage greater community participation in delivery of ambulance services.

**Recommendation 7:** *Review recruitment and development strategies*

The Service has already moved to improve staff development practices by implementing a strategy of management training and development and committing to a review of the current clinical training structure. As an initial step to better involve staff, the Service has recently completed a staff survey. The information from the survey will be incorporated into the various consultative processes leading into development of a new strategic plan for ambulance services in New South Wales.

The survey results will also assist the development of management competencies that are essential for the successful implementation of change processes. Managers will be assessed against these competencies in a Management Assessment Clinic in April 2001. Following the clinic, management development plans will be established for each manager, and a training plan developed and implemented. It is also proposed that further assessment clinics will be conducted involving other levels of management during the 2001/2002 and 2002/2003 financial years.

Regular Corporate Culture Surveys to measure progress are also a feature of this strategy.

The Service has also begun a review of workforce management planning. This exercise is expected to take up to twelve months to complete and will provide the information required to predict and respond to the recruitment, skills development, and succession planning needs of the Service.

While the comments on page 69 of the body of the report about pursuing more productive deployment of staff are noted and agreed, the Service is continuing to accelerate recruitment and training of new recruits to the maximum capacity of the Ambulance Education Centre in order to achieve enhanced staff establishment levels.

The Service has also recently reviewed recruitment practices and assessment processes for entry into the Ambulance Service. Changes to practices arising from this review were applied during the recruitment process for 50 trainees employed by the Service early this year.



**Recommendation 8:** *Continue to place a high priority on addressing issues relating to culture and ethics*

In the past 3 to 4 years, complaints handling management within the Ambulance Service has improved significantly. The Service is now better equipped than ever to deal with issues of ethics and complaints, both in terms of culture and systems of management.

Since the establishment of the Professional Standards and Conduct Unit in 1999, for example, there has been a decrease in the number of complaints reported to external bodies such as the Independent Commission against Corruption and the NSW Ombudsman. A tangible sign that the underlying causes of these types of allegations and concerns are being effectively addressed and, further, that individuals are confident that the Service will itself properly investigate and deal with complaints in a fair, expeditious and professional manner.

The Professional Standards and Conduct Unit has also overseen various pro active measures to raise awareness amongst staff about matters of ethics, probity and conduct. Most notably, the Code of Conduct has been redrafted, and a training package dealing with ethics and professional conduct developed and implemented as a core module within ambulance officer and future staff development training programs.

The Service is also participating in the development of a complaints management system for use across the whole of health.





- Page 4      The LTO figures quoted are not the latest available and given that the issue here is a winter phenomenon, the financial year analysis in the report is misleading.
- For example, although restricted access hours increased in the whole of 1999/00 (over the whole of 1998/99), there was an improvement in the latter half of 1999/00 over the latter half of the previous year (by 1,408 hours or 34%). This culminated in the restricted access over winter in 2000 being over 60% less than in winter of 1999. This is a very significant improvement.
- This noticeable improvement in restricted access continued into 2000/01. In the first seven months of the year, restricted access decreased by 2,709 hours or 44% over the same period last year.
- Page 12      The Audit Office was advised that the allegations concerning “roting” of overtime had been investigated and found not be substantiated. The Service further expressed the view to Audit Office representatives that where information concerning allegations appeared in the Report, equal space should be given to describing the outcomes of such allegations.
- Page 19      The benchmark data published by the Convention of Ambulance Authorities is not “independent” but compiled from information provided by the various ambulance services within Australia.
- Page 19      It should be noted that the Western Australian statistics provided in Table 3 only relate to metropolitan response times.
- Page 31      The Service wishes to remove any inference that Emergency Departments close. The restrictions only apply to cases assessed by ambulance officer as not “life threatening conditions”.
- Page 35      It is important to record the fact that the comments attributed to the management of the Central Coast Area Health Service have been denied.
- Page 36      The Southern Area Health Service advises that some current orthopaedic arrangements have been in place for more than 5 years and that the ACT Helicopter Service – a joint NSW/ACT venture introduced 2-3 years ago – has been introduced. Patients with injuries requiring orthopaedic services are now transported direct to the ACT.



- Page 59      The observation that the Service’s early use of Unit Hour Utilisation data was flawed is not correct. The compilation of this data was in compliance with international standards for this measure and was based on the total number of transports undertaken by hour of day and day of week.
- The view expressed by staff representatives, at this time, that the data was incomplete and inaccurate was, in the opinion of the Service, based on a lack of understanding and misinterpretation of this data.
- Page 87      The Report is in error. There was a formal review of paramedic services in NSW conducted in the early 1980s with a detailed Report submitted to the then Minister for Health. That review was accepted and resulted in the development of Advanced Life Support Officers (Level 4).
- Page 89      The Report confuses “retained” ambulance officers and honoraries. The only impediment to the employment of retained officers is union opposition to the concept, not the legal problem.

## **Performance Audits by the Audit Office of New South Wales**

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## Performance Auditing

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Performance audits seek to serve the interests of the Parliament, the people of New South Wales and public sector managers.

