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# 8 Emergency management

Emergency management aims to reduce the level of risk to the community of emergencies occurring, reduce the adverse effects of emergency events, and improve the level and perception of safety in the community. This chapter reports on selected emergency events, including fire, ambulance (pre-hospital care, treatment and transport) and emergency road rescue events. While section 8.1 contains some information on the scope of emergency services organisations' (ESOs) activities, the chapter does not report on the total range of State and Territory ESO activities.

An overview of emergency management appears in section 8.1. A framework of performance indicators is outlined in section 8.2. The data are discussed in sections 8.3 (fire), 8.4 (ambulance) and 8.5 (road rescue), and future directions for performance reporting are discussed in section 8.6. Jurisdictions' comments are provided in section 8.7. The chapter concludes with definitions (section 8.8), a list of supporting tables (section 8.9) and references in section 8.10. Supporting tables are identified in references throughout this chapter by an 'A' suffix. For example, table 8A.3 is table 3 in the supporting tables.

## 8.1 Overview of emergency management

Emergency management is defined as a range of measures to manage risks to communities and the environment (EMA 2003). The emergency management sector includes a range of ESOs engaged in areas as diverse as risk assessment, State and city governance, legislation, community development, emergency response, urban development and land use management, and community recovery.

The range of events addressed by emergency management includes fires, medical transport and emergencies, rescues, other natural events (such as floods, earthquakes, tsunamis, landslides, heatwaves, cyclones and other storms), consequences of acts of terrorism, technological and hazardous material incidents (such as chemical spills, harmful gas leaks, radiological contamination, explosions, and spills of petroleum and petroleum products), and the quarantine and control of diseases and biological contaminants. Emergency management aims to create and strengthen safe, sustainable and resilient communities that can avoid or minimise

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the effects of emergencies and, at the same time, have the ability to recover quickly and restore their socioeconomic vitality.

## **Roles and responsibilities**

The practice of emergency management requires cooperation among Australian, State, Territory and local governments, industry, community organisations and the community in general.

### *Australian Government*

The primary role of the Australian Government is to support and coordinate the development, by the states and territories, of a national emergency management capability. This is achieved by a range of activities, including:

- providing material and technical assistance to states and territories in the event of large scale emergencies (coordinated through Emergency Management Australia [EMA], a division within the Australian Government Attorney-General's Department)
- providing financial assistance to states, territories and authorities for natural disaster and flood prevention/mitigation (through the Natural Disaster Mitigation Program and the Regional Flood Mitigation Program of the Department of Transport and Regional Services [DOTARS]) and for helping to bear the costs of natural disasters (through DOTARS's Natural Disaster Relief Arrangements)
- providing information, best practice materials and training programs (through EMA)
- providing funding for risk management (through the DOTARS's Natural Disaster Risk Management Studies Program) and undertaking comprehensive risk assessment (through DOTARS and Geoscience Australia)
- supporting community awareness activities (through EMA, the Bureau of Meteorology and Geoscience Australia).

Australian Government agencies also have specific emergency management responsibilities, including: 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.

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### *State and Territory governments*

State and Territory governments are responsible for regulatory arrangements for the protection of life, property and the environment, and they have primary responsibility for delivering emergency services (including fire and ambulance services) directly to the community.

Australian, State and Territory governments are jointly responsible for developing building fire safety codes, undertaking fire-related research, formulating policies and providing advice on fire safety.

### *Local governments*

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

- considering community safety in regional and urban planning by assessing risks, and developing mitigation measures and prevention plans to address emergencies such as bushfires and structure fires, floods, storms, landslips and hazardous materials incidents
- improving community preparedness through local emergency and disaster plans
- issuing hazard reduction notices to private land holders and clearing vegetation in high risk public areas
- collecting statutory levies to fund fire and other emergency services
- allocating resources for response and recovery activities
- providing financial and operational assistance to rural fire brigades and/or other voluntary emergency service units.

### *Emergency service organisations*

State and Territory governments and local governments provide emergency management services to the community through a range of ESOs. The structure and reporting lines of ESOs vary across jurisdictions. These organisations range from government departments to statutory authorities, and to smaller branches, agencies or services within larger departments or authorities. In some instances, non-government organisations are also involved in the provision of emergency management services, such as St John Ambulance in WA and the NT.

In all jurisdictions, there is considerable cooperation and coordination among ESOs in response to major emergency events. There can also be substantial cooperative

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efforts across government, particularly in the recovery stages after a major incident. Events of considerable magnitude and duration, such as earthquakes, cyclones and bushfires, can involve international, interstate and other cooperation and support. Jurisdictions are increasingly interacting and contributing to programs and operational response to a number of significant emergency events around the Pacific and Indian Ocean rim.

### *Fire service organisations*

State and Territory governments provide a range of emergency management activities through agencies historically considered as fire service organisations, including prevention, preparedness, response and recovery (section 8.2). The role of fire service organisations varies across jurisdictions and includes involvement in an expanding variety of activities (table 8A.34). Fire service organisations are involved in:

- developing building fire safety codes and inspecting fire safety equipment and practices
- training and educating the community to achieve community awareness and behavioural change in relation to fire safety and road safety issues
- assisting individuals and communities to prepare for bushfires
- responding to structure, bush, vehicle and other fires
- providing rural land management advice on the role and use of fire
- providing road accident rescue and other rescue services
- managing hazardous material incidents
- administering legislation relating to fire safety, hazardous materials facilities and hazard mitigation
- fire investigation into cause and origin
- wide ranging industry research activities

Fire service organisations work closely with other government departments and agencies — including ESOs such as the State Emergency Service/Territory Emergency Service (SES/TES), police and ambulance services, and community service organisations — to minimise the impact of fire and other emergencies on the community. Their management structure differs across jurisdictions (box 8.1).

Separate urban and rural fire service organisations deliver fire services in most jurisdictions. Land management departments typically also provide rural fire services (although data on these agencies are not reported in this chapter unless

stated). Jurisdictions with more than one fire authority may separate services in different ways — for example, NSW separates fire services based on service function and geographic area, whereas Victoria separates fire services by geographic area only.

Some jurisdictions have particular arrangements for the provision of fire services to Indigenous communities. (For more information on fire services provided to Indigenous communities, see SCRCSSP 2002, p. 572.)

<b>Box 8.1 Delivery and scope of activity of primary fire service organisations<sup>a</sup></b>		
	<b>Urban</b>	<b>Rural</b>
	<b>Attend: residential and commercial structure fires; incidents involving hazardous materials; and road accidents within major urban centres.</b>	<b>Attend: local structure fires and other events outside major urban centres; rural non-structure fires (including crop, bushland and grassland fires on private property); and fires in national parks and State forests.</b>
<i>NSW</i>	<i>NSW Fire Brigades</i> — this government department reports to the Minister for Emergency Services directly.	<i>NSW Rural Fire Service</i> — this government department reports to the Minister for Emergency Services directly.
<i>Vic<sup>b</sup></i>	<i>Metropolitan Fire and Emergency Services Board</i> — this statutory authority reports to the Minister for Police and Emergency Services.  <i>Country Fire Authority</i> — this statutory authority reports to the Minister for Police and Emergency Services.	<i>Department of Sustainability and Environment</i> — this department is responsible for public lands.
<i>Qld</i>	<i>Queensland Fire and Rescue Service</i> — this service, incorporating the Rural Fire Service, is a division of the Department of Emergency Services, reporting to the Director-General, who reports to the Minister for Emergency Services.	
<i>WA<sup>c</sup></i>	<i>Fire and Emergency Services Authority of WA (FESA)</i> — this umbrella statutory authority reports to the Minister for Police and Emergency Services directly.	
<i>SA</i>	<i>South Australian Metropolitan Fire Service</i> — this body corporate reports to the Board of the SA Fire and Emergency Services Commission.  <i>South Australian Country Fire Service</i> — this body corporate reports to the Board of the SA Fire and Emergency Services Commission.	
<i>Tas</i>	<i>Tasmania Fire Service</i> — this is the operational arm of the State Fire Commission, which reports to the Minister for Police and Emergency Management.	
<i>ACT</i>	<i>ACT Fire Brigade and ACT Rural Fire Service</i> — these are agencies of the ACT Emergency Services Authority, which reports to the ACT Minister for Police and Emergency Services.	

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**Box 8.1 (Continued)**

**NT<sup>d</sup>** *NT Fire and Rescue Service* — this is a branch of the Department of Police, Fire and Emergency Services. The Director of Fire and Rescue Services and Emergency Services reports to the Commissioner for Police, who reports to the Minister for Police, Fire and Emergency Services.

*Bushfires NT* — this is a division of the Department of Natural Resources Environment and the Arts (NEAT). The Chief Fire Control Officer reports to the CEO of NEAT who reports directly to the Minister.

<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 Australian jurisdiction (for example, airport and defence installations). <sup>b</sup> The Metropolitan Fire and Emergency Services Board provides urban fire services coverage from the Melbourne Central Business District through to the middle and outer suburbs. The Country Fire Authority provides urban and rural fire services coverage for all parts of Victoria other than the Melbourne Metropolitan Fire District and public lands. This includes outer metropolitan Melbourne and regional centres. <sup>c</sup> As the primary fire and emergency service in WA, FESA includes the Fire and Rescue Career and Volunteer Service, Volunteer Bush Fire Service, Volunteer Emergency service Units and the Volunteer Marine rescue Services in its Operational Division. Bush Fire Brigades are administered by local governments with fires in national parks and reserves the responsibility of the Department of Environment and Conservation. <sup>d</sup> Bushfires NT is primarily a land management organisation and responds only to grass fires and bushfires on land outside the Fire and Rescue Service response areas. The NT statistics in this chapter do not apply to Bushfires NT unless stated.

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

### *Ambulance service organisations*

The role of ambulance service organisations as an integral part of the health system across jurisdictions generally includes:

- providing emergency and non-emergency pre-hospital and out-of-hospital patient care and transport
- undertaking inter-hospital patient transport including the movement of critical patients
- conducting specialised rescue services
- preparedness and the provision of capacity for the ambulance component of multi-casualty events
- enhancing the community's capacity to respond to emergencies

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 8.2).

There are fixed and rotary wing ambulance services in all jurisdictions. In most jurisdictions these services are provided by the ambulance service organisations through various contractual arrangements. In WA, SA, QLD and the NT, all or most

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of the cost of air ambulance services falls outside of the ambulance service organisations (see also Section 8.4 for a discussion of air ambulance services).

**Box 8.2 Relationships of primary ambulance response and management organisations to government**

<i>NSW</i>	<i>Ambulance Service of NSW</i> — a division of the Department of Health 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 division of the Department of Emergency Services, reporting to the Director-General, who reports to the Minister for Emergency Services
<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 (SAAS)</i> — is an incorporated association established under the <i>Associations Incorporations Act 1985 (SA)</i> with a single member being the Minister for Health. The <i>Ambulance Services Act 1992 (SA)</i> authorises SAAS to provide ambulance services in SA
<i>Tas</i>	<i>Tasmanian Ambulance Service</i> — a statutory service of the Acute Services group of the Department of Health and Human Services
<i>ACT</i>	<i>ACT Ambulance Service</i> — an agency of the ACT Emergency Services Authority, reporting to the ACT Minister for Police and Emergency Services
<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).

### *State Emergency Services and Territory Emergency Services*

State and Territory governments contribute to a range of emergency management activities through SES/TES. The activities of SES/TES (table 8A.35) include prevention, preparedness, response and recovery (section 8.2). The role of SES/TES across jurisdictions encompasses a variety of activities. The SES/TES have a role in searches, rescues, floods, cyclones and other storms and a major role in attending road rescue incidents and performing extrications.

### *Other ESOs*

The Review does not yet report on the performance of Australian Government or local government emergency management services or their agencies.

## Volunteers in emergency management

In 2005-06, nearly 230 000 fire, ambulance and SES/TES volunteers played a significant role in the provision of emergency services in Australia (table 8.1). The input by volunteers is particularly important in rural and remote service provision, where caseload/incident levels are low but community safety needs are still a high priority.

Volunteers in many ESOs — including fire, ambulance, SES/TES, marine rescue, and recovery and relief agencies — provide services relating to emergency situations and disasters resulting from natural hazards such as wildfires, floods, severe storms, earthquakes, cyclones, and human caused and technological events. In total, over 500 000 volunteers from ESOs and other organisations (such as the Red Cross) participate each year in the management of a broad range of emergency situations and disasters (EMA 2001).

Table 8.1 **Volunteers in emergency service organisations**

	NSW <sup>a</sup>	Vic <sup>b</sup>	Qld <sup>c</sup>	WA <sup>d</sup>	SA <sup>e</sup>	Tas <sup>f</sup>	ACT	NT	Aust
2003-04									
ASOs	115	501	445	2 720	1 583	567	–	20	5 951
FSOs	73 059	58 583	44 286	22 328	11 161	4 766	810	521	215 514
SES/TES	10 026	4 839	17 211	2 039	2 050	450	180	582	37 377
<b>Total</b>	<b>83 200</b>	<b>63 923</b>	<b>61 942</b>	<b>27 087</b>	<b>14 794</b>	<b>5 783</b>	<b>990</b>	<b>1 123</b>	<b>258 842</b>
2004-05									
ASOs	118	819	575	2 624	1 530	448	–	17	6 131
FSOs	73 072	58 662	44 648	28 319	11 307	4 668	1 022	551	222 249
SES/TES	9 835	4 350	12 456	2 015	1 998	575	244	495	31 968
<b>Total</b>	<b>83 025</b>	<b>63 831</b>	<b>57 679</b>	<b>32 958</b>	<b>14 835</b>	<b>5 691</b>	<b>1 266</b>	<b>1 063</b>	<b>259 773</b>
2005-06									
ASOs	84	915	427	2 851	1 479	503	0	14	6 273
FSOs	74 446	58 849	41 324	26 890	10 646	4 765	1 018	539	193 927
SES/TES	10 302	4 437	9 394	1 863	1 896	577	168	392	29 029
<b>Total</b>	<b>84 832</b>	<b>64 201</b>	<b>51 145</b>	<b>31 604</b>	<b>14 021</b>	<b>5 845</b>	<b>1 186</b>	<b>945</b>	<b>253 779</b>

ASO = ambulance service organisation. FSO = fire services organisation. <sup>a</sup> For NSW, fire service organisation numbers include community fire unit members. <sup>b</sup> Victorian ambulance service organisation data include remunerated volunteers. <sup>c</sup> Ongoing audits of the volunteer database have identified and removed individuals who have relinquished their voluntary duties. <sup>d</sup> WA data include multiskilled emergency service volunteers. <sup>e</sup> Fire service organisation numbers include retained firefighters. <sup>f</sup> Tasmania has reviewed its database to exclude inactive volunteers. – Nil or rounded to zero.

Source: State and Territory governments (unpublished); tables 8A.5, 8A.20 and 8A.30.

Although volunteers make a valuable contribution, they should not be counted as an entirely free resource. For example, governments incur costs in supporting volunteers to deliver emergency services in their communities by providing funds and support through infrastructure, training, uniforms, personal protective equipment, operational equipment and support for other operating costs.

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The effect of volunteer activity has implications for the interpretation of financial and non-financial performance indicators in this chapter. Notional wages costs for volunteers are not reflected in monetary estimates of inputs or outputs, which means that data for some performance indicators may be misleading where the input of volunteers is not counted but affects outputs and outcomes. This issue may be explored in the future as the Review continues to examine data on rural and remote service provision in the emergency services sector.

### *Emergency management events*

This chapter focuses on the performance of emergency management in relation to three types of emergency event: fire events (section 8.3), ambulance events (section 8.4), and road rescue events (section 8.5). There are, however, many other categories of emergency management that are not currently reported, including: rescues on land (other than road rescues) and at sea; natural events (such as floods, earthquakes, landslides, heatwaves, cyclones and other storms); the consequences of acts of terrorism; technological and hazardous material incidents (such as chemical spills, harmful gas leaks, radiological contamination, explosions and spills of petroleum and petroleum products); and the quarantine and control of diseases and biological contaminants.

## **8.2 Framework for measuring the performance of emergency management**

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 ESOs (box 8.3). These objectives are nationally agreed and developed by the Emergency Management Working Group.

### **Box 8.3 Objectives for emergency management**

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

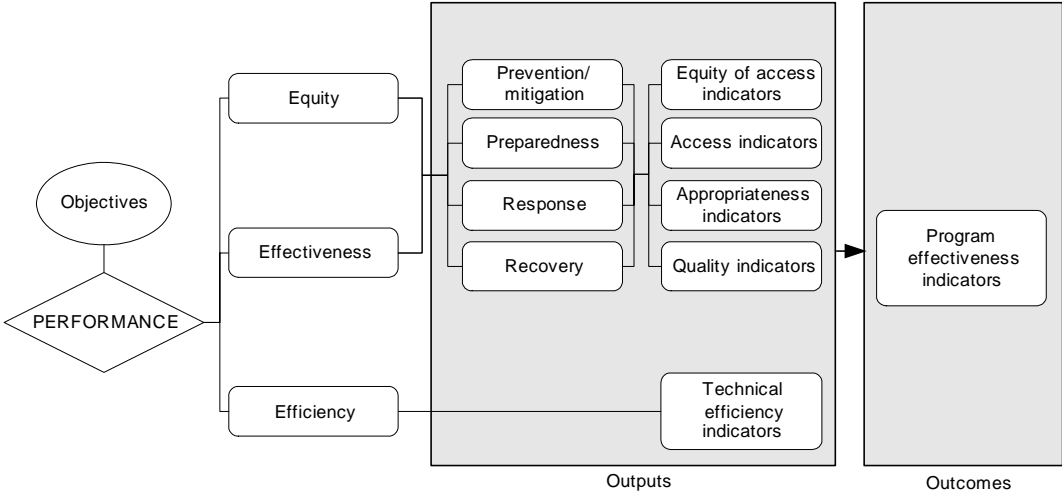
- reduce the adverse effects of emergencies and disasters on the Australian community (including people, property, infrastructure, economy and environment)
- contribute to the management of risks to the Australian community
- enhance public safety.

Emergency service organisations aim to reduce the number of emergency events through prevention activities, and to reduce the impact of emergency events through community and operational preparedness. Fast, effective response and recovery services are critical to containing hazards and managing the consequences of emergency events. The prevention/mitigation, preparedness, response and recovery performance indicator framework (figure 8.1) used in this chapter reflects all these activities.

The general performance indicator framework presented in figure 8.1 has been applied to fire events (section 8.3), ambulance events (section 8.4) and road rescue events (section 8.5).

The outcome indicators in the performance framework provide an indication of the effects of ESOs on the community, economy and environment. Those currently reported are, for fire events, the ‘fire death rate’, the ‘fire injury rate’, the ‘median dollar losses from structure fire’, ‘total property losses from structure fire’, and for ambulance events, the ‘survival rate from out-of-hospital cardiac arrest’.

**Figure 8.1 General performance indicator framework for emergency management**



The framework uses the widely accepted ‘comprehensive approach’ (prevention/mitigation, preparedness, response and recovery) to classify the key functions common to ESOs in managing emergency events. Outputs in the emergency event frameworks are grouped accordingly.

- *Prevention and mitigation* — the results of measures taken in advance of an emergency aimed at decreasing or eliminating its impact on the community and the environment. Activities that contribute to prevention and mitigation include: advice on land management practice and planning; the inspection of property

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and buildings for hazards, compliance with standards and building codes, and levels of safe practices; the preparation of risk assessment and emergency management plans; risk categorisation for public information campaigns; and public information campaigns and educational programs to promote safe practices in the community.

- *Preparedness* — the results of measures to ensure, if an emergency occurs, that communities, resources and services are capable of responding to, and coping with, the effects. Activities that contribute to 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 the 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 those standards.
- *Response* — the results of strategies and services to control, limit or modify the emergency to reduce its consequences. Activities that contribute to 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 (ESOs)* — the results of strategies and services to return agencies to a state of preparedness after emergency situations. Activities that contribute to emergency services recovery include: critical incident stress debriefing; and the return of ESO resources to the state of readiness specified in their response plan(s).
- *Recovery (community)* — the results of strategies and services to support affected individuals and communities in their reconstruction of physical infrastructure and their restoration of emotional, social, economic and physical wellbeing. Activities that contribute to community recovery include: the restoration of essential services; counselling programs; temporary housing; long term medical care; and public health and safety information.

