9 Fire and ambulance services

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| Attachment tables |
| Attachment tables are identified in references throughout this chapter by a ‘9A’ prefix (for example, table 9A.1). A full list of attachment tables is provided at the end of this chapter, and the attachment tables are available from the Review website at www.pc.gov.au/gsp. |
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This chapter reports on government services for fire events and emergency ambulance events (pre‑hospital care, treatment and transport). Information regarding the policy context, scope, profile, social and economic factors, and objectives of the emergency management sector (and related data) are included in the Emergency management sector overview (sector overview D).

Major improvements in reporting on fire and ambulance services in this edition include:

* a new output indicator for the fire events performance indicator framework — firefighter workforce — which provides information on fire service organisations’ human resource preparedness for fire events
* a new output indicator for the ambulance events performance indicator framework — paramedics in training — which complements the existing indicators of workforce sustainability and will be measured by enrolments in accredited paramedic training courses
* a mini‑case study which identifies strategies implemented by the ACT Ambulance Service to enable more effective management of increased demand for services, leading to a positive impact on response times at the 50th and 90th percentile.

## 9.1 Profile of emergency 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
* other fires, including vehicle and other mobile property fires, and outside rubbish fires.

### Fire service organisations

Fire service organisations are the primary agencies involved in providing emergency management services for fire events. The role of fire service organisations varies across jurisdictions but commonly includes prevention/mitigation, preparedness, response and recovery activities and services for each jurisdiction (table 9A.1). The full range of activities include:

* 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 and road safety issues
* assisting individuals and communities to prepare for bushfires and other hazards
* responding to structure, bush, vehicle and other fires
* providing rural land management advice on the role and use of fire
* providing road crash rescue and other rescue services
* managing hazardous material incidents
* administering legislation relating to fire safety, hazardous materials facilities and hazard mitigation
* investigating fire cause and origin
* providing specialist rescue capabilities, including Urban Search and Rescue
* providing emergency medical services such as Community First Responder
* counter‑terrorist preparedness work with police agencies and consequence management relating to a terrorist attack.

Each jurisdiction operates multiple fire service agencies, which service different populations and geographic area according to specified governance arrangements (table 9A.2). Separate urban and rural fire service agencies deliver fire services in most jurisdictions. In addition, land management agencies provide fire services within designated areas (for example, in national or state parks). However, each jurisdiction allocates the fire service responsibilities of their agencies 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.

Fire service organisations work closely with other government departments and agencies that also have responsibilities in the case of fire events. These include ambulance service organisations, State/Territory Emergency Services, police services, and community services (Emergency management sector overview — attachment, table DA.1).

This chapter covers the finances and activities of urban and rural fire service agencies and — for selected tables and jurisdictions — the fire event finances and activities of land management agencies (table 9A.3).

### Revenue and funding

Total revenue of the fire service organisations covered in this chapter was $3.6 billion in 2013‑14. Real revenue of fire service organisations grew, on average, 3.6 per cent annually over the period 2009‑10 to 2013‑14 (table 9.1). Within this period there are fluctuations for individual jurisdictions, which can result from funding related to specific major emergencies (see section 9.3). It should also be noted that jurisdictions may fund other fire event services (not provided fire service organisations), on which data are currently not available.

Fire levies were the primary source of funding in most jurisdictions. Governments provide the legislative framework for the imposition of fire levies, which are raised from levies on property owners or, in some jurisdictions, from levies on both insurance companies and property owners (table 9A.4). The ACT and the NT do not raise fire levies, relying on government grants as their largest revenue source. All states and territories also rely on volunteer firefighters.

More information on fire service organisation funding and expenditure can be found in section 9.3.

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| Table 9.1 Real revenue of fire service organisations (2013‑14 dollars) ($ million)**a, b, c** |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust | | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 2009-10 | 1 001.3 | 1 036.8 | 488.5 | 271.6 | 187.5 | 74.9 | 57.2 | 28.2 | 3 145.9 | | 2010-11 | 997.2 | 1 042.5 | 509.7 | 412.0 | 173.1 | 67.5 | 51.4 | 30.7 | 3 284.1 | | 2011-12 | 977.3 | 1 194.1 | 515.4 | 419.6 | 183.2 | 70.0 | 66.0 | 37.1 | 3 462.8 | | 2012-13 | 1 023.0 | 1 157.0 | 508.5 | 365.9 | 179.9 | 84.1 | 61.7 | 49.3 | 3 429.5 | | 2013-14 | 1 101.8 | 1 184.7 | 622.1 | 341.1 | 207.8 | 74.1 | 62.8 | 32.6 | 3 627.1 | | | | | | | | | | | |
| a Time series financial data are adjusted to 2013‑14 dollars using the General Government Final Consumption Expenditure (GGFCE) chain price deflator (2013‑14 = 100) (table 2A.51). See chapter 2 (sections 2.5‑6) for details. b Figures vary from year to year as a result of abnormal expenditure related to the response to specific major emergencies. (For jurisdiction examples see notes to attachment table 9A.4). c Financial and activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of jurisdictional reporting, including the impact of machinery of government changes. |
| *Source*: State and Territory governments (unpublished); table 9A.4. |
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### Human resources

Nationally, 19 198 full time equivalent (FTE) paid personnel were employed by fire service organisations in 2013‑14, of which 77.1 per cent were paid firefighters. A large number of volunteer firefighters (223 727 people) also participated in the delivery of fire services in 2013‑14 (table 9A.5).