The legislative basis for performance audits is contained within the *Public Finance and Audit Act 1983, Division 2A*, which differentiates such work from the Office's financial statements audit function. Performance audits examine whether an authority is carrying out its activities effectively and doing so economically and efficiently and in compliance with all relevant laws. These audits also evaluate whether members of Parliament and the public are provided with appropriate accountability information in respect of those activities.

Performance audits are not entitled to question the merits of policy objectives of the Government.

When undertaking performance audits, auditors can look either at results, to determine whether value for money is actually achieved, or at management processes, to determine whether those

processes should ensure that value is received and that required standards of probity and accountability have been met. A mixture of such approaches is common.

Where appropriate, performance audits provide recommendations for improvements in public administration.

Performance audits are conducted by specialist performance auditors who are drawn from a wide range of professional disciplines.

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## Performance Audit Reports

No.	Agency or Issue Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
1	Department of Housing	<i>Public Housing Construction: Selected Management Matters</i>	5 December 1991
2	Police Service, Department of Corrective Services, Ambulance Service, Fire Brigades and Others	<i>Training and Development for the State's Disciplined Services: Stream 1 - Training Facilities</i>	24 September 1992
3	Public Servant Housing	<i>Rental and Management Aspects of Public Servant Housing</i>	28 September 1992
4	Police Service	<i>Air Travel Arrangements</i>	8 December 1992
5	Fraud Control	<i>Fraud Control Strategies</i>	15 June 1993
6	HomeFund Program	<i>The Special Audit of the HomeFund Program</i>	17 September 1993
7	State Rail Authority	<i>Countrylink: A Review of Costs, Fare Levels, Concession Fares and CSO Arrangements</i>	10 December 1993
8	Ambulance Service, Fire Brigades	<i>Training and Development for the State's Disciplined Services: Stream 2 - Skills Maintenance Training</i>	13 December 1993
9*	Fraud Control	<i>Fraud Control: Developing an Effective Strategy (Better Practice Guide jointly published with the Office of Public Management, Premier's Department)</i>	30 March 1994
10	Aboriginal Land Council	<i>Statutory Investments and Business Enterprises</i>	31 August 1994
11	Aboriginal Land Claims	<i>Aboriginal Land Claims</i>	31 August 1994
12	Children's Services	<i>Preschool and Long Day Care</i>	10 October 1994
13	Roads and Traffic Authority	<i>Private Participation in the Provision of Public Infrastructure (Accounting Treatments; Sydney Harbour Tunnel; M4 Tollway; M5 Tollway)</i>	17 October 1994
14	Sydney Olympics 2000	<i>Review of Estimates</i>	18 November 1994
15	State Bank	<i>Special Audit Report: Proposed Sale of the State Bank of New South Wales</i>	13 January 1995
16	Roads and Traffic Authority	<i>The M2 Motorway</i>	31 January 1995
17	Department of Courts Administration	<i>Management of the Courts: A Preliminary Report</i>	5 April 1995
18*	Joint Operations in the Education Sector	<i>A Review of Establishment, Management and Effectiveness Issues (including a Guide to Better Practice)</i>	13 September 1995
19	Department of School Education	<i>Effective Utilisation of School Facilities</i>	29 September 1995

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21	Government Advertising	<i>Government Advertising</i>	23 November 1995
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23*	Ethnic Affairs Commission	<i>Administration of Grants (including a Guide To Better Practice)</i>	7 December 1995
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25	Environment Protection Authority	<i>Management and Regulation of Contaminated Sites: A Preliminary Report</i>	18 December 1995
26	State Rail Authority of NSW	<i>Internal Control</i>	14 May 1996
27	Building Services Corporation	<i>Inquiry into Outstanding Grievances</i>	9 August 1996
28	Newcastle Port Corporation	<i>Protected Disclosure</i>	19 September 1996
29*	Ambulance Service of New South Wales	<i>Charging and Revenue Collection (including a Guide to Better Practice in Debtors Administration)</i>	26 September 1996
30	Department of Public Works and Services	<i>Sale of the State Office Block</i>	17 October 1996
31	State Rail Authority	<i>Tangara Contract Finalisation</i>	19 November 1996
32	NSW Fire Brigades	<i>Fire Prevention</i>	5 December 1996
33	State Rail	<i>Accountability and Internal Review Arrangements at State Rail</i>	19 December 1996
34*	Corporate Credit Cards	<i>The Corporate Credit Card (including Guidelines for the Internal Control of the Corporate Credit Card)</i>	23 January 1997
35	NSW Health Department	<i>Medical Specialists: Rights of Private Practice Arrangements</i>	12 March 1997
36	NSW Agriculture	<i>Review of NSW Agriculture</i>	27 March 1997
37	Redundancy Arrangements	<i>Redundancy Arrangements</i>	17 April 1997
38	NSW Health Department	<i>Immunisation in New South Wales</i>	12 June 1997
39	Corporate Governance	<i>Corporate Governance Volume 1 : In Principle Volume 2 : In Practice</i>	17 June 1997
40	Department of Community Services and Ageing and Disability Department	<i>Large Residential Centres for People with a Disability in New South Wales</i>	26 June 1997
41	The Law Society Council of NSW, the Bar Council, the Legal Services Commissioner	<i>A Review of Activities Funded by the Statutory Interest Account</i>	30 June 1997
42	Roads and Traffic Authority	<i>Review of Eastern Distributor</i>	31 July 1997
43	Department of Public Works and Services	<i>1999-2000 Millennium Date Rollover: Preparedness of the NSW Public Sector</i>	8 December 1997