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

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## 8.3 Fire events

This section contains information on the performance of ESOs in providing emergency management services for fire events. A fire event is an incident that is reported to a fire service organisation and requires a response. Fire events include (but are not limited to):

- structure fires (that is, fires inside a building or structure), regardless of whether there is damage to the structure
- landscape fires, including bushfires and grass fires, regardless of the size of the area burnt.

### Emergency management services for fire events

Fire service organisations are the primary agencies involved in providing emergency management services for fire events. A range of other agencies may also be involved, including ambulance service organisations, SES/TES and police services (table 8A.37).

Full reporting would ideally include information on the resources allocated by all ESOs to the management of fire events. Although this information is currently unavailable, work is underway to improve this information for future reports. The descriptive information provided below on funding, incidents and human resources relate to fire service organisations only. (As discussed in section 8.1, fire service organisations are also involved in other activities not directly related to fire events).

#### *Funding*

Total funding of the fire service organisations covered in this Report was nearly \$1.9 billion in 2005-06 (excluding funding for land management agencies). Nationally, over the period 2000-01 to 2005-06, funding increased with an average annual growth rate of 4 per cent. Within jurisdictions, funding increased (in real terms) for all jurisdictions over the same period (table 8.2).

**Table 8.2 Funding of fire service organisations (2005-06 dollars)  
(\$ million)<sup>a</sup>**

	<i>NSW</i> <sup>b</sup>	<i>Vic</i>	<i>Qld</i> <sup>c</sup>	<i>WA</i> <sup>d</sup>	<i>SA</i>	<i>Tas</i>	<i>ACT</i> <sup>e</sup>	<i>NT</i>	<i>Aust</i>
2001-02	638.1	388.2	296.3	107.6	122.0	46.7	31.8	15.7	1 646.4
2002-03	692.2	382.0	291.7	104.5	120.3	45.3	30.7	16.5	1 683.1
2003-04	729.9	459.4	321.4	127.2	141.2	51.0	34.0	17.3	1 881.4
2004-05	651.3	494.1	310.2	120.7	139.1	51.8	45.5	19.8	1 832.4
2005-06	665.6	517.6	317.7	135.5	140.7	47.5	51.6	20.8	1 897.0

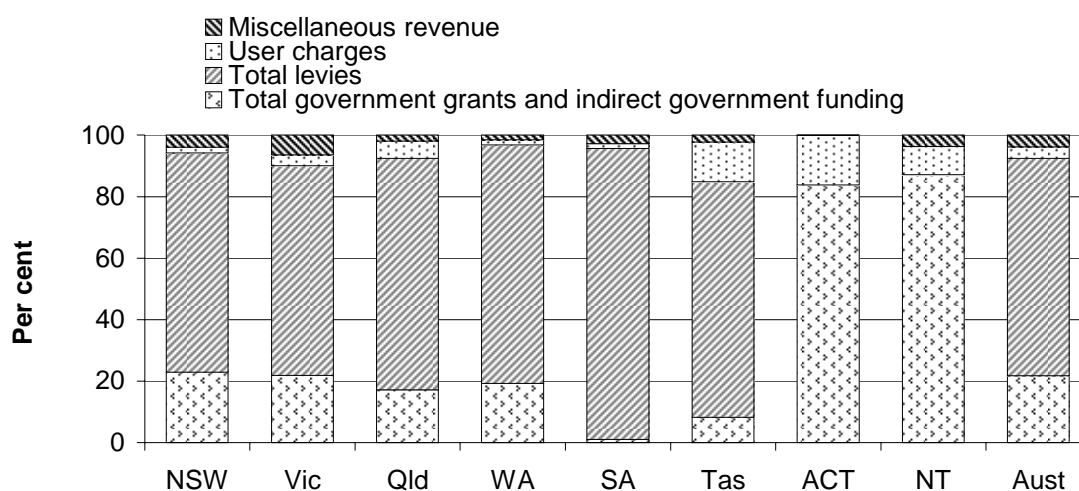
<sup>a</sup> Funding levels are adjusted using the Australian Bureau of Statistics (ABS) gross domestic product price deflator (2005-06 = 100) (table AA.26) to arrive at a constant price measure. <sup>b</sup> NSW figures vary from year to year as a result of abnormal grants for specific major emergencies. <sup>c</sup> The State Government grant for Queensland in 2002-03 and 2003-04 included funding for a 6 per cent equity return, equal to \$15 million in 2002-03 and \$17 million in 2003-04. However, a whole of government decision in 2004-05 eliminated the equity return expense performance management regime and related funding with effect from 1 July 2004. This has resulted in a reduction of \$18 million in both revenues and expenses in 2004-05. <sup>d</sup> Data for 2001-02 and 2002-03 do not include funding for Local Government Bush Fire Brigades. Data for 2003-04 includes operational and recurrent costs of Local Government Bush Fire Brigades, now funded by the Emergency Services Levy. Property-based Emergency Services Levy (ESL) began in WA on 1 July 2003; insurance fire levies ended on 31 December 2003. For this transitional year 2003-04 funding includes part insurance fire levy and part ESL. The first full year of ESL funding was 2004-05. <sup>e</sup> The increase in 2005-06 is due to a significant upgrade of Emergency Services Communication systems and inclusion of Joint Emergency Services Training Costs.

Source: State and Territory governments (unpublished); table 8A.1.

Fire levies were the primary source of funding in 2005-06 in all jurisdictions except the ACT and the NT, where Territory governments were the most important source of funds. Governments usually provide the legislative framework for the imposition of fire levies, rather than directly collecting the levies themselves. In 2005-06, fire levies were raised from levies on property owners or, in some jurisdictions, from levies on both insurance companies and property owners (table 8A.1). In addition to relying on funded resources, all states and territories rely on volunteer firefighters, who make a significant contribution to the community.

Nationally, 22 per cent of funding for fire service organisations was provided by government as government grants and indirect government revenue in 2005-06, with the proportion varying across jurisdictions (figure 8.2).

Figure 8.2 Major sources of fire service organisation funding, 2005-06



Source: State and Territory governments (unpublished); table 8A.1.

### Human resources

Human resources refers to any person delivering a firefighting or firefighting-related service, or managing the delivery of this service, including:

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

Nationally, 16 920 full time equivalent (FTE) paid personnel were involved in the delivery of fire services in 2005-06. Nationally, 12 458 FTE or 73.6 per cent of the 16 920 FTE paid personnel were firefighters. A large number of volunteer firefighters (193 927 people) also participated in the delivery of fire services in 2005-06 (table 8A.5).

### Fires and other emergency incidents

As noted in box 8.1, various urban and rural fire service organisations operate within the jurisdictions. Data on reported fires and other incidents were not available for all fire service organisations in all jurisdictions.

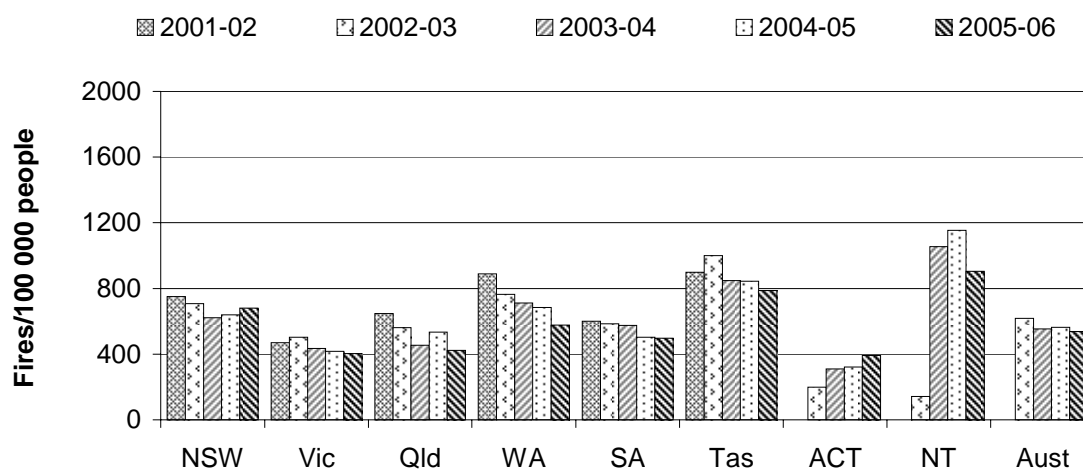
Nationally, 30.0 per cent or 109 300 of the 364 932 reported incidents were fires, and 70.0 per cent were other emergencies and incidents in 2005-06, with these proportions varying across jurisdictions (table 8A.2).

The proportion of fire types varied substantially across jurisdictions in 2005-06, with fires within or involving a structure the least attended type of fire except for Victoria and the ACT (table 8A.2). Although structure fires are relatively uncommon (compared with landscape (bush and grass) fires, for example), they impose a high threat to life and property and are a focus of this chapter.

*Total fire incidents attended by fire service organisations per 100 000 people*

Nationally, 537 fire incidents per 100 000 people were attended in 2005-06, with the number generally declining over the period since 2002-03 (figure 8.3). A significant proportion of all calls for assistance across all jurisdictions are found, upon investigation, to be false alarms. However, fire service organisations are required by legislation to respond to all calls, and an incident cannot be deemed to be a false report until the fire service organisation has responded and investigated the site.

**Figure 8.3 Total fire incidents attended by fire service organisations per 100 000 people<sup>a, b, c, d, e, f, g</sup>**



<sup>a</sup> Data in this table may be different from other tables in the chapter because these data only reflect responses from fire service organisations. These data report the type of incident that reflects the most serious situation as determined by operational personnel after arriving at the scene and not the incident type relayed by the communication centre. <sup>b</sup> Queensland: Reporting of incident attendance by rural fire crews is incomplete due to voluntary reporting procedures. <sup>c</sup> Tasmania: Figures include data provided by all fire brigades, both full-time and volunteer and represent 99 per cent of all incidents attended. <sup>d</sup> ACT: Includes data for urban and rural fire service organisations. <sup>e</sup> NT: Data exclude data from Bushfires NT. <sup>f</sup> WA: Data includes reported turnouts by career and volunteer services to fire. <sup>g</sup> Australia: The average for Australia excludes rural fire service data for some years as per the jurisdictions' caveats.

Source: State and Territory governments (unpublished); table 8A.10.

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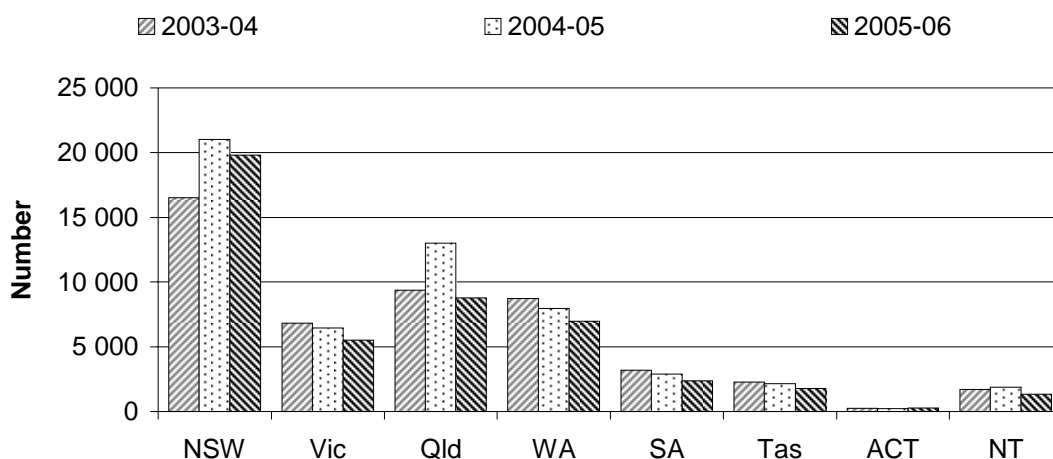
### *Ignition factor for structure fires*

Cause identification assists fire service organisations and other emergency management stakeholders in formulating fire prevention, community safety and public education programs. By examining the ignition factor, lessons are learnt and communities face reduced risk in the future. Cause identification also helps formulate legislation and standards, and is used to assist in recovery through the provision of information to facilitate insurance claims and settlements. Analysis of cause of structure fire will be included in the 2008 report.

### *Total reported landscape fire incidents*

Nationally, 46 848 landscape (bush and grass) fire incidents were reported by fire service organisations and land management agencies in 2005-06 (table 8A.3) Landscape fire incidents reported to land management agencies are excluded for some jurisdictions.

**Figure 8.4 Fire service organisations and land management agencies reported total landscape (bush and grass) fire incidents<sup>a, b, c, d, e, f, g, h, i</sup>**



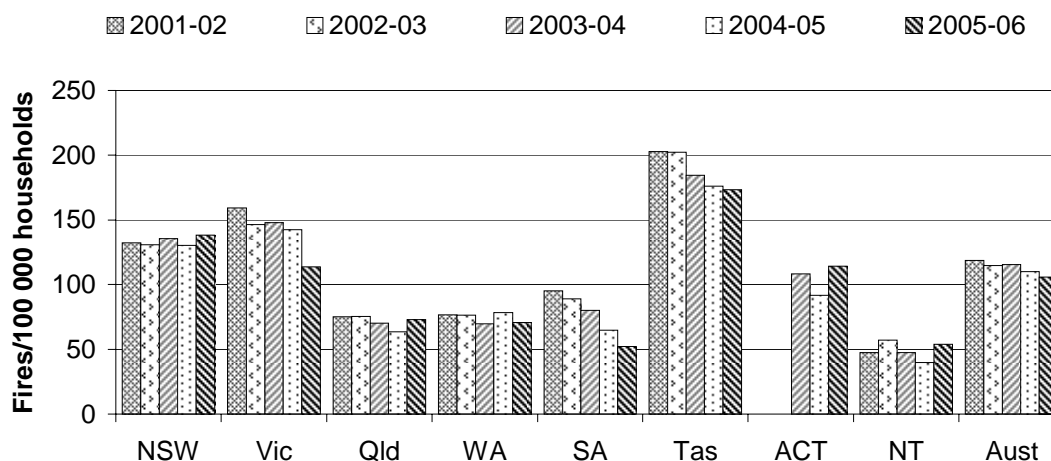
<sup>a</sup> These data may be different from other tables in the chapter because these data reflect responses from fire service organisations, land management agencies and other services for some jurisdictions. <sup>b</sup> NSW: Data include fires from the NSW Department of Environment and Conservation, the NSW Rural Fire Service and the NSW Fire Brigades for all bush and grass fires regardless of size of area burnt. <sup>c</sup> Victoria: Due to data collection issues, data for 2005-06 are incomplete. <sup>d</sup> Queensland: Does not include data from Land Management Agencies and reporting of incident attendance by rural fire crews is incomplete due to voluntary reporting procedures. <sup>e</sup> WA: Data also include landscape fires reported to the Department of Environment and Conservation as the lead agency, with 414 fires included for 2004-05. <sup>f</sup> SA: MFS industrial action: 18/4/05 0800 hrs to 20/06/05 1800 hrs (no incident reports in this period). <sup>g</sup> Tasmania: Figures supplied include *all* vegetation fires, regardless of size, from all fire brigades (full-time and volunteer) and land management agencies. <sup>h</sup> ACT: The January 2003 bushfires included in the 2002-03 data have been counted as one event. The year 2004-05 was a very good fire season, with minimal landscape fires compared with previous years. <sup>i</sup> NT: Data does not include data from Bushfires NT.

Source: State and Territory governments (unpublished); table 8A.3.

### *Accidental residential structure fires reported to fire service organisations per 100 000 households*

The rate of accidental residential structure fires per 100 000 households, is reported in figure 8.5. Although the national rate has been relatively constant, different trends appear in different jurisdictions.

Figure 8.5 **Accidental residential structure fires reported to fire service organisations<sup>a, b, c, d, e, f</sup>**



<sup>a</sup> This measure may not be entirely comparable. The rate of accidental residential structure fires per 100 000 households is affected by the number of fires where the cause has been determined and classified by fire service personnel. The data series for the estimated number of households used in calculations for this table, is currently under review by the ABS. As a result, the series has not been updated recently. Accordingly, the household numbers used in the calculations for this figure have remained the same for the last 5 years.

<sup>b</sup> Victoria: Due to data collection issues, data is incomplete for 2005-06. <sup>c</sup> Queensland: Rural Incident Database does not currently record the necessary information to calculate this measure. <sup>d</sup> SA: MFS industrial action: 18/4/05 0800 hrs to 20/06/05 1800 hrs (no incident reports completed during this period). <sup>e</sup> Tasmania: Figures supplied include data provided by all fire brigades, both career and volunteer, and represent 99 per cent of all incidents attended. <sup>f</sup> NT: Data does not include data from Bushfires NT.

Source: ABS Cat. no. 4102.0 (various years); State and Territory governments (unpublished); table 8A.4.

### *Hazardous materials incidents*

Over \$40 billion or 40 million tonnes of chemicals, petroleum products and other hazardous materials are supplied and used annually in Australia. These products include paints, adhesives, solvents, fuels, soap, detergents, cosmetics, pharmaceuticals, cleaners, household chemicals, acids, farm and garden chemicals, explosives, industrial chemicals, plastics raw materials, gases and many others. All of these materials have hazardous properties that must be controlled or contained. The materials must be effectively managed and cleaned up in an emergency, when the primary controls have failed.

Australian Governments aim to minimise the adverse effects of hazardous materials incidents on the Australian community and enhance public safety. Further, community expectations are rising that Governments will prevent hazardous materials incidents that threaten community safety and the environment. There are

rising expectations of fire service organisations in responding to these incidents with the minimum possible further impact on the environment.

Fire service organisations provide ‘Hazmat’ (hazardous material) services that contribute to achieving enhanced community safety and quality of life, business confidence and protection of the environment by:

- effective planning, prevention, safe response and recovery from incidents, and
- influencing government policy and legislation to ensure integration of prevention and response activities.

The prevention/mitigation, preparedness, response and recovery services provided and delivered by fire service organisations for hazardous materials incidents have the potential to avoid the need for downstream services. The use of downstream services may be undesirable because it reflects negative outcomes and/or involves significant social costs.

Nationally, fire service organisations responded to 4755 hazardous materials incidents in 2005-06 (table 8.3), a drop of 13 per cent on 2004-05. In addition to fire service organisations, other agencies and organisations contribute to the emergency management and risk management of hazardous materials incidents. Different arrangements exist across jurisdictions.

**Table 8.3 Number of hazardous materials incidents attended to by fire service organisations<sup>a, b, c</sup>**

	<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>
2001-02	1 647	1 879	279	1 142	1 292	30	79	151	6 499
2002-03	977	1 819	231	1 098	1 313	16	87	163	5 704
2003-04	767	1 891	253	1 063	1 331	24	60	122	5 511
2004-05	782	1 714	296	1 269	1 018	22	77	265	5 443
2005-06	848	1 245	288	1 285	1 116	30	62	238	4 755

<sup>a</sup> Data may differ from that in table 8A.2 because these data include fires involving or releasing hazardous materials. These data also exclude minor fuel or other flammable liquid spills/leaks of less than 200 litres.

<sup>b</sup> The data represent incidents attended by fire service organisations. Fire service organisations may not be notified of all hazardous materials incidents occurring in the community. <sup>c</sup> The coding of hazardous materials incidents is based on the judgement of the reporting fire officer shortly after the time of the incident. Some coding of incidents may be inaccurate due to the information available at the time of reporting.