More information on fire service organisation human resources can be found in section 9.3.

### Demand for fire service organisation services

Australian fire service organisations provide emergency response and rescue services for a range of domestic, industrial, medical, and transport fire and emergency events. Nationally, fire service organisations attended a total of 384 017 emergency incidents in 2013‑14, of which 101 867 were fire event incidents (table 9A.13).

More information on the range of emergency events to which fire service organisations respond can be found in section 9.3.

## 9.2 Framework of performance indicators for fire events

Figure 9.1 presents the performance indicator framework for fire events, based on the general framework for all emergency events (see the Emergency management sector overview box D.3) and governments’ objectives for emergency services for fire events (box 9.1).

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| Box 9.1 Objectives for emergency services for fire events |
| Emergency services for fire events aim to build fire resilient communities that work together to understand and manage the fire risks that they confront. Emergency management services provide highly effective, efficient and accessible services that:   * reduce the adverse effects of fire events on the community (including people, property, infrastructure, economy and environment) * contribute to the management of fire risks to the community * enhance public safety. |
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The performance indicator framework provides information on equity, efficiency and effectiveness, and distinguishes the outputs and outcomes of emergency services for fire events (figure 9.1). To reflect the activities of the emergency management sector, performance reporting also reflects the prevention/mitigation, preparedness, response and recovery framework (sector overview D). The performance indicator framework shows which data are comparable in the 2015 Report. For data that are not considered directly comparable, text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability and data completeness from a Report‑wide perspective (section 1.6).

The Report’s statistical context chapter contains data that may assist in interpreting the performance indicators presented in this chapter. These data cover a range of 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) (chapter 2).

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| Figure 9.1 Fire events performance indicator framework |
| |  | | --- | | Figure 9.1 Fire events performance indicator framework  More details can be found within the text surrounding this image. | |
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Data quality information (DQI) is being progressively introduced for all indicators in the Report. The purpose of DQI is to provide structured and consistent information about quality aspects of data used to report on performance indicators, in addition to material in the chapter or sector overview and attachment tables. DQI in this Report cover the seven dimensions in the Australian Bureau of Statistics (ABS) data quality framework (institutional environment, relevance, timeliness, accuracy, coherence, accessibility and interpretability) in addition to dimensions that define and describe performance indicators in a consistent manner, and key data gaps and issues identified by the Steering Committee. All DQI for the 2015 Report can be found at www.pc.gov.au/rogs/2015.

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.

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

The role of volunteers also needs to be considered when interpreting some indicators (such as fire service organisation expenditure per person). Volunteer personnel provide a substantial proportion of fire services (and emergency services more generally). 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 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.

## 9.3 Key performance indicator results for fire events

### Outputs

Outputs are the services delivered (while outcomes are the impact of these services on the status of an individual or group) (see chapter 1, section 1.5).

#### Equity and effectiveness

Equity and effectiveness indicators are linked for fire events.

* The equity dimension relates to whether specific parts of the community with special needs or difficulties in accessing government services benefit from fire services’ activities. This chapter currently provides data on services provided in remote locations, but not for other special needs groups.
* The effectiveness dimension relates to the fire service organisations’ ability to meet the objectives of prevention/mitigation, preparedness, response and recovery.

#### Equity and effectiveness — prevention/mitigation

Prevention/mitigation indicators relate to fire service organisations’ ability to prevent fires and mitigate fire damage.

##### Fire incidents

‘Fire incidents’ is an indicator of governments’ objective to manage the risk of fires by preventing/reducing the number of structure, landscape and other fires (box 9.2).

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| Box 9.2 Fire incidents |
| ‘Fire incidents’ is defined as the number of fire events that are reported to a fire service organisation that require a response, per 100 000 people.  As contextual information, measures are also provided for false alarm events and non‑fire events that fire service organisations attend.  A low or decreasing number of fire incidents per 100 000 people suggests a greater likelihood that the adverse effects of fire will be avoided or reduced.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally in 2013‑14, fire service organisations attended 437 fire incidents per 100 000 people in the population, a decrease from the rate of 490 fire incidents per 100 000 people in 2012‑13 (figure 9.2).