<b>No.</b>	<b>Agency or Issue Examined</b>	<b>Title of Performance Audit Report or Publication</b>	<b>Date Tabled in Parliament or Published</b>
44	Sydney Showground, Moore Park Trust	<i>Lease to Fox Studios Australia</i>	8 December 1997
45	Department of Public Works and Services	<i>Government Office Accommodation</i>	11 December 1997
46	Department of Housing	<i>Redevelopment Proposal for East Fairfield (Villawood) Estate</i>	29 January 1998
47	NSW Police Service	<i>Police Response to Calls for Assistance</i>	10 March 1998
48	Fraud Control	<i>Status Report on the Implementation of Fraud Control Strategies</i>	25 March 1998
49*	Corporate Governance	<i>On Board: guide to better practice for public sector governing and advisory boards (jointly published with Premier's Department)</i>	7 April 1998
50	Casino Surveillance	<i>Casino Surveillance as undertaken by the Director of Casino Surveillance and the Casino Control Authority</i>	10 June 1998
51	Office of State Revenue	<i>The Levying and Collection of Land Tax</i>	5 August 1998
52	NSW Public Sector	<i>Management of Sickness Absence NSW Public Sector Volume 1: Executive Briefing Volume 2: The Survey - Detailed Findings</i>	27 August 1998
53	NSW Police Service	<i>Police Response to Fraud</i>	14 October 1998
54	Hospital Emergency Departments	<i>Planning Statewide Services</i>	21 October 1998
55	NSW Public Sector	<i>Follow-up of Performance Audits: 1995 - 1997</i>	17 November 1998
56	NSW Health	<i>Management of Research: Infrastructure Grants Program - A Case Study</i>	25 November 1998
57	Rural Fire Service	<i>The Coordination of Bushfire Fighting Activities</i>	2 December 1998
58	Walsh Bay	<i>Review of Walsh Bay</i>	17 December 1998
59	NSW Senior Executive Service	<i>Professionalism and Integrity Volume One: Summary and Research Report Volume Two: Literature Review and Survey Findings</i>	17 December 1998
60	Department of State and Regional Development	<i>Provision of Industry Assistance</i>	21 December 1998
61	The Treasury	<i>Sale of the TAB</i>	23 December 1998
62	The Sydney 2000 Olympic and Paralympic Games	<i>Review of Estimates</i>	14 January 1999
63	Department of Education and Training	<i>The School Accountability and Improvement Model</i>	12 May 1999



No.	Agency or Issue Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
64*	Key Performance Indicators	<ul style="list-style-type: none"> <li>• <i>Government-wide Framework</i></li> <li>• <i>Defining and Measuring Performance (Better practice Principles)</i></li> <li>• <i>Legal Aid Commission Case Study</i></li> </ul>	31 August 1999
65	Attorney General's Department	<i>Management of Court Waiting Times</i>	3 September 1999
66	Office of the Protective Commissioner Office of the Public Guardian	<i>Complaints and Review Processes</i>	28 September 1999
67	University of Western Sydney	<i>Administrative Arrangements</i>	17 November 1999
68	NSW Police Service	<i>Enforcement of Street Parking</i>	24 November 1999
69	Roads and Traffic Authority of NSW	<i>Planning for Road Maintenance</i>	1 December 1999
70	NSW Police Service	<i>Staff Rostering, Tasking and Allocation</i>	31 January 2000
71*	Academics' Paid Outside Work	<ul style="list-style-type: none"> <li>▪ <i>Administrative Procedures</i></li> <li>▪ <i>Protection of Intellectual Property</i></li> <li>▪ <i>Minimum Standard Checklists</i></li> <li>▪ <i>Better Practice Examples</i></li> </ul>	7 February 2000
72	Hospital Emergency Departments	<i>Delivering Services to Patients</i>	15 March 2000
73	Department of Education and Training	<i>Using computers in schools for teaching and learning</i>	7 June 2000
74	Ageing and Disability Department	<i>Group Homes for people with disabilities in NSW</i>	27 June 2000
75	NSW Department of Transport	<i>Management of Road Passenger Transport Regulation</i>	6 September 2000
76	Judging Performance from Annual Reports	<i>Review of eight Agencies' Annual Reports</i>	29 November 2000
77*	Reporting Performance	<i>Better Practice Guide A guide to preparing performance information for annual reports</i>	29 November 2000
78	State Rail Authority (CityRail) State Transit Authority	<i>Fare Evasion on Public Transport</i>	6 December 2000
79	TAFE NSW	<i>Review of Administration</i>	6 February 2001
80	Ambulance Service of New South Wales	<i>Readiness to Respond</i>	March 2001

\* Better Practice Guides

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