Source: AFAC

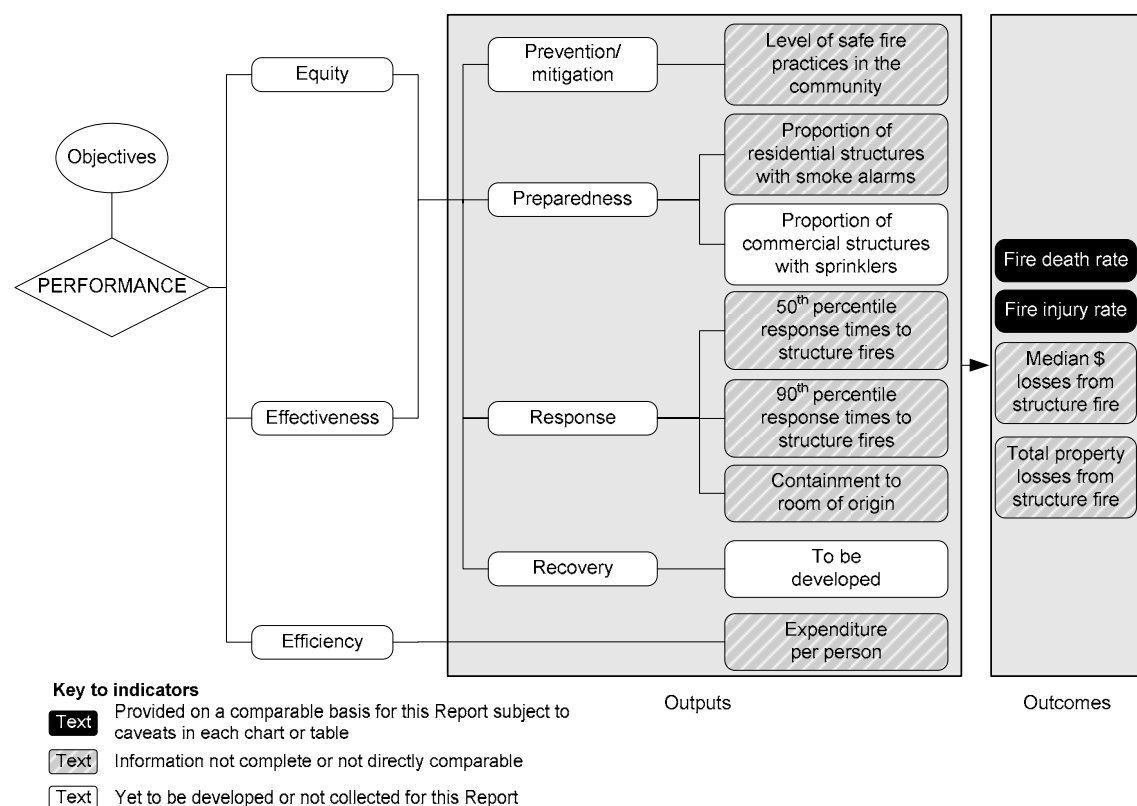
## Framework of performance indicators

Figure 8.6 presents the performance indicator framework for fire events, based on the general framework for all emergency events. Definitions of all indicators are provided in section 8.8.

The performance indicator framework for fire events shows which data are comparable in the 2006 Report. For data that are not considered directly comparable, the text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability from a Report-wide perspective (see section 1.6).

Performance information is reported for a number of indicators. These results might 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. Importantly, jurisdictions also have diverse legislative fire protection requirements.

Figure 8.6 Performance indicators for fire events



Results need to be interpreted with care because data might have been derived from small samples (for example, jurisdictions' fire safety measures surveys) or may be

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highly variable as a result of relatively small populations (as in Tasmania, the ACT and the NT).

The role of volunteers, particularly for country and rural fire brigades, also needs to be considered when interpreting some indicators (such as fire service organisation expenditure per 1000 people). Volunteer personnel provide a substantial proportion of fire services (and emergency services more generally) (ABS 2001a). While costs such as the training and equipment associated with volunteers are included in 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).

Information has not been reported for all fire events in each jurisdiction consistently over time. Reported results sometimes exclude rural fire events, so performance data are not always directly comparable across jurisdictions. Fire service organisations are cooperating to improve and enhance the standards for the collection of fire events data, which is evident by the inclusion of rural fire service organisations data for more jurisdictions in more current years. Differences in counting rules are expected to be minimised in future reports.

## **Key performance indicator results**

### *Outputs — equity and effectiveness*

Outputs are measured by the ‘level of safe fire practices in the community’; ‘the proportion of residential structures with smoke alarms’; ‘the proportion of commercial structures with sprinklers’; ‘the 50<sup>th</sup> and 90<sup>th</sup> percentile response times to structure fires’; ‘containment to the room of origin’; and ‘expenditure per person’.

### *Prevention/mitigation — level of safe fire practices in the community*

One measure of the extent of prevention/mitigation in the community is ‘the level of safe fire practices in the community’ (box 8.4). Selected fire risk management/mitigation strategies across jurisdictions are identified in table 8A.32. Nationally consistent data on household fire safety measures installed or prevention procedures followed were previously available from the Australian Bureau of Statistics (ABS) Population Survey Monitor (PSM), which has been discontinued. Since the PSM was discontinued by the ABS, jurisdictions have conducted their own surveys of household fire safety measures installed or prevention procedures followed consistent with local priorities, for example those with an already high level of reported smoke alarms in home may target and survey other fire safety

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practices or measures. Such methodological differences between the surveys undertaken by the jurisdictions mean that nationally consistent data are not currently available.

**Box 8.4 Level of safe fire practices in the community**

‘The level of safe fire practices in the community’ is an output indicator of governments’ objective to reduce the adverse effects of fires on the Australian community and manage the risk of fires.

Holding other factors constant, the higher the proportion of households with a fire safety measure installed or prevention measure followed, the less likely are fires to occur or cause excessive damage. This indicator does not provide information on the degree to which practices under consideration contribute to fire prevention and mitigation.

Previously reported data are no longer collected by the ABS. The Steering Committee has identified this indicator for development and reporting in future.

*Preparedness — proportion of residential structures with smoke alarms*

The proportion of residential structures with smoke alarms’ is an output indicator of governments’ objective to reduce the adverse effects of fire on the Australian community through preparedness measures (box 8.5).

**Box 8.5 Proportion of residential structures with smoke alarms**

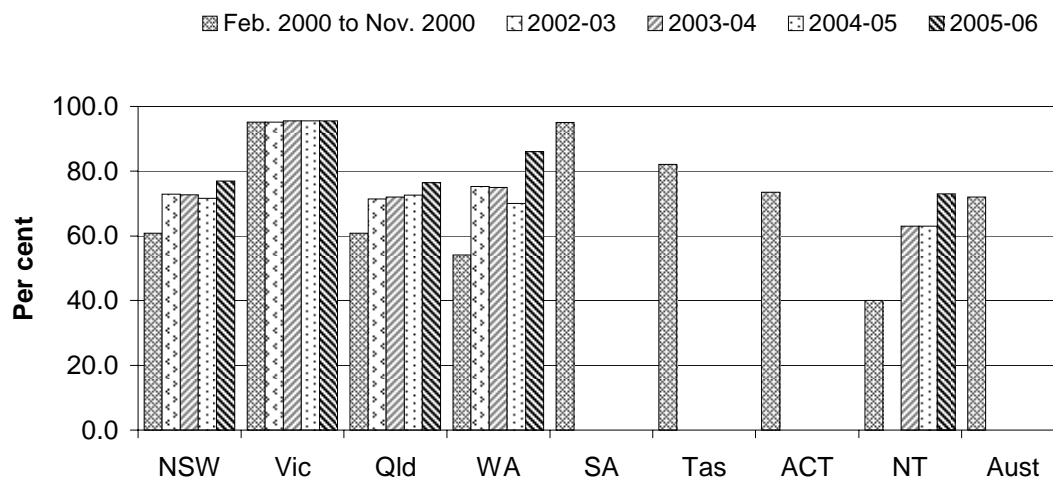
The indicator is defined as the number of households with an operational smoke alarm installed, divided by the total number of households.

The higher the proportion of households with an operational smoke alarm installed, the greater is the likelihood that the adverse effects of fire will be avoided or reduced.

Nationally consistent and complete data are not currently available on ‘the proportion of residential structures with smoke alarms’. Nationally consistent data were last available in 2000, from the discontinued ABS Population Survey Monitor (PSM). Data from 2002-03 onwards are sourced from jurisdictional collections and are not strictly comparable with the (earlier 1999-00) PSM data due to methodological differences.

Five jurisdictions (NSW, Victoria, Queensland, WA and the NT) conducted surveys in 2005-06, collecting data on total households that had an operational smoke alarm or smoke detector installed (figure 8.7).

Figure 8.7 Households with an operational smoke alarm installed<sup>a, b, c, d, e, f, g</sup>



<sup>a</sup> The February 2000 to November 2000 data are from the Population Survey Monitor (PSM) and represent the last occasion on which smoke alarm data were collected for all jurisdictions. The PSM was subsequently discontinued and, from 2002-03 onwards, the data were sourced from jurisdictional collections that were not strictly comparable with the PSM because of methodological differences. <sup>b</sup> NSW: The data for 2005-06 are sourced from the NSW Population Health Survey (HOIST), Centre for Epidemiology and Research, NSW Department of Health and represents the full 12 month period of 2005. The proportion of respondents reporting having smoke alarms installed in their home in 2005 was 76.9 per cent.. The 95 per cent confidence interval for 2005 is (75.8 to 78.0). Because the data is collected from a sample of the population, the 95 per cent confidence interval provides a range of values that should contain the actual value for the population 95 per cent of the time. <sup>c</sup> Victoria: Data for 2001-02 are sourced from a random telephone survey of 2304 respondents residing within the 23 local government areas significant to the metropolitan fire district. MFESB Commissioned Crime Prevention Victoria to develop a survey around fire safety issues through their Local Safety Survey. 2004-05 data is based on the results of the most recent survey conducted in April 2004. <sup>d</sup> Queensland: Data collected by the Office of Economic and Statistical Research as part of the November 2005 Queensland Household Survey. The figure is an estimate for the whole population of Queensland. <sup>e</sup> WA: Data for 2002-03 collected by market research organisation (random telephone survey with residents of Perth households). 2003-04 market research also a telephone survey, covering metropolitan and country residents. Apparent fall in percentage for 2004-05 data reflects more stringent survey design and collection by the Australian Bureau of Statistics: ABS Home Safety and Security, Western Australia, 4526.5.55.001, April 2005. Data collected October 2004. <sup>f</sup> Tasmania: No data available. <sup>g</sup> NT: Information for 2005-06 gained through survey results.

Source: ABS (2001b); State and Territory governments (unpublished); table 8A.11.

### *Preparedness — proportion of commercial structures with sprinklers*

The Steering Committee has identified ‘the proportion of commercial structures with sprinklers’ as an indicator of preparedness for fire events (box 8.6). Data for this indicator, however, were not available for the 2007 Report.

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**Box 8.6 Proportion of commercial structures with sprinklers**

'This indicator is defined as the number of commercial structures with sprinklers installed, divided by the total number of commercial structures.

The higher the proportion of commercial structures with sprinklers installed, the greater is the likelihood that the adverse effects of fire are reduced. This indicator will not provide information on the operational status of sprinkler systems or their contribution to fire prevention.

### *Response*

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

### *Response — 50<sup>th</sup> and 90<sup>th</sup> percentile response times to structure fires*

The 50<sup>th</sup> and 90<sup>th</sup> percentile response times to structure fires provide a measure of response activities (box 8.7). The data relate to the performance of the reporting agency (or agencies) only, not necessarily to the performance of all fire service organisations within each jurisdiction. Response time data need to be interpreted with care because performance is not strictly comparable across jurisdictions, given the following:

- Response times can be affected by land area, size and dispersion of the population (particularly rural/urban proportions), topography, road/transport infrastructure and traffic densities. The proportion of the population living in small rural centres in particular is a key factor as response times in those areas are generally longer because volunteers are on call rather than on duty.
- Responses may include career firefighters, auxiliary/part time firefighters and volunteers.
- While definitions on response times are consistent, not all jurisdictions have systems in place to capture all components of response time for all cases, from the time of the call to arrival at the scene. Some agencies use a manual system to calculate response time figures, while other services retrieve the data from computer aided dispatch (CAD) systems.

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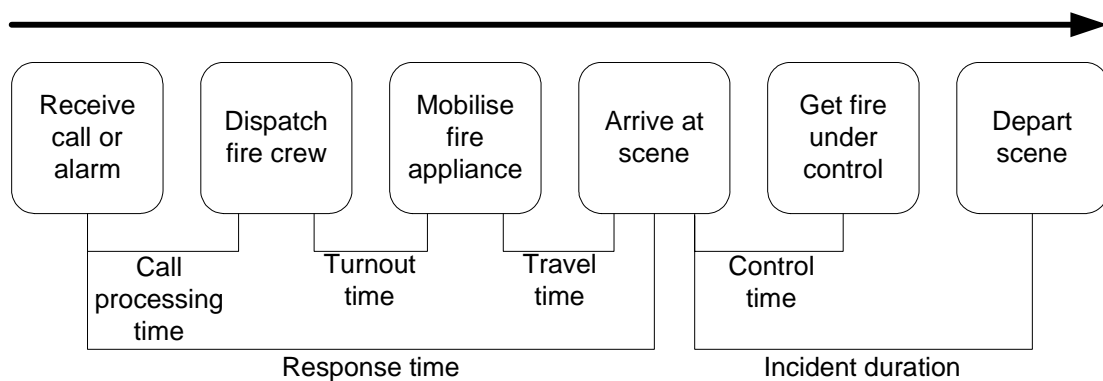
**Box 8.7 50<sup>th</sup> and 90<sup>th</sup> percentile response times to structure fires**

'50<sup>th</sup> and 90<sup>th</sup> percentile response times to structure fires' are output indicators of governments' objective to reduce the adverse effects of fire on the Australian community through timely response.

The indicator '50<sup>th</sup> percentile response time' is defined as the time within which 50 per cent of the first responding fire resources arrive at the scene of structure fires. Similarly, '90<sup>th</sup> percentile response time' refers to the time within which 90 per cent of the first responding fire resources arrive at the scene of structure fires. Structure fires are those fires in housing and other buildings. 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 8.8.

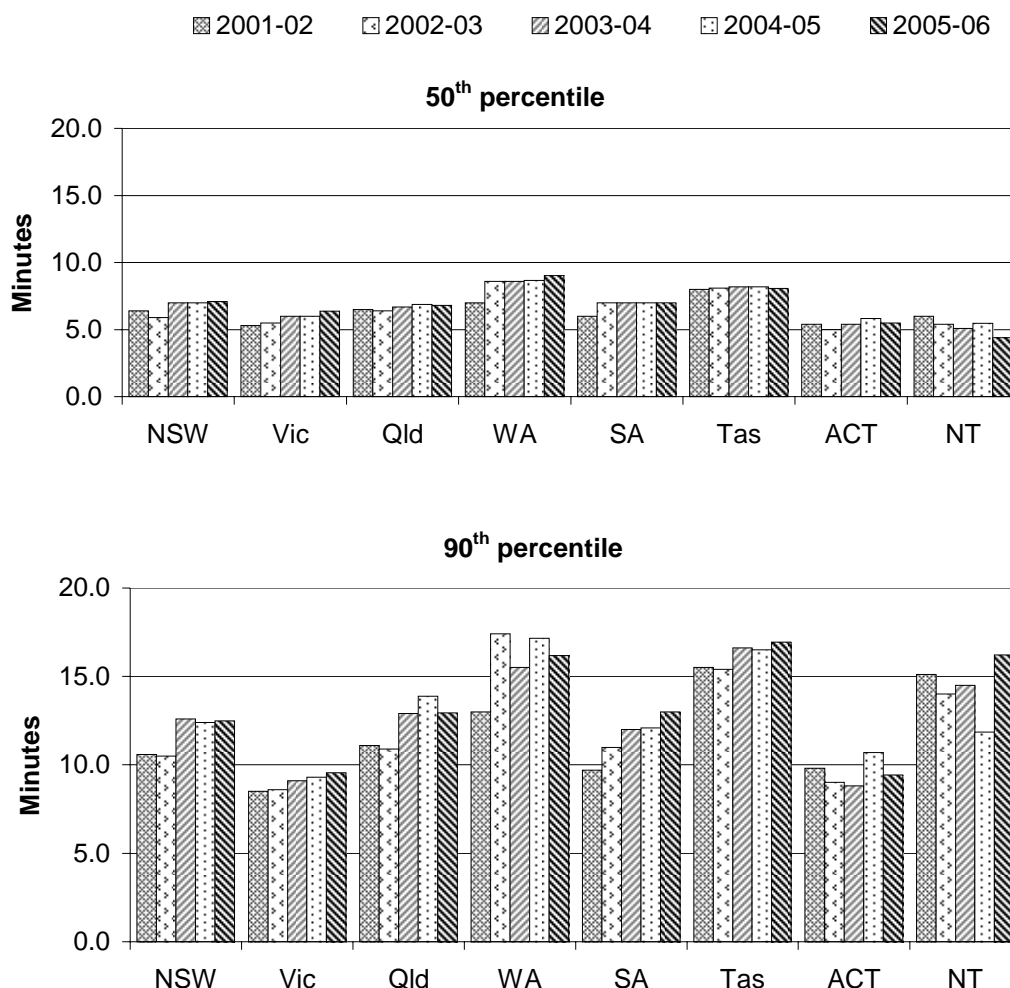
Shorter response times are more desirable.

**Figure 8.8 Response time points and indicators for fire events**



Response times vary between jurisdictions (figure 8.9). Response times also vary within jurisdictions depending on the remoteness of the area in which the responses occur (among other factors). Response times can be segmented into remoteness areas based on the ABS Australian Standard Geographical Classification (figure 8.10). Response times can be affected in regional and remote areas, where response is generally from home to station and then to the incident. Urban response performance is impacted upon by a range of factors including the density and dispersion of population in cities, road systems and traffic densities and significant city layout features (such as large rivers and waterways dividing cities, extensive green belts between suburbs etc).

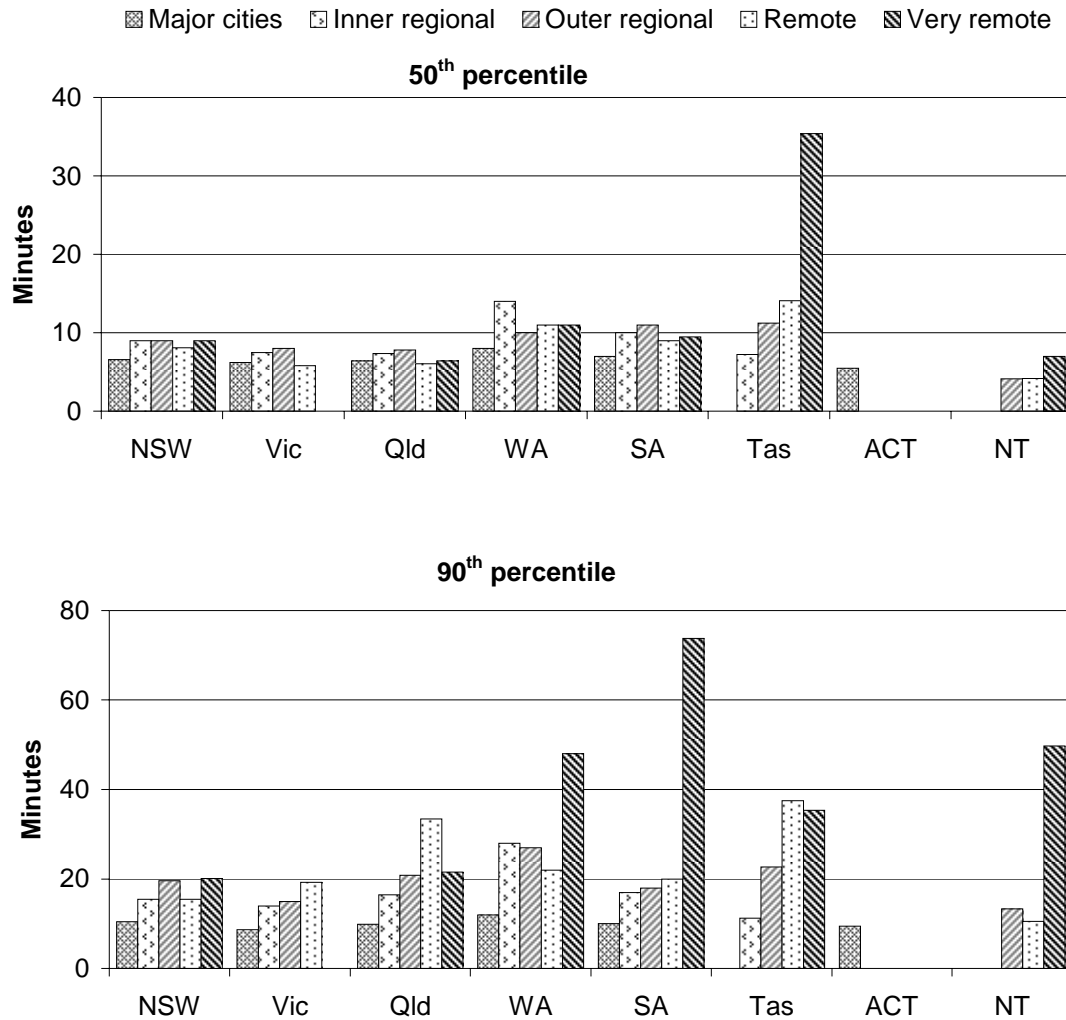
Figure 8.9 Response times to structure fires<sup>a, b, c, d, e, f</sup>



<sup>a</sup> NSW: Data for 2001-02 are for NSW Fire Brigades only, but include responses to calls outside NSW Fire Brigades' designated fire district. Data for 2002-03 and onwards include responses from the NSW Fire Brigades and NSW Rural Fire Service. <sup>b</sup> Queensland: Response times for rural fire brigade crews are not included as response times are not accurately recorded. Only primary exposure incidents are included. <sup>c</sup> WA response times in the cities, inter regional and regional areas are influenced by volunteer response in support and in remote areas of the state, are influenced by significant travel time to incidents. <sup>d</sup> Tasmania: Includes figures for all Brigades within the state, both career and volunteer, and, due to the highly dispersed nature of its population, comparisons of the response times with other jurisdictions will be affected accordingly. <sup>e</sup> ACT: Data for 2001-02 are adjusted to combine manual and automatic timing data. <sup>f</sup> NT: Data do not include data from Bushfires NT.

