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# 11 Emergency management

Emergency management aims to reduce the level of risk to the community from the occurrence of emergencies, reduce the adverse effects of emergencies, and improve the level and perception of safety in the community. This chapter reports on some activities of State and Territory government fire and ambulance services (pre-hospital care, treatment and transport services).<sup>1</sup> Except for information in section 11.1 on the scope of activities, the chapter does not report on the total range of State and Territory emergency services.

A profile of emergency management appears in section 11.1, followed by a discussion of recent policy developments in section 11.2. Together, these sections provide a context for assessing the performance indicators presented later in the chapter. A framework of performance indicators is outlined in section 11.3. The data are discussed in sections 11.4 and 11.5, and future directions for performance reporting are discussed in section 11.6. Jurisdictions' comments are provided in section 11.7. Section 11.8 provides information on sample data. The chapter concludes with definitions in section 11.9.

Major changes in this year's chapter include:

- the inclusion of text boxes detailing specific programs focused on Indigenous communities;
- the provision of information on the variety of agencies involved in providing responses to a range of emergencies to improve understanding of the breadth of emergency management;
- the presentation of information on the scope and type of State and Territory Emergency Services (SES/TES) activities;
- a change to the way in which the Report refers to ambulance services to accommodate future expansion of event-type services reporting; and
- the provision of data on revenue sources for event-type services.

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<sup>1</sup> Ambulance services are defined as pre-hospital care, treatment and transport services in this chapter.

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Data have been improved by refining revenue data items (for both fire and ambulance services) to clarify the reporting of revenue received directly and indirectly by agencies. Improvements include revised definitions for:

- staff numbers, to ensure categories are mutually exclusive and it is clear to which category staff belong;
- caseload, to avoid miscounting of patient transport vehicles;
- response times, to clarify the categories; and
- cardiac arrest survival, to enable more jurisdictions to report against this item.

These changes have improved data comparability.

### *Supporting tables*

Supporting tables for chapter 11 are provided on the CD-ROM enclosed with the Report. The files are provided in Microsoft Excel 97 format as \Publications\Reports\2002\Attach11A.xls and in Adobe PDF format as \Publications\Reports\2002\Attach11A.pdf.

Supporting tables are identified in references throughout this chapter by an 'A' suffix (for example, table 11A.3 is table 3 in the electronic files). These tables may be subject to revision. The most up-to-date versions of these files can be found on the Review web page ([www.pc.gov.au/gsp](http://www.pc.gov.au/gsp)). Users without Internet access can contact the Secretariat to obtain up-to-date versions of the tables (see details inside the front cover of the Report).

## **11.1 Profile of emergency management**

The emergency management sector includes a range of service providers engaged in activities of prevention, preparedness, response and post-emergency recovery. Emergency management providers address a range of events, including fires, medical transport and emergencies, rescues, other natural events (such as floods, earthquakes, landslides, heatwaves, cyclones and other storms), technological and hazardous material incidents (such as chemical spills, harmful gas leaks, radiological contamination, explosions and spills of petroleum and petroleum products), quarantine and control of diseases and biological contaminants.

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## **Roles and responsibilities**

The management of major emergencies and disasters requires cooperation among Commonwealth, State, Territory and local governments, industry, community organisations and the community in general.

The primary role of the Commonwealth Government is to support and develop national emergency management capability by:

- coordinating the Commonwealth's material and technical assistance to States and Territories in the event of large scale emergencies (through Emergency Management Australia);
- providing financial assistance to States, Territories and authorities for flood prevention/mitigation (through the Regional Flood Mitigation Program of the Department of Transport and Regional Services) and for bearing the costs of natural disasters (through the Natural Disaster Relief Arrangements of the Department of Transport and Regional Services);
- providing information, best practice materials and training programs (through Emergency Management Australia); and
- supporting community awareness activities (through Emergency Management Australia, the Bureau of Meteorology and Geoscience Australia).

Commonwealth Government agencies also have specific emergency management responsibilities, such as: the control of exotic animal diseases; aviation and maritime search and rescue; the management of major marine pollution and meteorological and geological hazards; the provision of firefighting services at some airports and some defence installations; human quarantine; and research and development.

State and Territory governments are responsible for instituting regulatory arrangements and have the primary responsibility for delivering emergency services, including fire and ambulance services, directly to the community. Commonwealth, State and Territory governments are also jointly responsible for developing building fire safety codes, undertaking fire related research, formulating policies and providing advice on fire safety.

Local governments in most States and Territories are involved to varying degrees in emergency management. Their roles and responsibilities include:

- considering public safety in town planning and development to assist in preventing emergencies such as fires, floods and hazardous material incidents;
- improving community preparedness through local emergency and disaster plans;

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- issuing hazard reduction notices to private land holders and clearing vegetation in high risk public areas;
  - collecting statutory levies to fund fire services;
  - allocating resources for response and recovery activities; and
  - providing financial and operational assistance to rural fire brigades and/or other voluntary emergency service units.

### *Fire services*

State and Territory governments provide a range of emergency management activities through fire services, including prevention, preparedness, response and recovery (see section 11.3). Fire services across jurisdictions generally:

- respond to structural, bush, forest, vehicle and other fires;
- develop building fire safety codes and inspect fire safety measures;
- provide rural land management advice on the role and use of fire;
- train and educate the community about fire safety and awareness and road safety issues;
- conduct road accident rescue;
- manage chemicals and hazardous material incidents; and
- administer legislation relating to fire safety, hazardous materials facilities and hazard mitigation.

The management structure and activities of fire services differ across jurisdictions (box 11.1). Separate urban and rural fire services deliver fire services in most jurisdictions. Land management departments also typically provide rural fire services. Jurisdictions with more than one fire authority may separate services in different ways; for example, NSW separates fire services on the basis of service function and geographic area, whereas Victoria separates fire services by geographic area only.

## Box 11.1 Delivery and scope of activity of primary fire services<sup>a</sup>

### *Urban*

***Attend residential and commercial structural fires; incidents involving hazardous materials; and road accidents within major urban centres.***

### *Rural*

***Attend local structural fires and other events outside major urban centres; rural non-structural fires (including crop, bushland and grassland fires on private property); and fires in national parks and State forests.***

<i>NSW</i>	<i>NSW Fire Brigades</i> — the brigades report to the Minister for Emergency Services directly.	<i>NSW Rural Fire Service</i> — day-to-day management of each brigade rests with the local councils, but each brigade is strategically and operationally responsible to the NSW Rural Fire Service, which reports to the Minister for Emergency Services.
<i>Vic</i>	<i>Metropolitan Fire and Emergency Services Board</i> — this statutory authority reports to the Minister for Police and Emergency Services and the Emergency Services Commissioner.  <i>Country Fire Authority</i> — this statutory authority reports to the Minister for Police and Emergency Services and the Emergency Services Commissioner.	<i>Department of Natural Resources and Environment</i> — this department is responsible for public lands.
<i>Qld</i>	<i>Queensland Fire and Rescue Authority</i> — this statutory authority, incorporating the Rural Fire Service, reports to the Minister for Emergency Services via the Director-General, Department of Emergency Services.	
<i>WA</i>	<i>Fire and Emergency Services Authority of WA</i> — this umbrella statutory authority reports to the Minister for Police and Emergency Services directly and incorporates the Bush Fire Service, State Emergency Service and Fire and Rescue Service.	
<i>SA</i>	<i>Metropolitan Fire Service</i> — this statutory authority reports to the Minister for Emergency Services directly.	<i>Country Fire Service</i> — the board of this authority reports to the Minister for Emergency Services directly.
<i>Tas</i>	<i>Tasmania Fire Service</i> — this is the operational arm of the State Fire Commission, which reports to the Minister for Health and Human Services.	
<i>ACT</i>	<i>ACT Fire Brigade and ACT Bushfire Service</i> — these are agencies of the ACT Emergency Services Bureau, which reports to the ACT Minister for Police, Emergency Services and Corrections.	
<i>NT</i>	<i>NT Fire and Rescue Service</i> — this is a branch of the larger Department of Police, Fire and Emergency Services. The Chief Fire Officer reports to the Commissioner for Police, who reports to the Minister for Police, Fire and Emergency Services.	<i>Bush Fires Council</i> <sup>b</sup> — this is a board, which reports to the Minister for Parks and Wildlife.

<sup>a</sup> Excludes brigades employed by large-scale public and private land managers; port, mining and other infrastructure brigades; and land management departments and brigades operating under Commonwealth jurisdiction (for example, airport and defence installations). <sup>b</sup> The NT Bush Fires Council is primarily a land management organisation and responds to only grass fires and bushfires on land outside the Fire and Rescue Service response areas. The NT statistics in this chapter do not apply to the Bush Fires Council unless stated.

Source: State and Territory governments (unpublished).

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Fire services provided to Indigenous communities are described in box 11.2.

**Box 11.2 Fire services for Indigenous communities**

A number of Australian fire services have implemented specific programs to improve services to Indigenous people. The jurisdictions that report having targeted fire service initiatives are NSW, Victoria, Queensland, WA and the NT.

These initiatives generally aim to :

- improve the representation of Indigenous people working within fire services;
- establish partnership projects in which fire services and Indigenous communities work together to address the risks faced by Indigenous communities; and
- improve the success of fire service education and awareness programs in reaching Indigenous communities.

Some fire services have, for example, implemented programs to increase the number of firefighters from the Indigenous community. These include preparatory Technical and Further Education programs for applicants for firefighter jobs in NSW, the promotion of career opportunities to Indigenous people in Victoria, and the development and implementation of the Aboriginal and Torres Strait Islander Employment Program 2001 in Queensland.

Some fire services are also implementing cultural awareness programs for staff to support Indigenous firefighters and improve awareness of cultural issues relevant to improving service delivery to Indigenous communities. The NSW Fire Brigade has established an Aboriginal Services Officer position, to assist with the development of programs for Indigenous communities.

In NSW, WA and the NT, fire services have implemented volunteer programs for Indigenous communities, which include the provision of training, equipment, assistance with firebreak projects and other support to promote fire safety and community protection. These projects also contribute to general capacity building goals within Indigenous communities.

In NSW, WA and the NT, fire services are developing or have already produced fire safety awareness programs in conjunction with Indigenous communities or Indigenous housing authorities. The programs will address local fire safety issues, addressing local needs in a culturally appropriate manner.

*Source:* Commonwealth, State and Territory governments (unpublished).

### *Ambulance services*

Ambulance services across jurisdictions:

- provide emergency pre-hospital patient care and transport in response to sudden injury and illness;
- retrieve emergency patients;

- access emergency pre-hospital patients (for example, in confined spaces and hazardous environments);
- undertake inter-hospital patient transport;
- conduct road accident rescue; and
- plan and coordinate patient services in multi-casualty events.

Some government ambulance services also provide first aid training courses, as do the non-government providers St John Ambulance Australia and the Australian Red Cross. The Royal Flying Doctor Service (RFDS) responds to medical emergencies in remote inland areas of Australia. It was contracted in 1999-2000, for example, by the Ambulance Service of NSW for routine and emergency work in the north-west sector of NSW. The RFDS is not included in the Report.

State and Territory governments provide ambulance services in most jurisdictions. In WA and the NT, St John Ambulance is under contract to the respective governments as the primary provider of ambulance services (box 11.3).

**Box 11.3 Relationships of primary ambulance response and management agencies to government**

<i>NSW</i>	<i>Ambulance Service of NSW</i> — a statutory authority reporting to the Minister for Health
<i>Vic</i>	<i>Metropolitan Ambulance Service, Rural Ambulance Victoria, and Alexandra and District Ambulance Service</i> — separate statutory bodies reporting to the Minister for Health
<i>Qld</i>	<i>Queensland Ambulance Service</i> — a statutory authority reporting to the Minister for Emergency Services through the Director-General
<i>WA</i>	<i>St John Ambulance</i> — an incorporated not-for-profit organisation under contract to the WA Government
<i>SA</i>	<i>SA Ambulance Service</i> — an incorporated joint venture between the State Minister for Health and St John Priory Australia
<i>Tas</i>	<i>Tasmanian Ambulance Service</i> — a statutory service of the Hospital and Ambulance Division of the Department of Health and Human Services
<i>ACT</i>	<i>ACT Ambulance Service</i> — an agency of the ACT Emergency Services Bureau reporting to the ACT Minister for Police, Emergency Services and Corrections
<i>NT</i>	<i>St John Ambulance</i> — an incorporated not-for-profit organisation under contract to the NT Government

*Source:* State and Territory governments (unpublished).

Jurisdictions have special arrangements for the provision of ambulance services to Indigenous communities. Ambulance services provided to Indigenous communities in Queensland are described as an example in box 11.4.

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#### **Box 11.4 Ambulance services for Indigenous communities**

The provision of ambulance services for some Indigenous communities poses particular challenges. These challenges have been analysed in some detail by the Queensland Ambulance Service through a series of studies funded by external research bodies.

The provision of services is made difficult by the remoteness, size and physical isolation of some rural and remote communities, which lead to difficulties in communications, education and support. The homeland outstation movement places further challenges upon service providers to meet community needs.

Some Indigenous communities have relatively high rates of illness, traumatic injuries, substance abuse and violence compared with the wider community. In remote areas, the alternative transport available is often very limited and distances are great. The level of demand for ambulance services is, therefore, comparatively high.

Cultural issues in Indigenous communities have an impact on ambulance services in relation to the lack of acceptance of non-Indigenous staff members. Yet, service provision by Indigenous community members can be difficult because they must spend time away from their community during ambulance related training.

There is an expectation that ambulance services in Indigenous communities will provide wider roles, including:

- leadership in problem solving around health access problems;
- community wide first aid training;
- close integration with primary health services;
- integrated health transport;
- training of local people as ambulance officers;
- health promotions and injury prevention strategies;
- support for traditional healing initiatives; and
- support for outstations.

Officers require appropriate education and training in cultural awareness and skills to address issues faced by some Indigenous communities.

*Source:* Queensland Ambulance Service (unpublished).

#### *Other emergency management organisations*

The Review does not yet report on the performance of Commonwealth or local government emergency management services or their agencies, or the SES/TES. The Review intends, however, to explore the inclusion of the SES/TES services in future in relation to some emergency events, because these services are an integral



part of emergency management. Table 11.1 describes the scope of activities of the SES/TES.

**Table 11.1 Description of SES/TES activities<sup>a</sup>**

<i>Activities</i>	<i>NSW</i>	<i>VIC</i>	<i>QLD</i>	<i>WA</i>	<i>SA</i>	<i>TAS</i>	<i>ACT</i>	<i>NT</i>
Storm damage	✓	✓	✓	✓	✓	✓	✓	✓
Flood response	✓	✓	✓	✓	✓	✓	✓	✓
Road accident rescue	✓	✓	✓	✓	✓	✓		✓
Earthquakes	✓(s)	✓		✓	✓	✓	✓(s)	
Civil defence	✓	✓		✓	✓	✓	✓	✓
Land search and rescue	✓(s)	✓	✓	✓	✓	✓	✓(s)	✓
Inland search and rescue	✓(s)	✓	✓	✓	✓	✓		✓
Offshore search and rescue <sup>b</sup>		✓	✓	✓	✓			✓
Diving		✓						
Support other emergency service organisations	✓	✓	✓	✓	✓	✓	✓	✓
Assistance for municipal planning	✓	✓	✓	✓	✓	✓		✓
Conduct of emergency management courses		✓	✓	✓	✓	✓		✓
Air observer <sup>b</sup>	✓(s)		✓(s)	✓			✓	✓
Vertical rescue	✓(s)	✓	✓(s)	✓	✓	✓		✓
Public safety awareness and education	✓	✓	✓	✓	✓	✓	✓	✓

<sup>a</sup> (s) indicates that the role is to provide support to another agency in this activity. <sup>b</sup> WA SES undertakes air observer duties only, off shore. WA SES does not participate in sea rescue.

Source: Australian Council of State Emergency Services (unpublished).

Emergency services operate in all States and Territories. Their specific functions vary across jurisdictions, although all services undertake work to mitigate the effects of flood, storm and earthquake, and all have civil defence responsibilities. In addition, most of the SES/TES undertake road accident rescue services and assist police and other accredited agencies to carry out search and rescue on land and in inland waters. Some also provide search and rescue support in offshore waters. Most of the SES/TES provide rescue from heights and depths, and some provide specialist activities such as diving, trench collapse, building collapse, urban and forensic search, rescue and animal rescue. All the SES/TES provide support to other

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emergency service organisations, under predetermined State and Territory agreements, on request.

Most of the SES/TES provide support to local government councils to assess risks and develop plans to prevent, prepare for, respond to and recover from emergencies. Most also provide training in emergency management through tailored courses.

## **Funding**

### *Fire services*

The primary sources of funding across all jurisdictions in 2000-01 were grants from State, Territory and local governments, levies on insurance companies and property owners, user charges, and fundraising and donations. Levies on insurance companies were the primary source of funding for NSW, Victoria and WA. Levies on property owners were the primary source of funding for Queensland, SA and Tasmania. Territory governments were the most important source of funds for the ACT and the NT (table 11A.1). In addition to relying on funded resources, all States and Territories rely on volunteer firefighters who make a significant contribution to the community.