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| Figure 9.2 Fire incidents that fire service organisations attended, per 100 000 people**a, b, c, d, e** |
| |  | | --- | | Figure 9.2 Fire incidents that fire service organisations attended, per 100 000 people  More details can be found within the text surrounding this image. | |
| a Activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of agencies’ reporting. b Jurisdictions provide data for both urban and rural services (including land management agencies) and for both career and volunteer services, other than the NT — see table 9A.14 for caveats. c Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. d Qld: Accurate identification of incidents attended by the former Queensland Fire Rescue Service (QFRS) Rural brigades prior to 2013‑14 was not possible due to incomplete voluntary reporting procedures. New procedures were fully implemented from 1 July 2013. e NT: The high number of incidents per 100 000 people can be attributed to deliberately lit fires and the large number of grass fires in northern Australia that are caused by the annual growth of vegetation following the wet season. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); table 9A.14. |
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Changes in the fire incident rate can be understood by analysing changes in the number of structure fires, landscape fires and other fires.

* S*tructure fire incidents* — Nationally in 2013‑14 there were 19 524 structure fires (a rate of 84 per 100 000 people), a decrease from 19 947 structure fires in 2012‑13 (a rate of 87 per 100 000 people) (figure 9.2 and table 9A.13).

Discussion of the fire risk prevention/mitigation activities indicator provides further analysis of structure fire rates (box 9.3).

* *Landscape fire incidents* — Landscape fire incidents include all vegetation fires (such as bushfires or grassfires), irrespective of the size of the area burnt and can vary substantially in their impact on fire resources, the community and longer term consequences. Decreases in the rate of landscape fire incidents per 100 000 people were recorded in most jurisdictions in 2013‑14. Nationally in 2013‑14, 43 646 landscape (bush and grass) fire incidents were reported by fire service and land management agencies, a rate of 187 fires per 100 000 people, or 5.7 per 100 000 hectares. The number of landscape fires per 100 000 people declined from 213 fires per 100 000 people in 2012‑13, or 6.3 landscape fires per 100 000 hectares (figure 9.2 and table 9A.16).

The number and severity of landscape fires is influenced by many interrelated factors, including: environmental factors, such as weather, climate, and landscape conditions (fuel loads associated with growth and dryness of grasses and forests); and human factors, with the majority of landscape fires triggered by human activity (AIC 2008). For the 2013‑14 fire season, Australia generally experienced warmer but approximately average rainfall conditions (BoM 2014). The Bushfire Cooperative Research Centre predicted normal to above normal fire potential (BCRC 2013).

* *Other fire incidents* — Nationally in 2013‑14, there were 38 697 other fires (such as mobile property type fires [cars, planes, etc] or outside storage fires) (a rate of 166 per 100 000 people). The number of other fire incidents decreased from 43 582 other fires in 2012‑13 (a rate of 190 per 100 000 people) (figure 9.2 and table 9A.13).

##### Fire incidents — false alarms

A significant proportion of calls for assistance across all jurisdictions are found upon investigation to be false alarms. Fire service organisations are required by legislation to respond to all calls and investigate the site prior to determining a false alarm. Nationally in 2013‑14, fire service organisations attended 109 611 system initiated and malicious false calls incidents, 28.5 per cent of all incidents attended. On average each fire alarm system in Australia generates 2.8 false alarms per year (AFAC unpublished). Most incidents found to be false alarms are a result of system initiated false alarms (table 9A.13).

Contemporary fire alarm systems are an integral part of the built environment and have a significant role in the protection of life and property. However, attending unwanted false alarms has social and economic impacts, including:

* repeated unwanted alarms can foster a culture of complacency, adversely affecting community fire safety
* community costs arise from lost working time and alarm attendance charges
* fire appliances can be delayed in responding to an emergency as a result of having to deal with unwanted fire alarms (AFAC 2012).

##### Non‑fire incidents

Fire service organisations provide services for a range of non‑fire emergency events (figure 9.3). In 2013‑14, attendance at other emergencies and incidents accounted for 55.6 per cent of total incidents (excluding false alarms) (table 9A.13).

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| Figure 9.3 Non‑fire incidents that fire service organisations attended (excluding false alarms), per 100 000 peoplea, b, c, d |
| |  | | --- | | Figure 9.3 Non-fire incidents that fire service organisations attended (exluding false alarms) per 100 000 people  More details can be found within the text surrounding this image. | |
| a Activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of agencies’ reporting. b Jurisdictions provide data for both urban and rural services (including land management agencies) and for both career and volunteer services, other than the NT — see table 9A.12 for caveats. c Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. d Qld: Accurate identification of incidents attended by the former QFRS Rural brigades prior to 2013‑14 was not possible due to incomplete voluntary reporting procedures. New procedures were fully implemented from 1 July 2013. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); table 9A.12. |
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Changes in the non‑fire incident rate can be understood by analysing changes in non‑fire rescue, hazardous conditions, natural disasters and other incidents:

* *Non‑fire rescue* — Fire service organisations attended 62 988 non‑fire rescue incidents at which they are called upon to locate, provide initial medical care, and remove entrapped persons from damaged structures (including road vehicles) and other environments in a safe and expeditious manner (table 9A.13).