Source: State and Territory governments (unpublished); table 8A.12.

Figure 8.10 **Response times to structure fires, by geographic area, 2005-06<sup>a, b, c, d, e, f</sup>**



<sup>a</sup> Queensland: Response times for rural fire brigade crews are not included as response times are not accurately recorded. Only primary exposure incidents are included. <sup>b</sup> WA response times in the cities, inter regional and regional areas are influenced by volunteer response in support and in remote areas of the state, are influenced by significant travel time to incidents. <sup>c</sup> SA: The very remote category reflects data for only 12 fires. <sup>d</sup> Tasmania: Includes figures for all Brigades within the state, both career and volunteer, and, due to the highly dispersed nature of its population, comparisons of the response times with other jurisdictions will be affected accordingly. <sup>e</sup> ACT: Data for 2001-02 are adjusted to combine manual and automatic timing data. <sup>f</sup> NT: Data do not include data from Bushfires NT.

Source: State and Territory governments (unpublished); table 8A.13.

### *Response — containment to room of origin*

Another indicator of response effectiveness for structure fires is ‘containment to the room of origin’ (box 8.8).

### Box 8.8 Containment to the room of origin

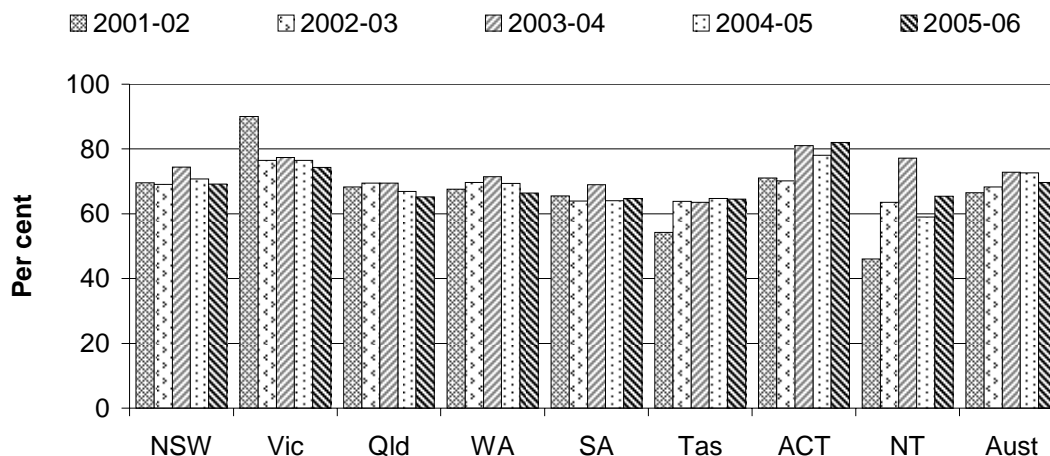
'Containment to the room of origin' is an output indicator of governments' objective to reduce the adverse effects of fire emergency events on the Australian community by response and mitigation strategies.

The indicator is defined as the number of structure fires contained to the object or room of origin divided by the total number of structure fires. Structure fires are those fires in housing and other buildings.

A higher proportion of structure fires contained to the object or room of origin is more desirable.

The proportion of fires contained to the object or room of origin has varied between and within jurisdictions over time (figure 8.11).

Figure 8.11 **Structure fires (all ignition types) contained to the object/room of origin<sup>a, b, c, d, e, f, g</sup>**



<sup>a</sup> NSW: Data are for the NSW Fire Brigades only, but include responses to fires outside NSW Fire Brigades designated fire districts. <sup>b</sup> Victoria: Data for 2001-02 exclude the Country Fire Authority. Data from 2002-03 to 2004-05 include the Country Fire Authority. Due to data collection issues, data is incomplete for 2005-06. <sup>c</sup> Queensland: Rural Incident Database does not currently record the necessary information to calculate this measure. <sup>d</sup> SA: Data exclude the Country Fire Service. <sup>e</sup> Tasmania: Figures include data provided by all fire brigades, both full-time and volunteer. <sup>f</sup> NT: Data exclude data for Bushfires NT. <sup>g</sup> Australia: Average excludes rural fire service data for some years as per the jurisdictions' caveats.

Source: State and Territory governments (unpublished); table 8A.14.

### Outputs — recovery

The Steering Committee has identified recovery as a key area for development in future reports (box 8.9).

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**Box 8.9 Performance indicator — recovery**

An output indicator of governments' objective to reduce the adverse effects of fires on the Australian community through recovery has yet to be developed.

*Outputs — efficiency*

Efficiency indicators report on the unit cost of service delivery. The calculation of unit costs requires the specification of outputs. For fire service organisations, this is a difficult task, given the diversity of activities undertaken. The fire sector is considering a range of options for specifying outputs.

*Expenditure per person*

'Expenditure per person' is an indicator of the efficiency of governments in delivering emergency management services (box 8.10). Both total cost of fire service organisations and the cost to government of funding fire service organisations are reported. Both are reported, because revenue from other sources is significant for a number of jurisdictions.

**Box 8.10 Expenditure per person**

The indicator is defined as fire service organisation expenditure per 1000 people.

Expenditure is employed as a proxy for efficiency. Expenditure per fire is not used as a proxy for fire service organisation efficiency because an organisation that devotes more resources to the prevention and preparedness components to reduce the number of fire incidents could erroneously appear to be less efficient.

Holding other factors constant, lower expenditure per person represents greater efficiency. Efficiency data are difficult to interpret. While high or increasing expenditure per person may reflect deteriorating efficiency, it may also reflect changes in aspects of the service (such as improved response) or the characteristics of fire events (such as more challenging fires). Similarly, low or declining expenditure per person may reflect improving efficiency or lower quality (response times) or less challenging fires.

Nationally, the total expenditure on fire service organisations per 1000 people in 2005-06 was \$93 441 (figure 8.12).

**Figure 8.12 Fire service organisations expenditure (2005-06 dollars)<sup>a, b, c, d, e</sup>**

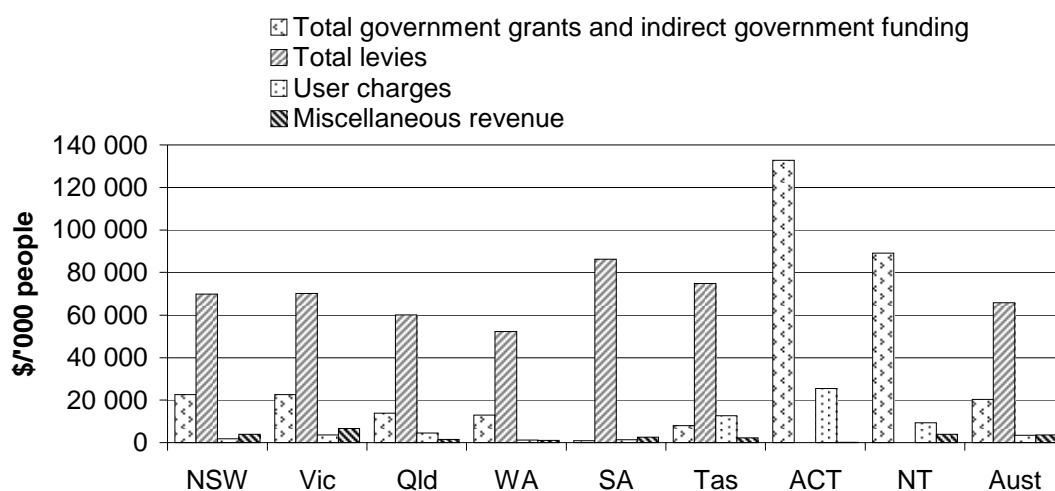


<sup>a</sup> Expenditure levels are adjusted using the Australian Bureau of Statistics (ABS) GDP price deflator 2005-06 = 100 (table AA.26) to arrive at a constant price measure. Due to differences in definitions and counting rules, data reported may differ from those in agency annual reports and other sources. Totals may not sum as a result of rounding. Total fire expenditure includes levies on insurance companies and property owners, user charges, fundraising and donations and indirect revenue. <sup>b</sup> NSW: Figures vary from year to year as a result of abnormal grants for specific major emergencies. <sup>c</sup> Victoria: MFB user cost of capital increase is related to June 2005 revaluations of \$34 million and the 8 per cent cost of capital calculation. Increase in other revenue is due to recharges to CFA (approximately \$2.5 million) for fibre optic communications/ICS support (SAP etc). Training costs for CFA do not represent the total training costs. Personnel and other costs associated with this item are included under other expense headings. <sup>d</sup> WA: A property-based Emergency Services Levy (ESL) was introduced on 1 July 2003; insurance levies ended on 31 December 2003. For this transitional year, 2003-04 funding includes part fire levy and part ESL. The first full year of ESL funding was 2004-05. <sup>e</sup> ACT: The increase in 2005-06 is due to a significant upgrade of Emergency Services Communications systems and inclusion of Joint Emergency Services Training Costs.

Source: State and Territory governments (unpublished); tables 8A.16.

Nationally, total government grants and indirect government funding of fire service organisations per 1000 people in 2005-06 was \$20 340. Levies per 1000 people in 2005-06 averaged \$65 815 nationally, with relatively minor contributions from user charges and miscellaneous revenue (figure 8.13).

Figure 8.13 Fire service organisation funding, 2005-06 <sup>a, b</sup>



<sup>a</sup> NSW: Fire Services data for 2005-06 are artificially inflated by significant abnormal grants associated with natural disasters. <sup>b</sup> ACT: The increase in 2005-06 is due to a significant upgrade of Emergency Services Communications systems and inclusion of Joint Emergency Services Training Costs.

Source: State and Territory governments (unpublished); table 8A.17.

### Outcomes

The outcome indicators reported here relate to the objective of ESOs to minimise the effect of fire on life, property and the environment. The ‘fire death rate’, ‘fire injury rate’, ‘median dollar losses from structure fire’ and ‘total property losses from structure fire’ are indicators of the effect of fire on life, property and the environment. Caution should be exercised in interpreting data for some indicators given, for example, the relatively small number of deaths and the significant fluctuations from year to year, particularly for jurisdictions with relatively small populations.

### Fire death rate

The ‘fire death rate’ is an indicator of governments’ objective to minimise the adverse effects of fire events on the Australian community (box 8.11).

### Box 8.11 Fire death rate

The 'fire death rate' is an outcome indicator of governments' objective to minimise the adverse effects of fires on the Australian community and enhance public safety.

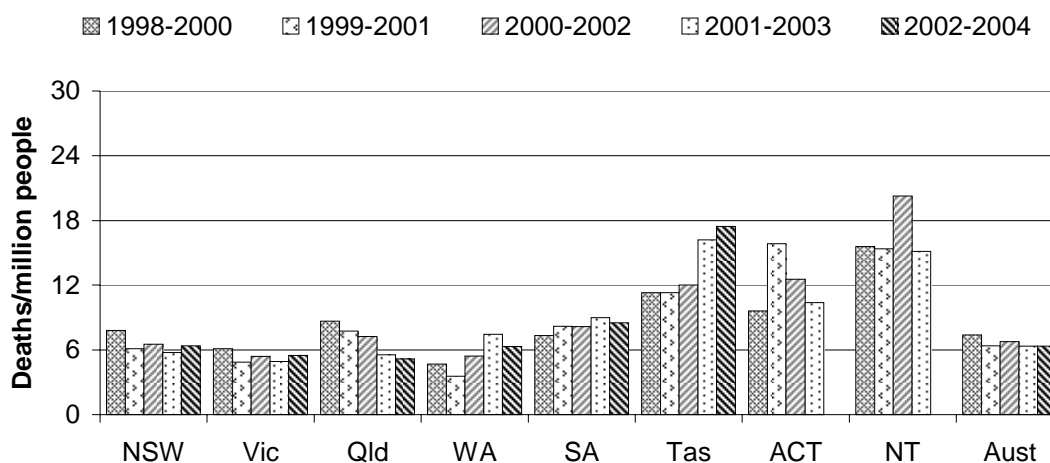
The indicator is defined as the number of fire deaths per million people. A lower fire death rate represents a better outcome.

Fire deaths are identified from cause of death information supplied by the medical practitioner certifying the death or by a coroner. Fire deaths are represented by registration of death at state and territory Registrars of Births, Deaths and Marriages.

Nationally, there were 110 fire deaths in 2004. Exposure to smoke, fire and flames accounted for 86 deaths, followed by 21 fire deaths from intentional self-harm by smoke, fire and flames (table 8A.6). Nationally, the fire death rate was 5.5 deaths per million people in 2004.

Fire deaths data are volatile over time, given the small number of fire deaths. To overcome data volatility, a three year average fire death rate is reported (figure 8.14). Nationally, the three year average fire death rate was 6.4 per million people for 2002–2004.

Figure 8.14 Fire death rate<sup>a</sup>



<sup>a</sup> Fire deaths data are reported by the State or Territory of the deceased's usual residence, and by the year in which the death was registered. The small number of deaths means death rates fluctuate from year to year and it is difficult to establish patterns. This must be taken into account in any interpretation of the data.

Source: ABS Cat. no. 3303.0 (unpublished); table 8A.6.

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### *Fire injury rate*

The 'fire injury rate' is an indicator of governments' objective to minimise the adverse effects of fire events on the Australian community (box 8.12). Fire injuries are represented by hospital admissions and are reported by the State or Territory where the admission occurs (a person injured by fire may be treated more than once, and in more than one State or Territory).

Fire injury rates are volatile from year to year, given the small number of fire injuries. Three year average fire injury rates are also reported in the data attachment for those periods and jurisdictions for which data is published (table 8A.7).

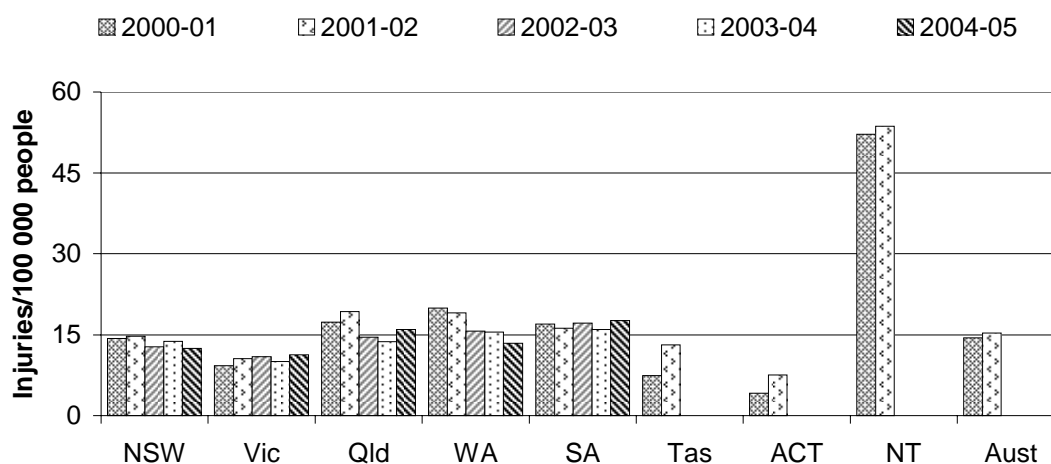
#### **Box 8.12 Fire injury rate**

The 'fire injury rate' is an outcome indicator of governments' objective to minimise the adverse effects of fires on the Australian community and enhance public safety.

The indicator is defined as the number of fire injuries per 100 000 people. A lower fire injury rate represents a better outcome.

Fire injuries are represented by hospital admissions (excluding emergency department non-admitted casualties). Deaths from fire injuries after hospitalisation have been removed from the fire injuries data for the time series because these are counted in the fire death rate.

Figure 8.15 Fire injury rate<sup>a</sup>



<sup>a</sup> Fire injuries are defined as the number of persons admitted to public and private hospitals with fire related injuries. Fire injuries are reported by the State or Territory where the injury is treated. Data excludes emergency department non-admitted casualties and fire injuries arising from arson, secondary fires resulting from explosions, and transport accidents. Since 2001-02, data for Tasmania, ACT and NT have not been published.

Source: ABS (unpublished); AIHW (unpublished); table 8A.7.

### Losses from structure fire

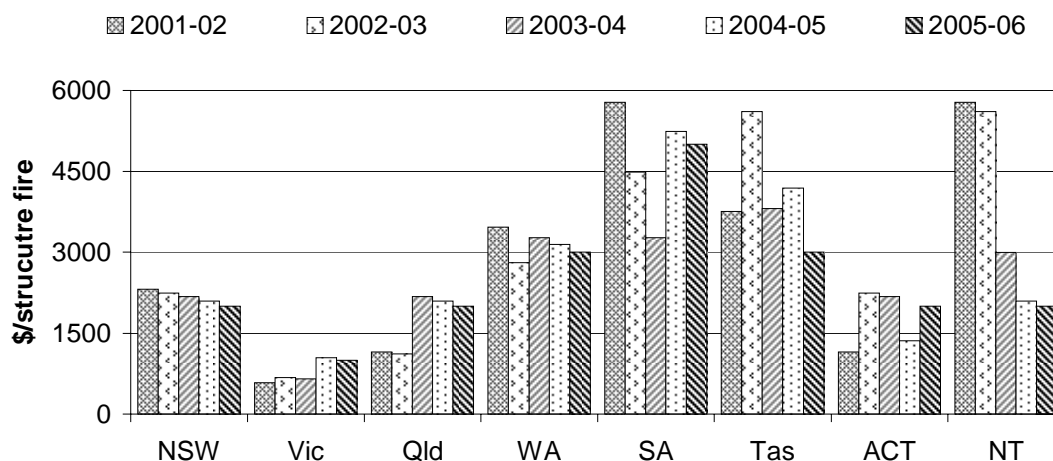
The ‘median dollar losses from structure fire’ (box 8.13) and the ‘total property loss from structure fire’ (box 8.14) are outcome indicators of the effect of fire on property. These data (expressed in real terms) have not been adjusted for jurisdictional differences in the costs and values of various types of building. Further, the method of valuing property loss from fire varies across jurisdictions.

#### Box 8.13 Median dollar losses from structure fire

This indicator is defined as the median dollar losses from structure fire (a fire in a house or other building), adjusted for inflation. (The median is the middle number in a sequence). Lower median dollar losses represent a better outcome.

The median dollar loss varies across jurisdictions and over time. No clear national trends are evident (figure 8A.8).