Total funding of fire services covered in this Report was \$1.3 billion in 2000-01. Across jurisdictions funding was highest in NSW (\$429 million) and lowest in the NT (\$21 million). Funding increased (when measured in real terms) in Victoria, Queensland, SA, Tasmania, the ACT and the NT between 1999-2000 and 2000-01, and decreased in NSW and WA (table 11.2).

Fire services are funded by a variety of sources, with non-government organisations making a significant contribution. Fire services received direct government funding of 23.8 per cent nationally in 2000-01. Across jurisdictions, the highest proportion of direct government funding was in the NT (90.6 per cent) and the lowest was in SA (0.4 per cent) (figure 11.1).

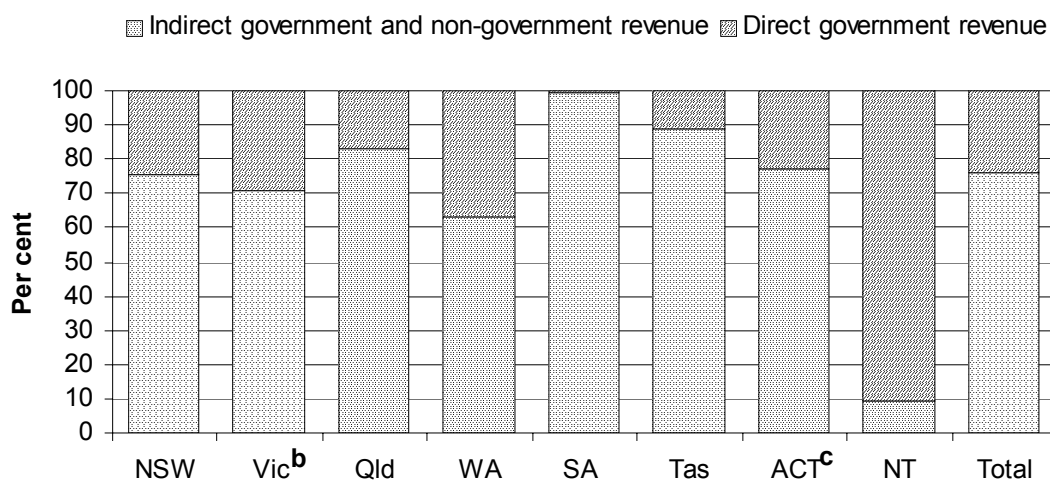
**Table 11.2 Funding of fire services (2000-01\$ million)<sup>a, b</sup>**

	NSW <sup>c</sup>	Vic <sup>d</sup>	Qld	WA	SA	Tas	ACT <sup>e</sup>	NT <sup>f</sup>	Total
1998-99	393	283	209	85	88	36	35	21	1151
1999-2000	441	286	230	101	109	36	22	20	1246
2000-01	429	310	239	97	110	37	25	21	1268

<sup>a</sup> Totals may not sum as a result of rounding. <sup>b</sup> Indirect revenue is counted in government grants in table 11A.1. The totals are the sum of government grants, levies, user charges and other revenue. <sup>c</sup> The 1999-2000 figure for NSW Fire Services has been artificially inflated by abnormal items of \$23 million. <sup>d</sup> 2000-01 was the first year of funding for a special resources initiative in Victoria. <sup>e</sup> The ACT funding change for 1999-2000 and 2000-01 reflects the revised method of attributing funds to the Emergency Services Bureau by event type. <sup>f</sup> 1999-2000 NT data include a Commonwealth Government (National Heritage Trust) grant for a fire management research project. 'User charges' include charges to landholders for aerial control burning and firebreaks. 'Other' includes the sale of assets.

Source: State and Territory governments (unpublished); table 11A.1.

**Figure 11.1 Major sources of fire services funding, 2000-01<sup>a</sup>**



<sup>a</sup> Government revenue is equal to government grants less indirect revenue. Indirect revenue is counted in indirect government and non-government revenue. <sup>b</sup> 2000-01 was the first year of funding for a special resources initiative in Victoria. <sup>c</sup> The ACT funding change for 2000-01 reflects the revised method of attributing funds to the Emergency Services Bureau by event type.

Source: State and Territory governments (unpublished); table 11A.1.

### Ambulance services

Nationally, ambulance services receive funding from different sources, including transport fees (from government hospitals, private citizens and insurance), subscriptions and levies, and government contributions. The distribution of funding sources varies across jurisdictions. Data for NT were not available for this Report.

State and Territory governments were the largest contributors to ambulance services in all States and Territories except WA. The contribution from this level of government in 2000-01 was highest in Tasmania (98.5 per cent) and lowest in WA (21.9 per cent). The primary source of funds in WA was transport fees (61.7 per cent). All jurisdictions except NSW and Tasmania received funding from subscriptions. Queensland relied more on this funding source (23.4 per cent) than did any other jurisdiction (table 11A.16). There is an ambulance subscription scheme in NSW, but these funds are deposited in the consolidated revenue of NSW Treasury.

Total funding of ambulance services covered in this Report was \$885 million in 2000-01. Across jurisdictions, funding was highest in NSW (\$280 million) and lowest in the ACT (\$9 million). Compared with 1999-2000, funding increased in real terms in NSW, Victoria, Queensland, decreased in SA and Tasmania, and remained the same in WA and the ACT (table 11.3).

**Table 11.3 Funding of ambulance services (2000-01\$ million)<sup>a, b</sup>**

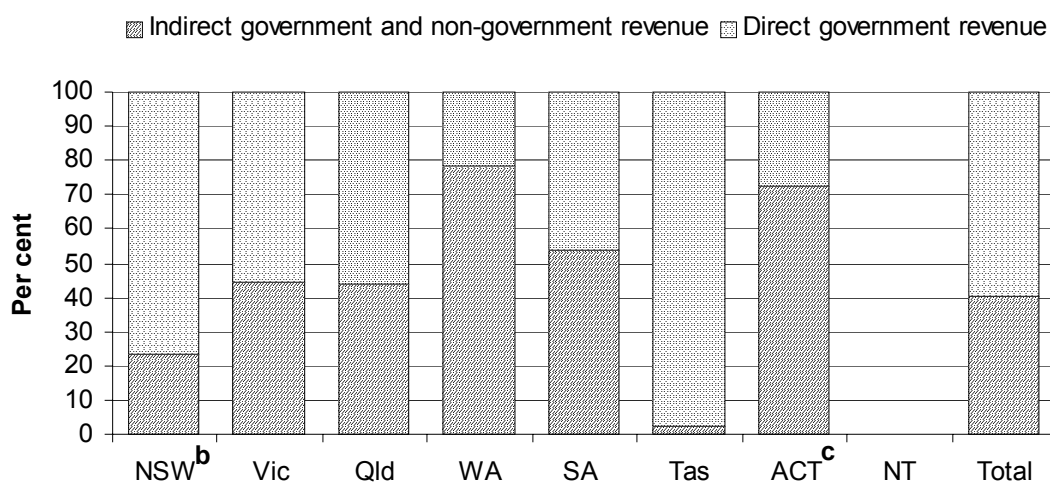
	<i>NSW<sup>c</sup></i>	<i>Vic</i>	<i>Qld</i>	<i>WA<sup>d</sup></i>	<i>SA</i>	<i>Tas</i>	<i>ACT<sup>e</sup></i>	<i>NT</i>	<i>Total</i>
1998-99	250	201	182	48	62	15	na	10	767
1999-2000	270	206	205	59	72	15	9	9	844
2000-01	280	227	226	59	70	14	9	na	885

<sup>a</sup> Totals may not sum as a result of rounding. <sup>b</sup> Indirect revenue is counted in government grants in table 11A.16. The totals are the sum of government grants, subscription fees, transport fees, donations and other revenue. <sup>c</sup> NSW has a subscription scheme but funds are deposited in the consolidated revenue of NSW Treasury. <sup>d</sup> For 1999-2000, WA subscription fees are for country regions only; insurance transport fees include those covered by private health insurance; and workers' compensation transport fees are not separately identified and are included with the uninsured. <sup>e</sup> The ACT funding change for 1999-2000 and 2000-01 reflects the revised method of attributing funds to the Emergency Services Bureau by event type. **na** Not available.

*Source:* State and Territory governments (unpublished); table 11A.16.

Ambulance services are funded by a variety of sources, with non-government organisations making a significant contribution. Ambulance services received direct government funding of 59.9 per cent nationally in 2000-2001. Across jurisdictions, direct government funding was highest in Tasmania (97.7 per cent) and lowest in WA (21.9 per cent). Total government funding is equal to that of State and Territory governments because no funding was provided from the Commonwealth and local governments (figure 11.2).

Figure 11.2 Major sources of ambulance services funding, 2000-01<sup>a</sup>



<sup>a</sup> Government revenue is equal to government grants less indirect revenue. Indirect revenue is counted in indirect government and non-government revenue. <sup>b</sup> NSW has a subscription scheme but funds are deposited in the consolidated revenue of NSW Treasury. <sup>c</sup> The ACT funding change for 2000-01 reflects the revised method of attributing funds to the Emergency Services Bureau by event type.

Source: State and Territory governments (unpublished); table 11A.16.

### Indigenous funding

At a national level, expenditure per person on patient transport for Indigenous people (\$106 per Indigenous person) was higher than that for non-Indigenous people (\$31 per person) in 1998-99 (AIHW 2001). This difference is explained by the higher costs and greater reliance of Indigenous people on the RFDS (AIHW 2001).

Data are affected by the difficulties associated with the identification of Indigenous people. Indigenous identification is incomplete, so the data need to be treated with care.

### Size and scope

#### Fire services

The scope of activity within fire service delivery is broad and varies across jurisdictions (table 11A.28).

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## *Incidents*

Information on reported fires and other incidents was provided separately for fire agencies in each jurisdiction. Data were not available for all fire services across jurisdictions. Fire services are required by legislation to respond to all calls, and an incident cannot be deemed to be a false report until the fire service has responded and investigated the site. Nationally, 36.8 per cent of reported incidents in 2000-01 were fires or explosions (table 11A.2).

The proportions of incident types varied substantially across jurisdictions in 2000-01. Victorian fire services, for example, attended 69 456 incidents, of which 35.8 per cent were fires and explosions, 13.7 per cent were fire alarm system notifications not involving fire, and 50.4 per cent were false alarms, false calls and other incidents. The WA fire brigades responded to 28 533 incidents, of which 60.2 per cent were fires and explosions, 17.1 per cent were fire alarm system notifications not involving fire, and 22.7 per cent were false alarms, false calls and other incidents (table 11A.2).

## *Staffing*

A staff member is any person delivering a firefighting or firefighting related service, or managing the delivery of this service, including:

- firefighters (qualified paid and volunteer firefighters); and
- support staff (any paid and volunteer person directly supporting the operational provider, including technical and communications staff and personnel staff).

Nationally, 11 937 full time equivalent paid staff were involved in the delivery of fire services in 2000-01. Across jurisdictions, the number of paid staff ranged from 3959 full time equivalent staff in NSW to 177 full time equivalent staff in the NT. The majority of paid staff were firefighters (80.6 per cent). Across jurisdictions, this proportion was highest in SA (88.6 per cent) and lowest in Tasmania (67.1 per cent) (table 11A.3).

Volunteer firefighters (218 253 people) participated in the delivery of fire services in 2000-01. The number of volunteer firefighters varied across jurisdictions from 68 350 in NSW to 580 in the NT (table 11A.3).

## *Ambulance services*

The scope of activity within ambulance service delivery is broad and varies across jurisdictions (table 11A.28).

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## *Incidents*

Ambulance services attended two million incidents nationally in 2000-01. Most of these were emergency incidents (45.4 per cent), followed by non-emergency incidents (37.8 per cent) and urgent incidents (25.3 per cent). Only Queensland and WA attended casualty room incidents (1.8 per cent or less). The proportion of emergency incidents was highest in NSW (65.1 per cent) and lowest in WA (26.1 per cent) (table 11A.17).

## *Staffing*

Data on staffing for ambulance services are improved in this Report because more specific definitions were applied. The data are reported by operational status on a full time equivalent basis to provide a detailed description of the human resources profile for ambulance agencies.

A staff member is any person involved in delivering an ambulance service or managing the delivery of this service, including:

- ambulance operatives (including qualified ambulance officers, advanced life support officers, student ambulance officers, patient transport officers, communications staff and other operatives, including public education officers, flight nurses and medical staff);
- operational and business support staff (including management, corporate support staff, non-operative communications and technical staff, and training staff); and
- remunerated and non-remunerated volunteers and retained staff (any paid and volunteer staff providing ambulance services on an on-call basis).

Nationally, 8443 full time equivalent salaried staff were involved with the delivery of ambulance services. Across jurisdictions, the number of salaried ambulance staff ranged from 2942 full time equivalent staff in NSW to 107 in the ACT. The majority of salaried ambulance staff in 2000-01 were ambulance operatives (83.8 per cent). Across jurisdictions, this proportion ranged from 88.2 per cent in NSW to 72.9 per cent in WA (table 11A.18).

Non-remunerated volunteer and retained ambulance staff numbering 6001, along with 406 remunerated volunteers and retained staff, participated in the delivery of ambulance services in 2000-01. Across jurisdictions, the number of non-remunerated volunteer and retained ambulance operatives varied across jurisdictions from 3767 in WA to zero in Victoria and the ACT. Volunteer operational and business support staff (898) were used in WA. Because of the

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decentralised structure of its ambulance services, WA is the only jurisdiction with volunteer operational and business support staff (table 11A.18).

### *Other emergency management services*

Other types of emergency for which performance reporting has yet to be developed include: rescues; natural events; technological and hazardous material incidents; emergency relief and recovery; and quarantine and disease control. State and Territory Emergency Management Committee executive officers across jurisdictions identified which emergency management departments and agencies provide relevant services in these areas in the 2000 Survey of Emergency Management Activities by the Review (table 11A.28).

## **11.2 Policy developments in emergency management**

Emergency management organisations have continued to pursue developments identified in Reports from previous years. These include computer aided dispatch, risk management and increased multi-service cooperation. This Report focuses on developments in the following areas:

- the Australian Emergency Management Committee;
- major reviews established by the Council of Australian Governments (COAG);
- the International Year of Volunteers;
- leadership and management; and
- training.

### *Australian Emergency Management Committee*

The Australian Emergency Management Committee (AEMC) has replaced the National Emergency Management Committee as the peak national strategic advisory group for emergency management. The AEMC comprises senior State and Territory emergency management officials and is chaired by the Director-General, Emergency Management Australia. Its objectives include (1) the promotion of emergency management as a critical community safety issue on the strategic policy mainstream agenda and (2) the development of national emergency management capability.



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### *Major COAG reviews*

The COAG announced two major reviews which have an impact on the emergency management sector. The first review concerns Australia's approach to natural disaster relief and mitigation. The objectives of the review are to determine whether current arrangements provide an effective framework to meet the needs of those affected by natural disasters and, where appropriate, to develop options for improving existing arrangements. An underlying premise of the review is that any arrangements should facilitate the maximum involvement of State, Territory and local governments in contributing to disaster relief and mitigation, and continued Commonwealth cost sharing arrangements. The review also includes an assessment of the Natural Disaster Relief Arrangements, Exceptional Circumstances relief for farmers, and access to insurance coverage for natural disasters (expected to report in 2002).

The second review has been given a high priority by COAG. Its objective is the revision of national whole-of-government frameworks for the prevention, preparedness for, and management of a major animal disease outbreak emergency, such as Foot and Mouth Disease (FMD). An FMD Taskforce was established under the oversight of COAG senior officials to coordinate the development of these frameworks (expected to report in March 2002).

These reviews could have an impact on the scope of emergency management activities discussed in the profile section of future reports.

### *2001 International Year of Volunteers*

The year 2001 was designated by the United Nations as the International Year of Volunteers. The contributions of more than 500 000 volunteers to emergency management were recognised through many activities conducted throughout the country. A national summit was held on 11–12 October 2001 in Canberra, focusing on recognition, funding, training and legal issues. The key outcomes from the summit are to be incorporated in a report to governments.

### *Leadership and management*

In recent times, there have been some distinct changes in the leadership and management of services engaged in emergency management. These changes have needed to accommodate the complex, diverse and rapidly changing socioeconomic environments in which agencies operate, and to create opportunity and capability for improving service delivery and organisational performance. There has been a clear shift away from a paramilitary response-style approach in the industry to a

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more collaborative and inclusive community and intersectoral partnership model, including:

- better tailoring of services to at-risk and special needs groups (Indigenous Australians, people from non-English speaking backgrounds, people with a disability, older Australians and children);
- building community capability for self help through programs such as community fire units at bushland interfaces;
- a whole-of-government or ‘joined-up-government’ approach to developing service delivery policy and community safety programs; and
- partnering with universities and learning centres to ensure evidence based planning.

