
8 EMERGENCY MANAGEMENT

In this Report efficiency and effectiveness indicators have been applied to State and Territory statutory lead agencies for two common forms of emergencies: structural and bush fires and medical emergencies. The statutory lead agencies responsible for these emergencies in each jurisdiction are fire and ambulance services respectively.

These services have been reported first because:

- they represent a significant area of government expenditure;
- there are indicator and data development exercises in progress among parallel groups; and
- sufficiently similar delivery of service exists across the states and territories.

Thus, a number of other significant emergency service providers are not being covered at this stage.

8.1 Introduction

This Report is the first time that comparative performance across jurisdictions for aspects of emergency management has been publicly reported. Considerable progress has been achieved in developing a general performance indicator framework which could apply to the different types of emergencies. More detailed frameworks including a list of priority indicators have also been developed for the two initial areas of reporting: fires and medical emergencies. However, much of the indicator and data development work for the sector is still in progress and detailed reporting of most aspects of performance of the sector is not yet achievable.

The data which are provided on a nationally comparable basis in this Report consist of:

- the total expenditure by the fire and ambulance service providers of the State and Territory Governments; and
- the funding sources for this expenditure.

Australia's arrangements for dealing with emergencies and disasters require an active partnership between Commonwealth, State, Territory and Local Governments, statutory authorities, industry, community organisations and the

Australian people. State and Territory Governments are primarily responsible for the protection of the lives and property of their citizens. State governments exercise control over many functions which are essential for effective emergency management — regulatory arrangements; the provision of police, fire, ambulance, hospital and emergency services; and government agencies which provide services to the community.

Local Government plays a major role in the arrangements to improve public safety and manage emergencies and disasters. It has responsibility (the extent of which may vary among states and territories) to consider public safety as a town planning and development issue; to develop local emergency and disaster plans; and to coordinate or support emergency and disaster response and recovery operations within the local area.

The role of the Commonwealth Government is primarily to support and develop the national emergency management capability. Emergency Management Australia (EMA) coordinates Commonwealth Government physical and technical assistance in the event of an emergency, provides learning programs and disseminates information and best practice materials. Commonwealth Government agencies with specialist response and prevention responsibilities include:

- the Australian Quarantine and Inspection Service (exotic animal diseases);
- the Australian Maritime Safety Authority (aviation and maritime search and rescue, and marine pollution);
- the Australian Geological Survey Organisation (geological hazard monitoring and mitigation);
- the Bureau of Meteorology (meteorological hazard monitoring, reporting and warning);
- the Commonwealth Scientific and Industrial Research Organisation (CSIRO) (research into emergencies and their causes);
- the Australian Buildings Codes Board (fire codes for buildings);
- Airservices Australia (firefighting services at airports); and
- the Department of Health and Family Services (human quarantine).

The Commonwealth Government also provides financial assistance to ease the burden on State and Territory Governments of the effects of natural disasters. This funding is allocated through the Natural Disaster Relief Arrangements, which are administered by the Department of Finance and Administration.

8.2 Profile of fire services

The provision of fire services is primarily a responsibility of the State and Territory Governments. Local Government involvement in rural areas is most often in supporting bushfire services. The Commonwealth Government's involvement includes firefighting at airports and at defence installations, fire codes for buildings, fire safety policy and advice and fire research.

8.2.1 Services covered

The services provided by State and Territory Government fire services can include:

- urban and rural fire suppression;
- response to incidents involving hazardous substances;
- road and industrial rescue;
- community advocacy of safe fire practices (including fire prevention) and public education and training;
- inspection of property and buildings for fire hazards and fire standards compliance;
- hazardous chemicals and material certification and inspection of storage and handling arrangements;
- advice on rural land management practice for hazard reduction and fire prevention; and
- preparation of risk assessment and emergency management plans.

Number and type of incidents

Nationally comparable statistics for each state and territory of the number of each type of emergency response and incident are not currently available.¹ However, a number of individual agencies independently report the number and type of incidents or responses. These data indicate the frequency of fire service turnout.

¹ In the future a recording and reporting system for fire brigades, known as AIRS (Australian Incident Reporting System) should provide a consistent means of reporting incidents across Australia.

In 1996–97, the NSW Fire Brigade turned out to 99 592 incidents of which 31 per cent were fires, 22 per cent were other emergencies such as over-pressure ruptures, rescue calls and hazardous conditions, and 48 per cent were false calls. These proportions were similar across fire services (Table 8.1).

Table 8.1: Reported fires and other primary incidents, 1996–97 (number)

	<i>Fires</i>	<i>Others</i>	<i>False</i>	<i>Total</i>
NSW Fire Brigade ^a	30 415	21 462	47 715	99 592
Victoria				
—Metropolitan Fire & Emergency Services Board	10 860	4 541	18 097	33 498
—Country Fire Authority ^a	14 000	4 000	8 000	26 000
Queensland Fire and Rescue Authority ^b	13 028	8 546	20 124	41 698
WA Fire and Emergency Services Authority	8 800	10 200	na	19 000
SA				
— Metropolitan Fire Service (Metro)	3 837	10 986	6 482	21 305
— Metropolitan Fire Service (Rural)	753	949	1 035	2 737
— Country Fire Service	4 387	2 216	1 945	8 548
Tasmania Fire Service	3 649	1 105	3 692	8 446
ACT Emergency Services Bureau	1 927	2 579	3 597	8 103
NT				
—Fire and Rescue Service	2 060	556	2 056	4 672
—Bush Fires Council ^c	na	na	na	na

na not available

a As a result of industrial action, some incidents were not reported for inclusion in these figures.

b Queensland data did not include all rural activations for response to wildfires and other incidents.