Figure 8.16 **Median dollar loss from structure fire (2005-06 dollars)<sup>a, b, c, d, e, f, g</sup>**



<sup>a</sup> Expenditure levels are adjusted using the ABS gross domestic product price deflator (2004-05 = 100) (table AA.26) to arrive at a constant price measure. Estimates have not been validated by the insurance industry or adjusted for interstate valuation differences. <sup>b</sup> NSW: Data are for the NSW Fire Brigades only, but include responses to fires outside NSW Fire Brigades designated fire districts. <sup>c</sup> Victoria: Due to data collection issues, Victorian data is incomplete for 2005-06. <sup>d</sup> Queensland: Reporting of incident attendance by rural crews is incomplete due to voluntary reporting procedures. <sup>e</sup> Tasmania: Figures supplied include data provided by all fire brigades, both full-time and volunteer. Incidents where the \$ loss is zero or not reported have been excluded from the calculation of the median. <sup>f</sup> ACT: Data for 2001-02 exclude the ACT Bushfire Service. Data for 2002-03 exclude the January 2003 wildfire which destroyed over 500 houses and resulted in losses in excess of \$200 million. <sup>g</sup> NT: Data do not include data from Bushfires NT.

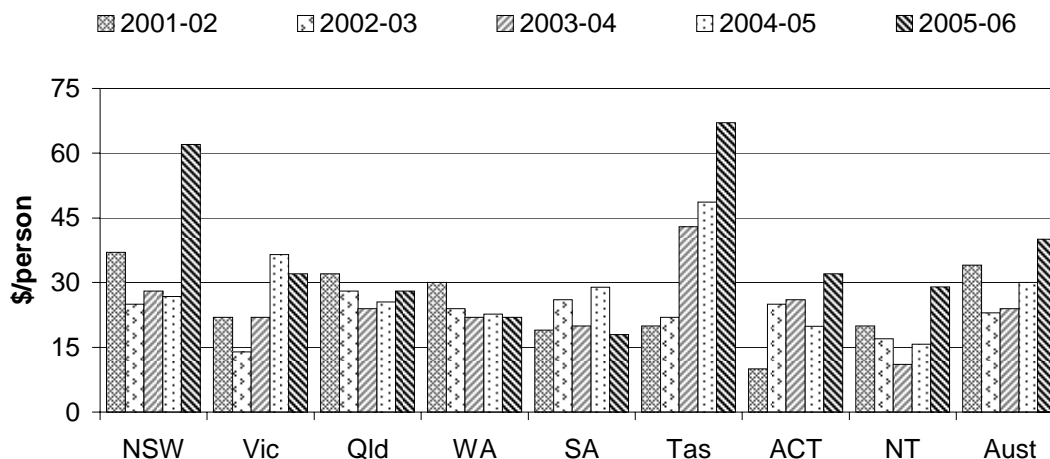
Source: State and Territory governments (unpublished); table 8A.8.

**Box 8.14 Total property losses from structure fire**

This indicator is defined as the total property loss from structure fire (a fire in housing or other building) per person adjusted for inflation. Lower total property losses from structure fire per person represent better outcomes.

The total property loss per person (expressed in real terms) increased from 2004-05 to 2005-06 in most jurisdictions (figure 8.17).

**Figure 8.17 Total property loss from structure fire (2005-06 dollars)<sup>a, b, c, d, e, f, g, h</sup>**



<sup>a</sup> Total property loss levels are adjusted using the Australian Bureau of Statistics (ABS) gross domestic product price deflator (2005-06 = 100) (table AA.26) to arrive at a constant price measure. Estimates have not been validated by the insurance industry or adjusted for interstate valuation differences. <sup>b</sup> NSW: Data are for NSW Fire Brigades only, but include responses to calls outside NSW Fire Brigades designated fire districts. Data for 2001-02 include an outlier that resulted in direct dollar loss of more than \$60 million. The increase in dollar loss can be attributed to the increase in the number of large loss fires. In 2004-05 there were 17 structure fires that resulted in direct dollar loss in excess of \$1 million each. In 2005-06 there were 32 structure fires that resulted in excess of \$1 million each. Of these fires, 5 resulted in direct dollar loss in excess of \$10 million each and one of \$89 million. <sup>c</sup> Victoria: Total property loss from structure fires in 2004-05 was higher than the previous year, due to a number of fires with significant levels of individual loss. Due to data collection issues, data are incomplete for 2005-06. <sup>d</sup> Queensland: Data prior to 2003-04 exclude incidents solely attended by the rural crews. Reporting of incident attendance by rural fire crews is incomplete due to voluntary reporting procedures. Incidents with missing or nil dollar losses have been excluded. <sup>e</sup> Tasmania: Figures supplied include data provided by all fire brigades, both full time and volunteer. Due to small population size, figures are affected by single large-loss events. Significant increases have also been experienced due to rapidly rising property prices. <sup>f</sup> ACT: Data for 2001-02 exclude the ACT Bushfire Service. Data for 2002-03 exclude the January 2003 wildfire which destroyed over 500 houses and resulted in losses in excess of \$200 million. <sup>g</sup> NT: Does not include data from Bushfires NT. Data for 2005-06 include an outlier that resulted in a direct dollar loss of \$3.5 million. <sup>h</sup> Australia: Average excludes rural fire service data for some years as per the jurisdictions' caveats.

Source: State and Territory governments (unpublished); table 8A.9.

## 8.4 Ambulance events

This section provides information on the performance of ESOs in providing emergency management services for ambulance events and in preparing the community to respond to emergencies. Ambulance events are incidents that result in demand for ambulance services to respond. They include the provision of emergency and non-emergency pre-hospital patient care and transport, inter-hospital patient transport, conducting specialised rescue services, preparing and providing

ambulance services to multi-casualty events, and enhancing the community's capacity to respond to emergencies.

## Emergency management services for ambulance events

Ambulance service organisations are the primary agencies involved in providing emergency management services for ambulance events. In a limited number of cases, other organisations provide services such as medical transport for emergencies (table 8A.37). The descriptive information provided below on funding, incidents and human resources are for ambulance service organisations only. As discussed in section 8.1, these organisations are involved in other activities in addition to providing ambulance event services.

### Revenue

Total revenue of ambulance service organisations covered in this Report was \$1.4 billion in 2005-06. Nationally, revenue (expressed in real terms) increased each year from 2000-01 to 2004-05, with an average annual growth rate of 6.0 per cent (table 8.4).

Table 8.4 **Revenue of ambulance service organisations (2005-06 dollars) (\$ million)<sup>a</sup>**

	<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<sup>b</sup></i>
2001-02	324.5	314.7	269.7	75.0	100.2	20.3	18.4	11.0	1 133.8
2002-03	355.2	340.3	288.8	78.0	90.5	20.7	23.8	12.3	1 209.6
2003-04	382.2	352.9	311.3	84.6	102.0	21.3	22.5	12.6	1 289.4
2004-05	391.7	388.6	310.4	94.6	109.8	24.7	16.8	15.7	1 352.3
2005-06	425.6	411.8	328.3	98.6	111.7	26.9	19.6	15.9	1 438.4

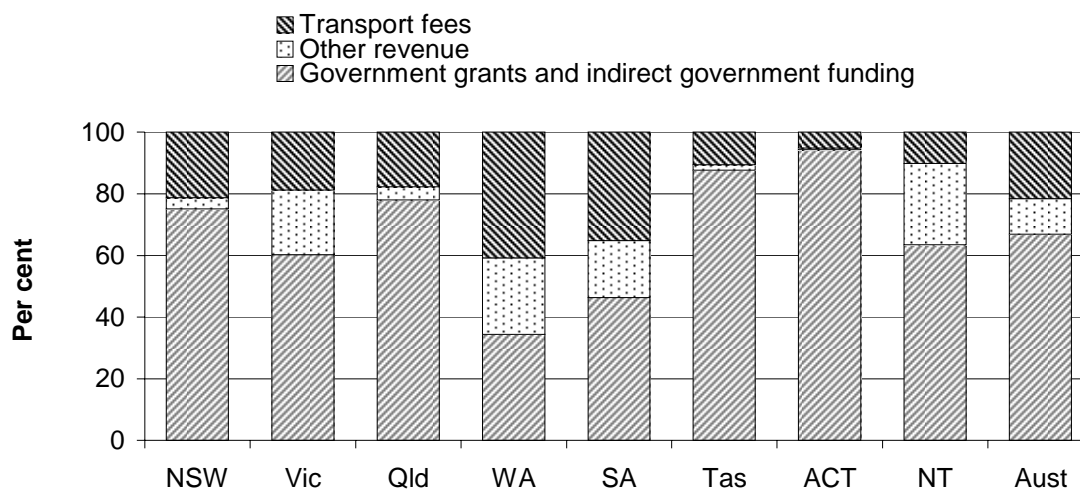
<sup>a</sup> Funding levels are adjusted using the ABS gross domestic product price deflator (2005-06 = 100) (table AA.26) to arrive at a constant price measure. Due to differences in definitions and counting rules, data reported may differ from data in agency annual reports and other sources. <sup>b</sup> Totals may not sum due to rounding.

Source: State and Territory governments (unpublished); table 8A.18.

Ambulance service organisations are funded by a variety of sources, with non-government sources making a significant contribution. The primary sources of funding across all jurisdictions in 2005-06 were revenue from State and Territory governments, transport fees (from government hospitals, private citizens and insurance) and other revenue comprising subscriptions, donations and miscellaneous revenue (figure 8.18).

Nationally, 67.0 per cent of funding for ambulance service organisations in 2005-06 was provided as direct government revenue and indirect government revenue, with the remainder sourced from transport fees and other revenue (figure 8.18).

Figure 8.18 **Major sources of ambulance service organisation revenue, 2005-06<sup>a</sup>**



<sup>a</sup> Other revenue is equal to the sum of subscriptions, donations and miscellaneous revenue.

Source: State and Territory governments (unpublished); table 8A.18.

### Incidents

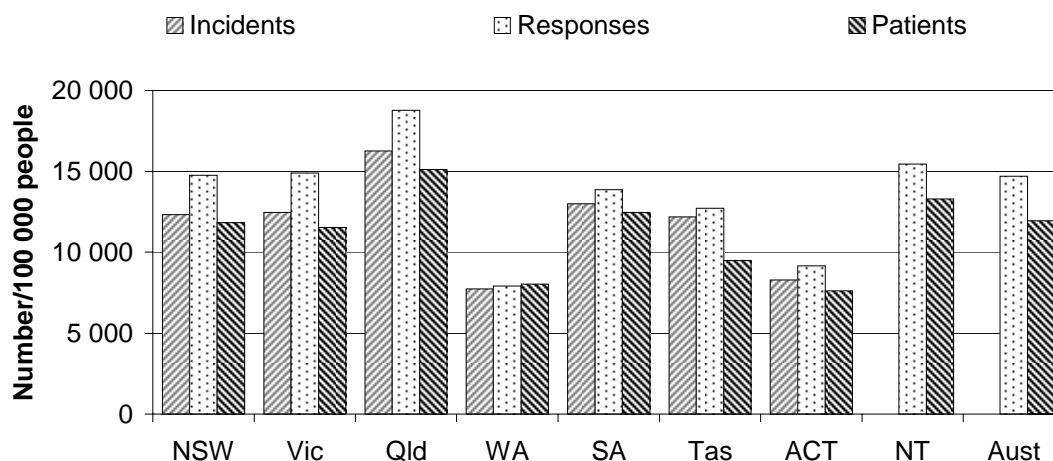
Ambulance service organisations attended 2.55 million incidents nationally in 2005–06 (table 8A.19). Most of these were emergency incidents (37.9 per cent), followed by non-emergency incidents (30.9 per cent) and urgent incidents (30.9 per cent).

### *Ambulance incidents, responses and patients per 100 000 people*

The numbers of incidents, responses and patients are interrelated. Multiple responses/vehicles may be sent to a single incident, and there may be more than one patient per incident. There may also be responses to incidents that do not have people requiring treatment and/or transport.

Nationally, there were nearly 15 000 responses, and 12 000 patients per 100 000 people in 2005-06 (figure 8.19).

Figure 8.19 **Reported ambulance incidents, responses and patients, 2005-06<sup>a</sup>**



<sup>a</sup> An incident is an event that results in a demand for ambulance resources to respond. An ambulance response is a vehicle or vehicles sent to an incident. There may be multiple responses/vehicles sent to a single incident. A patient is someone assessed, treated or transported by the ambulance service. Data for incidents per 100 000 people are not available for NT or Australia.

Source: State and Territory governments (unpublished); table 8A.19.

### *Aero-medical arrangements in Australia*

There is a variety of arrangements for air ambulance or aero-medical services throughout Australia. Some of these arrangements involve services provided entirely by State/Territory ambulance services or by sub-contractors to these services, while others are provided completely externally to the State ambulance services. Some arrangements involve a mix of the two, where external organisations provide aircraft and/or air crew while ambulance service organisations provide paramedics to staff the air ambulances. The result is that the revenue (funding) and expenditure for air ambulance services are included in ambulance reports from some jurisdictions while in other jurisdictions none of these costs are included.

The Australian Government also provides some capital and recurrent funding for aero-medical service provision through the Royal Flying Doctor Service, mainly for primary health services to rural and remote communities. In some jurisdictions these same aircraft are used to transfer patients requiring higher level care.

It is not possible for ambulance service organisations to provide full activity and financial data for air ambulance services in Australia. The Council of Ambulance Authorities (CAA) has tried to identify, as comprehensively as possible, air ambulance services provided by ambulance service organisations directly, or by

other service providers such as the Royal Flying Doctor Service. In doing so, the CAA has counted the total number of aircraft available in each jurisdiction during 2004-05, and the component of expenditure that is funded through ambulance service expenditure (that is, the expenditure figures do not represent total expenditure, only that component funded through ambulance services) (see table 8.5).

**Table 8.5 Aero medical resources and expenditure, 2005-06<sup>a, b</sup>**

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT<sup>c</sup></i>	<i>NT</i>	<i>Aust</i>
Operated by State									
Ambulance Service									
Fixed wing	4	4	–	–	–	1	–	–	9
Helicopter	–	3	–	–	–	–	–	–	3
Operated by other service providers									
Fixed wing	1	–	7	11	4	–	–	6	29
Helicopter	9	–	12	1	3	1	1	–	27
<b>Total aircraft</b>	14	7	19	12	7	2	1	6	68
<b>Expenditure (\$'000)</b>	41 536	25 020	1 820	412	0	3 132	594	–	–

<sup>a</sup> These figures do not represent the total air ambulance medical expenditure for the jurisdiction. They only represent that portion funded through ambulance services and reported as part of the total ambulance service expenditure for each jurisdiction. <sup>b</sup> Fixed wing services in WA, SA and NT are provided by the Royal Flying Doctor Service (RFDS). In addition, AMS, a NT Government operated aero-medical service, operates in the Top End <sup>c</sup> Significant variance compared with the previous year results from including the direct cost of medical crews for the helicopter. – Nil or rounded to zero.

Source: Council of Ambulance Authorities (CAA).

### *Human resources*

Data on human resources are reported by operational status on a FTE basis to provide a description of the human resources profile. Human resources include any person involved in delivering and/or managing the delivery of this service, including:

- ambulance operatives (including patient transport officers, students and base level ambulance officers, qualified ambulance officers, other clinical personnel and communications operatives)
- operational and corporate support personnel (including management, operational planners and coordinators, education and training personnel, corporate support personnel, non-operative communications and technical personnel)
- remunerated and non-remunerated volunteers.

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Nationally, 11 152 FTE salaried personnel were involved in the delivery of ambulance services in 2005-06. The majority of salaried ambulance personnel in 2005-06 were ambulance operatives (81.7 per cent) (table 8A.20).

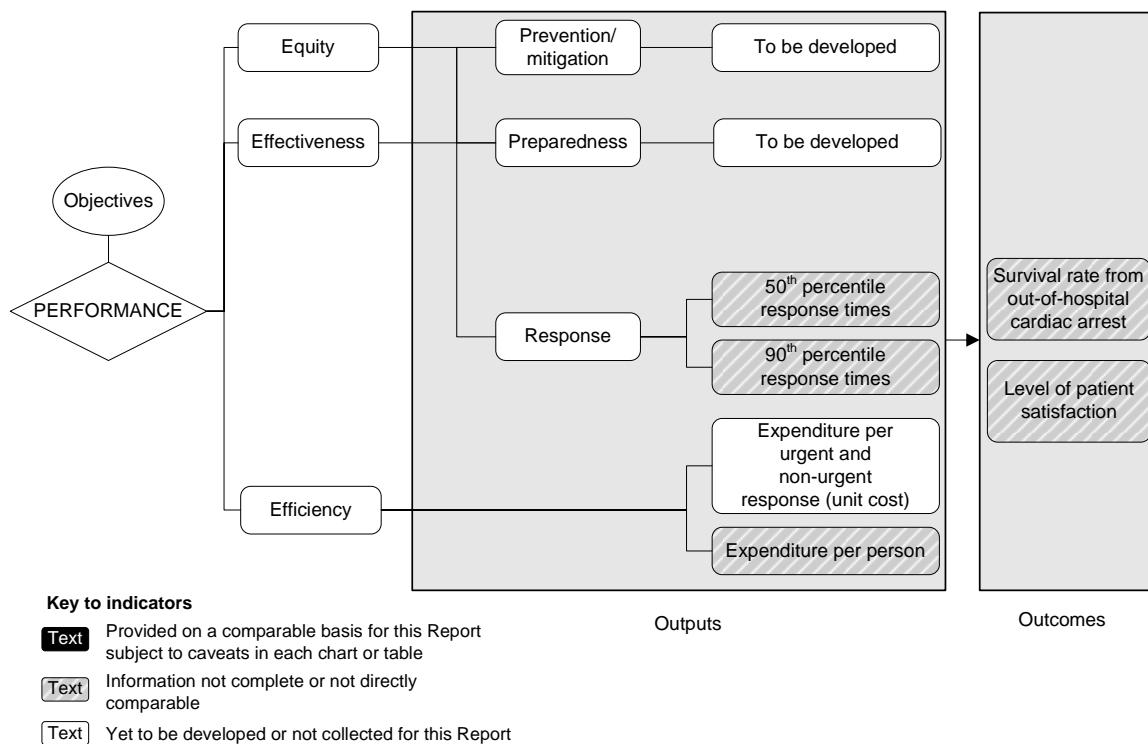
Nationally, 6273 volunteer personnel (comprising 5114 operatives and 1159 support personnel) participated in the delivery of ambulance services in 2005-06. The proportion of volunteer personnel and the nature of their role varied across jurisdictions. Given the decentralised structure of its ambulance service operations, WA has a high number of volunteer operational and corporate support personnel (table 8A.20).

### **Framework of performance indicators**

Figure 8.20 presents the performance indicator framework for ambulance events, based on the general framework for all ESOs (figure 8.1). Definitions of all indicators are provided in section 8.8. 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 demographic and socioeconomic data that may assist in interpreting the performance indicators presented in this section.

The performance indicator framework for ambulance events shows which data are comparable in the 2007 Report. For data that are not considered directly comparable, the text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability from a Report-wide perspective (see section 1.6).

Figure 8.20 Performance indicators for ambulance events



Performance indicators for ambulance events have been provided at the State and Territory government level in the Report since 1998. Caution should be exercised in making comparisons between the ambulance service organisations because of differences in geography, population dispersal and service delivery models.

## Key performance indicator results

### *Outputs — equity and effectiveness*

#### *Prevention/mitigation*

The Steering Committee has identified prevention/mitigation as a key area for development in future reports (box 8.15). There are difficulties in identifying useful and reliable indicators of prevention/mitigation for ambulance events given that other elements of both the health and justice systems are involved in these areas.

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**Box 8.15 Performance indicator — prevention/ mitigation**

An output indicator of governments' objective to reduce the adverse effects on the Australian community of emergencies requiring ambulance services through prevention and mitigation strategies has yet to be developed.

*Preparedness*

The Steering Committee has identified preparedness as a key area for development in future reports (box 8.16).

**Box 8.16 Performance indicator — preparedness**

An output indicator of governments' objective to reduce the effects on the Australian community of emergencies requiring ambulance services through preparedness strategies has yet to be developed.