### *Training*

The Public Safety Training Package has been launched. The package is a comprehensive education and training tool based on input from public safety industry representatives from each State and Territory. The package details the competency standards identified as necessary for safe, effective and efficient operations within the industry. It also includes assessment guidelines and the range of national qualifications for the industry from entry level to management. It applies to workers (both paid and volunteer) in the emergency management, state and territory emergency services, and police sectors.

The Convention of Ambulance Authorities has established the Australian Ambulance Education Council as a body responsible for the identification and development of education standards for the ambulance industry in Australia. New competency standards have been established for educational programs with the Vocational Education and Tertiary sector. These standards are currently under final consideration by the Australian National Training Authority.

## **11.3 Framework of performance indicators**

The broad aim of emergency management is to reduce the level of risk to the community from emergencies. The framework of performance indicators in this chapter is based on the objectives for emergency management, which are common to all Australian emergency management agencies (box 11.5).

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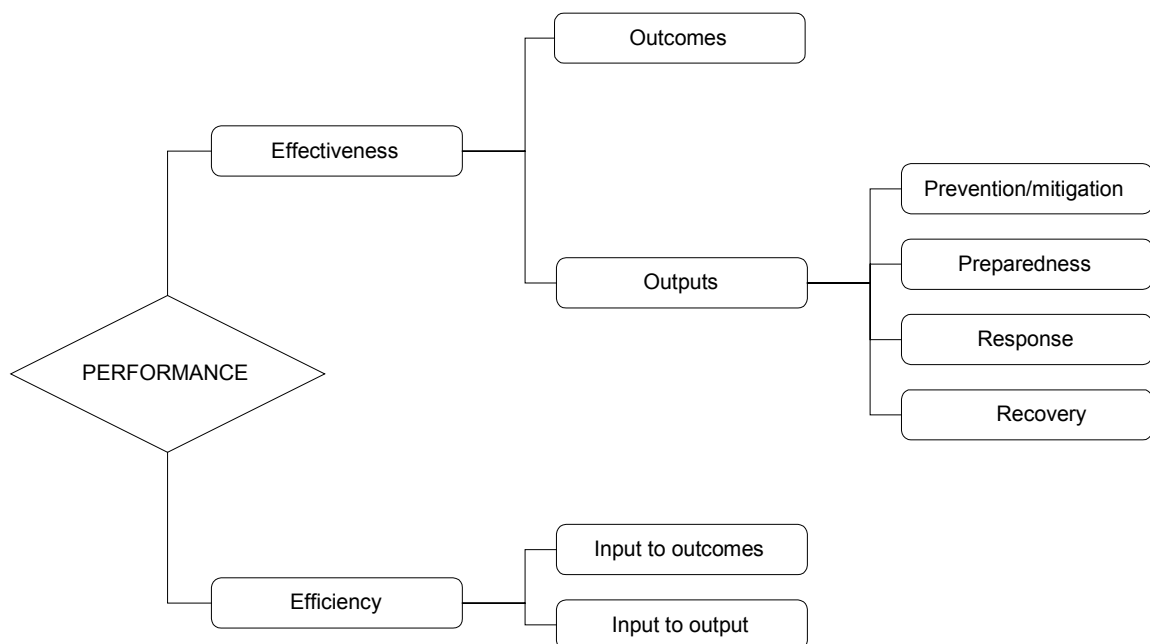
**Box 11.5 Objectives for emergency management**

Emergency management services aim to provide highly effective, efficient and accessible services that:

- reduce the adverse effects of emergencies and disasters on the Australian community (including people, property, infrastructure, economy and environment);
- contribute to the management of risks to the Australian community; and
- enhance public safety.

The general performance indicator framework has been applied to both fire and ambulance services (pre-hospital care, treatment and transport services). The aim of the indicator framework is to provide information on the efficiency and effectiveness of government provided and/or funded emergency management services (figure 11.3).

**Figure 11.3 General performance indicators framework for emergency management**



The performance framework includes overarching indicators of the effects of a service on the community, economy and environment. The indicators may suggest the degree of service success. Outcomes indicators include: fire death rate; fire injury rate; the value of property lost and saved from fire incidents; the number of fire incidents relative to the population; and the survival rate from out-of-hospital cardiac arrest.

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The framework uses the widely accepted ‘comprehensive approach’ (prevention/mitigation, preparedness, response and recovery) to classify the key functions common to emergency agencies. The Review uses a somewhat similar approach to examine health management (chapter 7). Outputs for emergency services are grouped accordingly:

- *prevention and mitigation* — the results of strategies and services to prevent or reduce the frequency of emergency events or to lessen their effects. Activities that contribute to outputs of prevention and mitigation include: advice on rural land management practice for hazard reduction and fire prevention; the inspection of property and buildings for fire hazards, fire standards compliance and levels of safe fire practices; the preparation of risk assessment and emergency management plans; hazard categorisation for public information campaigns; and public information campaigns to promote safe practices by the community;
- *preparedness* — the results of strategies and services to position providers and the community to respond to emergency events quickly and effectively. Activities that contribute to outputs of preparedness include: public education and training; emergency detection and response planning (including the installation of smoke alarms and/or sprinklers); hazardous chemicals and material certification, and inspection of storage and handling arrangements; the exercising, training and testing of emergency service personnel; and standby and resource deployment and maintenance. Preparedness also involves establishing equipment standards and monitoring adherence to these standards;
- *response* — the results of strategies and services to control, limit or modify the emergency to reduce the consequences. Activities that contribute to outputs of response include: the implementation of emergency plans and procedures; the issuing of emergency warnings; the mobilisation of resources in response to emergency incidents; the suppression of hazards (for example, fire containment); the provision of immediate medical assistance and relief; and search and rescue;
- *recovery (emergency services)* — the results of strategies and services to return agencies to a state of preparedness after emergency situations. Activities that contribute to outputs of emergency services recovery include: critical incident stress debriefing; and salvage and restoration of the emergency site to a safe state; and
- *recovery (community)* — the results of strategies and services to support affected communities in their reconstruction of physical infrastructure and restoration of emotional, social, economic and physical wellbeing. Activities that contribute to outputs of community recovery include: the restoration of essential services; counselling programs; temporary housing; long term medical care; and public health and safety information.

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Effective prevention activities reduce the requirement to respond to, and recover from, emergency events. Efficient resource use reduces the risk to the community by supporting a greater availability of services. Greater emphasis is being placed on preventative activities in every jurisdiction.

Descriptor information is also provided in this chapter and appendix A to assist in the interpretation of reported performance.

## **11.4 Key performance indicator results — fire services**

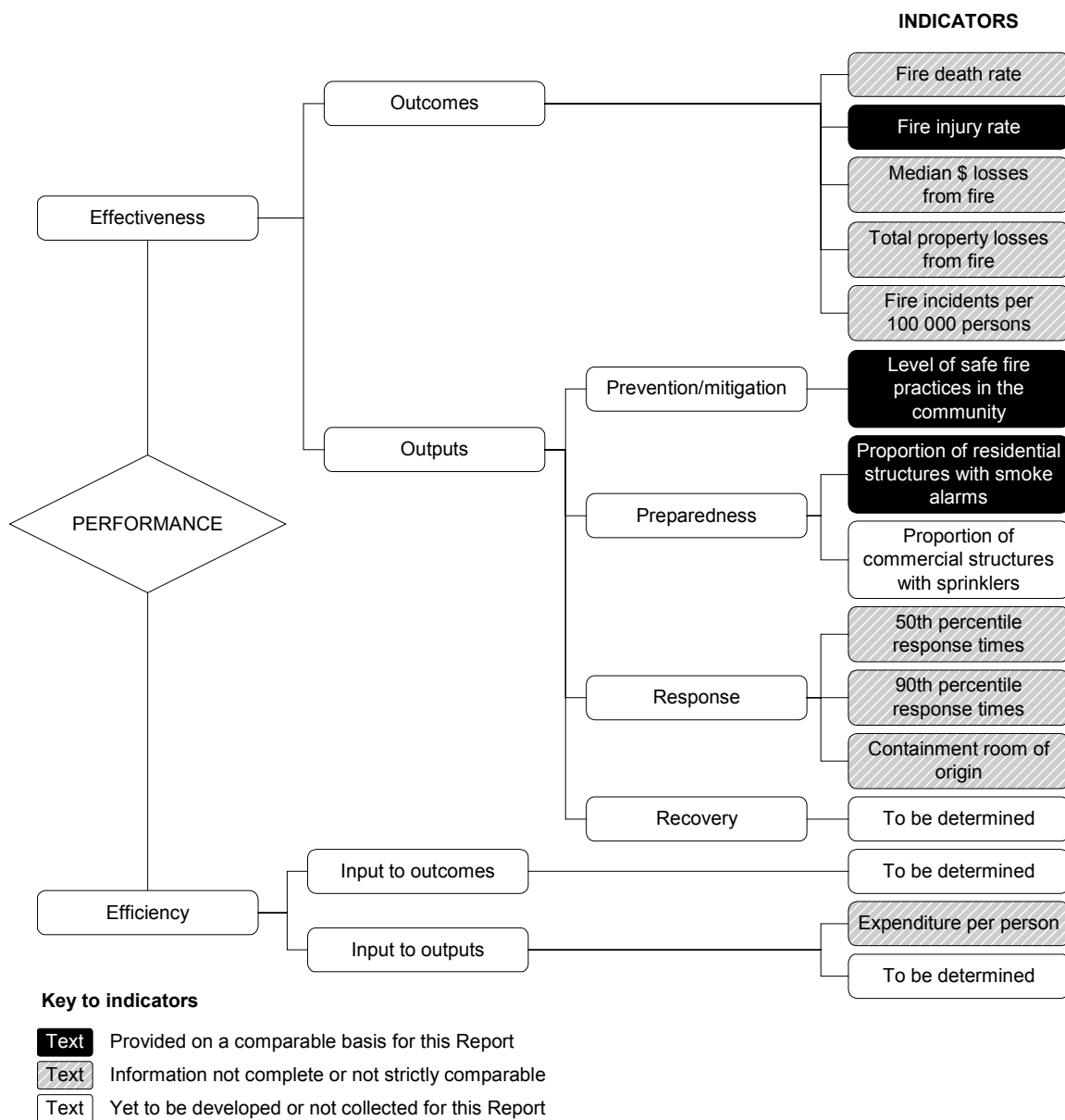
A performance indicator framework for fire services (figure 11.4) has been developed from the framework described in figure 11.3. Definitions of all indicators are provided in table 11.7.

Performance information has been reported for a number of indicators. These results may have been influenced by factors such as differences in climatic and weather conditions, the socio-demographic and topographic composition of jurisdictions, property values and dwelling construction types. Appendix A contains detailed statistics and short profiles on each State and Territory, which may assist in interpreting the performance indicators presented in this chapter. Importantly, jurisdictions have diverse legislative fire protection requirements.

There has been some progress in the reporting of data, but the results need to be treated with care because data either were derived from small samples — as in the case of the Australian Bureau of Statistics (ABS) Population Survey Monitor (PSM) — or are highly variable as a result of the relatively small populations in Tasmania, the ACT and the NT. The role of volunteers, particularly for country and rural fire brigades, needs to be considered in the interpretation of indicators (for example, fire expenditure per person). Specifically, volunteer staff provide a substantial proportion of fire services (and emergency services more generally, ABS 2001a). While costs such as training and equipment associated with volunteers are included in calculating the cost of fire service provision, the labour costs of providing fire services would be much greater without volunteers (assuming these functions were still performed).

Further, information was not reported for all fire agencies in each jurisdiction. Rural fire services are sometimes excluded from reported results. Partly for this reason, performance data are not always strictly comparable across jurisdictions. Fire services are cooperating to improve and enhance the standards for the collection of fire data. Differences in counting rules are expected to be minimised for future reports.

Figure 11.4 Performance indicators for fire services



In relation to time series comparisons, population data in several jurisdictions for 1998-99, 1999-2000 and 2000-01 have been adjusted to reflect population coverage by fire services that have provided data in this Report. Thus, efficiency and some effectiveness data for 1998-99, 1999-2000 and 2000-01 are not strictly comparable with 1997-98 data.

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## Effectiveness

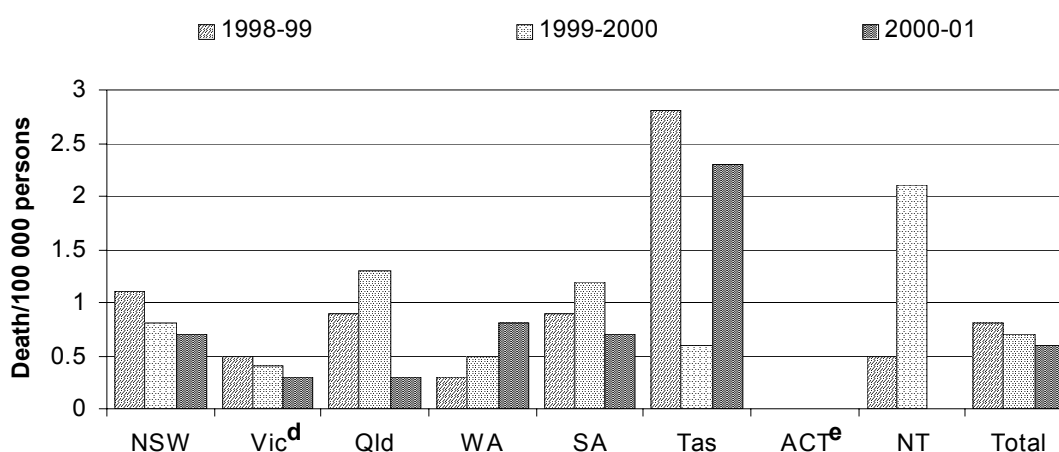
### Outcomes

The indicators of outcomes reported here relate to the objective of fire services to minimise the effect of fire on life, property and the environment. The fire death rate and the fire injury rate are indicators of outcomes in terms of the effect of fire on life. However, caution in interpreting data must be exercised, given the relatively small numbers of deaths and significant fluctuations from year to year, particularly for jurisdictions with relatively smaller populations.

The fire death rate in 2000-01 was highest in Tasmania (with 2.3 fire deaths per 100 000 persons) and lowest in the ACT and the NT (with no fire deaths) (figure 11.5). When data are expressed as a three year rolling average, the Tasmanian rate was still highest (1.9 deaths per 100 000 persons) and the ACT rate was lowest (with no deaths) (table 11A.4).

The definitions used to count fire deaths varied across jurisdictions. Fire deaths reported in some jurisdictions were verified by the respective State coroner's findings, while fire deaths in other jurisdictions were estimated by fire agencies. Future reports are expected to use more uniform reporting methods.

Figure 11.5 Fire death rate<sup>a, b, c</sup>



<sup>a</sup> The small number of deaths needs to be considered when interpreting fluctuations in the data. Fire deaths relate to all fire exposures. <sup>b</sup> Figures for NSW, Victoria, Queensland, WA and Tasmania in 1999-2000 and 2000-01 refer to total fires deaths and include deaths involving civilians and operational staff. <sup>c</sup> 1998-99 figures have been validated by State coroners for NSW, Queensland, WA, Tasmania, the ACT and the NT. 1999-2000 figures have been validated by State coroners for NSW, Queensland, WA, Tasmania, the ACT and the NT. 2000-01 figures have been validated by State coroners for NSW and WA. <sup>d</sup> Victorian data exclude murders and suicides where a fire subsequently occurred. <sup>e</sup> The ACT had no fire deaths between 1998-99 and 2000-01.

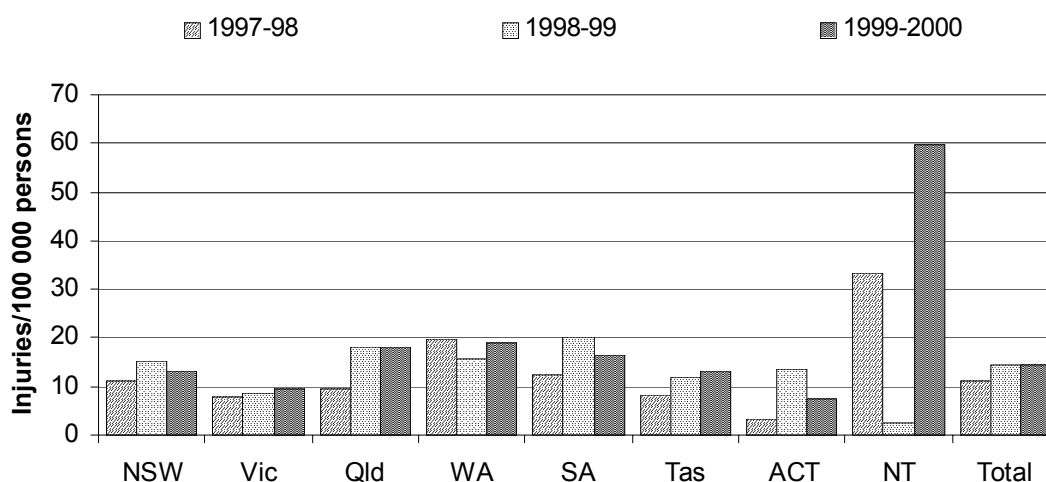
Source: State and Territory governments (unpublished); table 11A.4.