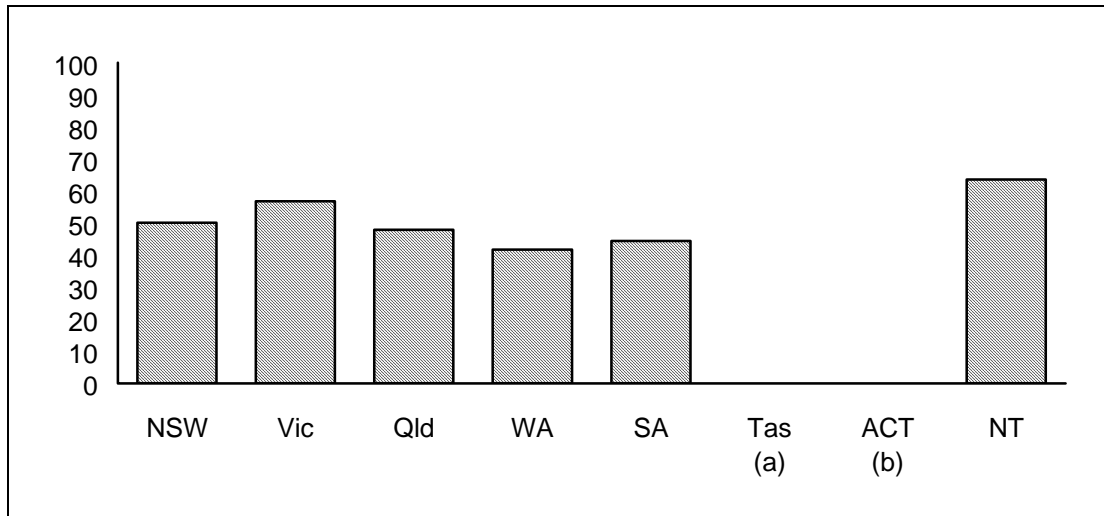
c Incident statistics were not available for the NT Bush Fires Council.

Source: Table 8A.1

Expenditure

The total expenditure by the fire services for which data were available for 1996–97 was approximately \$860 million. Apparent expenditure per person was highest in the NT (\$64 per person) and lowest in WA (\$42 per person) (Figure 8.1).

Figure 8.1: Fire expenditure, 1996–97 (\$ per person)



a Not available

b Fire services expenditure in the ACT was only available on a consolidated basis for the ACT Emergency Services Bureau which funds the ACT Fire Brigade, ACT Bushfire Service, ACT Emergency Service and ACT Ambulance Services. Per capita expenditure by the Bureau was \$93.

Sources and additional notes: ABS 1996, Table 8A.2

8.2.2 Institutional structure and funding mechanisms

Urban and rural

Fire services can generally be separated on a rural and urban basis. Urban providers typically deal with residential and commercial structural fires, hazardous chemical spills and motor vehicle accidents within major urban centres. Providers in rural areas are generally one of two types:

- agencies established to respond to bush and grassland fires on private property and, in some instances, to also respond to structural fires, transport accidents and other types of emergencies within their area of coverage; and
- agencies established under the auspices of departments of land management to fight bush and grassland fires on Crown lands such as national parks and state forests.

The primary agencies managing fires in urban and rural settings in each jurisdiction are outlined in Table 8.2. Those agencies established under the auspices of the land management departments have been excluded.

Table 8.2: Primary fire services, 1997^a

<i>Juris</i>	<i>Urban</i>	<i>Rural</i>
NSW	NSW Fire Brigade — reports directly to the Minister for Emergency Services.	NSW Rural Fire Service — day to day management of each brigade rests with the local councils but each brigade is operationally responsible to the NSW Rural Fire Service which reports to the Minister for Emergency Services.
Vic	Metropolitan Fire and Emergency Services Board — this statutory authority reports to the Minister for Police and Emergency Services.	na
	Country Fire Authority — this statutory authority reports to the Minister for Police and Emergency Services.	
Qld	Queensland Fire & Rescue Authority — this statutory authority reports directly to the Minister for Emergency Services.	
WA	WA Fire and Emergency Service Authority — is an umbrella statutory authority reporting directly to the Minister for Police and Emergency Services and incorporating the Bush Fire Service, State Emergency Service and Fire and Rescue Authority.	
SA	Metropolitan Fire Service — this statutory authority reports directly to the Minister for Emergency Services.	Country Fire Service — the board of this authority reports directly to the Minister for Emergency Services.
Tas	Tasmania Fire Service — this is the operational arm of the State Fire Commission, which reports to the Minister for Police and Public Safety.	
ACT	ACT Fire Brigade and ACT Bushfire Service — these are agencies of the ACT Emergency Services Bureau which reports to the ACT Minister for Police and Emergency Services.	
NT	NT Fire and Rescue Service — a branch of the larger Department of Police, Fire and Emergency Services. The Chief Fire Officer reports to the Commissioner for Police, who reports to the Minister for Police, Fire and Emergency Services.	Bush Fires Council — part of the Parks and Wildlife Commission of the NT and managed by a board of pastoralists. The Board reports to the Minister for Parks and Wildlife. ^b

a Excludes brigades employed by large-scale public and private land managers, port, mining and other infrastructure brigades as well as brigades operating under Commonwealth jurisdiction (for example, airport and defence installations).

b The NT Bush Fires Council was responsible primarily for responding to grass and bush fires on private lands in the NT and had no structural firefighting, road accident rescue or hazardous substances response capacity.

The boundaries and roles of the urban and rural fire services vary considerably across jurisdictions. Queensland, WA and Tasmania have a single state-wide

fire service. In contrast, NSW, Victoria, SA, the ACT and the NT have a number of separate services. Fire suppression on Crown land is undertaken by separate fire services in most states and territories.

The greatest contrast in the structure and scope of urban and rural services exists between Victoria and NSW. Victoria's services are geographically divided, with each performing a full range of functions, while NSW has two fire services divided on functional grounds.

In Victoria, the geographic area of the Metropolitan Fire and Emergency Service is the Metropolitan Fire District (which covers 45 per cent of Victoria's population, but only 0.5 per cent of Victoria's land area). The Country Fire Authority is responsible for the rest of the State (with the exception of public lands).

In contrast, the NSW Fire Brigade responds to structural fires, road accidents, hazardous chemicals and rescues in major urban centres throughout NSW (covering almost 90 per cent of the state's population and approximately 0.7 per cent of the state's land area). The NSW Rural Fire Service responds primarily to bush fires in all areas and structural fires in rural towns. However, the NSW Fire Brigade responds to hazardous materials incidents throughout the entire area of the state.

Institutional structure

The management structures, status and reporting arrangements for fire services differ significantly across jurisdictions. Table 8.2 illustrates the different corporate structures of fire services throughout Australia.

Sources of funding

Fire services received funding from a large number of sources, the main ones being State or Territory Governments and compulsory levies on insurance companies in 1996–97. Levies on property owners, user charges and public fund raising were other important sources of funding in some states and territories. The primary source of funds in Queensland was a levy on property owners collected through rates notices (Table 8.3).