*Response*

Indicators of response include the times during which 50 per cent and 90 per cent of first responding ambulance resources respond in code 1 situations.

*Response — 50<sup>th</sup> and 90<sup>th</sup> percentile response times*

The 50<sup>th</sup> and 90<sup>th</sup> percentile response times for ambulance service organisations provide a measure of response activities (box 8.17). Response time data need to be interpreted with care, however, because performance is not strictly comparable across jurisdictions:

- Response time data for some jurisdictions (when calculated on a State-wide basis) represent responses to urban, rural and remote areas, while others include urban areas only.
- Responses in some jurisdictions include responses from volunteer stations where turnout times are generally longer because volunteers are on call rather than on duty.
- Response times can be affected by the dispersion of the population (particularly rural/urban population proportions), topography, road/transport infrastructure and traffic densities.

While definitions of response times are consistent, not all jurisdictions have systems in place to capture all components of response time for all cases from the time of the call to arrival at the scene (figure 8.21).

**Box 8.17 50<sup>th</sup> and 90<sup>th</sup> percentile response times**

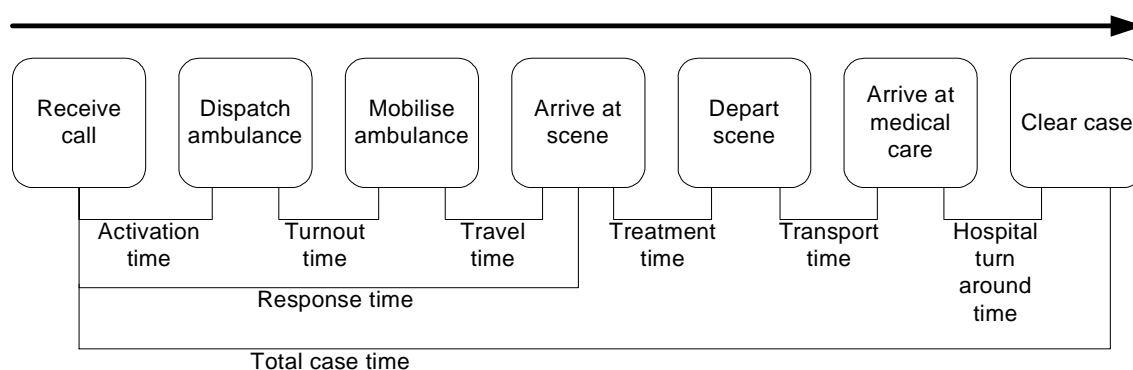
The 50<sup>th</sup> and 90<sup>th</sup> percentile response times are included as output indicators of governments' objective to reduce the adverse effects on the Australian community of emergencies requiring ambulance services through timely response.

The indicator '50<sup>th</sup> percentile response time' is defined as the time within which 50 per cent of the first responding ambulance resources arrive at the scene of an emergency in code 1 situations. Similarly, '90<sup>th</sup> percentile response time' is the time within which 90 per cent of the first responding ambulance resources arrive at the scene of an emergency in code 1 situations. Shorter response times are more desirable.

The response time is defined as the time taken between the initial receipt of the call for an emergency ambulance and the ambulance's arrival at the scene of the emergency (figure 8.21). Emergency responses are categorised by an assessment of the severity of the medical problem:

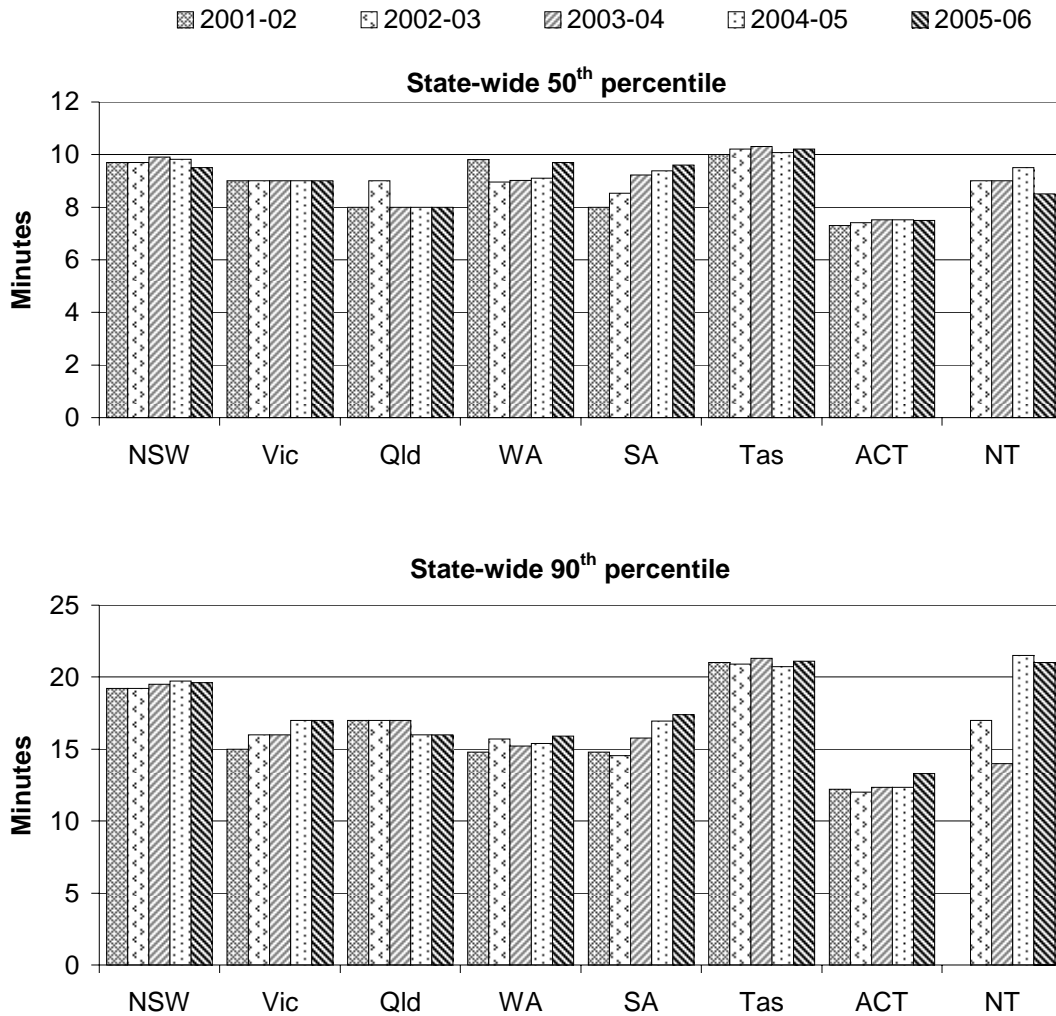
- code 1 — responses to potentially life threatening situations using warning devices
- code 2 — responses to acutely ill patients (not in life threatening situations) where attendance is necessary but no warning devices are used.

**Figure 8.21 Response time points and indicators for ambulance events**



Ambulance response times are reported on a State-wide basis (figure 8.22). In 2005–06, response time data were also collected and reported for the first time for the capital cities only. Urban response performance is impacted upon by a range of factors including the density and dispersion of population in cities, road systems and traffic densities and significant city layout features (such as large rivers and waterways dividing cities, extensive green belts between suburbs etc).

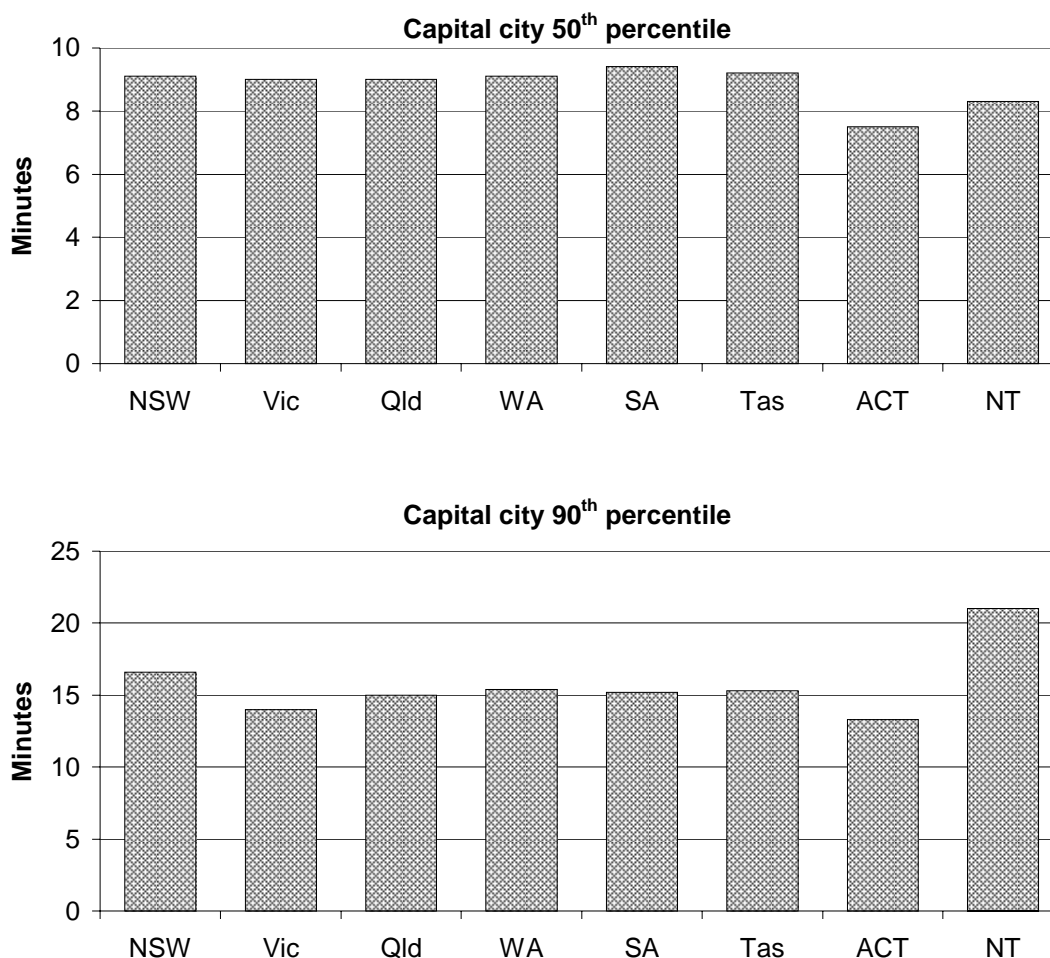
Figure 8.22 Ambulance response times (State-wide)<sup>a</sup>



<sup>a</sup> Differences across jurisdictions in definitions of response times, geography, personnel mix and system type for capturing data affect the comparability of response time data.

Source: State and Territory governments (unpublished); table 8A.23.

Figure 8.23 Ambulance response times, 2005-06 (Capital city)<sup>a</sup>



<sup>a</sup> Differences across jurisdictions in definitions of response times, geography, population dispersal, personnel mix and system type for capturing data affect the comparability of response time data.

Source: State and Territory governments (unpublished); table 8A.23.

### Outputs — efficiency

The main efficiency indicator is expenditure by ambulance service organisations per 1000 people. Funding of ambulance service organisations per 1000 people is also reported to show the contribution of governments and other funding sources. Care needs to be exercised when interpreting efficiency data, however, because differences in the reporting of asset-related costs mean data are not fully comparable across jurisdictions.

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### *Expenditure per urgent and non-urgent response*

The Steering Committee has identified ‘expenditure per urgent and non-urgent response’ as an indicator of the efficiency with which governments deliver ambulance services. Data for this indicator were not available for the 2007 Report (box 8.18).

**Box 8.18 Expenditure per urgent and non-urgent response**

‘Expenditure per urgent and non-urgent response’ has been identified for development as an output indicator of governments’ objective to deliver efficient emergency management services.

### *Expenditure per person*

‘Expenditure per person’ is an indicator of the efficiency of governments in delivering emergency management services (box 8.19). Care needs to be taken when comparing data across jurisdictions because there are differences in the reporting of a range of cost items and funding arrangements (funding policies and taxing regimes). Some jurisdictions, for example, have a greater proportion of government funding compared with other jurisdictions. Also, differences in geographic size, terrain, climate, and population dispersal may affect costs of emergency infrastructure and numbers of service delivery locations per capita.

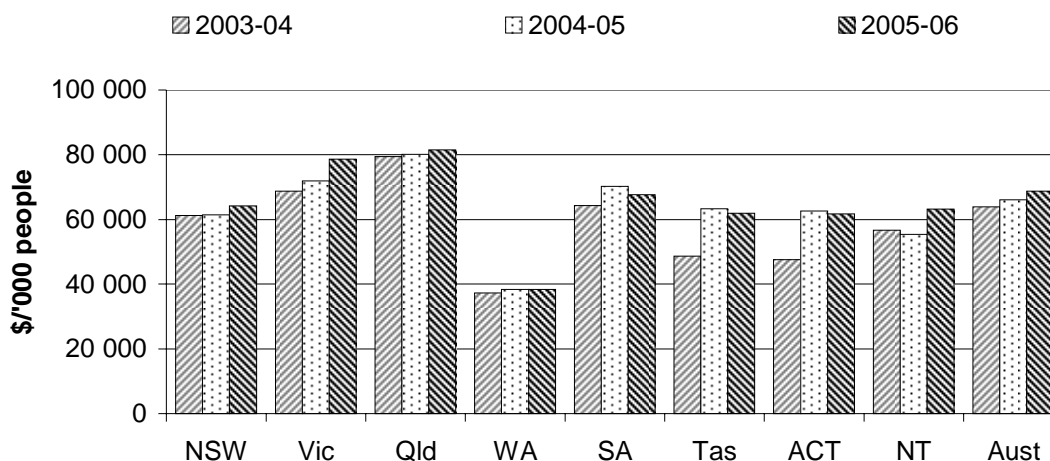
Nationally, total expenditure on ambulance service organisations per 1000 people was \$68 765 in 2005-06 (figure 8.24).

### Box 8.19 Expenditure per person

This indicator is defined as ambulance service organisation expenditure per 1000 people. Expenditure is reported as the total cost (total direct and indirect government and other ambulance expenditure) of ambulance service organisations. The cost to government is reported as total government funding of these organisations. Total expenditure is a measure of efficiency for ambulance services, and government funding is a measure of the cost to government of ambulance service organisations. Both are reported, because revenue from other sources is significant for a number of jurisdictions.

Holding other factors constant, a decrease in expenditure per person represents an improvement in efficiency. Efficiency data are difficult to interpret, however. While high or increasing expenditure per person may reflect deteriorating efficiency, it may also reflect changes in aspects of the service (such as improved response) or changes in the characteristics of emergencies requiring ambulance services (such as more serious para-medical challenges). Similarly, low or declining expenditure per person may reflect improving efficiency or lower quality (slower response times) or less severe cases.

Figure 8.24 Ambulance service organisations expenditure (2005-06 dollars)<sup>a, b</sup>

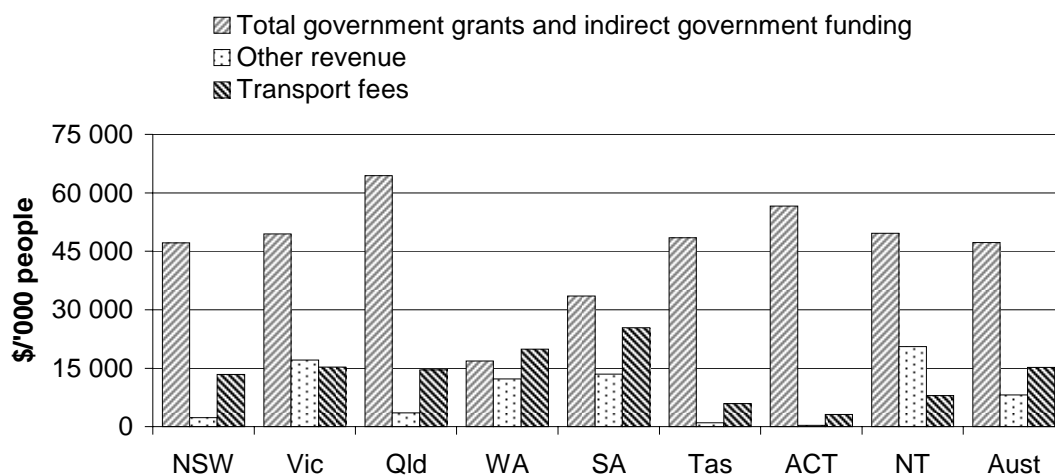


<sup>a</sup> Expenditure levels are adjusted using the ABS gross domestic product price deflator (2005-06 = 100) (table AA.26) to arrive at a constant price measure. <sup>b</sup> For 2005-06, the ACT Ambulance Service data has been collated using the new Emergency Services Agency Capability Model, which utilises a different cost attribution model for shared costs across the Emergency Services Agency. Therefore, the financial figures for 2005-06 cannot be directly compared with those of previous years.

Source: State and Territory governments (unpublished); tables 8A.25 and 8A.26.

Nationally, total government grants and indirect government funding of ambulance service organisations per 1000 people was \$47 307 in 2005-06 (figure 8.25).

Figure 8.25 **Ambulance service organisations revenue, 2005-06<sup>a</sup>**



<sup>a</sup> Other revenue is equal to the sum of subscriptions, donations and miscellaneous revenue.

Source: State and Territory governments (unpublished); table 8A.27.

## Outcomes

### *Survival rate from out-of-hospital cardiac arrest*

An outcome measure for ambulance events is the survival rate from out-of-hospital cardiac arrest (box 8.20).

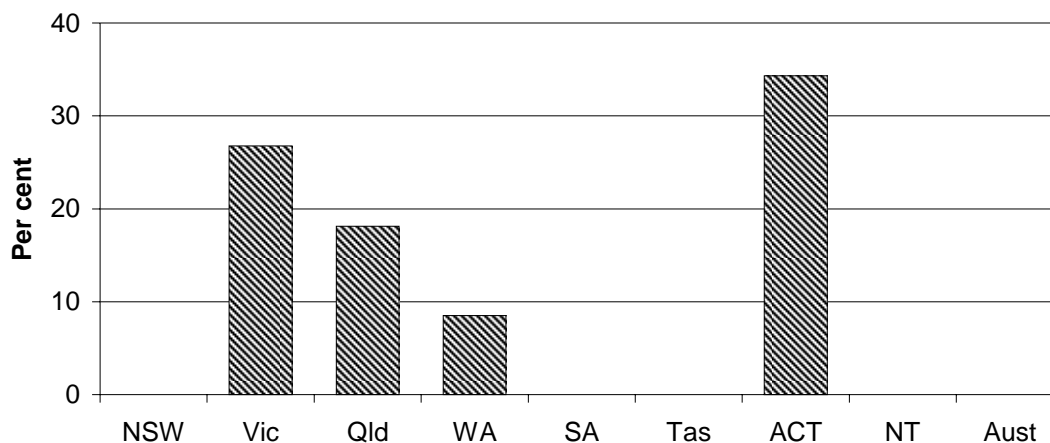
#### **Box 8.20 Survival rate from out-of-hospital cardiac arrest**

The indicator is defined as the percentage of patients aged 16 years and over who were in cardiac arrest (excluding paramedic witnessed) where any chest compressions and/or defibrillation was undertaken by ambulance/EMS personnel who have a return to spontaneous circulation (ROSC) on arrival at hospital.

A further breakdown of this indicator is defined as the percentage of patients aged 16 years and over in out-of-hospital cardiac arrest (excluding paramedic witnessed) where the arrest rhythm on the first ECG assessment was either Ventricular Fibrillation or Ventricular Tachycardia who have a return of spontaneous circulation (ROSC) on arrival at hospital.

The survival rate from out-of-hospital witnessed cardiac arrests varied across jurisdictions where data were available in 2005-06 (figure 8.26). A number of jurisdictions did not report on this indicator. Available data on the further breakdown of this indicator (see box 8.20) are reported in table 8A.22.