Fire injuries data describe the number of hospital admissions (excluding emergency department non-admitted casualties). Deaths from fire injuries after hospitalisation have been removed from 1998-99 and 1999-2000 data because these are counted in the fire death rate.

Nationally, the fire injury rate was 14.4 per 100 000 people in 1999-2000. Across jurisdictions, the rate was highest in the NT, with 59.9 fire injuries per 100 000 people, and lowest in the ACT, with 7.4 per 100 000 people (figure 11.6). When data are expressed as a three year rolling average, the NT rate was still highest (31.9 fire injuries per 100 000 people) and the ACT rate was lowest (8.0 fire injuries per 100 000 people) (table 11A.5).

The median dollar loss per structural fire and the total property loss from structural fires are indicators of outcomes in terms of the effect of fire on property. Structural fires are those fires contained in housing and other buildings. The data have not been adjusted for jurisdictional differences in the costs and values of various types of building. Information for some jurisdictions includes only urban fire services, so the results across jurisdictions are not strictly comparable. Further, the method of valuing property loss from fire varies across jurisdictions.

Figure 11.6 Fire injury rate<sup>a,b</sup>



<sup>a</sup> Fire injuries are defined as the number of persons admitted to public and private hospitals. Excludes emergency department non-admitted casualties. <sup>b</sup> All years data exclude fire deaths. The 2001 Report included deaths in 1998-99 data. These data have been revised this year to exclude fire deaths. In addition to the removal of fire deaths data, the Australian Institute of Health and Welfare (AIHW) revised the fire injuries data for 1998-99 subsequent to publication of its Australian Hospital Statistics, 1998-99 (AIHW 2000).

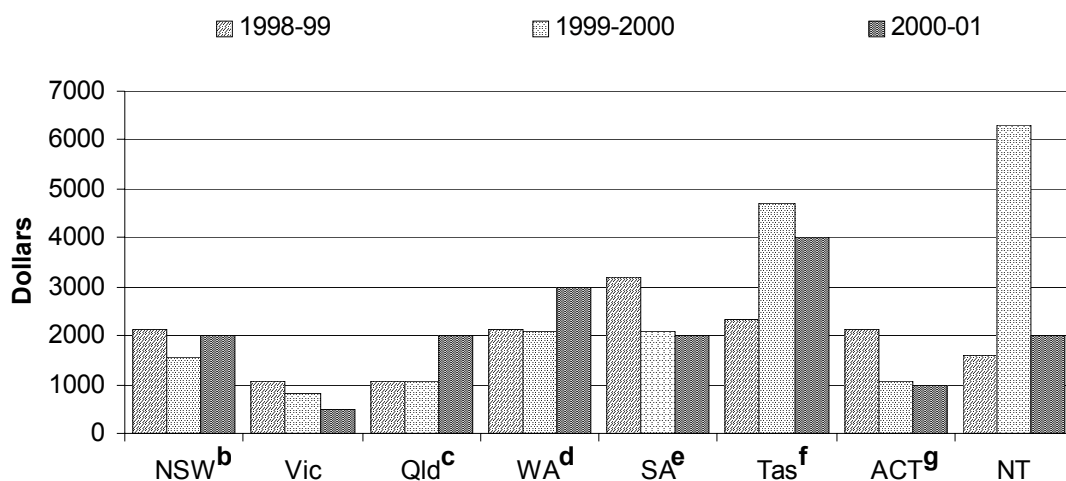
Source: AIHW (unpublished); table 11A.5.

The median dollar loss in 2000-01 was highest in Tasmania (\$4000 per structural fire) and lowest in Victoria (\$500 per structural fire) (figure 11.7). Across



jurisdictions, the median dollar loss (in real terms) decreased between 1999-2000 and 2000-01 in all jurisdictions except NSW, Queensland and WA. The substantial decrease in the NT needs to be considered with care because data for the relatively smaller jurisdictions can be subject to high volatility.

Figure 11.7 **Median dollar loss from structural fires (2000-01 dollars)<sup>a</sup>**

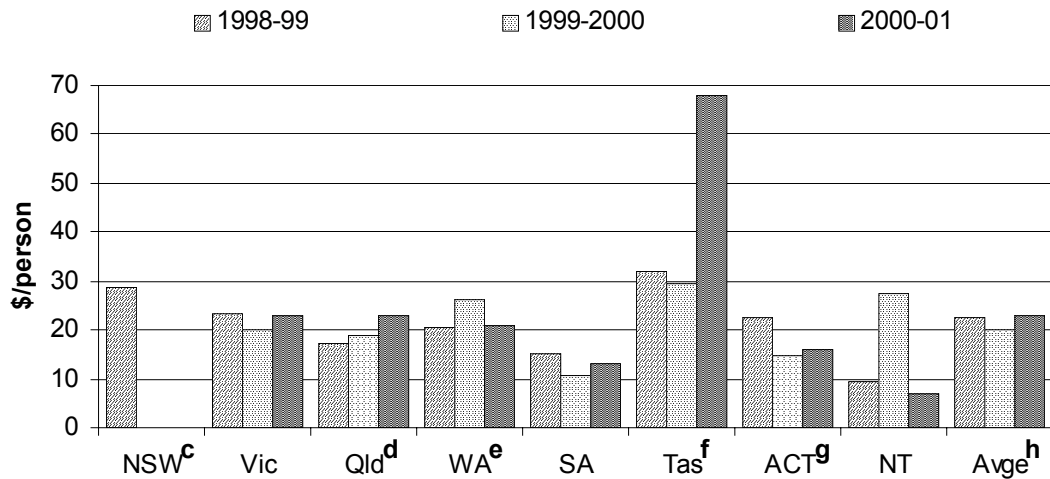


<sup>a</sup> Estimates have not been validated by the insurance industry or adjusted for interstate valuation differences. <sup>b</sup> 1998-99, 1999-2000 and 2000-01 data are for NSW Fire Brigades only, but include responses to calls outside NSW Fire Brigades designated fire districts. Due to industrial bans, 1999-2000 data are derived from a sample representing 80 per cent of the incidents, and 2000-01 figures are derived from a sample representing 85 per cent of the incidents. <sup>c</sup> Queensland data exclude Rural Fire Service. <sup>d</sup> 1998-99 WA data exclude Bush Fire Brigades. <sup>e</sup> 1999-2000 SA data exclude Country Fire Service. 2000-01 SA data include Country Fire Service. <sup>f</sup> Tasmanian data include both urban and rural brigades. <sup>g</sup> Industrial bans in the ACT mean 1998-99 and 1999-2000 data are based on extrapolated results.

Source: State and Territory governments (unpublished); table 11A.6.

Nationally, for structural fires, the total property loss in 2000-01 was \$23 per person (not including NSW). Across jurisdictions, it was highest in Tasmania (\$68 per person) and lowest in the NT (\$7 per person) (figure 11.8) (although for Tasmania, data for both rural and urban fire brigades were included in this estimate). The total property loss (in real terms) increased between 1999-2000 and 2000-01 in all jurisdictions except WA and the NT.

**Figure 11.8 Total property loss per person in structural fires (2000-01 dollars)<sup>a, b</sup>**

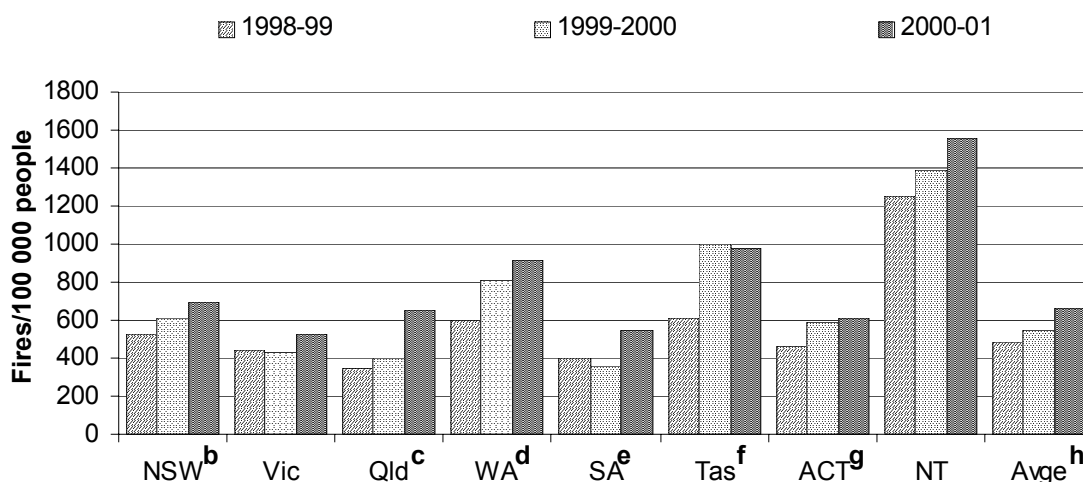


- a** Estimates have not been validated by the insurance industry or adjusted for interstate valuation differences. **b** Rates for 1998-99 and 1999-2000 have been adjusted to reflect the population covered by the data. **c** 1998-99 data are for NSW Fire Brigades only, but include responses to calls outside NSW Fire Brigades designated fire districts. Due to industrial bans, figures for 1999-2000 and 2000-01 are not available. **d** 1998-99 and 1999-2000 data exclude the Rural Fire Service. 2000-01 figures include both Queensland Urban and Rural Fire Service data. **e** 1998-99 WA data exclude Bush Fire Brigades. **f** Tasmanian data include both urban and rural fire services for 1998-2001. **g** Industrial bans in the ACT mean 1998-99 and 1999-2000 figures are based on extrapolated results. **h** Excludes rural fire service data for some years, and excludes NSW for 1999-2000 and 2000-01.

Source: State and Territory governments (unpublished); table 11A.7.

Nationally, the total number of fire incidents in 2000-01 was 667 per 100 000 persons. The total number of fire incidents per 100 000 persons increased between 1999-2000 and 2000-01 in all jurisdictions except Tasmania. Across jurisdictions, the total number of fire incidents per 100 000 persons was highest in the NT (1553) and lowest in Victoria (522) (figure 11.9).

Figure 11.9 Total fire incidents per 100 000 people<sup>a</sup>



<sup>a</sup> Population figures used to calculate the rates have been adjusted to represent population coverage by fire agencies. <sup>b</sup> 1998-99 data are for NSW Fire Brigades only, but include responses to calls outside NSW Fire Brigades designated fire districts. 1999-2000 and 2000-01 data include both Rural Fire Service and NSW Fire Brigades. Due to an industrial ban 1999-2000 and 2000-01 figures from NSW Fire Brigades are derived from a sample representing 80 per cent and 85 per cent of the incidents respectively. Data for areas serviced by the NSW Rural Fire Service are derived from one third of Rural Fire Districts. <sup>c</sup> 1998-99 and 1999-2000 Queensland data exclude the Rural Fire Service. 2000-01 figures include both Queensland Urban and Rural Fire Service data. <sup>d</sup> WA 1998-99 data exclude Bush Fire Brigades. <sup>e</sup> Excludes SA Country Fire Service data. <sup>f</sup> Tasmanian data include urban and rural fire brigades. <sup>g</sup> Industrial bans in the ACT mean 1998-99 and 1999-2000 data are based on extrapolated results. <sup>h</sup> Excludes the NT Bushfire Council, the WA Bush Fire Brigades for 1998-99 and the SA Country Fire Service.

Source: State and Territory governments (unpublished); table 11A.8.

## Outputs

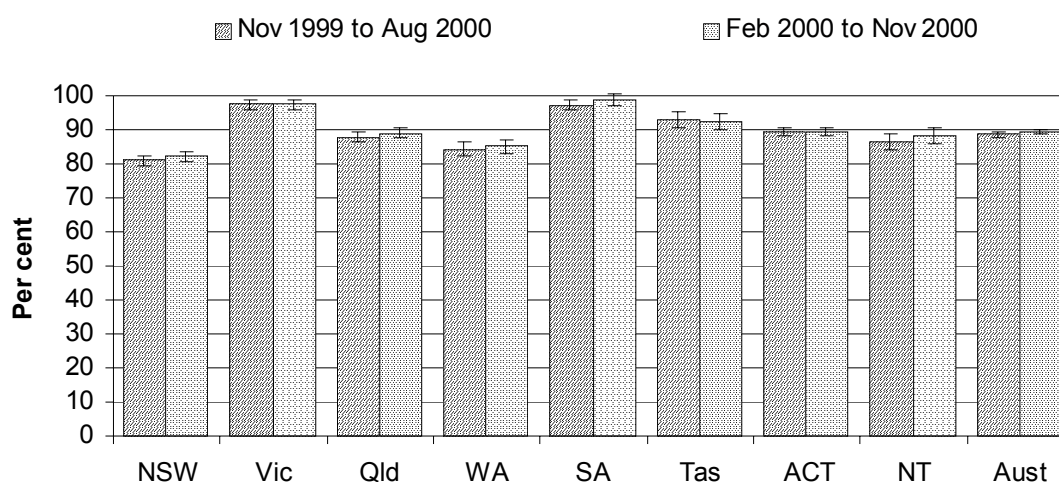
### Prevention

Indicators of fire prevention focus on the level of fire safety practices in the community. The ABS PSM supplied national level data on household fire safety measures installed or prevention procedures followed. These data were collected for nine quarters from November 1998 to November 2000 (providing data for 1998-99 and 1999-2000). Data for the quarters before November 1999 were reported previously. The precision of survey estimates depends on the survey sample size and the sample estimate. Larger sample sizes result in higher precision, while smaller sample sizes result in lower precision. Consequently, caution needs to be used when interpreting small differences in results because these may be due to sample size rather than an actual difference in the population (section 11.8).

Household fire safety measures include operational smoke alarms or detectors, sprinkler systems, safety switches, fire extinguishers, fire blankets, fire evacuation

plans, external water supplies, the removal of external fuel sources, and external sprinklers. Nationally, 89.4 per cent of total households had at least one fire safety measure installed for the four quarters from February 2000 to November 2000. Across jurisdictions, this proportion was highest in SA (98.7 per cent) and lowest in NSW (82.3 per cent). It increased across all jurisdictions except Victoria (which remained the same) and Tasmania between the November 1999 to August 2000 and February 2000 to November 2000 quarters. This change was minimal, however, and once standard errors are considered, data indicate that there was no change across jurisdictions (figure 11.10).

Figure 11.10 Households with at least one fire safety measure<sup>a, b, c</sup>

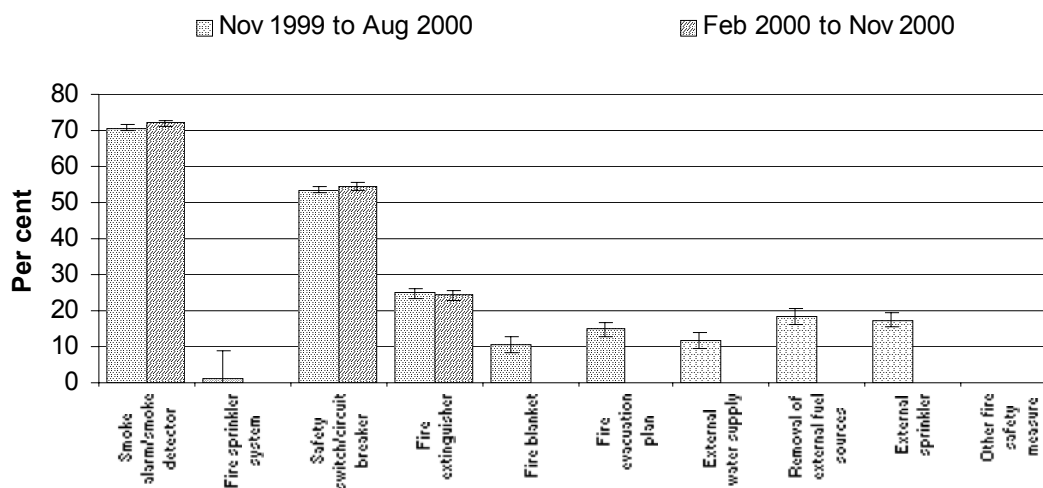


<sup>a</sup> Confidence intervals have been indicated on the bars in this figure. Small differences in the results should be viewed with care as they may be affected by sample and estimate size (section 11A.8). <sup>b</sup> The total number of households with at least one fire safety measure is smaller than the sum of the individual components (table 11A.11) because a number of households have more than one fire safety measure installed or followed. <sup>c</sup> Only the final quarter are new data because the PSM ceased. Three quarters already reported were repeated with the new data to preserve data integrity.