Table 8.3: Source of funding for fire services, 1996–97^a

	<i>State Gov.</i>	<i>Local Gov.</i>	<i>Insur- ance</i>	<i>Property owners</i>	<i>User charges</i>	<i>Other</i>	<i>Total</i>	
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(\$m)
NSW								
— NSW Fire Brigade	14.0	12.3	73.7	0.0	0.0	0.0	100.0	254.8
— Rural Fire Service	14.0	12.3	73.7	0.0	0.0	0.0	100.0	59.7
Victoria								
— Metropolitan Fire & Emergency Services Board	10.0	10.0	63.2	0.0	2.2	14.6	100.0	156.6
— Country Fire Authority	19.2	0.0	68.8	0.0	2.6	9.4	100.0	103.9
Queensland Fire and Rescue Authority ^b	19.0	0.0	0.0	78.0	2.0	1.0	100.0	164.6
WA								
— Fire & Rescue Service	12.5	12.5	75.0	0.0	0.0	0.0	100.0	55.0
— Bushfire Service	65.0	35.0	0.0	0.0	0.0	0.0	100.0	20.0
SA								
— Metropolitan Fire Service	12.5	12.5	75.0	0.0	0.0	0.0	100.0	52.5
— Country Fire Service	48.0	0.0	45.9	0.0	0.0	6.1	100.0	13.6
Tasmanian Fire Service	6.0	0.0	24.0	47.0	12.0	11.0	100.0	na
ACT—Emergency Services Bureau ^c	73.0	0.0	0.0	0.0	26.0	1.0	100.0	28.7
NT								
— Fire & Rescue Service	100.0	0.0	0.0	0.0	0.0	0.0	100.0	9.5
— Bush Fires Council	100.0	0.0	0.0	0.0	0.0	0.0	100.0	2.5

na not available

a Some funds provided for capital expenditure have been excluded.

b A Fire levy or tax was collected through rates notices.

c Included ACT Fire Brigade, ACT Bushfire Service, ACT Emergency Service and ACT Ambulance Services.

Source: Table 8A.2

8.3 Profile of ambulance services

8.3.1 Services covered

The services provided by ambulances include:

- emergency pre-hospital patient care and transport in response to sudden injury and illness;
- emergency patient rescue;
- emergency pre-hospital patient access (for example, in confined spaces and hazardous environments);
- aeromedical patient services;

- inter-hospital patient retrieval; and
- lead agency planning and coordination of patient services in multicasualty events.

First aid training is provided by different accredited government and non-government agencies across states and territories. Some government ambulance services provide first aid training courses, but the primary providers are St John Ambulance Australia and the Red Cross. In addition, the Royal Flying Doctor Service plays an important role in medical emergencies in remote in-land areas of Australia.

Number and type of incidents

The number of incidents for which ambulances turned out to ranged from 682 200 in NSW to 15 000 in the ACT in 1995–96. For those jurisdictions where data were available, a patient was transported in 66 per cent of responses in Victoria and 75 per cent of responses in NSW. For most jurisdictions the most common vehicle dispatched was an emergency stretcher ambulance (Table 8.4).

Table 8.4: Reported ambulance incidents, 1995–96 (per cent)

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>
1. Patients transport								
Emergency stretcher ambulance	44.6	33.5	na	63.9	53.1	84.6	69.9	38.9
Non-emergency stretcher ambul.	10.0	19.5	na	34.6	27.8	0.0	14.0	22.6
Clinic/non-stretcher patients	20.1	11.7	na	0.0	3.3	0.0	5.0	14.6
Air ambulance	0.0	1.2	na	0.0	2.1	0.0	0.0	0.0
Total patients transported	74.8	65.9	na	98.5	86.3	84.7	88.9	76.1
2. Patients treated, not transported								
Emergency stretcher ambulance	11.4	0.8	na	0.0	4.2	9.2	5.9	23.9
Non-emergency stretcher ambul.	0.9	0.4	na	0.0	0.1	0.0	2.9	0.0
Clinic/non-stretcher patients	0.7	0.2	na	0.0	0.0	0.0	0.0	0.0
Air ambulance	0.0	0.0	na	0.0	0.4	0.0	0.0	0.0
Public events	0.0	0.5	na	0.3	0.0	0.0	0.0	0.0
Total patients treated	13.0	1.9	na	0.3	4.8	9.2	8.8	23.9
3. Ambulance not required								
	12.2	32.3	na	1.2	8.9	6.1	2.2	0.0
<i>Total cases ('000s)</i>	682.2	406.4	na	96.5	134.1	34.6	15.0	21.3

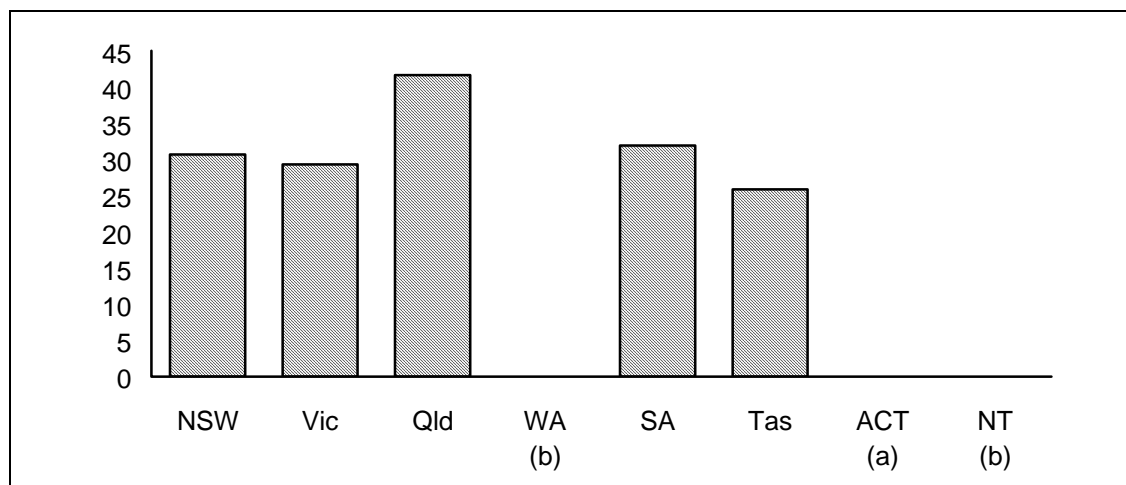
na not available

Source: Table 8A.3

Expenditure by government

The total expenditure by ambulance services in the states and territories was over \$540 million in 1996–97. Per person expenditure was highest in Queensland (\$42 per person) and lowest in Tasmania (\$26 per person) (Figure 8.2).