A large number of these non‑fire rescue incidents involved road crash rescue. Fire service organisations generally work with State and Territory emergency service organisations as primary road crash rescue service providers, although governance arrangements differ across jurisdictions (Emergency management sector overview, table DA.1). Together, fire service and State and Territory emergency service organisations combined attended 23 938 road crash rescue incidents nationally in 2013‑14, or 102.7 incidents per 100 000 people (table 9A.19 and figure 9.4). While responding to road crash rescue incidents, a total of 9006 extractions (the assisted removal of a patient at the scene of the incident) were performed, or 38.6 extractions per 100 000 people (table 9A.20).

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| Figure 9.4 Road crash rescue incidents that fire service organisations and/or State and Territory emergency service organisations attended**a, b** |
| |  | | --- | | **Figure 9.4 Road crash rescue incidents that fire service organisations and/or State and Territory emergency service organisations attended  More details can be found within the text surrounding this image.** | |
| a Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. b NT data may be revised in future editions. Data for 2012‑13 may reflect under‑reporting of incidents. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); table 9A.19. |
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* *Hazardous materials incidents* — Fire service organisations attended 24 094 incidents where materials that have hazardous properties must be controlled or contained in 2013‑14 (table 9A.13). Of these, 2766 incidents (or 11.9 incidents per 100 000 people) were categorised as having the potential to endanger, damage or destroy the health or safety of people, their property or the environment on or beyond the incident site (table 9A.18 and figure 9.5).
* *Calls to floods, storm and tempest and other natural disasters* — In coordination with other emergency services, fire service organisations responded to 23 976 natural disaster incidents (actual or imminent) in 2013‑14 (table 9A.13). Further information on government services in the event of natural disasters are available in the Emergency management sector overview (sector overview D).

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| Figure 9.5 Hazardous materials incidents which must be controlled or contained that fire service organisations attended**a, b, c, d, e** |
| |  | | --- | | Figure 9.5 Hazardous materials incidents which must be controlled or contained that fire service organisations attended  More details can be found within the text surrounding this image. | |
| a Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. b Data represent incidents attended by Fire Service Organisations. Fire Service Organisations may not be notified of all hazardous materials incidents occurring in the community. c Coding of hazardous materials incidents is based on the judgment 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. d Vic: 2011‑12 and 2012‑13 hazardous material data have been revised from the data published in the 2013 and 2014 reports to correct a coding error. e Qld: Accurate identification of incidents attended by the former QFRS Rural brigades prior to 2013‑14 was not possible due to incomplete voluntary reporting procedures. New procedures were fully implemented from 1 July 2013. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); table 9A.18. |
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##### Fire risk prevention/mitigation activities

‘Fire risk prevention/mitigation activities’ is an indicator of governments’ objective to reduce the adverse effects of fire on the community through prevention/mitigation measures (box 9.3).

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| Box 9.3 Fire risk prevention/mitigation activities |
| ‘Fire risk prevention/mitigation activities’ is defined by two measures.   * ‘Accidental residential structure fires per 100 000 households’ is defined as those fires that are not deliberately lit but with effective educational programs can be reduced and prevented from occurring in the first instance.   A low or decreasing number of fire incidents suggests a greater likelihood that the adverse effects of fire will be avoided or reduced.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions. * ‘Proportion of residential structures with smoke alarms’ is defined as the number of households with a smoke alarm installed, divided by the total number of households.   High or increasing numbers of households with a smoke alarm installed, increases the likelihood that the adverse effects of fire will be avoided or reduced.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * incomplete for the current reporting period. All required 2013-14 data are not available for SA, Tas, ACT, and NT.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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All jurisdictions undertake a range of fire risk prevention/mitigation tasks to assist households, commercial businesses, and communities prepare for the risk of fire, including:

* *public education* — the promotion of good fire safety and mitigation practices in the community, such as:
* the promotion of smoke alarms and smoke alarm maintenance
* the installation of electrical safety switches
* the provision and maintenance of fire extinguishers and fire blankets.
* *building codes and legislation* (with relevant building and planning authorities) — to ensure new buildings and structures are fire resistant and address locational fire risks
* *product standards* (with relevant authorities) — to ensure products minimise the risk of unwanted fires (either because they are faulty or by accidental/deliberate misuse by owners)
* *effective emergency warning systems* (table 9A.21).

A summary of selected fire risk management/mitigation strategies implemented in each jurisdiction is available at table 9A.22.