Figure 8.26 Cardiac arrest survival rate, 2005-06<sup>a, b, c</sup>



<sup>a</sup> The definition of witnessed cardiac arrest survival rates relates to the percentage of patients aged 16 years or over who were in out-of-hospital cardiac arrest (excluding paramedic witnessed) where any chest compressions and/or defibrillation was undertaken by ambulance/EMS personnel who have a return of spontaneous circulation (ROSC) on arrival at hospital. <sup>b</sup> A further breakdown of cardiac arrest data (see table 8A.22) is defined as the percentage of patients aged 16 years or over who were in out-of-hospital cardiac arrest (excluding paramedic witnessed) where the arrest rhythm on the first ECG assessment was either Ventricular Fibrillation or Ventricular Tachycardia who have a return of spontaneous circulation (ROSC) on arrival at hospital. <sup>c</sup> A number of states who previously reported data were unable to report in 2005-06 due to changes in definitions.

Source: State and Territory governments (unpublished); table 8A.22.

### *Level of patient satisfaction*

Another outcome measure for ambulance events is the 'level of patient satisfaction' (box 8.21). The performance of ambulance service organisations can be measured in terms of the satisfaction of those people who directly used the service (table 8A.24).

Data for 2004 to 2006 were collected by jurisdictions and collated by the CAA. The CAA survey obtained 4326 usable responses nationally from patients who used an ambulance service in 2006 (table 8A.24). The estimated satisfaction levels for ambulance patients were comparable with previous years (figure 8.27).

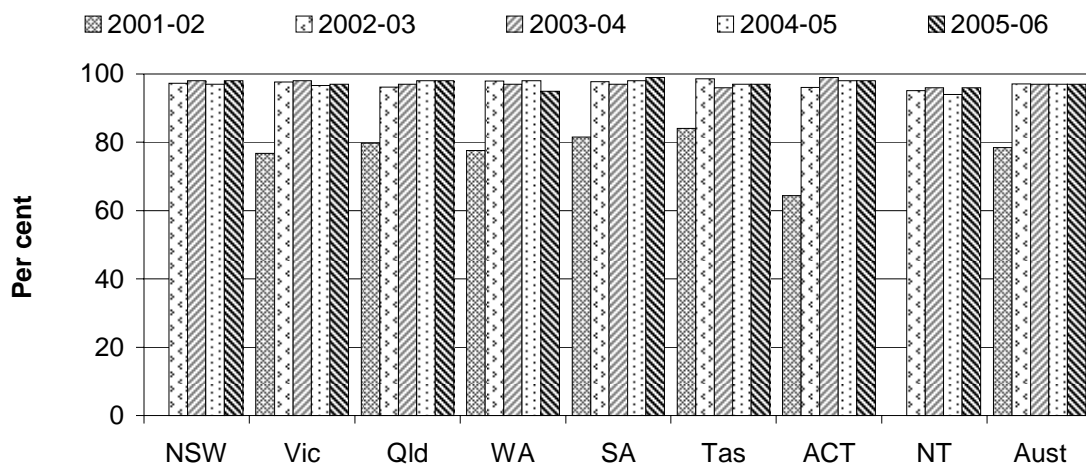
### Box 8.21 Level of patient satisfaction

This indicator is defined as the total number of patients who were either 'satisfied' or 'very satisfied' with ambulance services they had received in the previous 12 months, divided by the total number of patients.

A higher level or increase in the proportion of patients who were either 'satisfied' or 'very satisfied' suggests greater success in meeting patient needs.

This indicator does not provide information on why some patients were not satisfied. It also does not provide information on the level of patient expectations.

Figure 8.27 Proportion of ambulance users who were satisfied or very satisfied with the ambulance service<sup>a</sup>



<sup>a</sup> Based on a survey of people who used an ambulance service in the previous 12 months. Jurisdictions conducted the surveys at various times during each year. Data for 2001-02 not available for NSW and the NT.

Source: Council of Ambulance Authorities National Patient Mailout Satisfaction Research 2002-2006; table 8A.24.

## 8.5 Road rescue events

A road rescue event is an accident or incident involving a motor vehicle and the presumption that there are injuries or that assistance is required from ESOs.

### Emergency management services for road rescue events

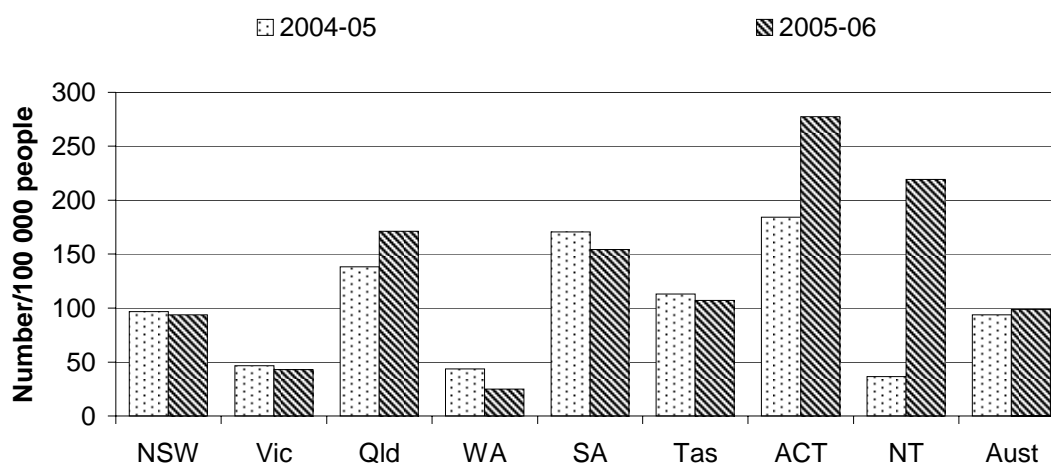
In all jurisdictions, a diverse range of ESOs provide emergency management services for road rescue events. In some jurisdictions, several agencies provide road

rescue services, although the trend is towards consolidation. In most jurisdictions, SES/TES have an important role in providing road rescue services, although this is not always the case. In Tasmania, the ambulance service provides road rescue services in urban areas, SES in most rural areas and the fire service in one rural area, while in NSW road rescue services are provided by five organisations.

### *Number of reported road rescue incidents*

Nationally, there were 20 230 road rescue incidents in 2005-06, or 99.5 incidents per 100 000 people (table 8A.28). The number of incidents per 100 000 people varied between years and jurisdictions (figure 8.28).

**Figure 8.28 Reported road rescue incidents<sup>a, b, c</sup>**



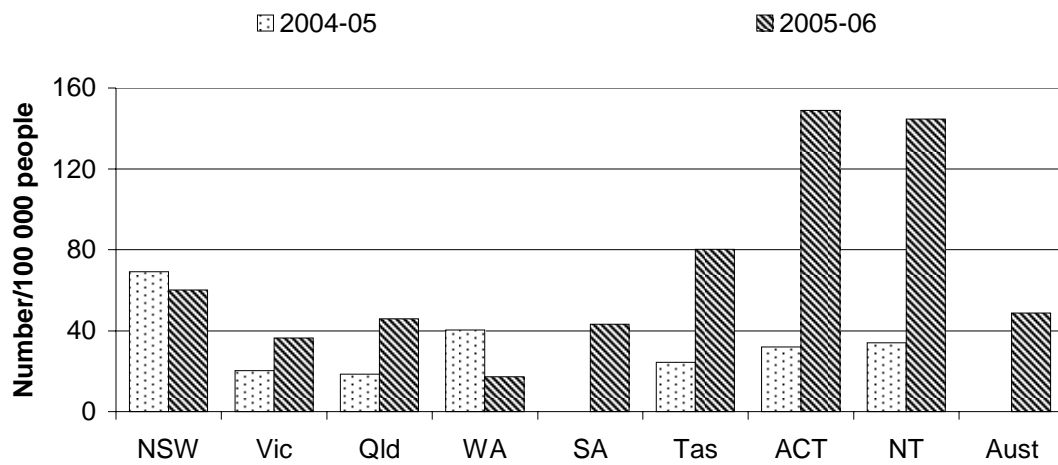
<sup>a</sup> Victoria: SES incidents reported are those where the SES responded as the primary rescue crew. Due to data collection issues, data is incomplete for 2005-06. <sup>b</sup> Queensland: SES and rural incident databases do not record the necessary information to calculate this measure. <sup>c</sup> SA: The SASES reports taskings, not being able to distinguish incidents.

Source: State and Territory governments (unpublished); table 8A.28.

### *Number of reported road rescue extrications*

The data for road rescue extrications per 100 000 people display some marked variations across jurisdictions and, in some cases, within jurisdictions between 2004-05 and 2005-06 (figure 8.29). These marked variations may reflect definitional issues and the newness of the collection.

Figure 8.29 Reported road rescue extrications<sup>a, b, c, d, e</sup>



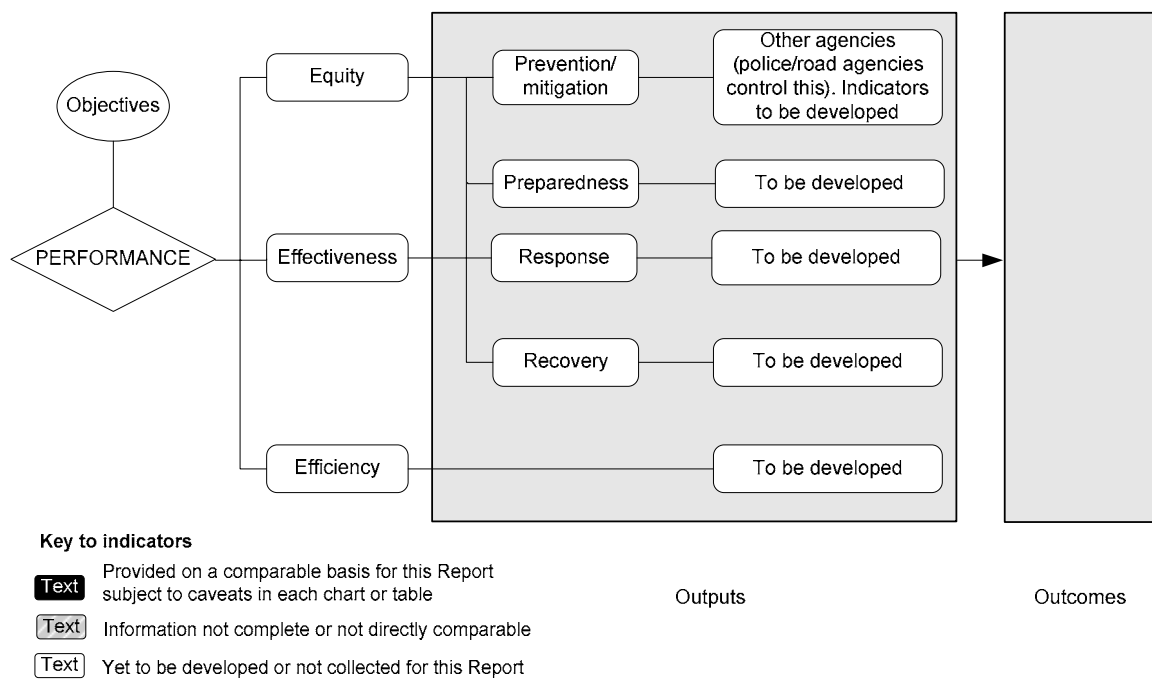
<sup>a</sup> Victoria: SES incidents reported are those where the SES responded as the primary rescue crew. Due to data collection issues, data is incomplete for 2005-06. <sup>b</sup> Queensland: SES and Rural incident database does not currently record the necessary information to calculate this measure. <sup>c</sup> SA: The SES extrications are not available for 2004-05. <sup>d</sup> Tasmania: Data include responses by fire services, ambulance services and SES. <sup>e</sup> ACT: There has been an increasing trend toward requiring extrication at road accident rescues.

Source: State and Territory governments (unpublished); table 8A.29.

## Framework of performance indicators

Figure 8.30 presents the performance indicator framework for road rescue events based on the general framework for emergency management (figure 8.1).

Figure 8.30 Performance indicators for road rescue events



## Key performance indicator results

No performance indicators are reported this year for road rescue services. Work is being undertaken to develop and expand the scope of performance reporting for road rescue events. Road rescue prevention/mitigation indicators are closely related to the indicators reported for road safety and traffic management in chapter 5 ('Police services').

## 8.6 Future directions in performance reporting

A number of developments are underway to improve data quality and comparability, and to expand the scope of reporting on emergency services.

### *Expanding the scope of reporting*

In 2005-06, transport accidents accounted for nearly 1700 deaths and 41 000 hospitalisations (tables 5A.46 and 5A.47 respectively).

A primary aim of governments is to reduce death and injury and the personal suffering and economic costs of road crashes. Emergency service organisations

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provide services that contribute to these objectives through the provision of effective and efficient trauma mitigation and medical and retrieval services.

Previous editions of this chapter have provided road rescue information on the number of road rescue incidents and the number of events in which extrications occurred. The next challenge for this chapter is to demonstrate the cost, benefits and value of the full range of emergency risk management services related to road transport accidents. This, combined with data in other chapters, will provide a more comprehensive picture of the strategies and programs delivered by governments to reduce the impact of road transport accidents.

Using the PPRR framework applied in emergency management, these services could include:

- *prevention* of road crashes through community safety campaigns, regulation and law enforcement
- *preparedness* through safety engineering, vehicle technology and occupant protection (to reduce the severity of incidents)
- *response*, including emergency management services
- *recovery*, including work to reopen roadways, repair vehicles and rehabilitate patients.

Other event-type services for which performance reporting has yet to be developed include: rescues (other than road rescues); natural events (other than landscape fires); technological and hazardous material incidents; emergency relief and recovery; and quarantine and disease control.

### *Improving data comparability and completeness*

Work to improve the comparability and accuracy of data is continuing. Performance indicators for fire, ambulance and road rescue services are being improved with the assistance of the Australasian Fire Authorities Council, the CAA and the Australian Council for State/Territory Emergency Services. These organisations will continue to expand the scope of the data collected, and to refine data items and data definitions.

## **8.7 Jurisdictions' comments**

This section provides comments from each jurisdiction on the services covered in this chapter. Appendix A contains data that may assist in interpreting the performance indicators presented in this chapter. These data cover a range of

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demographic and geographic characteristics, including age profile, geographic distribution of the population, income levels, education levels, tenure of dwellings and cultural heritage (including Indigenous and ethnic status).

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## **New South Wales Government comments**

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The NSW Government continues its commitment to ensuring safer communities and providing excellence in emergency risk management. In 2005-06, Ambulance Service of NSW (ASNSW) responses increased by 5.3 percent to over 995,900, averaging 2,728 responses per day, with improved response times at both the 50th and 90th percentiles. ASNSW also improved case cycle time of ambulance resources by 34 percent by utilising the patient allocation matrix to identify in-patient medical services provided at each metropolitan hospital. Early notification to emergency departments of estimated ambulance arrival time and the condition of the patient and real time use of data to disperse ambulance patients to emergency departments also assisted hospitals in managing peak demand periods. ASNSW added 60.5 ambulance officers in rural NSW and 73 ambulance officers and 21 patient transport officers in Sydney. The ASNSW Special Operations Unit, working with Emergency Management Australia and AusAid, coordinated the response of a 25 member medical taskforce to Indonesia following the May 2006 earthquake.

The State Emergency Service (SES) implemented Request For Assistance (RFA) Online, an Operations Management System, and a dedicated 24x7 Operational Communications Centre to receive life-critical emergency calls from the NSW Police Service in relation to accredited rescue responses. The State Emergency Management Committee endorsed the State's first Tsunami Emergency Sub-Plan. The revised Hawkesbury-Nepean Flood Emergency Sub-Plan was endorsed and tested and the SES commenced the roll out of the Business FloodSafe Toolkit and began developing a complementary Home FloodSafe package.

The draft document, *Planning for Bush Fire Protection 2006*, providing information on standards for building or renovating in bushfire prone areas was released for comment by the NSW Rural Fire Service (NSWRFS). The NSWRFS undertook a comprehensive Strategic Asset Management Plan including completion of Standards of Fire Cover analysis of all its brigades and the development of standard brigade station designs, and, on behalf of the Coordinating Committee, the NSWRFS commenced a review of the Bush Fire Risk Management Plan process. NSW Fire Brigades (NSWFB) communication centres processed 259,647 incidents. The NSWFB completed new fire stations at Arncliffe, Cranebrook, Katoomba, Molong and Tingira Heights; and major renovations at Hamilton, Manly, Toukley, Trangie and Wallsend fire stations and further reduced the age of its fleet by replacing older vehicles with new fire engines. The NSWFB improved prevention and preparedness by initiating the "I-Zone" Project to reduce the effects of bushfires at the urban/bushland interface; assisted in introducing legislation making smoke alarms mandatory in all NSW homes from 1 May 2006; led the national push for reduced fire-risk cigarettes; established a further 22 Community Fire Units, taking the total to 314 and visited 10,660 homes to install new smoke alarms or check previously-installed alarms.

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## Victorian Government comments

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Late January and early February 2006 saw numerous simultaneous wildfires across Victoria, particularly in the Grampians region. Successful integrated response and recovery activities were undertaken during these fires, including the provision of interstate support from NSW and Tasmanian firefighters. Extensive community preparation for the fire season contributed significantly to minimising the losses incurred as a result of these fires. Application of the Memorandum of Understanding between ABC Radio as the official broadcaster of emergency information and the emergency services occurred during the fires providing communities with timely, ongoing information.

During March 2006, Victoria hosted a successful and incident free Commonwealth Games, which was the culmination of many years of planning and preparation including considerable work by the state's police and emergency services.

Two important new agencies were established during the year. On 1 July 2005 the Emergency Services Telecommunications Authority (ESTA) commenced operations in accordance with the Emergency Services Telecommunications Authority Act 2004. ESTA is responsible for the provision of emergency telecommunications including call taking, dispatch and other communications services. The Victoria State Emergency Service (VICSES) was established as a statutory authority on 1 November 2005, placing it on an equal footing with Victoria's other emergency services.

Victoria's commitment to more responsive and safer ambulance services continued in 2005-06 with new emergency response teams operating in metropolitan and rural Victoria. In addition, the Metropolitan Ambulance Service (MAS) continued to better target its responses through its secondary triage referral service. This reduced the need to dispatch ambulances to 13,498 patients who were either redirected to alternative care or provided with self-care advice. Arrangements were also put in place to manage calls to the Nurse-on-Call health assistance line which commenced operation.

The government's Statewide Integrated Public Safety and Communications Strategy (SIPSaCS) rolled out improved communications technology, including Mobile Data Network for Police and Ambulance, Metropolitan Mobile Radio in police vehicles, fire appliances and ambulances, and a pager based Emergency Alerting System to VICSES and Country Fire Authority. At the same time MAS continued training for the majority of it's paramedics in the use of the Victorian Ambulance Clinical Information System. Rural Ambulance Victoria is also intending to introduce this system.

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## Queensland Government comments

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The Queensland Government provides world-class emergency and disaster management services under the umbrella of a single department. This unique model assists Queensland's preparedness from an all-hazards perspective and facilitates multi-service collaboration, coordination and cooperation.

Queensland's integrated approach was put to the test on 20 March 2006 when Tropical Cyclone Larry devastated Innisfail and the surrounding area. As lead agency for disaster management in Queensland, Emergency Management Queensland (EMQ) initiated disaster management preparation on March 17, three days before the cyclone crossed the coast. By the time it became apparent the cyclone was going to hit the coast with severe intensity, specialist crews had been deployed to the region and liaison with other functional agencies was well under way. SES crews from areas in the cyclone's path were activated and evacuations of more than 1000 residents began. A whole-of-Government incident management taskforce was implemented immediately following the cyclone which responded to more than 6500 requests for assistance in the first two weeks.

During the year, EMQ conducted numerous exercises, which have significantly contributed to the level of preparedness of staff and key stakeholders and ultimately to a safer Queensland. The exercises covered topics including counter terrorism, recovery for major natural disasters and pandemics. They provided an opportunity for disaster managers and responders to test their skills and evaluate the effectiveness of existing plans.