Figure 8.2: Ambulance expenditure, 1996–97 (\$ per person)



a Ambulance services expenditure in the ACT was only available on a consolidated basis for the ACT Emergency Services Bureau which funds the ACT Fire Brigade, ACT Bushfire Service, ACT Emergency Service and ACT Ambulance Services. Per capita expenditure by the Bureau was \$93.

b Data were not available for those services provided by St John Ambulance Australia.

Sources: ABS 1996, Table 8A.4

8.3.2 Institutional structure and funding mechanisms

Agency structure

The degree of government involvement in the provision of ambulance services varied significantly across jurisdictions. A State and Territory Government agency provided the service in most jurisdictions. However, the ambulance services in WA and the NT were provided by St John Ambulance Australia, a non-government community-based organisation that also provided first aid training and first aid services at public events in all jurisdictions (Table 8.5).

Table 8.5: Relationships of primary ambulance response and management agencies to government, 1997

NSW	Ambulance Service of NSW — governed by a board which is established as a statutory authority reporting to the Minister for Health
Vic	Ambulance Service Victoria (Metropolitan and five country services) — established as statutory authorities reporting to the Minister for Health
Qld	Queensland Ambulance Service — governed by a board which is established as a statutory authority reporting to the Minister for Emergency Services
WA	St John Ambulance — an incorporated not-for-profit organisation under contract to Government
SA ^a	South Australian Ambulance Service — an incorporated joint venture between the Minister for Justice and St John Priory Australia
Tas	Tasmanian Ambulance Service — a statutory service of the Hospitals and Ambulance Division of the Department of Community and Health Services
ACT	ACT Ambulance Service — an agency of the ACT Emergency Services Bureau which reports to the ACT Minister for Police and Emergency Services
NT	St John Ambulance — an incorporated not-for-profit organisation under contract to Government

a From 1998 the SA government may establish the SA Ambulance Service as an incorporated entity with the SA Minister for Justice as the sole shareholder.

Sources of funding

The key sources of funding for ambulance service providers in Australia were:

- income from ambulance subscription schemes or ambulance-specific insurance arrangements;
- funding from government; and
- income from ambulance fees and charges from:
 - uninsured members of the public who use ambulance services ;
 - public hospitals for inter-hospital ambulance transfers;
 - motor accident insurers/third party insurers for people injured in motor vehicle accidents;
 - workers' compensation insurers for work accidents; and
 - sporting organisations for ambulance coverage at sporting events.

Most of the ambulance services in Australia operated benefit fund/subscription schemes to enable residents of their state or territory to insure themselves against the cost of ambulance transport. The ambulance services in Victoria, Queensland, SA and the NT operated their own subscription funds. WA recently

reached an arrangement with a private health insurance fund to operate its metropolitan ambulance benefit fund but WA country services still run their own benefit funds.

In NSW, the *Health Insurance Levies Act 1982* provided for a voluntary ambulance insurance plan called the State Ambulance Insurance Plan. Some NSW health insurance funds collected voluntary 'ambulance only' insurance cover from the public and payed the funds raised (less a collection fee) direct to the NSW Treasury, rather than to the Ambulance Service of NSW. Similar to NSW, the ACT also had an ambulance levy scheme; health insurance funds providing hospital/ambulance cover were required to collect a levy on behalf of the ACT Government which were paid into consolidated revenue. In the ACT a health insurance fund also collected voluntary 'ambulance only' insurance cover from the public and payed the funds raised (less a collection fee) to the ACT Ambulance Service.

Tasmania was the only state that provided free ambulance services to the general public and, thus, it received no income from such insurance arrangements.

All states and territories (except Tasmania) had ambulance insurance arrangements but not all had the same financial arrangements for pensioners. NSW, Victoria and the ACT provided free ambulance transport to pensioners, for example, while Queensland and SA provided discounts. Pensioners in WA and the NT payed the full rate. The differentials in ambulance insurance cover had a significant impact on income to ambulance services from their insurance arrangements and hence, the levels of income supplementation from the government. Queensland, which charged pensioners at a discount rate, received 44 per cent of its total income from its subscription scheme and 34 per cent from the government. In contrast Victoria, which provided free ambulance services to pensioners, receives only 31 per cent of its income from subscriptions.

The Ambulance Service of NSW did not directly receive the income from its State Ambulance Insurance Plan (which was \$45.9 million in 1994–95), resulting in 68.5 per cent of its funding appearing to come from the government. (The figure for government financial support reduces to 41.7 per cent net of income from the insurance arrangements.)

In recent years private health insurers have entered into the ambulance cover market, offering 'ambulance only' cover in direct competition with the ambulance subscription schemes. As a result, most subscription schemes have declining membership levels.

All jurisdictions (except Tasmania) received income from the ambulance fees of service users. There were significant variations in the levels of charges across jurisdictions and variations in ambulance charges for pensioners and other social security beneficiaries, with pensioners in NSW, Victoria and the ACT exempt from user charges for ambulance services (Table 8.6).

Table 8.6: Sources of funds for ambulance services, 1996–97 (per cent)

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA^b</i>	<i>SA</i>	<i>Tas</i>	<i>ACT^a</i>	<i>NT^b</i>
Transport fees	27.2	17.2	16	na	47	10.3	na	na
Subscribers	0.0	30.5	44	na	22	0	na	na
Government	71.3	50.1	34	na	27	89.1	na	na
Other	1.5	2.2	6	na	4	0.6	na	na
Total	100.0	100	100	na	100	100	na	na
— \$ million	192.4	134.3	143	na	47.5	12.3	na	na

na not available

a Ambulance services expenditure in the ACT was only available on a consolidated basis for the ACT Emergency Services Bureau which funds the ACT Fire Brigade, ACT Bushfire Service, ACT Emergency Service and ACT Ambulance Services. Per capita expenditure by the Bureau was \$93.

b Data were not available for those services provided by St John Ambulance Australia.

Source: Table 8A.4

8.4 Recent developments in emergency management

8.4.1 Co-location

Emergency service providers regularly review the service provision in response to changing demographic patterns, urban sprawl and population growth. The aim is to maximise responsiveness and best meet the identified risks.