##### Fire risk prevention/mitigation activities — Accidental residential structure fires per 100 000 households

The national rate of accidental residential structure fires was 86.9 per 100 000 households in 2013‑14 (figure 9.6). Over the past ten years, the rate has been declining at an average rate of 1.9 per cent annually, which varied across jurisdictions (table 9A.15).

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| Figure 9.6 Accidental residential structure fires that fire service organisations attended**a, b, c, d, e** |
| |  | | --- | | Figure 9.6 Accidental residential structure fires that fire service organisations attended  More details can be found within the text surrounding this image. | |
| a Financial and activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of agencies’ reporting. b Jurisdictions provide data for both urban and rural services (including land management agencies) and for both career and volunteer services, other than the NT — see table 9A.15 for caveats. c Rates may not be entirely comparable. The numerator (the number of accidental residential structure fires) is affected by the number of fires where the cause has been determined and classified by fire service personnel. Data for the denominator are derived from ABS Australian Demographic Statistics Household projection series. d Qld: Accurate identification of incidents attended by the former QFRS Rural brigades prior to 2013‑14 was not possible due to incomplete voluntary reporting procedures. New procedures were fully implemented from 1 July 2013. e NT: Data are for NT Fire and Rescue Service permanent fire stations only. |
| *Source*: State and Territory governments (unpublished); ABS (2010) *Household and Family Projections, 2006 to 2031*, Cat. no. 3236.0; table 2A.25; table 9A.15. |
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The rate of accidental residential structure fires per 100 000 households should be interpreted with caution. In particular, rates are affected by differences in the practice of fire service personnel in each jurisdiction, who determine and classify accidental structure fires from structure fires resulting from other causes.

Fire cause identification assists fire service organisations and other emergency management stakeholders to identify and determine the cause of accidental residential structure fires. It also assists in the formulation of the most appropriate fire prevention and mitigation activities and priorities within each jurisdiction, including fire prevention, community safety and public education programs. For example, cause identification has been used to assist in formulating legislation and standards, and is used to assist in recovery through the provision of information to facilitate insurance claims and settlements.

In 2013‑14, nationally, firefighter assessments reported that:

* 10 974 structure fires had an ignition factor of misuse, failure or deficiency (56.6 per cent of all structure fires), of which:
* 2853 fires had an ignition factor of unattended heat sources
* 2133 fires had an ignition factor of short‑circuit and other electrical failure
* 1986 structure fires were deliberately or suspiciously set fires (10.2 per cent) (table 9A.17).

Nationally in 2013‑14, the ignition factor for 23.3 per cent of structure fires was ‘undetermined or not reported’ (figure 9.7).

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| Figure 9.7 Ignition factors for structure fires, 2013‑14a |
| |  | | --- | | Figure 9.7 Ignition factors for structure fires, 2013-14  More details can be found within the text surrounding this image. | |
| a NSW: For the NSW Rural Fire Service volunteer brigades, where ignition factor is not entered, the data are excluded from the total structure fires calculation in this table. |
| *Source*: State and Territory governments; table 9A.17. |
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##### Fire risk prevention/mitigation activities — Residential structures with smoke alarms

One key fire risk mitigation strategy across all jurisdictions is the mandated installation of smoke detectors in residential structures. Nationally consistent data for all jurisdictions are not available. However, recent jurisdictional surveys indicate that 94.1 per cent, 96.6 per cent and 94.0 per cent of NSW, Queensland and WA households, respectively, had an installed smoke alarm/detector in 2013‑14, an increase from 70 to 82 per cent in 2004‑05 (table 9A.23).

Fire service organisations also have programs to encourage households to test their smoke detector/alarms regularly to ensure that they are operational. In 2013‑14, 88.1 per cent of households in Queensland had a smoke alarm that had been tested in the previous 12 months (table 9A.23).

#### Equity and effectiveness — preparedness

Preparedness indicators relate to fire service organisations’ ability to prepare and assist the community to prepare for fire events.

##### Level of safe fire practices in the community

‘Level of safe fire practices in the community’ is an indicator of governments’ objective to reduce the adverse effects of fires on the community and manage the risk of fires (box 9.4).

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| Box 9.4 Level of safe fire practices in the community |
| ‘Level of safe fire practices in the community’ is defined as the number of households with household fire safety measures installed or prevention procedures followed, divided by the total number of households.  The higher the proportion of households with a fire safety measure installed or prevention measure followed, the greater the level of safe fire practices in the community.  Previous editions reported Household preparedness for emergencies (ABS 2007). In lieu of these data, which have become dated, results from the National Security and Preparedness Survey are reported in the Emergency management sector overview (sector overview D). The survey provides measures of natural disaster preparedness.  Data on the level of safe *fire* *practices* has been identified for development and reporting in future. However, data are available on the community preparedness for *natural disasters*, which are provided in the Emergency management sector overview (sector overview D). |
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##### Firefighter workforce

‘Firefighter workforce’ is an indicator of governments’ objective to reduce the adverse effects of fires on the community and manage the risk of fires (box 9.5).