Queensland Ambulance Service (QAS) has been recognised for its investment in staff development. During the year, QAS won the Australian Training Initiative Award for its work in overcoming the challenges of delivering professional development programs to staff in rural and remote locations across the state. QAS also employed 70 new paramedics to help maintain quick responses from our life saving staff. These additional paramedics are in new positions, above the attrition replacement level. They have been employed in areas of greatest need in Queensland to ensure the community receives appropriate levels of service. An additional 214 paramedics will be placed over the next two years.

Queensland Fire and Rescue Service (QFRS) received two Australian Business Excellence Awards (Finalist for Overall Performance and Winner of the Strategy and Planning Award) and continued to improve home safety, safety in licensed premises and building fire safety compliance by developing new legislation. The Fire and Rescue Service Amendment Bill 2006 will make it compulsory for owners of residential houses and units to install smoke alarms in all pre-1997 homes, with smoke alarms already mandatory in homes constructed after 1 July 1997. QFRS also continued to enhance bushfire preparedness in high fire risk zones by better preparing its residents before the wildfire season, delivering more training to personnel in fire management strategies and consolidating incident control capabilities.

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## Western Australian Government comments

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Emergency Management continues to be challenged in Western Australia. One third the land mass of the continent, the state has varying climates, topography and a widely dispersed population. The WA Government works collaboratively with the community across all locations. Users of emergency services can be metropolitan or regional dwellers, visitors, or isolated indigenous or mining communities.

Of particular note this year were the seven cyclones which threatened WA communities, particularly in the North West. The northern coastal region of WA is one of the most cyclone-prone areas in the world. The magnitude of their impact and subsequent flooding in early 2006 required additional effort. In spite of the potential for a major disaster, no lives were lost or major injuries recorded. There are an estimated 142 100 visitors to the Northwest each December quarter, so a special traveller's safety brochure was developed in partnership with ABC radio to complement their safety and awareness during this time.

Although bushfires were not as frequent or destructive as in previous years, the Fire and Emergency Services Authority (FESA) distributed 35 000 bushfire Stay and Defend or Go Early kits as one of its many community safety campaigns. The first Community Emergency Management Officers (CEMOS) were also appointed to assist local government in bushfire planning. More water bomber "Helitacs" were provided with a subsequent increase in their coverage area. Over a million litres of water were dropped by these helicopters. A new designated "aerial intelligence" helicopter was introduced with a thermal imaging camera and the ability to transmit real-time images of mapping to the ground.

The Emergency Management Act came into operation in December, establishing overarching arrangements for the State's emergency services, including local governments and support organizations. The Emergency Service Levy (ESL) provided an additional \$7.9 million towards the development of the WA Emergency Radio Network Project. When completed, there will be provision of inter-operable communications between all agencies involved in emergency response. It is anticipated that more than 7000 mobile radios will be replaced with dual band equipment.

Road ambulance services are delivered by non-government suppliers for most of the State. St John Ambulance Australia Service (SJA) is the principal provider. Now in its second year, the contract between the Department of Health and SJA will provide an additional 100 paramedics and a substantial capital works programme over five years. The additional resources are aimed primarily at enhancing metropolitan response times. Ambulance services in rural communities in Western Australia are largely dependent on SJA volunteers with over 3 million volunteer hours being contributed annually. Essential air ambulance coverage across the state is provided by the Royal Flying Doctor Service's 11 fixed wing aircraft. In addition, Rescue One, the FESA Emergency Rescue Helicopter Service, services a 200 kilometre radius which covers more than 90 per cent of the population of Western Australia.

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## South Australian Government comments



To improve Public Safety the South Australian Government's vision is for emergency services:

- Comprising dedicated, highly competent people;
- Using modern technology and equipment;
- Providing a community focus for positioning and aligning emergency services across Prevention, Preparedness, Response and Recovery;
- Efficiently working together and with the community; and
- Efficiently managed and supported to meet modern challenges.

The Government has established the SA Fire and Emergency Services Commission (SAFECOM) to enhance community safety and make the best possible use of resources under the Fire and Emergency Services Act 2005. SAFECOM's Strategic Plan sets community safety goals, objectives and strategies to achieve them.

In Health, the SA Ambulance Service (SAAS) highlights 2005-06 include:

- Ranking the nation's leading ambulance service in patient satisfaction;
- Strengthening SA Ambulance Service's capabilities, along with strategic and business planning as an integral part of the health system;
- Embarking on an ambitious and challenging Service Development Plan to enhance service delivery, including over 60 projects designed to put patients' needs at the forefront of planning;
- Implementing a joint Assessment and Crisis Intervention Service (ACIS) project with Mental Health based in the State Communications Centre. Designed to create better outcomes for mental health patients, a Mental Health Nurse was located in the Centre between 5pm and 8am daily; and
- Completing a new Memorandum of Understanding between SAAS, the Department of Health, Royal Flying Doctor Service and SA Police to clearly define the responsibilities of each service in dealing with people who have a known or suspected mental illness.

Major emergency management initiatives for 2006-2007 include:

- Implementing the recommendations of the COAG Reviews of Natural Disaster Management and Bushfires;
- Participating in the SA Computer Aided Dispatch (SACAD) project to provide new computer aided dispatch systems for Police, Ambulance, Metropolitan Fire Service, Country Fire Service and State Emergency Service);
- Promoting long-term retention and recruitment of volunteers, including volunteer selection, induction, reward and recognition, flexible learning and conflict resolution; and
- Working closely with the Convention of Ambulance Authorities and the Australasian Fire Authorities Councils' initiatives for service excellence.



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## Tasmanian Government comments

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Tasmania has a number of unique characteristics which impact on the provision of emergency services throughout the state, including the small and dispersed population (and subsequent lack of economies of scale), the reliance on a network of 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, radio communications).

Unlike some other jurisdictions, Tasmania includes data for both urban and rural fire and ambulance service performance. As Tasmania has the highest percentage of all jurisdictions of its population in rural areas, reliable comparisons with other jurisdictions are difficult.

The Tasmania Fire Service (TFS) is comprised of four career brigades and 232 volunteer brigades that respond to fires in all metropolitan and rural areas. All incidents attended by these brigades are reported, and the TFS bears the full cost of funding both the operating and capital costs of its brigades.

The TFS continues to deliver a broad range of programs to assist at-risk sectors of the community to prevent fires and minimise the impact of fires that occur. Figures indicate that fire-prevention programs targeting at-risk households are particularly effective, with significant decreases in house fire rates experienced over the last ten years.

The Tasmanian Ambulance Service (TAS) provides emergency ambulance care, rescue and transport services and a non-emergency patient transport service. In addition, TAS provides fixed-wing and helicopter aero-medical services. The Government has made a decision to transfer urban road crash rescue from the ambulance service to the fire service and this decision will take effect from 1 December 2006.

Tasmania is the only state that provides a free ambulance service to the general public and as a consequence, there is a far greater reliance on government funding for ambulance services than in other jurisdictions. Increasing demand for ambulance services is a major issue with the ageing of the population being the major factor in the growth in demand.

Tasmania trains a far greater proportion of its salaried ambulance personnel to paramedic level than most other jurisdictions. Operational staffing increased by 25 positions in the north-west region of Tasmania during the last 18 months and election commitments have been made to provide extra ambulance crewing in Hobart and Launceston in the year ahead.

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## Australian Capital Territory Government comments

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The ACT Government continued its commitment to enhance community safety, emergency management preparedness and capability building through the ACT Emergency Services Authority (ESA), which comprises the ACT Ambulance Service, the ACT Fire Brigade, the ACT Rural Fire Service and the ACT State Emergency Service.

Over the past twelve months the ESA has continued to foster the ‘all hazards all agencies’ approach to delivering emergency services and emergency management for the ACT and surrounding region. A number of incidents have ‘tested’ the operational capability of the ESA and many of the processes that have been established to effectively provide for joint planning and operations. These included:

- A series of ‘white powder’ incidents involving government buildings and embassies;
- The structural collapse at the Defence Force Staff College in Weston; and
- A severe thunderstorm on 2 December 2005.

The Operational capability of the ESA was further improved or enhanced through the continued work of the following key projects:

- Trunk Radio Network (TRN). The progressive roll out of the digital TRN continued, resulting in enhanced radio coverage over most of the urban area as well as rural areas to the north and west of the ACT; and
- Remote area mobile data and Automatic Vehicle Location (AVL). This extension of the computer aided dispatch system provides an accurate and real time common operating picture for emergency management operations in rural areas of the ACT.

All ESA services were involved in the testing of the command and control procedures, triage and mass casualty management during the counter terrorist exercise *Mercury 2005* and *Exercise Precinct 84* the Canberra CBD evacuation exercise in 2006 and the ESA’s contribution to the development of the Chemical, Biological and Radiological (CBR) plan.

Building on a well-established community information foundation, the ESA developed and distributed to every Canberra household the *Emergencies and the National Capital - A Residents Guide* (the Guide). Designed to provide a range of information that can be applied regardless of the prevailing hazard, the Guide highlights the ACT Evacuation Strategy and introduces the All Hazards Warning System (AHWS). The Guide includes advice to residents to assist in the development of a home evacuation plan and was made available as an audio CD, and also in large font and Braille formats for the visually impaired.

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## Northern Territory Government comments

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For the first time the Northern Territory Fire and Rescue Service (NTFRS) has its own Output Group which better reflects the fire and rescue services role within its community and the role it plays within the emergency management community of the Northern Territory. The Output Group, 'Prevention and Response Management' clearly reflects the Government's social policy of 'Building Safer Communities' and enables the fire and rescue service to identify areas of response and community safety which are important to it.

To this end the NTFRS Community Safety Strategy and the Fire Reduction Strategy play a large role in the NTFRS effort to reduce the number of fires it attends and the severity and impact those fires have on the community. In the past 12 months the NTFRS has managed to reduce the number of grass fires it attended by approximately 600. This continues the downward trend in the number of grass fires within NTFRS emergency response areas of approximately 60 per cent over the past five years.

The Northern Territory Government has continued its commitment to a safer community with the commencement of construction of a new fire station in Darwin's northern suburbs. The \$4.75m fire station will replace the aging fire station at Casuarina and improve service delivery throughout Darwin's northern suburbs and provide faster assistance to other fire stations in the Darwin region.

Government purchased a new tanker appliance for the Darwin rural region during the reporting period. The tanker will greatly assist firefighters in the rural interface area and assist with the deployment of tanker appliances throughout the Northern Territory.

The NTFRS has developed and launched its 2006 – 2009 Strategic Plan. The Plan will set direction for the NTFRS over the next three years and provide a solid foundation for its continued development after the Government Review into the NTFRS some three years ago.

Major Emergency Management initiatives during the reporting period include:

- Participation in the Commonwealth's Bushfire Preparedness and Awareness Campaign.
- Smoke Alarm and Home Evacuation Campaigns.
- Significant assistance to the Territory community in the wake of the Katherine Floods and Cyclone Monica.
- Elevated participation in national emergency management initiatives.

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## 8.8 Definitions of key terms and indicators

<b>Ambulance service response times</b>	The response time is defined as the time taken between the initial receipt of the call for an emergency ambulance and the ambulance's arrival at the scene of the emergency. Emergency responses are categorised by an assessment of the severity of the medical problem: code 1 — responses to potentially life threatening situations using warning devices code 2 — responses to acutely ill patients (not in life threatening situations) where attendance is necessary but no warning devices are used.
<b>50<sup>th</sup> percentile ambulance service response times</b>	The time within which 50 per cent of emergency (code 1) incidents are responded to.
<b>50<sup>th</sup> percentile fire service response times</b>	The time within which 50 per cent of first fire resources respond.
<b>90<sup>th</sup> percentile ambulance service response times</b>	The time within which 90 per cent of emergency (code 1) incidents are responded to.
<b>90<sup>th</sup> percentile fire service response times</b>	The time within which 90 per cent of first fire resources respond.
<b>Alarm notification not involving fire</b>	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.
<b>Ambulance expenditure</b>	Includes salaries and payments in the nature of salaries to ambulance personnel, capital expenditure (such as depreciation and the 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.
<b>Ambulance incident</b>	An event that results in one or more responses by an ambulance service.
<b>Ambulance non-government revenue</b>	Includes revenue from subscription fees, transport fees, donations and other non-government revenue. Excludes funding revenue from Australian, State and local governments.
<b>Ambulance patient</b>	A person assessed, treated or transported by the ambulance service.
<b>Ambulance personnel</b>	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. Includes salaried ambulance personnel, remunerated volunteer and nonremunerated volunteer ambulance personnel.
<b>Ambulance response</b>	A vehicle or vehicles sent to an incident. There may be multiple responses/vehicles sent to a single incident.
<b>Ambulance services</b>	Provide emergency and non-emergency pre-hospital and out of hospital patient care and transport, inter-hospital patient transport, specialised rescue services, preparedness and provision of ambulance services to multi-casualty events, and to enhance the community's capacity to respond to emergencies.

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<b>Emergency ambulance response</b>	An emergency ambulance response (code 1) to a pre-hospital medical incident or accident (incident is potentially life threatening) that necessitates the use of ambulance warning (lights and sirens) devices.
<b>Events in which extrication(s) occurred</b>	An event in which the assisted removal of a casualty occurs. An incident with multiple people extricated is counted the same as an incident with one person extricated.
<b>Extrication</b>	Assisted removal of a casualty.
<b>False report</b>	An incident in which the fire service responds to and investigates a site, and may restore a detection system.
<b>Fire death</b>	A fatality where fire is determined to be the underlying cause of death. This information is verified by coronial information.
<b>Fire death rate</b>	The number of fire deaths per 100 000 people in the total population.
<b>Fire expenditure</b>	Includes salaries and payments in the nature of salaries to fire personnel, capital expenditure (such as depreciation and the 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.
<b>Fire incident</b>	A fire reported to a fire service that requires a response.
<b>Fire injury</b>	An injury resulting from a fire or flames, requiring admission to a hospital. Excludes emergency department outpatients.
<b>Fire injury rate</b>	The number of fire injuries per 100 000 people in the total population.
<b>Fire personnel</b>	Any person employed by the fire service provider who delivers a firefighting or firefighting-related service, or manages the delivery of this service. Includes paid and volunteer firefighters and support personnel.
<b>Fire safety measure</b>	<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> <li>• External sprinkler</li> <li>• Other fire safety measure.</li> </ul>
<b>Indirect revenue</b>	All revenue or funding received indirectly by the agency (for example, directly to Treasury or other such entity) that arises from the agency's actions.
<b>Landscape fires</b>	Vegetation fires (for example, bush, grass, forest, orchard and harvest fires), regardless of the size of the area burnt.
<b>Median dollar loss per structure fire</b>	The median (middle number in a given sequence) value of the structure loss (in \$'000) per structure fire incident.

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<b>Non-emergency ambulance response</b>	A non-urgent response (code 3 and code 4) by required ambulance or patient transport services that does not necessitate the use of ambulance warning (lights and sirens) devices.
<b>Non-structure fire</b>	A fire outside a building or structure, including fires involving mobile properties (such as vehicles), a rubbish fire, a bushfire, grass fire and an explosion.
<b>Other incident</b>	An incident (other than fire) reported to a fire service that requires a response. This may include: <ul style="list-style-type: none"> <li>• overpressure ruptures (for example, steam or gas), explosions or excess heat (no combustion)</li> <li>• rescues (for example, industrial accidents or vehicle accidents)</li> <li>• hazardous conditions (for example, the escape of hazardous materials)</li> <li>• salvages</li> <li>• storms or extreme weather.</li> </ul>
<b>Response time</b>	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).
<b>Road rescue</b>	An accident or incident involving a motor vehicle and the presumption that there are injuries or that assistance is required from emergency services organisations.
<b>Structure fire</b>	A fire inside a building or structure, whether or not there is damage to the structure.
<b>Structure fire contained to object or room of origin</b>	A fire where direct fire/flame is contained to the room of origin (that is, excludes wildfires and vehicle fire in unconfined spaces). A room is an enclosed space, regardless of its dimensions or configuration. This category includes fires in residential and non-residential structures.
<b>Survival rate for out-of-hospital cardiac arrest incidents</b>	The percentage of patients aged 16 years and over who were in out of hospital cardiac arrest (excluding paramedic witnessed) where any chest compressions and/or defibrillation were undertaken by ambulance/EMS personnel and have a return of spontaneous circulation (ROSC) on arrival at hospital..
<b>Urgent ambulance response</b>	An urgent (code 2) undelayed response required (arrival desirable within 30 minutes) that does not necessitate the use of ambulance warning (lights and sirens) devices.
<b>User cost of capital</b>	The opportunity cost of funds tied up in the capital used to deliver services. Calculated as 8 per cent of the current value of noncurrent physical assets (including land, plant and equipment).

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## 8.9 Supporting tables

Supporting tables are provided on the CD-ROM enclosed with the Report. The files containing the supporting tables are provided in Microsoft Excel format as \Publications\Reports\2007\Attach8A.xls and in Adobe PDF format as \Publications\Reports\2007\Attach8A.pdf. The files can also 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 the tables (see details on the inside front cover of the Report).

### Fire events

<b>Table 8A.1</b>	Major sources of fire service organisations' funding (2005-06 dollars)
<b>Table 8A.2</b>	Reported fires and other primary incidents attended to by fire service organisations
<b>Table 8A.3</b>	Fire service organisations and land management agencies reported total landscape fires (bush and grass) incidents
<b>Table 8A.4</b>	Accidental residential structure fires reported to fire service organisations per 100 000 households
<b>Table 8A.5</b>	Fire service organisations' human resources
<b>Table 8A.6</b>	Fire deaths
<b>Table 8A.7</b>	Fire injuries
<b>Table 8A.8</b>	Median dollar loss from structure fire (2005-06 dollars)
<b>Table 8A.9</b>	Total property loss from structure fire (2005-06 dollars per person)
<b>Table 8A.10</b>	Total fire incidents attended by fire service organisations per 100 000 persons
<b>Table 8A.11</b>	Households with an operational smoke alarm or smoke detector installed
<b>Table 8A.12</b>	Response times to structure fires (minutes)
<b>Table 8A.13</b>	Structure fires and response times to structure fires across geographic areas
<b>Table 8A.14</b>	Structure fires contained to the object or room of origin (per cent)
<b>Table 8A.15</b>	Fire service organisations' costs (\$'000) (2005-06 dollars),
<b>Table 8A.16</b>	Fire service organisations' expenditure per 1000 people (2005-06 dollars)
<b>Table 8A.17</b>	Fire service organisations' funding per 1000 people (2005-06 dollars)

### Ambulance Services

<b>Table 8A.18</b>	Major sources of ambulance service organisations revenue (2005-06 dollars)
<b>Table 8A.19</b>	Reported ambulance incidents, responses, patients and transport
<b>Table 8A.20</b>	Ambulance service organisations' human resources
<b>Table 8A.21</b>	Ambulance assets (number)
<b>Table 8A.22</b>	Cardiac arrest survival rate
<b>Table 8A.23</b>	Ambulance code 1 response times (minutes)
<b>Table 8A.24</b>	Satisfaction with ambulance service organisations

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<b>Table 8A.25</b>	Ambulance service costs (\$'000) (2005-06 dollars)
<b>Table 8A.26</b>	Ambulance service organisations' expenditure per 1000 people (2005-06 dollars)
<b>Table 8A.27</b>	Ambulance service organisations' revenue per 1000 people (2005-06 dollars)
<b>Road Rescue services</b>	
<b>Table 8A.28</b>	Reported road rescue incidents
<b>Table 8A.39</b>	Reported number of road rescue extrications
<b>SESTES services</b>	
<b>Table 8A.30</b>	SES/TES volunteer human resources (number)
<b>Other information</b>	
<b>Table 8A.31</b>	Communications and dispatching systems
<b>Table 8A.32</b>	Selected fire risk management/mitigation strategies
<b>Table 8A.33</b>	Prevention activities of fire service organisations
<b>Table 8A.34</b>	All activities of fire service organisations
<b>Table 8A.35</b>	All activities of State Emergency Services and Territory Emergency Services
<b>Table 8A.36</b>	Treatment of assets by emergency management agencies
<b>Table 8A.37</b>	Summary of emergency management organisations by event type, 2003
<b>Table 8A.38</b>	Reported fires and other primary incidents, urban and rural inclusions and exclusions, 2005-06

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## 8.10 References

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