Source: ABS (2001b); table 11A.9.

Nationally, of those households with a fire safety measure installed in the February 2000 to November 2000 quarters, 72.0 per cent had a smoke alarm or detector, 54.6 per cent had a safety switch or circuit breaker, and 24.3 per cent had a fire extinguisher (figure 11.11). The proportion of households with a fire safety measure increased for smoke alarms/smoke detectors and safety switches/circuit breakers and decreased for fire extinguishers in the February 2000 and November 2000 quarters (ABS 2001b). When standard errors are considered, however, these differences are negligible. Data for the remaining safety measures were not available for the November 2000 quarter (table 11A.10).

Figure 11.11 **Households with a fire safety measure, by fire safety measure installed or followed<sup>a, b, c</sup>**



<sup>a</sup> Confidence intervals have been indicated on the bars in this figure. Small differences in the results should be viewed with care as they may be affected by sample and estimate size (section 11.8). <sup>b</sup> The total number of households with at least one fire safety measure is smaller than the sum of the individual components because a number of households have more than one fire safety measure installed or followed. <sup>c</sup> Only the final quarter are new data because the PSM ceased. Three quarters already reported were repeated with the new data to preserve data integrity.

Source: ABS (2001b); table 11A.10.

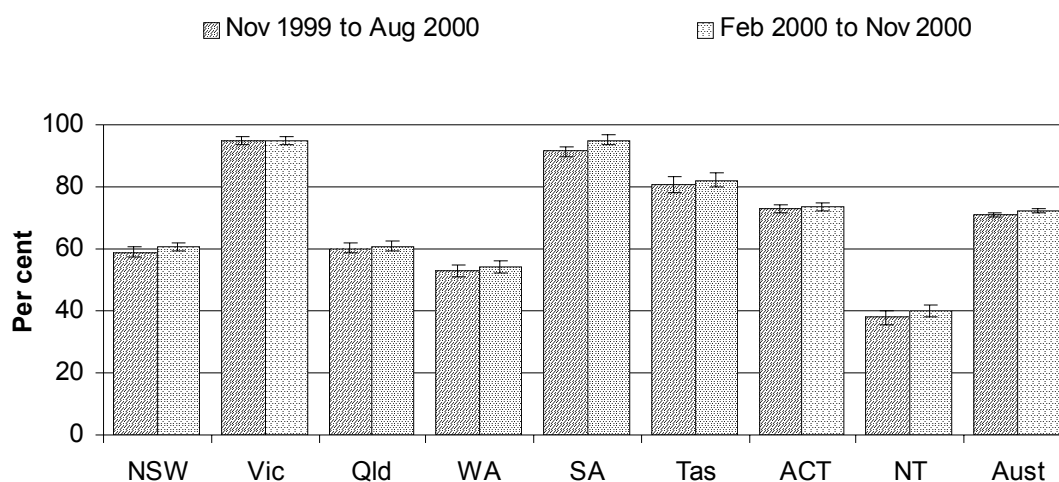
### *Preparedness*

Preparedness relates to both the community and the fire service. Indicators used for the preparedness of the community are reported as the level of community training in fire responsiveness, and the installation of fire safety equipment. The preparedness of the fire service relates to its level of contingent capacity (including the competency of personnel and the appropriateness of equipment) and the matching of resources with potential risks. Fire services also need to allow for seasonal influences (in drought years, for example) and population variations (in holiday destinations, for example).

This chapter focuses on the level of preparedness of the community in terms of the proportion of residential buildings and commercial buildings with fire safety equipment and systems. The ABS PSM supplied national level data on the proportion of household dwellings with fire safety equipment for nine quarters from November 1998 to November 2000. These data provide information on the preparation of residential buildings only. It should be noted that there are diverse legislative fire protection requirements across jurisdictions.

In the February 2000 to November 2000 quarters, the proportion of households with an operational smoke alarm or smoke detector was highest in Victoria and SA (both 95.0 per cent) and lowest in the NT (40.0 per cent) (figure 11.12).

Figure 11.12 **Households with an operational smoke alarm or smoke detector installed**<sup>a, b, c</sup>



<sup>a</sup> Confidence intervals have been indicated on the bars in this figure. Caution needs to be used where there are small differences in the results, which are affected by sample and estimate size (section 11.8). <sup>b</sup> The total number of households with at least one fire safety measure is smaller than the sum of the individual components because a number of households have more than one fire safety measure installed or followed. <sup>c</sup> Only the final quarter are new data because the PSM ceased. Three quarters already reported were repeated with the new data to preserve data integrity.

Source: ABS (2001b); table 11A.11.

## Response

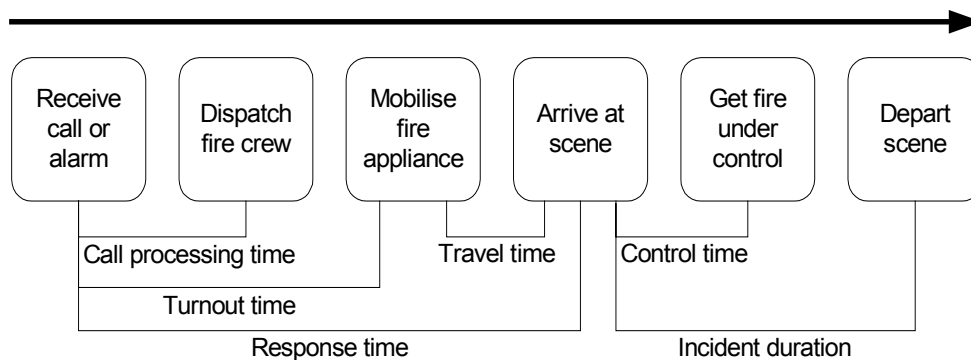
Response times and containment of structural fires (to the object or room of origin) are indicators of the effectiveness of fire services in terms of their ability to respond to and suppress fires. Response times to structural fires are reported first, followed by containment of structural fires to the object/room of origin.

The response time is defined as the interval between the receipt of the call at the dispatch centre and the arrival of the vehicle at the scene (that is, when the vehicle is stationary and the handbrake is applied). This and other intervals are illustrated in figure 11.13. Response times are provided on a jurisdictional basis, so they are not agency specific (which is consistent with information provided for other indicators in this chapter).

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Figure 11.13 Response time points and indicators

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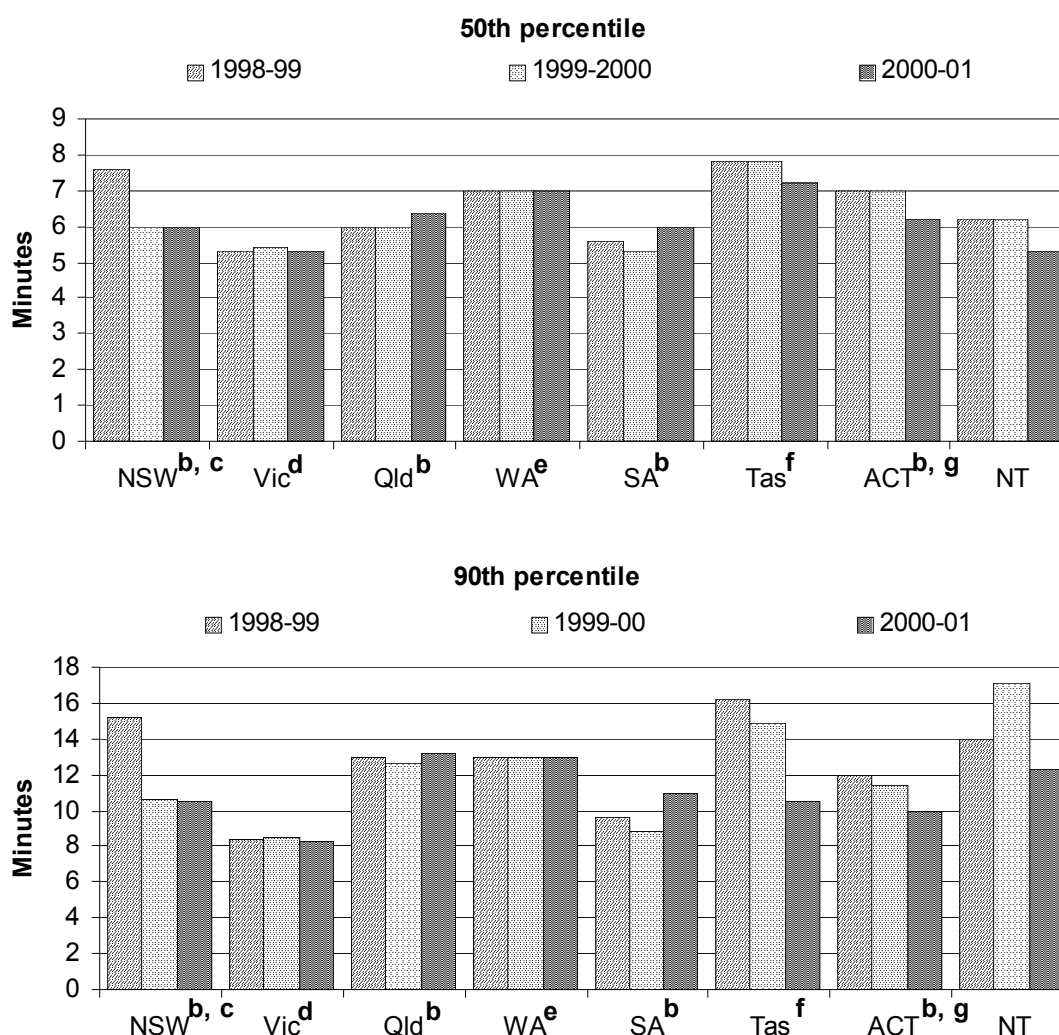
The information provided is for response times to structural fires. The results indicate the performance of only the agency (or agencies) reported, not necessarily of all fire services within each jurisdiction. Response time data need to be viewed with care because performance is not strictly comparable across jurisdictions, given that:

- response time data for some jurisdictions represent responses to urban, rural and remote areas;
- responses may include career firefighters, auxiliary/part time firefighters and volunteers;
- response times can be affected by the dispersion of the population; and
- definitions on response times vary across jurisdictions (that is, the agreed definition for the Review is not always applied).

The 50th percentile response time refers to the time within which 50 per cent of the first responding fire resources arrived at the scenes. The 50th percentile response time in 2000-01 was highest in Tasmania (7.2 minutes) and lowest in Victoria and the NT (5.3 minutes) (figure 11.14).

The 90th percentile response time refers to the time within which 90 per cent of the first responding fire resources arrived at the scenes. The 90th percentile response time in 2000-01 was highest in Queensland (13.2 minutes) and lowest in Victoria (8.3 minutes). Response time data for Victoria, however, are not yet strictly comparable (figure 11.14).

Figure 11.14 Response times to structural fires<sup>a</sup>



<sup>a</sup> Definitions of response times may vary from jurisdiction to jurisdiction. Also, some agencies use a manual system to calculate response time figures while other services retrieve the data from computer aided dispatch systems. <sup>b</sup> In NSW, Queensland, SA and the ACT, data for 1998-99 have been revised by including structural fires only, to maintain comparability with 1999-2000 and 2000-01 data. Excludes the Queensland Rural Fire Service for all years and SA Country Fire Service prior to 2000-01. <sup>c</sup> Data are for NSW Fire Brigades only, but include responses to calls outside NSW Fire Brigades' designated fire districts. Due to an industrial ban 1999-2000 data are derived from a sample representing 80 per cent of the incidents, and 2000-01 figures are derived from a sample representing 85 per cent of the incidents. <sup>d</sup> Victorian data for 1998-99 have been amended by including structural fires only, to maintain comparability with 1999-2000 and 2000-01 data. Victorian data are not uniformly consistent with the definition in the Review's data dictionary used by other jurisdictions. <sup>e</sup> WA 1998-99 data exclude Bush Fire Brigades. <sup>f</sup> Tasmanian 2000-01 data exclude Rural Fire Brigades. <sup>g</sup> Industrial bans in the ACT mean 1998-99 and 1999-2000 data are based on extrapolated results.

Source: State and Territory governments (unpublished); table 11A.12.

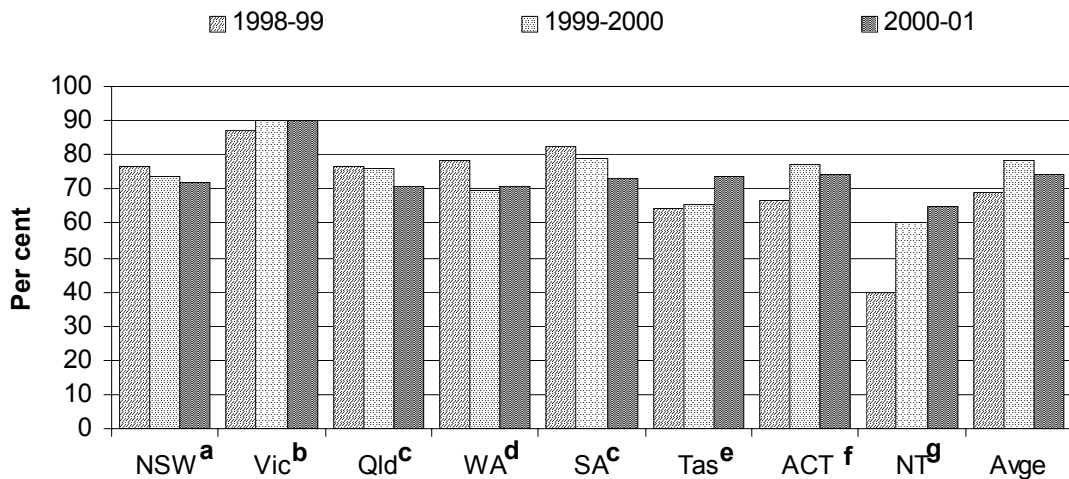
Another indicator of response effectiveness is the proportion of structural fires contained to the object or room of origin. The proportion of fires contained to the object or room of origin in 2000-01 was highest in Victoria (90.0 per cent) and lowest in the NT (65.0 per cent) (figure 11.15).



## Recovery

Recovery refers to the effectiveness of fire service strategies in both returning agencies to a state of preparedness after emergency situations, and supporting communities in their reconstruction of physical infrastructure and restoration of emotional, social, economic and physical wellbeing. These strategies include the restoration of essential services, counselling programs, temporary housing, long-term medical care, and public health and safety information. Indicators of effectiveness in terms of recovery are yet to be developed.

Figure 11.15 Structural fires contained to the object/room of origin



<sup>a</sup> 1998-2001 data are for NSW Fire Brigades only, but include responses to calls outside NSW Fire Brigades' designated fire districts. Due to an industrial ban 1999-2000 data are derived from a sample representing 80 per cent of the incidents, and 2000-01 data are derived from a sample representing 85 per cent of the incidents. <sup>b</sup> Victorian data include the Metropolitan Fire and Emergency Services Board and exclude the Country Fire Authority. <sup>c</sup> Excludes the Queensland Rural Fire Service and SA Country Fire Service respectively. <sup>d</sup> WA 1998-99 data exclude Bush Fire Brigades. <sup>e</sup> Tasmanian 2000-01 data exclude Rural Fire Brigades. <sup>f</sup> Industrial bans in the ACT mean 1998-99 and 1999-2000 data are based on extrapolated results. <sup>g</sup> Average excludes rural fire services for some years.

Source: State and Territory governments (unpublished); table 11A.13.

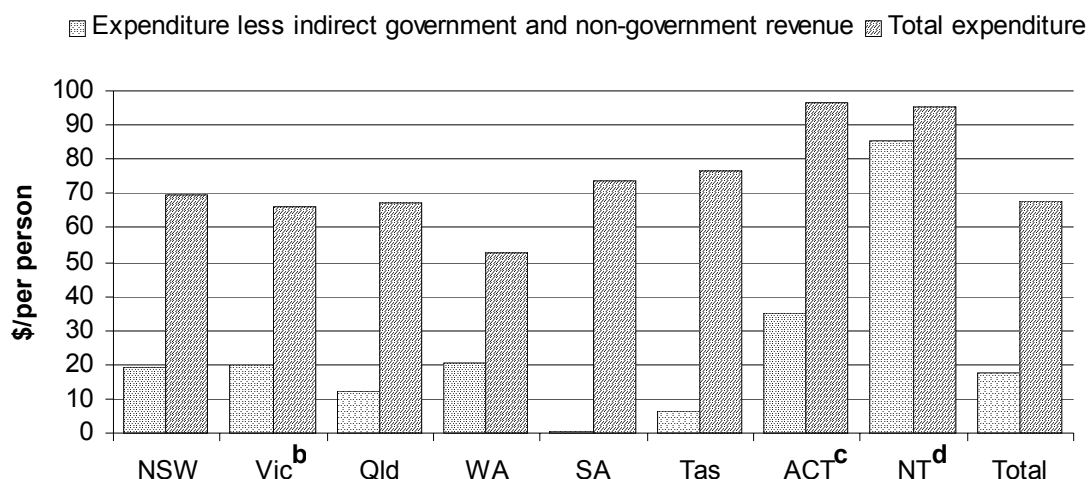
## Efficiency

Efficiency indicators report on the unit cost of service delivery. Calculation of unit costs requires the specification of outputs. For fire services, this is a difficult task, given the diversity of activities undertaken. The fire sector has considered a range of options for specified outputs. Expenditure per person is employed as a proxy for efficiency. Expenditure per fire is not used as a proxy for fire services efficiency because a fire service that devotes more resources to the prevention and preparedness components to reduce the number of fire incidents could erroneously appear to be less efficient.