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| Box 9.5 Firefighter workforce |
| ‘Firefighter workforce’ is defined as the number of firefighters per 100 000 people. Two measures are provided:   * the number of full time equivalent firefighter personnel per 100 000 people * the number of fire service organisation volunteers (firefighters and support volunteers) per 100 000 people.   High or increasing availability of firefighters per 100 000 people is desirable.  Data reported for these measures are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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Fire service organisations must assure themselves that they have a workforce of paid firefighter personnel and volunteers which has:

* sufficient capacity to meet community needs
* sufficient capabilities to respond to a range of fire and other emergency events
* the diversity and adaptability to respond to community needs, now and into the future.

##### Firefighter workforce — full time equivalent paid firefighter personnel per 100 000 people

Nationally in 2013‑14, 63.5 FTE paid firefighters were employed by fire service organisations per 100 000 people, which varied across jurisdictions. This represents an increase from 60.7 FTE paid firefighters per 100 000 people in 2012‑13 (figure 9.8).

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| Figure 9.8 Number of full time equivalent paid firefighting personnel**a, b** |
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| a Human resource data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of agencies’ reporting. b Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. |
| *Source*: State and Territory governments (unpublished), table 9A.24. |
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##### Firefighter workforce — fire service organisation volunteers per 100 000 people

Australia’s fire service organisations also rely on volunteer workforces to meet their responsibilities. Fire service organisation volunteers are unpaid professionals who provide services that would not be economically possible to provide with paid workforces (VAGO 2014). Fire service organisations must effectively recruit, train, deploy and retain volunteer firefighters by investing in infrastructure, training, uniforms, personal protective equipment, and operational equipment and support.

Nationally in 2013‑14, there were 959.4 fire service organisation volunteers per 100 000 people, which varied across jurisdictions. This represents a decrease from 970.7 volunteer firefighters per 100 000 people in 2012‑13 (figure 9.9).

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| Figure 9.9 Fire service organisation volunteers, per 100 000 people**a, b** |
| |  | | --- | | Figure 9.9 Fire service organisation volunteers, per 100 000 people  More details can be found within the text surrounding this image. | |
| a Human resource data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of agencies’ reporting. b Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2004 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. |
| *Source*: State and Territory governments (unpublished), table 9A.24. |
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Over the past 10 years the number of fire service organisation volunteers per 100 000 people has decreased by 16.0 per cent (table 9A.24). Several factors have contributed to this fall, including: economic factors (making it financially more difficult for people to commit to volunteering); demographic factors (such as an ageing population and urban living, leading to fewer people being available to volunteer in the places where they are required); and improvements in the maintenance of volunteer registers (removing inactive volunteers from the estimates) (McLennan 2008).

#### Equity and effectiveness — response

Response indicators relate to fire service organisations’ ability to respond to and suppress fires.

##### Response times to structure fires

‘Response times to structure fires’ is an indicator of governments’ objective to reduce the adverse effects of fire on the community through timely response activities (box 9.6).

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| Box 9.6 Response times to structure fires |
| ‘Response times to structure fires’ (as illustrated below) is defined as the time taken between the arrival of the first fire crew appliance at the scene of a structure fire and:   * *initial receipt of the call at the communications centre*. Response time (*including* call taking time) reflects jurisdictions’ overall responsiveness to the notification of a structure fire * *dispatch of the responding fire crew*. Response time (*excluding* call taking time) reflects service organisations’ responsiveness to the notification of a structure fire.   Response times are calculated at the 50th and 90th percentile. (The time taken for 50 per cent of all responses to arrive at a structure fire is equal to or below the 50th percentile. The time taken for 90 per cent of all responses to arrive at a structure fire is equal to or below the 90th percentile.)  Box 9.6 Response times to structure fires  More details can be found within the text surrounding this image.  Response time measures are provided for:   * state‑wide — the entire jurisdiction * urban centre — measured as the geographic area that incorporates the jurisdictions’ capital city. Boundaries are based on the ABS Australian Standard Geographical Classification (ASGC) structure. Capital cities are calculated as the major cities classification for all jurisdictions, other than Tasmania and the NT, where the inner regional (incorporating Hobart and Launceston) and outer regional (incorporating Darwin) classifications are applied * remoteness areas — inner regional (excluding Tasmania), outer regional (excluding the NT), remote and very remote boundaries based on the ASGC structure.   Calculations are based on emergency responses to structure fire incidents and include responses by both permanent and volunteer brigades (unless otherwise noted).  Shorter response times suggest the adverse effects on the community of emergencies requiring fire services are reduced.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * incomplete for the current reporting period (subject to caveats). All required 2013-14 data are not available for SA.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Response times need to be interpreted with caution because the data are not directly comparable across jurisdictions. Differences between jurisdictions in definitions of response times, geography, personnel mix, and system type (manual or computer assisted dispatch) (table 9A.49), affect the comparability of response times data (Fire and ambulance services data quality information).