Co-location refers to a trend among jurisdictions to share common facilities which incorporate ambulance and fire vehicles, equipment and staff. Co-location can also mean stationing ambulances at hospitals, particularly in rural areas. The aim of these reforms is to lower infrastructure costs by rationalising the overall number of stations without compromising responsiveness, and to improve the level of coordination and cooperation between the services.

8.4.2 Centralised dispatch

A number of jurisdictions have centralised their dispatch operations for all emergency services in an attempt to:

- make the most efficient use of personnel resources;
- take advantage of modern telecommunications, vehicle tracking and computer-based decision-support systems;
- relieve on-call staff/volunteers of call-taking responsibilities; and
- facilitate improved coordination between services.

The most recent and public example of this trend was in Victoria where a private contractor dispatches a number of agencies (police, State Emergency Service, Metropolitan Fire and Emergency Services Board and ambulance) throughout metropolitan Melbourne and some areas of country Victoria (police districts A to K). The ACT Emergency Services Bureau which has responsibility for ambulance, fire and the Territory Emergency Service has operated a co-located dispatch system for all services since 1994. The Queensland Fire and Rescue Authority and the Queensland Ambulance Service are currently implementing a co-located computer-aided dispatch system for the Brisbane metropolitan area.

8.4.3 Risk management

Since the release of the Australian/New Zealand Standard on Risk Management (AS/NZS 4360 1995), emergency services have been examining the application of risk management to the formulation and delivery of their services. The standard provides a framework for the systematic application of management policies, procedures and practices to the tasks of identifying, analysing, evaluating, treating and monitoring risk. Several agencies have developed models (based on this framework) to manage risks to communities and the environment. In line with this change in their approach, agencies are switching their emphasis from response and recovery activities for specific events to a range of strategies to reduce community vulnerability and to promote public safety.

A prominent example of the application of risk management is an increasing trend both within Australia and overseas to shift the emphasis in the delivery of fire services from fire suppression to an integrated fire prevention and suppression service delivery strategy. An analysis of fire death and injury statistics indicated that the victims in many fatal fires died from smoke inhalation before a fire crew could be mobilised. The shift in focus towards

prevention has involved fire brigades promoting a community awareness of effective fire safety practices to minimise the risk of a fire, or in the event of a fire, to minimise its impact. A key component of this education is the promotion of the use of fire and smoke alarms in residential homes. The promotion of appropriate fire management practices in rural communities and on the urban fringe (such as land clearing around houses before the bushfire season) is also significant. Prevention has been included as a key output area in the indicator framework for this sector.

8.5 Framework of performance indicators

A general framework for monitoring emergency management performance has been developed in line with the objectives of the sector (Box 8.1).

Box 8.1: Objectives for emergency management

The objectives of emergency management services are to:

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

This framework applies to fire and ambulance services, and it is hoped that it will also be applicable to the management of other types of emergency. The general framework uses the widely accepted ‘comprehensive approach’ (prevention, preparedness, response and recovery) to classify the key functions common to emergency agencies.

The groupings of indicators to measure effectiveness are as follows:

- *outcomes* — an overarching measure of the impact the service has on the community, economy and environment. The impact may be as a result of the degree of service success (for example, the value of property saved);
- *prevention and mitigation* — strategies and services to stop emergency events or lessen their impact. They include regulatory and physical measures (such as land zoning and compliance with building codes and standards) and public information campaigns to promote safe practices by the community;
- *preparedness* — strategies and services to position providers and the community to respond quickly and effectively to emergency events. They

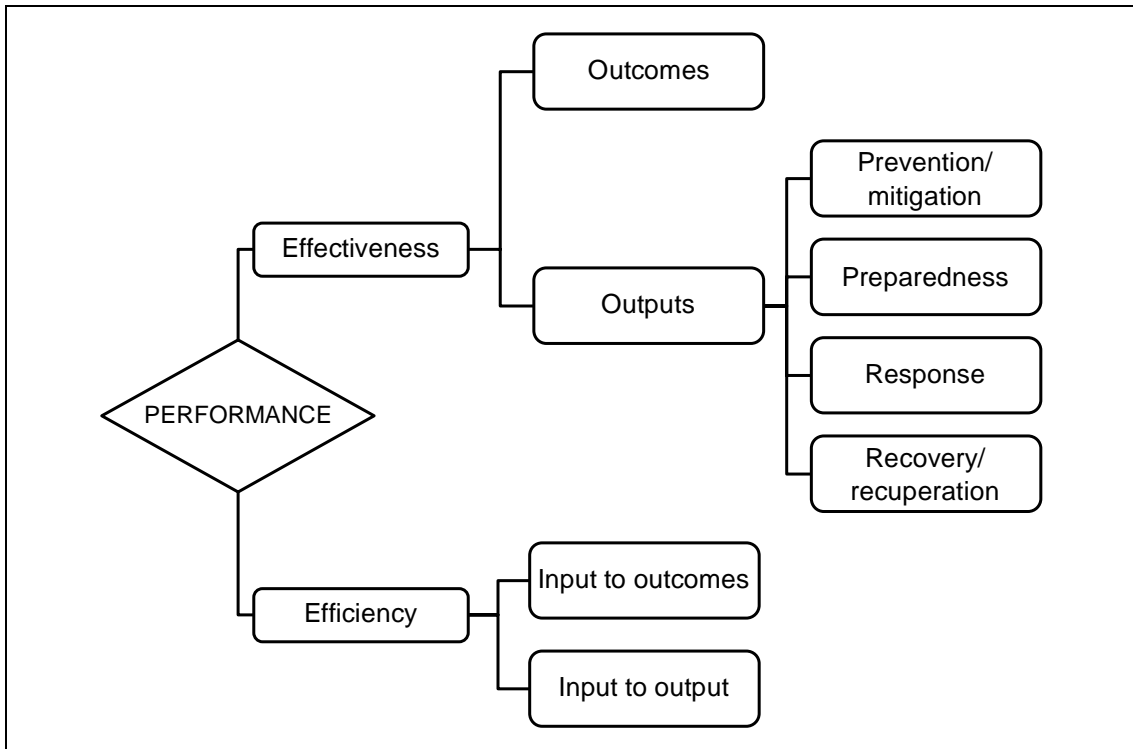
include emergency response planning, exercising and testing, training of emergency service personnel, standby and resource deployment and maintenance. Evacuation planning, detection, warning and community education and training are also included. Preparedness also encompasses the establishment of equipment standards and the monitoring of adherence to these standards;

- *response* — strategies and services to control, limit or modify the emergency to reduce the consequences. They include implementing plans and procedures, issuing warnings, mobilising resources, suppressing hazards, providing immediate medical assistance and relief, and undertaking search and rescue;
- *recovery (emergency services)* — strategies and services to return agencies to a state of preparedness after emergency situations. These include critical incident stress debriefing, salvage and restoration of the emergency to a safe state; and
- *recovery (community)* — strategies and services to support affected communities in their reconstruction of physical infrastructure and restoration of emotional, social, economic and physical wellbeing. These include restoration of essential services, counselling programs, temporary housing, long-term medical care and public health and safety information (Figure 8.3).