The indicator of efficiency for fire services is the level of inputs per person in the population. The quality of unit cost data has improved following reporting of the user cost of capital. The data are not fully comparable because there are differences in the reporting of payroll tax and asset related costs.

Expenditure is reported as both the total cost (total expenditure) and net cost (expenditure less non-government revenue) to government of fire services. Total expenditure is a measure of efficiency for fire services, and net cost is a measure of the cost to government. Both were reported in the 2001 Report and are reported again this year because non-government revenue is significant for a number of jurisdictions. Nationally, the net cost to government per person in 2000-01 was \$17.40, ranging across jurisdictions from \$85.30 per person in the NT to \$0.40 per person in SA (figure 11.16).

**Figure 11.16 Fire expenditure less indirect government and non-government revenue, and total expenditure, 2000-01<sup>a</sup>**



<sup>a</sup> Revenue from indirect government and non-government sources includes levies on insurance companies and property owners, user charges, fundraising and donations and indirect revenue. <sup>b</sup> 2000-01 was the first year of funding for a special resources initiative in Victoria. <sup>c</sup> Excludes adjustment for payroll tax exempt status in the ACT. <sup>d</sup> NT data exclude depreciation.

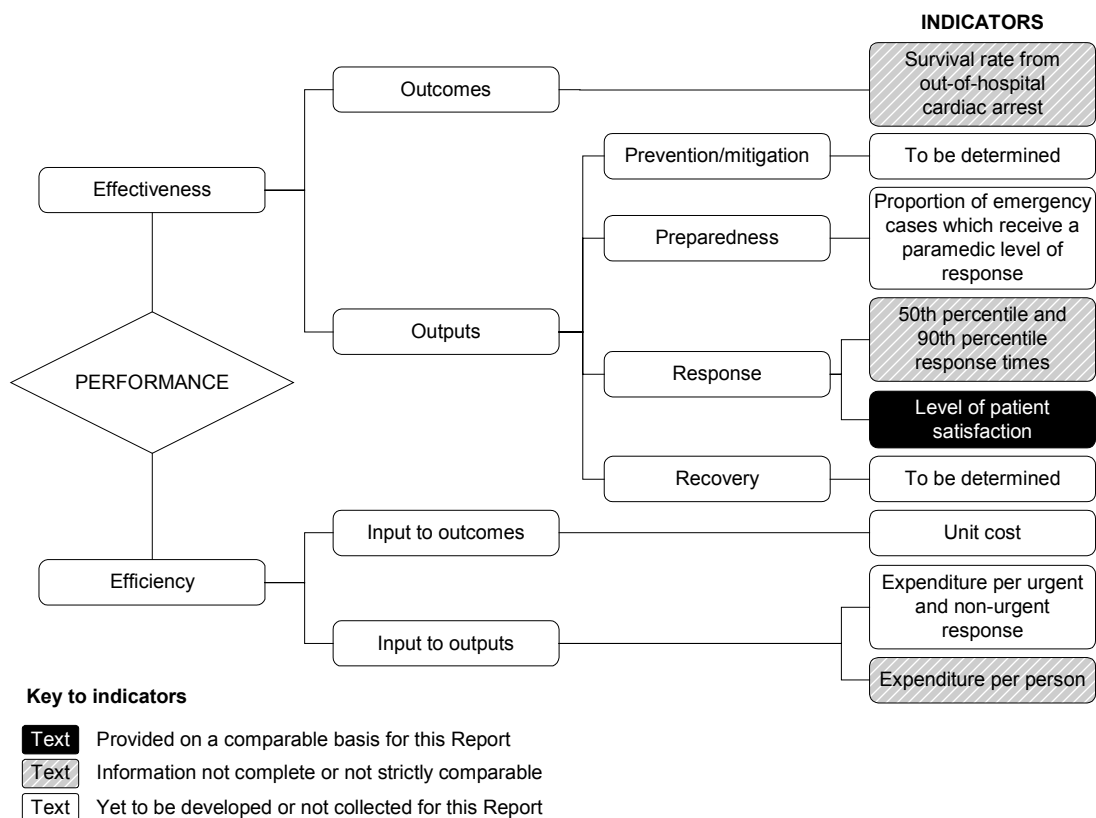
Source: State and Territory governments (unpublished); table 11A.15.

## 11.5 Key performance indicator results — ambulance services (pre-hospital care, treatment and transport services)

An indicator framework for ambulance services (pre-hospital care, treatment and transport services) (figure 11.17) has also been developed from the generic

framework for all emergency services. Performance has been reported for a number of indicators, but different delivery contexts, locations and types of client may affect these indicators. Appendix A contains detailed statistics and short profiles on each State and Territory, which may assist in interpreting the performance indicators presented in this section.

**Figure 11.17 Performance indicators for ambulance services (pre-hospital care, treatment and transport services)**



## Effectiveness

### Outcomes

The survival rate from out-of-hospital cardiac arrest is a measure of the outcomes achieved by ambulance services. Reporting against this indicator is improved this year, with four jurisdictions (compared with two in the 2001 Report) able to provide these data: Victoria, Queensland, WA and the ACT (table 11A.19). The highest survival rate from out-of-hospital cardiac arrest in 2000-01 was in the ACT (19.7 per cent) and the lowest rate was in WA (1.9 per cent). The ACT data are not strictly comparable with data from other jurisdictions because the ACT provided a

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six year moving average to December 2000 to overcome the potential error from the ACT's small population.

### *Outputs*

#### *Prevention*

Prevention focuses on the extent to which community education programs improve the health and safety in the community — for example, the effectiveness of first aid training courses. The role of ambulance services in the prevention of medical emergencies differs across jurisdictions, so indicators of effectiveness in terms of prevention are yet to be developed.

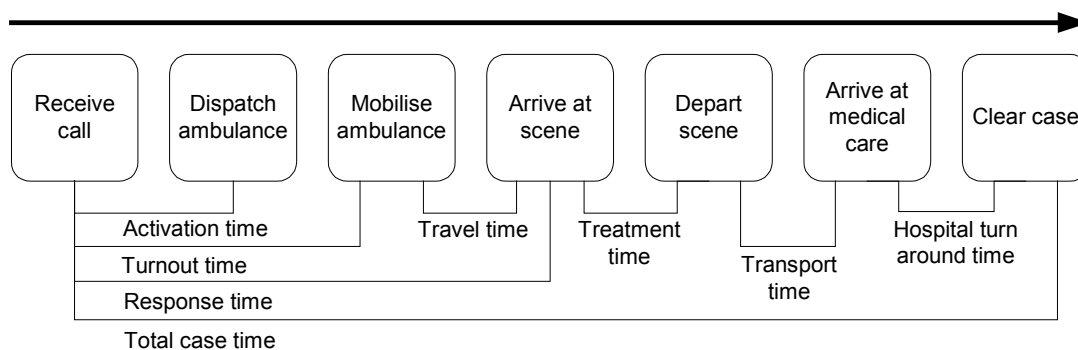
#### *Preparedness*

The ability of ambulance services to dispatch staff with a paramedic level of training quickly to a medical emergency requiring such a level of response is an indicator of their preparedness for such emergencies. No data are yet available for this indicator.

#### *Response*

The response time is defined as the time taken between the initial receipt of the call for an emergency ambulance to the ambulance's arrival at the scene of the emergency (figure 11.18).

**Figure 11.18 Response time points and indicators**



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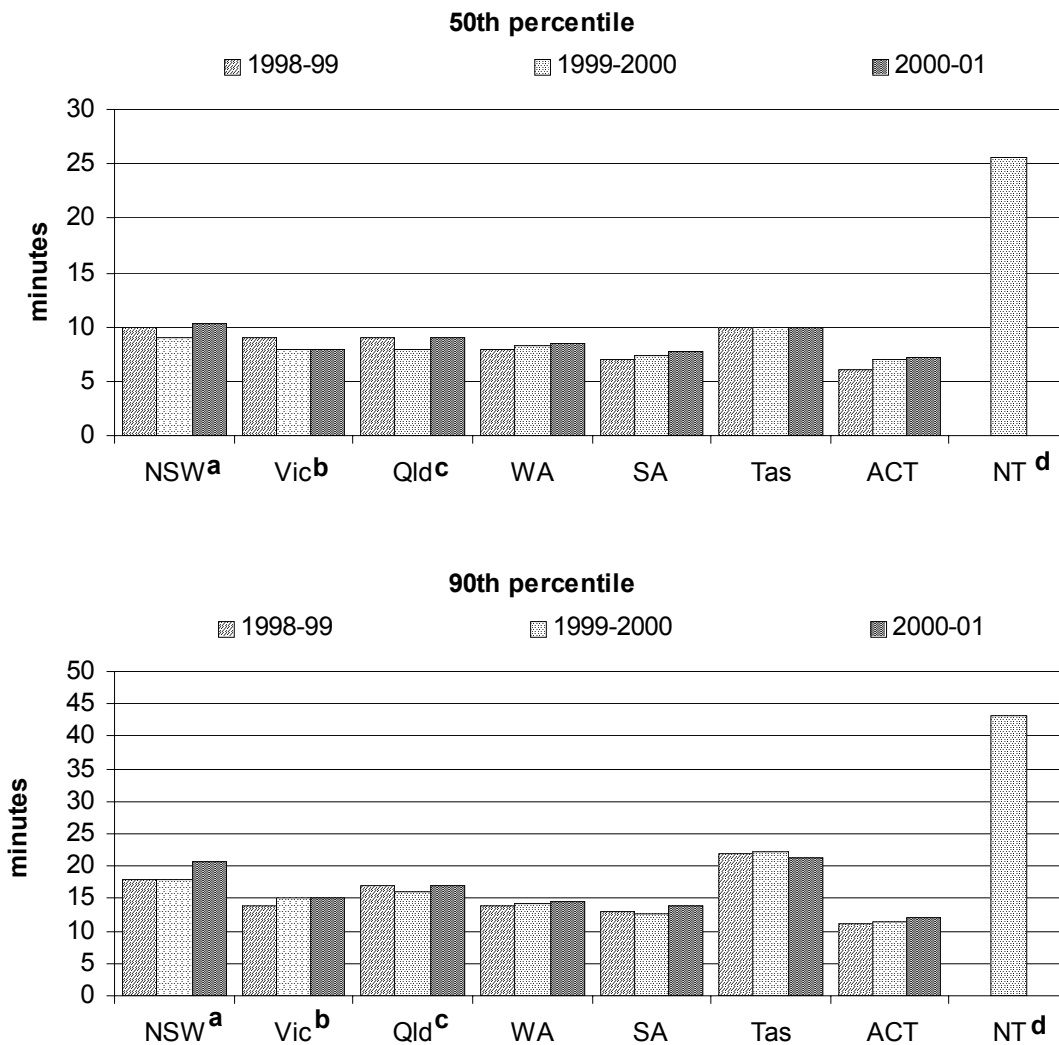
Emergency responses are categorised by an assessment of the severity of the medical problem. These categories are:

- code I — responses to potentially life threatening situations using warning devices; and
- code II — responses to acutely ill patients (not in life threatening situations) where attendance is necessary but no warning devices are used.

The level of responsiveness is reported as the times during which 50 per cent and 90 per cent of first responding ambulance resources actually respond in code I situations (figure 11.19). Information is also reported on the national level of patient satisfaction and the national level of community satisfaction.

In 2000-01, the 50th percentile response time — the time within which 50 per cent of first ambulance resources actually responded — was highest in NSW and Tasmania (10 minutes) and lowest in the ACT (7 minutes). The 90th percentile response time in 2001 was highest in NSW and Tasmania (21 minutes) and lowest in the ACT (12 minutes) (figure 11.19).

Figure 11.19 Ambulance response times

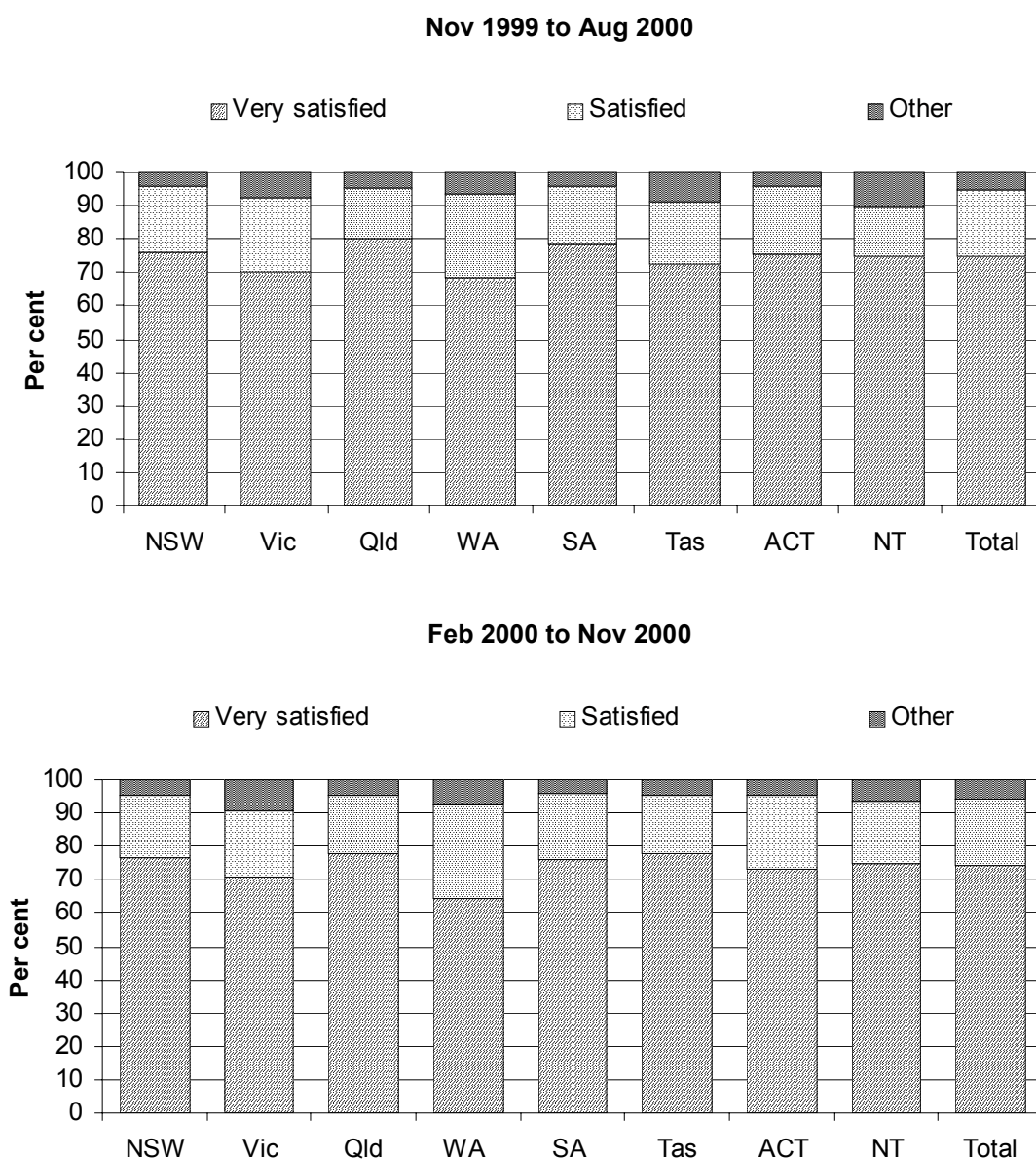


<sup>a</sup> NSW does not triage emergency calls. Results for code 1 cases represent '000' and urgent medical incidents. <sup>b</sup> 1998-99 Victorian data include Metropolitan Ambulance Service only. Therefore, response time data for that year are not strictly comparable across jurisdictions. 1999-2000 and 2000-01 Victorian data are jurisdiction wide. Response times are estimated. Data are incomplete due to industrial action. <sup>c</sup> Queensland Ambulance Service responded to 91.4 per cent of all urgent cases in less than or equal to 16 minutes. <sup>d</sup> NT data were not available for 1998-99 and 2000-01.

Source: State and Territory governments (unpublished); table 11A.20.

The performance of ambulance services in providing response services can be measured in terms of the satisfaction of those persons who did (figure 11.20) and did not directly use the service (table 11A.22).