##### Response times to structure fires — state‑wide

The time within which 90 per cent of the first responding fire appliances arrive at the scene of a structure fire (including call taking time) varies from 10.4 minutes to 19.6 minutes across jurisdictions (figure 9.10 and tables 9A.26–27).

State‑wide response times are affected by the geographic and demographic characteristics of each jurisdiction. In particular, data calculated on a state‑wide basis represent responses to urban, rural and remote areas, which can differ substantially.

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| Figure 9.10 Response times to structure fires, state‑wide, 90th percentile **a, b, c, d, e** |
| |  | | --- | | Figure 9.10 Response times to structure fires, state-wide, 90th percentile  Including call taking time  More details can be found within the text surrounding this image.  Figure 9.10 Response times to structure fires, state-wide, 90th percentile  Excluding call taking time  More details can be found within the text surrounding this image. | |
| a Jurisdictions provide data where response was provided under emergency conditions (lights and sirens). Data are for both urban and rural services (including land management agencies) and for both career and volunteer services, unless otherwise stated — see tables 9A.26‑27 for caveats. b Response times for major cities, regional and remote areas are affected by a range of factors including geography and personnel mix (including the use of volunteers), which can affect travel time to incidents significantly, particularly in remote areas. c Vic: Excludes calls attended under the National Response Centre (electrical incidents), late notifications, calls with Event Create time stamp blank. d Qld: Structure fires within the Urban Service Administrative Areas are included. Calls where Queensland Fire and Emergency Service (QFES) experienced delays due to either extreme weather conditions or where the initial response was by another agency or brigade are excluded. Only primary exposure incidents are included. e SA: Data including call taking time are not available. |
| *Source*: State and Territory governments (unpublished); tables 9A.26 and 9A.27. |
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##### Response times to structure fires — capital city

Response times in capital cities are lower than the state‑wide responses for all jurisdictions. The time within which 90 per cent of the first responding fire appliances arrive at the scene of a structure fire (including call taking time) within capital cities ranged across jurisdictions from 9.0 minutes to 13.8 minutes (figure 9.11). Population density across Australian capital cities varies considerably and this can impact on response time performance.

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| Figure 9.11 Response times to structure fires, capital cities, 2013‑14, 90th percentile**a, b, c, d, e, f** |
| |  | | --- | | Figure 9.11 Response times to structure fires, capital cities, 2013-14, 90th percentile  More details can be found within the text surrounding this image. | |
| a Capital cities are calculated as the Major cities ASGC classification for all jurisdictions, other than Tasmania and NT, where the Inner regional (incorporating Hobart and Launceston) and Outer regional (incorporating Darwin) classifications are applied. b Jurisdictions provide data where response was provided under emergency conditions (lights and sirens). Data are for both urban and rural services (including land management agencies) and for both career and volunteer services, unless otherwise stated — see tables 9A.26‑27 for caveats. c Response times for major cities, regional and remote areas are affected by a range of factors including geography and personnel mix (including the use of volunteers), which can affect travel time to incidents significantly, particularly in remote areas. d Vic: Excludes calls attended under the National Response Centre (electrical incidents), late notifications, calls with Event Create time stamp blank. e Qld: Structure fires within the Urban Service Administrative Areas are included. Calls where QFES experienced delays due to either extreme weather conditions or where the initial response was by another agency or brigade are excluded. Only primary exposure incidents are included. f SA: Data including call taking time are not available. |
| *Source*: State and Territory governments (unpublished); tables 9A.26 and 9A.27. |
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##### Response times to structure fires — remoteness areas

Response times generally increase for all jurisdictions in regional and remote areas (figure 9.12).