Note that effective prevention activities will reduce the requirement to respond to, and recover from, emergencies. In keeping with the risk management approach and a greater emphasis on prevention, high levels of response and recovery may not be the most effective or most efficient emergency management strategies.

Potential efficiency indicators relating input to output could cover the unit cost of operations as well as expenditure per person, response or case. Use rates for staff (full-time and volunteers) and equipment is another potential indicator, although use ratios of 100 per cent may not be a desirable outcome because a service may need to maintain a contingent response capacity.

Figure 8.3: General performance indicators framework for emergency management



8.6 Future directions

8.6.1 Coverage of services

There are a number of other types of emergencies for which performance reporting has yet to be considered. These include:

- road accident rescue;
- land and sea search and rescue;
- hazardous materials spills;
- disasters caused by cyclones, storms, floods, earthquakes, landslides and major transport incidents; and
- civil defence.

The potential for the development of frameworks, indicators and data for these areas will be reviewed once the indicators are finalised for fire and ambulance services. Performance data for events such as floods, cyclones, storms and

earthquakes, and for respondents for vehicle rescue and cliff and cave rescue are the next likely area of development.

8.6.2 Indicator and data development

The indicator and data development for fire and ambulance is being undertaken with the assistance of the Australasian Fire Authorities Council and the Convention of Ambulance Authorities. Both organisations plan to publish statistical data on a more detailed and comprehensive basis for each member agency than is envisaged for this Report.

In addition, the indicator and data development process is being monitored to ensure consistency of approach by the two organisations. Potential issues include:

- definitions, contextual information and data counting rules for fire and medical emergencies — for example, the treatment of false alarms and the definitions of terms such as ‘urban’, ‘rural’ and ‘metropolitan’; and
- financial and other counting rules which may apply more generally across services reported by the review — for example, the treatment of property valuations and depreciation and the treatment of volunteer efforts.

It is planned that the 1999 Report will include the first reporting of performance data. As with all new areas the development of detailed indicators and data collection will be an iterative process extending over several years.

For structural and bush fires the indicators for which reporting is expected in 1999 will be:

- outcomes;
- responsiveness; and
- efficiency.

For medical emergencies the indicators for which reporting is expected in 1999 will be:

- outcomes;
- preparedness;
- responsiveness; and
- two indicators of efficiency.

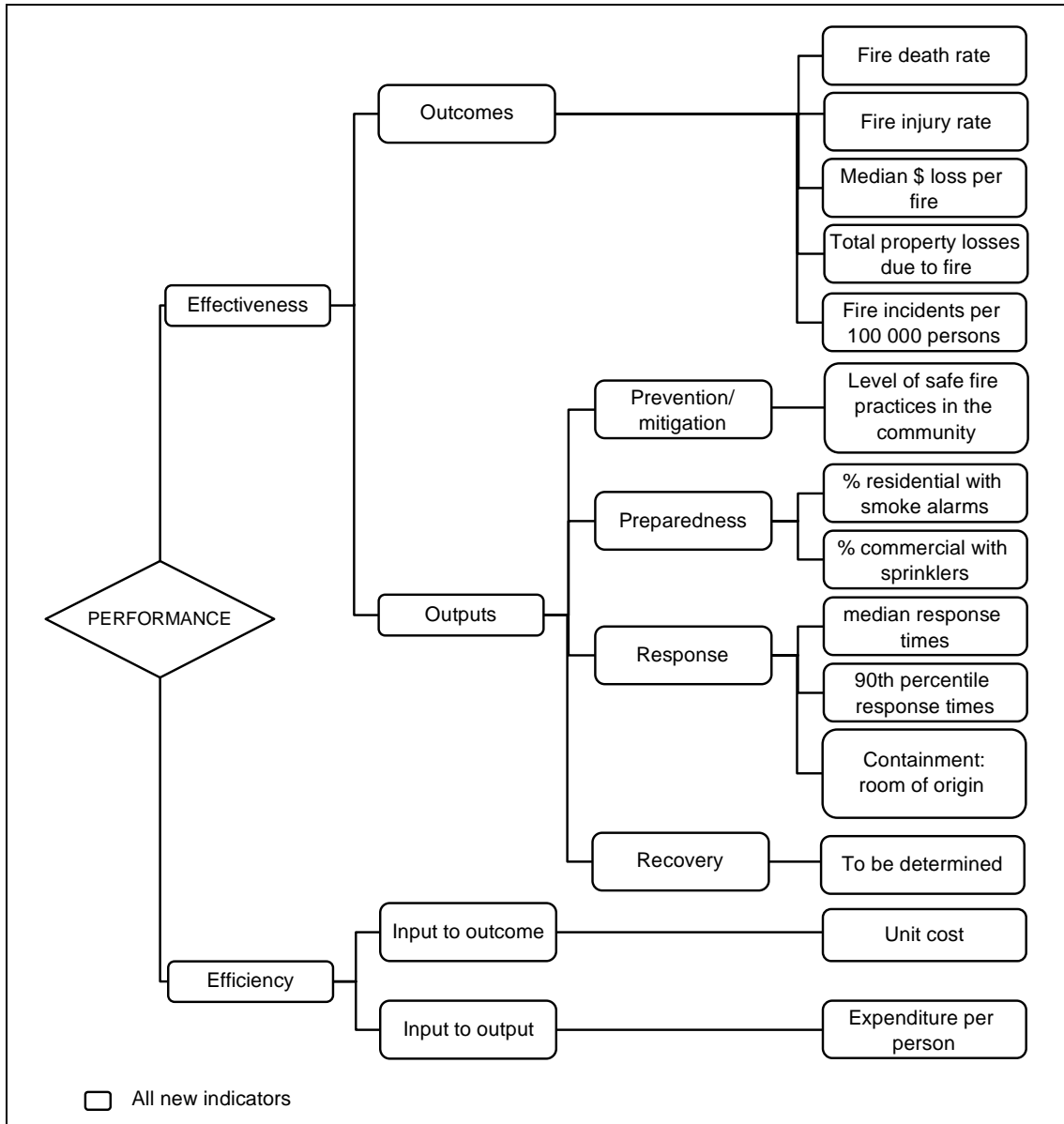
Other indicators highlighted by the following frameworks may not be available for a number of years.