Figure 11.20 **Satisfaction with ambulance services, persons who had used an ambulance service in the last 12 months<sup>a, b, c</sup>**



<sup>a</sup> Data are obtained quarterly for persons aged 18 years and over. <sup>b</sup> Small differences in the results should be viewed with care as they may be affected by sample and estimate size (see section 11.8). <sup>c</sup> Only the final quarter is new data because the PSM ceased. Three quarters already reported were repeated with the new data to preserve data integrity.

Source: ABS (2001b); table 11A.21.

Nationally, 5 per cent of the population surveyed in the February 2000 to November 2000 quarters had used an ambulance in the previous 12 months (ABS 2001b). The proportion of persons who were either satisfied or very satisfied with ambulance services was higher in all jurisdictions for those who had used an ambulance service in the previous 12 months (94.0 per cent) compared with those who had not (71.7 per cent) (table 11A.21 and 11A.22). There was little difference within

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jurisdictions in the proportion of persons who had used an ambulance service who were either very satisfied or satisfied from February 2000 to November 2000 quarters (figure 11.20).

Across jurisdictions, the proportion of ambulance users who were either very satisfied or satisfied increased in Tasmania and the NT, decreased in NSW, Victoria and WA and remained constant in Queensland and SA between the 10 months ending August 2000 and November 2000 respectively. The proportion of ambulance users who were either very satisfied or satisfied was highest in SA (95.8 per cent), and lowest in Victoria (90.8 per cent) (table 11A.21).

There was no change in the satisfaction level of those who had not used an ambulance service in the 10 months ending August 2000 to November 2000, nationally (remaining at 72 per cent) (ABS 2001b). Across jurisdictions, the proportion of people who had not used ambulance services who were either very satisfied or satisfied was highest in Queensland (79.8 per cent) and lowest in the ACT (67.7 per cent). There was minimal change within jurisdictions between the 10 months ending August 2000 and November 2000 respectively (table 11A.22).

### *Recovery*

Indicators of effectiveness expressed in terms of recovery are yet to be developed.

### **Efficiency**

The main efficiency indicator is ambulance expenditure per person. As with fire services, the quality of unit cost data provided by ambulance services has improved following the reporting of the user cost of capital and payroll tax. The data are still not fully comparable, however, because there are differences in payroll tax exempt status and geography. Expenditure per urgent and non-urgent response will be presented in future reports.

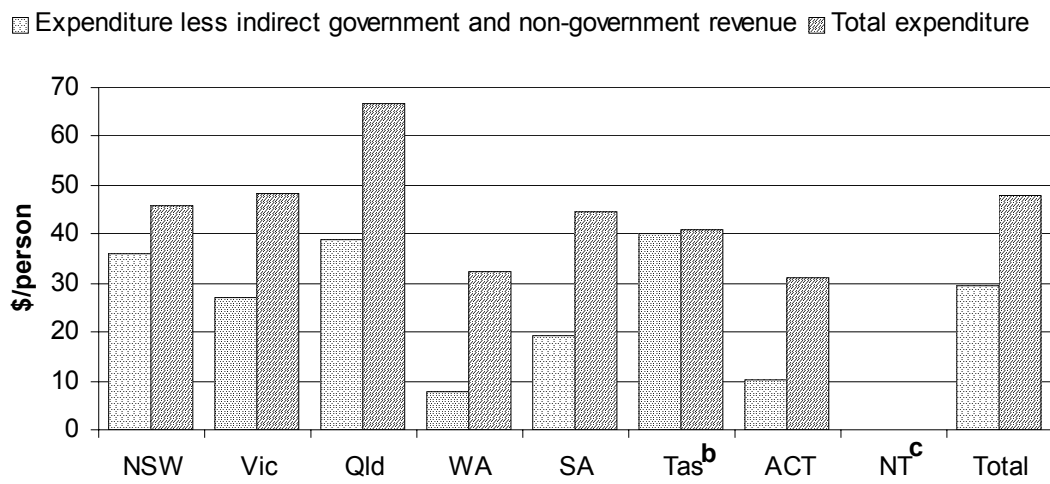
Expenditure is reported as both the total cost (total expenditure) and net cost (expenditure less indirect government and non-government revenue) to government of ambulance services. Total expenditure is a more appropriate measure of efficiency for ambulance services, given that non-government revenue is significant for a number of jurisdictions.

Nationally, ambulance expenditure less indirect government and non-government revenue per person was \$30 in 2000-01. Across jurisdictions, Tasmania had the highest (\$40 per person) and WA had the lowest (\$8 per person) (figure 11.21).



Care needs to be taken when comparing data across jurisdictions, because there are differences in the reporting of a range of cost items (including payroll tax and the user cost of capital) as well as funding arrangements (funding policies and taxing regimes). Some jurisdictions, for example, have a greater proportion of government funds than that of other jurisdictions.

**Figure 11.21 Ambulance expenditure less indirect government and non-government revenue, and total expenditure, 2000-01<sup>a</sup>**



<sup>a</sup> Indirect government and non-government revenue includes subscription fees, transport fees, donations and indirect revenue. <sup>b</sup> Excludes expenditure on administration of the ambulance subscription scheme, hospital based transport services, independent ambulance services, first aid training and clinic transport services. <sup>c</sup> NT data are not available.

Source: State and Territory governments (unpublished); table 11A.24.

## 11.6 Future directions in performance reporting

A number of developments are under way to improve data quality and comparability in the chapter for future reports. A priority for the Review is to improve reporting on services to Indigenous Australians. No data are currently available because Indigenous people are generally not identified for data collection purposes. At least one jurisdiction advises that there are developments in Indigenous reporting, which if expanded nationally, may lead to data possibilities for future reports in the long term.

The Survey of Emergency Management Activities outlined in the profile identified the agencies involved in various event-type services. Road accident rescue has been selected as the next event-type service to report, and a subgroup formed this year commenced work on development of a performance indicator framework.

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Data for the new road accident rescues framework are expected to be presented in the 2003 Report. The development of detailed indicators and data collection will be an iterative process extending over several years.

The survey also identified that land management agencies should be included in the Report to improve the coverage of data for fires. It is expected that some data for landscape fires may be available for future reports. Other types of event-type service for which performance reporting have yet to be developed include: rescues (other than road accident); natural events; technological and hazardous material incidents; emergency relief and recovery; and quarantine and disease control.

Improving the comparability and accuracy of response times data is also a priority for the Review. Descriptive performance indicators for fire and ambulance services are being improved with the assistance of the Australasian Fire Authorities Council and the Convention of Ambulance Authorities. In particular, these two organisations, under the auspices of the Review, are separately investigating methods for disaggregating response times data to account for geographic and other factors that may differ across jurisdictions. The Convention of Ambulance Authorities expects to conduct a pilot test in 2002, applying the Accessibility/Remoteness Index of Australia geographic classification to response time data for ambulance services.

Further, as outlined in the key performance indicator sections, the PSM is no longer part of the ABS collection. It is envisaged that jurisdictions will be responsible for collecting similar data on fire safety measures and ambulance services patient satisfaction. Instruments and arrangements to collect these data are at the developmental stage. Some data are expected to be available for the 2003 Report; these data will be less comparable than the PSM collection (because they will not be collected nationally for fire at least), although more meaningful.

Financial data are expected to improve in future reports. A subgroup has been formed this year to work on financial data issues, including cost allocation across event-type services, the impact of different leasing arrangements on asset valuations and expenses, the comparability of the treatment of assets and implications of new Australian accounting standards relating to asset measurement techniques.

The possibility of reporting an indicator for drug overdoses has been discussed. While data in this area are not collected, this issue is on the agenda for investigation during 2002, which may lead to reporting on drug overdoses in the ambulance services key performance indicators section in future reports.

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## **11.7 Jurisdictions' comments**

This section provides comments from each jurisdiction on the services covered in this chapter and attachment 11A on the CD-ROM. Appendix A contains detailed statistics and short profiles on each State and Territory, which may assist in interpreting the performance indicators presented in this chapter. The information covers aspects such as age profile, geographic distribution of the population, income levels, education levels, tenure of dwellings and cultural heritage (such as Indigenous and ethnic status).

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## **New South Wales Government comments**

“ The NSW Government recognises the value of performance information to enhance service delivery and for planning and policy development to build a safer, confident community. This information is also used in demonstrating to the community that emergency services are delivering the best possible services and value. It should be noted however, that the chapter reports only on a subset of the functions of the total emergency management sector in NSW. The role of emergency services in the multi-agency planning and operations that helped deliver the successful Sydney 2000 Olympic and Paralympic Games for example, is not reported in the chapter.

Some caution is necessary with the interpretation of data. NSW recognises that problems with data consistency and comparability still exist and that more work is required in some areas. To this end, NSW emergency services continue to invest in programs through the Convention of Ambulance Authorities and the Australasian Fire Authorities Council in improving performance reporting and data quality.

Fire and Ambulance Services in NSW face similar policy developments aimed at improving service delivery and the value of emergency services. The most significant developments have been:

- the construction of additional fire and ambulance stations, and the upgrading of firefighting and ambulance vehicle fleets,
- changes to management structures to accommodate the increasingly complex and changing social, economic and physical environments in order to manage risks and develop, implement and monitor community risk management programs,
- engaging the community through collaborative and partnership models in developing service delivery policy and community safety and risk management programs, and
- using information and community advice to evaluate and improve service delivery.

The year 2001 also provided emergency services the opportunity to recognise the value of volunteers to service delivery. Volunteers come from a wide range of backgrounds and their motivation for joining emergency services range from a need to protect their properties to a desire to serve the community. These backgrounds reflect the demographics of the communities they serve. Volunteers have a strong connection with and understanding of their local communities, and have a depth of local knowledge of the threat of fire and other emergencies and the way in which they can be managed. Volunteers, like other members of the community, are increasingly facing more challenging and busier professional and private lives. This impacts on their availability, a challenge that emergency services are addressing by implementing a range of systems and support services.”

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## Victorian Government comments

“ Victorian emergency services continue to deliver effective and efficient services to the community. In keeping with its commitment to ensure consistent service to the community and maximum resource sharing, the Office of the Emergency Services Commissioner initiated a process for developing a Model of Fire Cover for Victoria. This model will provide a long term planning framework for equitable fire cover and enhanced and relevant performance measurement. The Government continues to emphasise prevention/preparedness and partnership programs, through initiatives such as householder bushfire safety campaigns, the MFESB's (Metropolitan Fire and Emergency Services Board) Operation Home Safe and partnerships such as the formation of forestry industry fire brigades. In recognition of the value and contribution of its volunteer-based service, the Government introduced the first year of Special Resources Initiative funding, strategically targeted towards ensuring CFA (Country Fire Authority) brigades are trained, equipped and supported to professional standards. During the year 12 827 volunteers commenced the Minimum Skills program. Skills maintenance and development are also important issues for the professional firefighters in the State.

The introduction of simultaneous dispatch of ambulance and suitably trained and equipped MFESB fire units in Melbourne's Emergency Medical Response pilot program has improved response times to cases of suspected cardiac arrest. The completion of a 26 per cent expansion of Metropolitan emergency ambulance services has also improved response time performance, particularly in outer metropolitan areas. In addition, 31 000 people were trained to administer CPR through the free 'Learn CPR — the Key to Survival' initiative. All ambulance paramedics commenced training in advanced life support skills.

In a continuing Government initiative with benefits of particular importance to Victorians living in rural and regional areas, Air Ambulance has significantly enhanced its transport capability. A new state-of-the-art ambulance helicopter service began operating in Bendigo with the two existing air ambulance helicopter services scheduled to be upgraded to 'Category A' by December 2001 and arrangements were made with private helicopter operators to provide back-up craft when necessary. In addition, four old Cessna Titan aircraft were replaced with new pressurised King Air planes. Other initiatives to improve ambulance services in regional and rural Victoria included the establishment of new professional branches, the extension of two-officer crewing and the provision of 24 hour intensive care paramedics in provincial cities.

Contract execution occurred for the implementation of electronic data capture in the field through the Victorian Ambulance Clinical Information System. The system will offer unprecedented opportunities for pre-hospital research and will provide a comprehensive picture of the profile of ambulance patients and the level of paramedic intervention.”

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## Queensland Government comments

“ The past year has been one of continuing developments in the Emergency Services Portfolio in Queensland with continued progress towards achieving key corporate outcomes and objectives, which directly contribute to the Queensland Government’s policy priorities.

Queensland has, in a single portfolio, skills in all aspects of emergency management — from prevention and preparation activities to response and recovery. Most uniquely Queensland has these skills in the areas of ambulance, fire, search, rescue, disaster management and mitigation, and hazardous materials. This combination of skills allows us to provide and improve emergency services to the community in an integrated and holistic way.

A key priority for the emergency services within Queensland has been to raise awareness across all levels of government of our broad role in ensuring the safety of the community in areas such as injury prevention, home based safety programs and disaster mitigation and planning.

The Dangerous Goods Safety Management Act 2001 was passed in May 2001. This legislation covers the storage and handling of dangerous goods, and the operation of high risk major hazard facilities, and mandates specific public safety requirements.

In response to the tragic fire in the Childers backpacker hostel last year, a multi-agency Building Fire Safety Taskforce was established. A Regulatory Impact Statement providing options for improvement of fire safety in budget accommodation has been released for public comment, and responses have been incorporated into legislative reforms aimed at improved building fire safety standards.

QAS (Queensland Ambulance Service) successfully commissioned its Computer Aided Dispatch and Automatic Vehicle Location technologies which, along with procedural changes, have dramatically improved ambulance response times, with 70 per cent of the most urgent cases being attended to in 10 minutes or less. Ninety-one per cent of cases are responded to within 16 minutes.

QFRA (Queensland Fire and Rescue Authority) were successful in maintaining their emergency response times for full-time permanent stations and were able to reach 93 per cent of incidences within 14 minutes.

Our International Year of Volunteers (IYV) program has significantly increased community recognition of our volunteers and their vital contribution to public safety and community support.

As we move forward our focus will remain on providing the best possible services to our diverse and geographically spread community. Our key areas of action will be on enhancing community safety and prevention, enhancing service delivery, continuing to develop and support our staff and volunteers, disaster mitigation enhancements and establishing emergency management on the strategic policy mainstream of Government.

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## Western Australian Government comments

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The Fire and Emergency Services Authority (FESA) and St John Ambulance Australia (WA) Inc. have been actively participating in the development of improved nationally comparable performance data for emergency management, including the review of performance measures which commenced in 2001.<sup>1</sup>

As these agencies cover all key emergency services areas in Western Australia, the proposed introduction of data from additional sources (for example, relating to rescues, and other human and natural hazard events) is welcomed.

A number of challenges continue to influence the provision of emergency services throughout the State (some of which may encroach on the ability to provide comparative performance information). Many relate to the State's huge land mass and sparse, widely dispersed rural/remote population; for example, WA is the largest area in the world covered by a single ambulance service.

Metropolitan ambulance services are provided almost entirely using paid ambulance officers and paramedics. In the country, however, the figure is less than 10 per cent. The remaining services are provided entirely by more than 3 500 volunteers who contribute over 3 000 000 hours of service annually. Despite this unique challenge, St John Ambulance provides services with a total cost per capita equal to the ACT and significantly less than any other State.

Associated issues for FESA include providing adequate levels of service in line with different demand profiles and (often low) economies of scale, the reliance on volunteers, and potentially lengthy response times in rural/remote areas. The State's size and resultant climatic variability also means that numerous hazards (for example, bush fires, flooding) need to be addressed on a year-round basis.

Other issues include substantial population and industrial growth in the Perth metropolitan area and the State's south west (in contrast to other regions), continuing advancements in the coordination and collocation of services, and an increasing focus on prevention services.

During the year, FESA began working towards community centred emergency management. This strategic intention seeks to heighten local community involvement in prevention programs, and assist communities to become more self-reliant and better prepared in case of emergencies. One particular focus is on increasing the capacity of remote indigenous communities to minimise the impact of hazards, including fires, floods and cyclones.

<sup>1</sup> St John Ambulance is a non-profit incorporated association that provides the ambulance service in WA under contract with the State Health Department. FESA is a statutory authority supporting more than 830 career firefighters and 2500 volunteer firefighters (Fire and Rescue Service), 17 900 volunteer firefighters (Bush Fire Brigades) as well as around 2500 State Emergency Service volunteers and 2400 Volunteer Marine Rescue Services volunteers.

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## South Australian Government Comments

“ The South Australian Government has committed to the following strategic priorities for emergency services to better achieve outcomes in Public Safety:

- Introducing a funding system that is equitable, transparent, accountable and integrated with strategic and risk based management;
- Revising structural and governance arrangements to deliver services more effectively and efficiently;
- Increasing support for voluntarism and regional communities;
- Collocating emergency services for integrated service delivery;
- Introducing a strategic framework for resource management;
- Adopting a strategic approach to providing emergency services;
- Achieving more cost effective delivery of emergency services; and
- Improving telecommunications for emergency services and Police.