8.7 Key performance results — fire

A preliminary indicator framework for fire services has been developed from the generic framework (Figure 8.4). The individual indicators are discussed in more detail below.

A description of all indicators is provided in Attachment 8A.

Figure 8.4: Performance indicators for fire services



8.7.1 Effectiveness — outcomes

The outcomes planned for future reporting relate to the objective of the fire service to minimise the negative impact of fire on life, property and the environment. However, further consideration is being given to developing indicators which report service successes, including the level of stakeholder satisfaction.

8.7.2 Effectiveness — prevention

Fire prevention aims to reduce the incidence and impact of fire emergencies within the community. Responsibilities of fire services include:

- the promotion of fire prevention strategies;
- the participation in the review of building codes and dangerous goods regulations;
- the administration of fire-related aspects of legislation such as building inspections; and
- the identification of fire causation trends to enable corrective action.

It is also important to monitor the degree to which fire prevention education programs cater for target groups such as people from a non-English speaking background, as well as the young and the elderly.

8.7.3 Effectiveness — preparedness

Preparedness strategies in fire are targeted at the community and at the service. The preparedness of the community is assisted by its training in fire responsiveness and by the installation of equipment which, if operational, should reduce the severity of the fire. Such equipment includes:

- smoke alarms in residential buildings; and
- alarms and sprinkler systems in commercial buildings.

The preparedness of the fire service relates to its level of contingent capacity and the potential risks.

Data on the installation of fire safety equipment was available for individual jurisdictions following surveys conducted over recent years. A survey conducted in 1997 in Queensland found that approximately 57 per cent of households had smoke detectors, 36 per cent had fire extinguishers, 12 per cent had fire blankets and 67 per cent had electrical safety switches (Roy Morgan Research 1997). An earlier survey conducted in NSW showed generally lower levels of installation of fire safety equipment (ABS 1995) (Table 8.7).

Table 8.7: Households, fire safety equipment (per cent)

	<i>NSW, October 1994</i>			<i>Queensland, 1997</i>		
	<i>Has</i>	<i>Does not have</i>	<i>Total</i>	<i>Has</i>	<i>Does not have</i>	<i>Total</i>
Smoke alarm or smoke detector	21	79	100	57	43	100
Fire extinguisher	17	83	100	36	64	100
Fire blanket	6	94	100	12	88	100
Home fire sprinkler system	0	100	100	1	99	100
Electrical safety switch	35	65	100	67	33	100

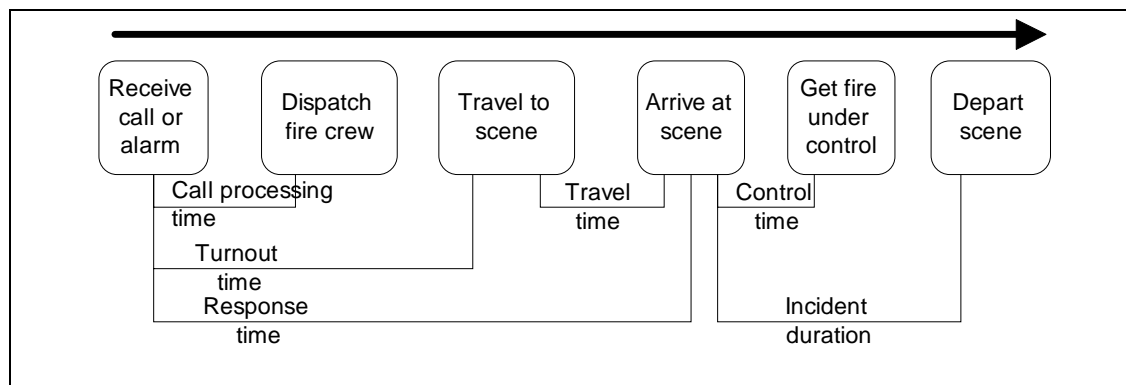
Sources: Tables 8A.6; 8A.7

8.7.4 Effectiveness — response

Indicators of responsiveness are both the response time taken to reach the emergency and the proportion of incidents when the fire was contained to the room of origin (if a structural fire) or possibly within a specified area of land (if a bushfire).

Response times are monitored for the times taken for 50 per cent and 90 per cent of first response firefighting appliances (with an incident management capacity) to respond to fire incidents. 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 8.5.

Figure 8.5: Response time points and indicators



Responsiveness will be reported in terms of performance against jurisdiction specific targets for emergencies in rural, urban and metropolitan areas.

8.7.5 Effectiveness — recovery

The objective of recovery at the agency level is to restore the service to an operational capacity or state of preparedness. The comparative performance indicator may report on how quickly and effectively the state of preparedness is achieved.

8.7.6 Efficiency

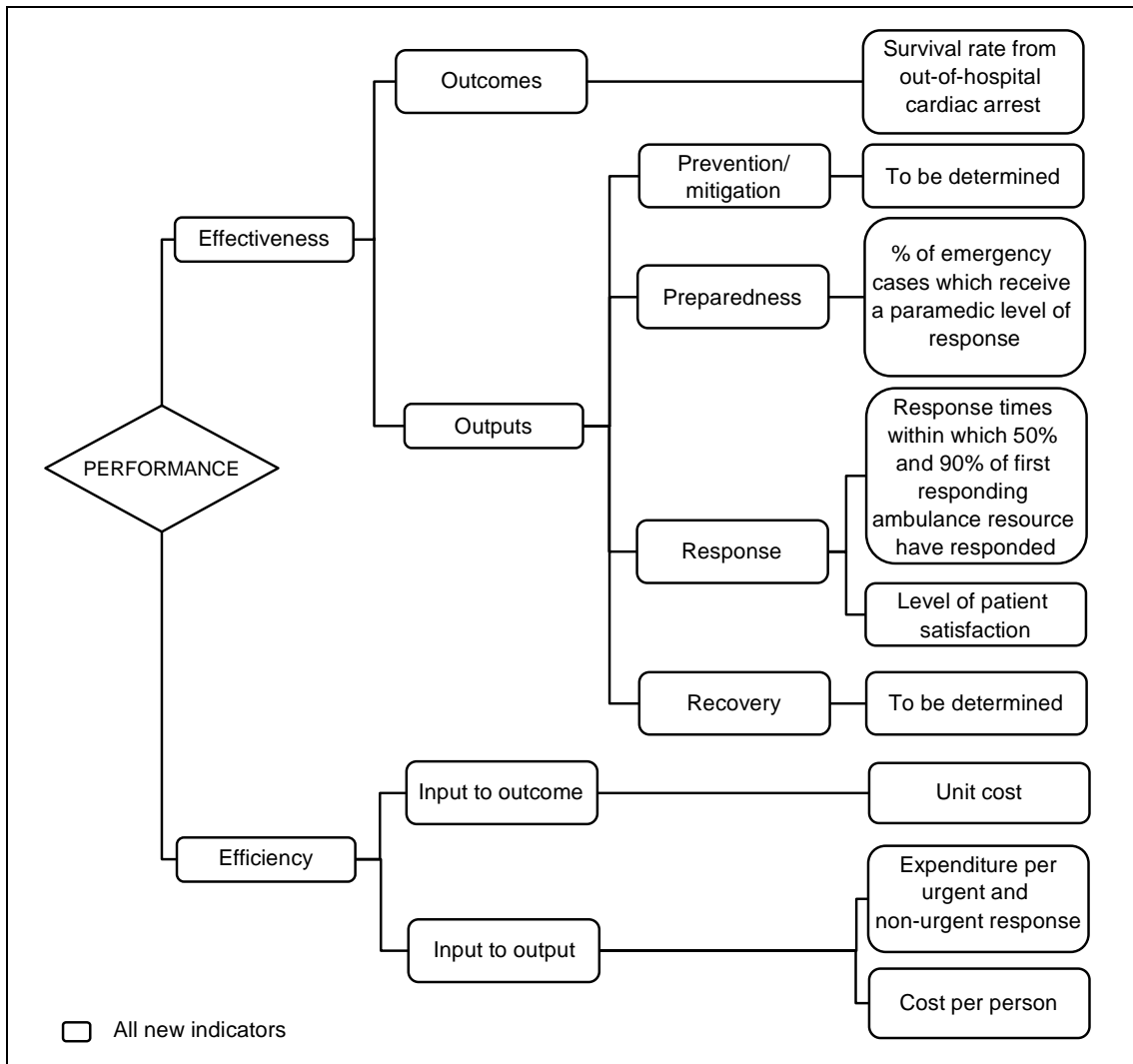
The main potential efficiency measures for fire services focus on expenditure per person, incident or fire.

8.8 Key performance results — ambulance

A preliminary indicator framework has also been developed for ambulance services based on the generic framework for all emergency services (Figure 8.6). The individual indicators are discussed in more detail below.

Pre-hospital emergency patient care and transport includes ambulance responses to medical emergencies such as those in the home, in the workplace and at public events. It does not include transport accident rescue, but does include response to medical emergencies at the scene of transport accidents.

Figure 8.6: Performance indicators for ambulance services



8.8.1 Effectiveness — outcomes

One of the key measures of the outcomes achieved by ambulance services is the survival rate from out-of-hospital cardiac arrest.

8.8.2 Effectiveness — prevention

Effectiveness indicators for prevention strategies focus on the extent to which community education programs improve health and safety in the community. But the role of ambulance services in preventing medical emergencies is less defined than that of fire services and varies across jurisdictions, so indicators are not being investigated for this activity at this stage.

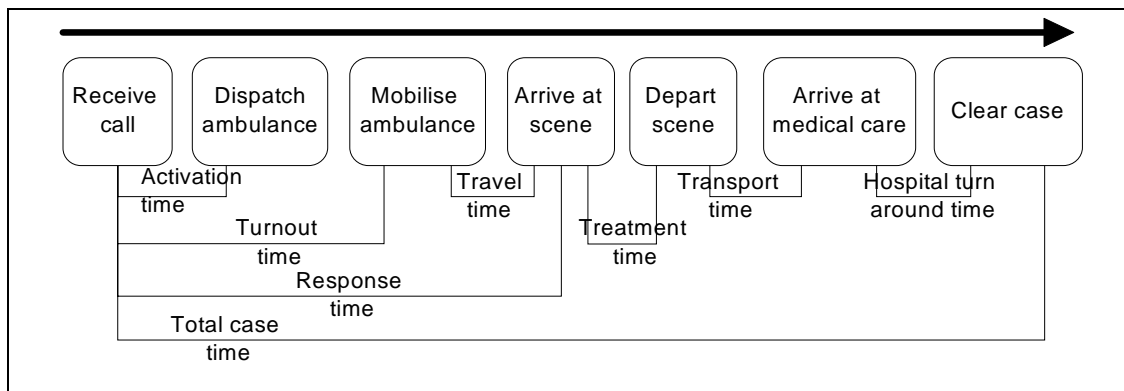
8.8.3 Effectiveness — preparedness

Preparedness indicators may report the percentage of ambulance responses (or cases) which receive a paramedic level of response. This indicates the degree to which the services are capable of dispatching paramedics to the scene of medical emergencies.

8.8.4 Effectiveness — response

Response times are generally seen as the key effectiveness measure for ambulance services. Separate response time points are often identified within the chain of events associated with dealing each emergency (Figure 8.7).

Figure 8.7: Response time points and indicators



Responses are also often categorised based on the severity and location of the event. Code I, for example, refers to responses for potentially life-threatening situations using warning devices; code II refers to responses where attendance is necessary (but not life threatening) with no warning devices used. Location can be metropolitan, urban or rural. Responsiveness will be reported in terms of the level of patient satisfaction and the times by which 50 per cent and 90 per cent of first responding ambulance resources actually responded in code I situations.

8.8.5 Effectiveness — recovery

Indicators of recovery are yet to be identified.

8.8.6 Efficiency

Potential efficiency measures for ambulance services, as for fire services, are expenditure per capita, incident or response.