The strategic reform agenda has delivered:

- The Community Emergency Services Fund (CESF), collected from levies on mobile and fixed property;
- The Emergency Services Administrative Unit (ESAU) to provide strategic and support services to the SAMFS (SA Metropolitan Fire Service), CFS (Country Fire Service) and SES (State Emergency Service) and strategic advice to the CESF, which directly advises the Minister on the allocation of funding;
- A Strategic Directions Framework for all emergency services to provide a context for agency planning and performance measurement;
- Enhanced processes for Emergency Risk Management; and
- The Metropolitan Transfer Service to enable more efficient matching of clinical resources to medical casetypes, thus enhancing the efficiency of SAAS.

SA Ambulance Service (SAAS) is a stand-alone agency that is not funded by the CESF, except for its rescue activity. SAAS continues to work closely with the other emergency agencies to ensure effective management of incidents. SAAS pursues co-location with these Services wherever feasible, conducts and is party to, state disaster planning and regular exercises involving all emergency agencies and is heavily involved in a number of multi-agency projects.

Major emergency management initiatives for 2001-02 include:

- Collaboratively developing Emergency Services Resourcing Standards for optimal resource allocation planning and management;
- Finalising, in conjunction with the Minister for Emergency Services and St John Priory, the withdrawal of St John from SAAS;
- Developing and implementing a new incident response system to enable better matching of clinical resources to pre-hospital medical cases; and
- Reviewing the country ambulance service to improve the delivery of ambulance services in country SA.

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## Tasmanian Government comments

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Tasmania has a number of key issues which impact on the provision of both fire and ambulance services throughout the State. These issues include:

- the small population and subsequent lack of economies of scale;
- the widely dispersed population which affects fire and ambulance response times. At 59.1 per cent, Tasmania has the largest proportion of rural population of all jurisdictions;
- the reliance on volunteers in rural and remote areas affecting turnout times; and
- the State's rugged topography which impacts on response times and infrastructure costs (for example, the radio system).

### *Fire Services*

Tasmania Fire Service (TFS) is comprised of four career brigades and 235 volunteer brigades that respond to fires in all metropolitan and rural areas. All incidents attended by TFS brigades are reported on, and the TFS bears the full cost of funding both the operating and capital costs of these brigades.

The 2000-01 fire season was exceptionally busy for the second year in a row and included some extended incidents due to an usually dry summer. These conditions contributed to the TFS attending more than twice the number of bush and scrub fires for consecutive years in comparison to 1998-99 levels.

TFS continued its commitment to the other key responsibility of fire prevention and the fostering of greater fire safety in the community. TFS has identified those in the community who are most at risk from fire and has established a broad range of programs to assist these people to prevent fires and minimise the impact of fires when they occur. Figures suggest fire prevention programs are helping to reduce property fires with the number of property fires in 2000-01 dropping significantly after being relatively static for the past seven years.

### *Ambulance Services*

Tasmania is the only State which provides free ambulance services to the general public, and as a consequence there is a far greater reliance on government funding than all other jurisdictions.

Unlike most other jurisdictions expenditure on ambulance service provision in Tasmania does not include expenditure on operating an ambulance subscription scheme.

Tasmania continues to train a far greater proportion of its salaried ambulance personnel to paramedic level than most jurisdictions, with up to 70 per cent of all emergencies in Tasmania responded to at the paramedic level.

Tasmania's major influencing factor is the addition of 16 salaried officers to the service since last report. In addition, the ambulance replacement program for urban and rural areas is progressing rapidly.

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### **Australian Capital Territory Government comments**

“ The ACT is unique and fundamentally different to other jurisdictions in a number of aspects relevant to emergency management. The relatively small geographic size of the Territory, and the fact that the ACT has city/State functions; and a high proportion of urban area all impact on the provision of emergency services. There are no other counterparts in Australia that provide both Territorial (State) and municipal functions in the one government structure. In addition the revenue raising capabilities of some other jurisdictions are greater and more flexible than those of the ACT.

In the ACT the focus in emergency management is on the delivery of outputs by cooperation of all emergency agencies in partnership with a prepared community. Output classes for the ACT Emergency Services Bureau are based on the national emergency management principles of prevention/mitigation, preparedness, response and recovery and are not individually identified against the specific emergency agency. The emergency management arrangements in the ACT reflect both Territorial (State) and municipal funding arrangements in the budget of the ACT Emergency Services Bureau. The bureau's Standards of Emergency Response are time and risk based, and the positioning of resources affects the impact of the multiple town centres, 'greenbelts' and Commonwealth assets of National importance.

Emergency activities, which in other jurisdictions are spread across many agencies, are concentrated in the fewer agencies comprising the ACT Emergency Services Bureau. Consequently, the expenditure per person in the ACT for the reported fire and ambulance agencies may be inflated by the cost of those activities not yet included for other jurisdictions.

Given the indication that the average annual growth rate in the over 65 age group in the ACT is the second highest for all States and Territories in the seven years since 1993, the ACT has placed emphasis on a Community Liaison and Advisory Safety Project (CLASP) as part of a prevention strategy. CLASP aims to facilitate the continued independent living of the older population by providing advice on improvements to personal safety and security. This is a cooperative venture between the ACT Council on the Ageing, the ACT Ambulance Service, the ACT Fire Brigade and the Australian Federal Police.

The ACT has been fortunate to experience no fire deaths in the last three reporting years and to have the lowest fire injury rate of all jurisdictions in the latest reported period. The ACT Fire Brigade continues to maintain preventative programs for fire education for school children, an intervention program for potential juvenile fire lighters and smoke alarms installation in residences to prevent or minimise the impact of fire in structures.

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## Northern Territory Government comments

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As with previous reports, the Ambulance Service in the Northern Territory (NT) has not been commented on in this chapter. St John Ambulance is an incorporated non-profit organisation and works under a contract arrangement with Territory Health Services, an agency of the Northern Territory Government.

The Northern Territory is fundamentally different from other States and Territories in a number of areas relevant to emergency management. The relatively large geographic size of the Territory, and its small population, impact heavily on the provision of emergency services to the NT community.

The tyranny of distance is a major issue for fire stations at remote locations across the Territory. Auxiliary and volunteer firefighters regularly have to travel up to 200 kilometres to attend motor vehicle accidents and chemical spills. The vast distances between centres means that brigades in these locations get no back-up from other brigades when dealing with large fires. The career and auxiliary members in these locations must rely on their own abilities and equipment to deal with any emergency.

To this end, Government is providing brigades in rural locations with better resources to help carry out the important task of emergency response. Larger appliances have been purchased for volunteer brigades in Elliott, Timber Creek, Pine Creek and Batchelor to assist firefighters in these towns to provide a better service to their community and the travelling public. Each new vehicle will enable up to seven volunteers to travel to an incident in the one vehicle while carrying 3000 litres of water, as well as firefighting and rescue equipment.

New tankers have also been purchased for the permanent and auxiliary brigades in Palmerston and Tennant Creek.

A new Memorandum of Understanding (MOU) was signed between the NT and the Commonwealth, for the NT Government to provide fire protection to Commonwealth facilities in the Territory. The MOU will enable the Northern Territory Fire and Rescue Service (NTFRS) to obtain additional staff and resources that will assist it to provide appropriate fire protection.

The primary focus of the NTFRS during the reporting period remains prevention, preparedness, response and recovery. The past 12 months have seen a dramatic improvement in NTFRS response times to emergency incidents, a reduction in deaths attributable to grass and structure fires, a reduction in the number of structure fires and a reduction in dollar loss from structure and property fires.

Fire prevention strategies such as hazard reduction planning in emergency response areas and hazard reduction burning on Crown land continues to play an important role in the fire prevention strategies of the NTFRS.

School based education also continues to play an important role in our fire prevention strategies with schools in every emergency response being visited by firefighters during the year.

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## 11.8 Information on sample data

Some of the results reported are estimates obtained by conducting surveys of samples of the group or population in question. Results are therefore subject to *sampling error*. The data obtained from a sample may be different from the ‘true’ data that would have been obtained from the entire group or population — not just a sample — using the same methods. Consequently, when using survey results, it is necessary to be cautious (see section A, appendix A, for further details).

The *standard error* is a measure of sampling error. It indicates the extent to which the estimate may differ by chance from the ‘true value’ because only a sample was taken. If the survey is performed repeatedly, then the difference between the sample estimate and the population value will be less than one standard error about 68 per cent of the time. The difference will be less than two standard errors 95 per cent of the time. It will be less than three standard errors 99 per cent of the time. Another way of expressing this is to say that in 68 (95, 99) of every hundred samples, the estimate obtained from a single survey will be within one (two, three) standard errors of the ‘true’ value.

The chance that an estimate falls within a certain range of the true value is known as the confidence of the estimate. For any particular survey, there is a tradeoff between the confidence of the estimate (68 per cent, 95 per cent or 99 per cent) and the acceptable range of error (in terms of standard errors) attached to the estimate. The appropriate level of confidence chosen depends on the purpose of obtaining the estimate.

The *relative standard error* is the standard error expressed as a percentage of the estimate to which it relates. It indicates the margin of error that should be attached to the estimate. The smaller the estimate, the higher is the relative standard error.

Table 11.4 presents the relative standard errors associated with ABS PSM estimates by jurisdiction. The ABS estimated, for example, that over the four quarters from November 1999 to August 2000, 95 per cent of households in Victoria (or 1 643 000) installed an operational smoke alarm or smoke detector (table 11A.11). Table 11A.11 shows that the associated relative standard error is 1.4 per cent. There is a 68 per cent probability that the proportion of the population having the device installed is within one relative standard error of the estimated proportion. We can be 68 per cent confident that the true value lies between 95 per cent plus or minus 1.4 per cent of 95 per cent — that is, 93.7 per cent to 96.3 per cent. (*Note:* this is not equivalent to 94 per cent plus or minus 1.4 per cent.) We can be 95 per cent confident that the true value lies within two relative standard errors — that is, between 92.3 per cent and 97.7 per cent. The higher the level of confidence, the less precise the estimate is likely to be.

**Table 11.4 Relative standard error of estimates for four quarters of the PSM (per cent)<sup>a</sup>**

<i>Estimate</i>	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
1 000	110.0	120.0	90.0	70.0	80.0	50.0	40.0	40.0	80.0
2 000	85.0	85.0	75.0	55.0	60.0	35.0	25.0	30.0	65.0
5 000	58.0	58.0	52.0	38.0	40.0	22.0	14.0	18.0	46.0
10 000	43.0	43.0	38.0	27.0	28.0	16.0	9.0	12.0	36.0
20 000	31.0	30.5	27.5	19.0	20.0	10.5	6.0	8.0	26.5
50 000	19.2	18.8	17.0	11.2	12.2	6.2	3.2	4.6	17.0
100 000	13.0	12.7	11.4	7.3	8.2	4.0	1.9	2.9	11.9
200 000	8.6	8.4	7.4	4.6	5.5	2.5	1.1	1.8	8.1
500 000	4.7	4.7	4.0	2.3	3.1	1.3	..	..	4.7
800 000	3.4	3.4	2.9	1.6	2.3	..	..	..	3.5
1 000 000	2.9	2.9	2.4	1.4	2.0	..	..	..	3.0
1 500 000	2.2	2.2	1.8	1.0	1.5	..	..	..	2.3
2 000 000	1.8	1.8	1.4	0.8	1.2	..	..	..	1.8
5 000 000	0.9	0.9	0.7	0.3	0.6	..	..	..	0.9

<sup>a</sup> The ABS considers that only estimates with relative standard errors of 25 per cent or less are sufficiently reliable for most purposes. Estimates greater than 25 per cent are subject to sampling variability too high for most practical purposes; they need to be treated with caution and viewed as merely indicative of the magnitude involved. ... Not applicable.

Source: ABS (2001b).

## 11.9 Definitions

Table 11.5 Terms and indicators

<i>Term or indicator</i>	<i>Definition</i>
Alarm notification not involving fire	Fire alarm notification due to the accidental operation of an alarm, the failure to notify fire services of an incorrect test by service personnel or a storm induced voltage surge.
Ambulance services	Pre-hospital care, treatment and transport services.
Ambulance expenditure	Includes salaries and payments in the nature of salaries to ambulance staff, capital expenditure (such as depreciation and user cost of capital) and other operating expenditure (such as running expenditure, contract expenditure, provision for losses and other recurrent expenditure). Excludes interest on borrowings.
Ambulance non-government revenue	Includes revenue from subscription fees, transport fees, donations and other non-government revenue. Excludes funding revenue from Commonwealth, State and local governments.
Ambulance staff	Any person employed by the ambulance service provider who delivers an ambulance service, manages the delivery of this service or provides support for the delivery of this service. This includes salaried, volunteer and retained ambulance staff.
Emergency ambulance response	An emergency ambulance response to a pre-hospital medical incident or accident which necessitates the use of ambulance warning devices.
False report	An incident in which the fire service responds to and investigates a site, and may restore a detection system.
Fire death	A fatality that the reporting officer deems as directly attributable to the incident or the action of handling the fire incident. Excludes fatalities where a fire conceals a death that occurred before the fire incident. This information may be verified by coronial information.
Fire expenditure	Includes salaries and payments in the nature of salaries to fire staff, capital expenditure (such as depreciation and user cost of capital) and other operating expenditure (such as running expenditure, training expenditure, maintenance expenditure, communications expenditure, provision for losses and other recurrent expenditure). Excludes interest on borrowings.
Fire non-government revenue	Includes revenue from levies on insurance companies and property owners, user charges (such as subscriptions and other fees) and other non-government revenue (such as sale of plant and equipment, donations and industry contributions). Excludes funding revenue from Commonwealth, State and local governments.
Fire incident	A fire that is reported to a fire service and requires a response.
Fire injury	An injury resulting from a fire or flames, requiring admission to a hospital. Excludes emergency department outpatients.
Fire safety measure	<ul style="list-style-type: none"> <li>• Operational smoke alarm or detector;</li> <li>• Fire sprinkler system;</li> <li>• Safety switch or circuit breaker;</li> <li>• Fire extinguisher;</li> <li>• Fire blanket;</li> <li>• Fire evacuation plan;</li> <li>• External water supply;</li> <li>• The removal of an external fuel source;</li> </ul>

(Continued on next page)

Table 11.5 (Continued)

<i>Term or indicator</i>	<i>Definition</i>
Fire staff	<ul style="list-style-type: none"> <li>• External sprinkler; or</li> <li>• Other fire safety measure.</li> </ul> <p>Any person employed by the fire service provider who delivers a firefighting or firefighting related service, or manages the delivery of this service. This includes paid and volunteer firefighters and support staff.</p>
Indirect revenue	All revenue or funding received indirectly by the fire agency (for example directly to treasury or other entity such as subscription fees) that arises from the agency's actions.
Non-emergency ambulance response	A non-emergency ambulance response which does not necessitate the use of ambulance warning devices.
Non-structural fire	A fire outside a building or structure — including a fire involving mobile properties (such as vehicles), a rubbish fire, a bush or grass fire, and an explosion.
Other incident	<p>An incident other than fire that is reported to a fire service and requires a response. This may include:</p> <ul style="list-style-type: none"> <li>• an overpressure rupture (for example, steam or gas), explosion or excess heat (no combustion);</li> <li>• a rescue (for example, industrial accidents or vehicle accidents);</li> <li>• a hazardous condition (for example, escape of hazardous materials);</li> <li>• salvage; and</li> <li>• a storm or extreme weather.</li> </ul>
Paramedic response	A level of emergency care categorised as advanced life support
Response time	The interval between the receipt of the call at the dispatch centre and the arrival of the vehicle at the scene (that is, when the vehicle is stationary and the handbrake is applied).
Structural fire	A fire inside a building or structure, whether or not there is damage to the structure.
Urgent ambulance response	An urgent ambulance response to a pre-hospital medical incident or accident which does not necessitate the use of ambulance warning devices.
User cost of capital	Calculated as 8 per cent of the current value of non-current physical assets (including land, plant and equipment).
50 <sup>th</sup> percentile ambulance service response times	The time within which 50 per cent of first ambulance resources actually respond.
50 <sup>th</sup> percentile fire service response times	The time within which 50 per cent of first fire resources actually respond.
Fire death rate	The number of fire deaths per 100 000 persons in the total population.
Fire injury rate	The number of fire injuries per 100 000 persons in the total population.
90 <sup>th</sup> percentile ambulance service response times	The time within which 90 per cent of first ambulance resources actually respond.
Median dollar loss per structural fire	The median (middle number in a given sequence) of the structural loss in \$'000 per structural fire incident.

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**Table 11.5 (Continued)**

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90 <sup>th</sup> percentile fire service response times	The time within which 90 per cent of first fire resources actually respond.
Structural fire contained to object or room of origin	A fire where direct fire/flame is contained to the room of origin (that is, excludes wildfires and vehicle fires in unconfined spaces). A room is an enclosed space, regardless of its dimensions or configuration. This category includes fires in residential and nonresidential structures.

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