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| Figure 9.12 Response times to structure fires, regional and remote areas, 2013‑14, 90th percentile**a, b, c, d, e, f, g** |
| |  | | --- | | Figure 9.12 Response times to structure fires, regional and remote areas, 2013-14, 90th percentile  More details can be found within the text surrounding this image. | |
| IR = Inner Regional OR = Outer Regional Rem = Remote VR = Very Remote  a Regional and remote response times are calculated as the Inner Regional, Outer regional, Remote and Very remote ASGC classification for all jurisdictions, other than Tasmania and NT, where the Inner regional (incorporating Hobart and Launceston) and Outer regional (incorporating Darwin) classifications excluded. b Jurisdictions provide data where response was provided under emergency conditions (lights and sirens). Data are for both urban and rural services (including land management agencies) and for both career and volunteer services, unless otherwise stated — see tables 9A.26‑9A.27 for caveats. c Response times for major cities, regional and remote areas are affected by a range of factors including geography and personnel mix (including the use of volunteers), which can affect travel time to incidents significantly, particularly in remote areas. d There are no very remote areas in Victoria. Remote structure fires are rolled into the outer regional classification due to the low numbers of events. Excludes calls attended under the National Response Centre (electrical incidents), late notifications, calls with Event Create time stamp blank. e Qld: Structure fires within the Urban Service Administrative Areas are included. Calls where QFES experienced delays due to either extreme weather conditions or where the initial response was by another agency or brigade are excluded. Only primary exposure incidents are included. f SA: Data including call taking time are not available. g ACT: There are no regional or remote areas in the ACT. |
| *Source*: State and Territory governments (unpublished); tables 9A.26 and 9A.27. |
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There are many factors that influence remoteness area response times including:

* land area and population size
* the dispersion of the population (particularly rural/urban population proportions), topography, road/transport infrastructure and traffic densities
* crewing configurations, response systems and processes, and travel distances — for example, some jurisdictions include responses from volunteer stations (often in rural areas) where turnout times are generally longer because volunteers are on call as distinct from being on duty
* small numbers in remote and very remote areas can lead to volatility in the response time data (table 9A.25).

#### Equity and effectiveness — recovery

Recovery indicators relate to community restoration and to communities’ and fire service organisations’ ability to return to a state of preparedness (box 9.7).

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| Box 9.7 Performance indicators — recovery |
| There are two elements to recovery: supporting communities in reconstruction of the physical infrastructure and restoration of emotional, social, economic, ecological and physical wellbeing following a fire event, and return of communities and fire service organisations to a state of preparedness after experiencing a fire event.  Recovery indicators are identified as a key development area for future reports. |
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#### Efficiency

##### Fire service organisations’ expenditure per person

‘Fire service organisations’ expenditure per person’ is a proxy indicator of the efficiency of governments in delivering emergency management services (box 9.8).

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| Box 9.8 Fire service organisations’ expenditure per person |
| ‘Fire service organisations’ expenditure per person’ is defined as total fire service organisation expenditure per person in the population.  Expenditure per person is employed as a proxy for efficiency. All else being equal, lower expenditure per person represents greater efficiency. However, efficiency data are difficult to interpret. For example:   * high or increasing expenditure per person may reflect deteriorating efficiency. Alternatively, it may reflect changes in aspects of the service (such as improved response), increased resourcing for fire prevention or community preparedness, or the characteristics of fire events (such as more challenging fires) * low or declining expenditure per person may reflect improving efficiency. Alternatively, it may reflect lower quality responses or less challenging fires.   Expenditure per fire is not used as a measure of efficiency because an organisation that works to reduce the number of fire incidents could erroneously appear to be less efficient.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally in 2013‑14, the total expenditure of fire service organisations was $3.7 billion, or $158 per person in the population (table 9A.28–29 and figure 9.13).

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| Figure 9.13 Fire service organisations’ expenditure (2013‑14 dollars)**a, b, c, d** |
| |  | | --- | | Figure 9.13 Fire service organisations' expenditure (2013-14 dollars)  More details can be found within the text surrounding this image. | |
| a Time series financial data are adjusted to 2013‑14 dollars using the General Government Final Consumption Expenditure (GGFCE) chain price deflator (2013‑14 = 100) (table 2A.51). See chapter 2 (sections 2.5‑6) for details. b Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. c Figures vary from year to year as a result of abnormal expenditure related to the response to specific major emergencies. (For jurisdiction specific instances see notes to attachment table 9A.29). d Financial and activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of jurisdictional reporting, including the impact of machinery of government changes. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); table 9A.29. |
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Different jurisdictions have selected a range of funding models to provide resourcing to fire service organisations. Total government grants and indirect government funding forms a substantial, but not the major, source of funds for fire service organisations. In 2013‑14, government grants and indirect government funding per person was $57.45 nationally (36.9 per cent of total funding for fire service organisations) (figure 9.14).

Nationally, levies are the largest source of fire service organisation revenue at $85.24 per person in the population in 2013‑14 (54.8 per cent of total funding). Fire levies were raised from levies on property owners or, in some jurisdictions, from levies on both insurance companies and property owners (table 9A.30).

Relatively minor contributions are raised from user charges and miscellaneous revenue.

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| Figure 9.14 Fire service organisation funding (2013‑14 dollars)**a, b, c, d** |
| |  | | --- | | Figure 9.14 Fire service organisation funding (2013-14 dollars)  More details can be found within the text surrounding this image. | |
| a Time series financial data are adjusted to 2013‑14 dollars using the General Government Final Consumption Expenditure (GGFCE) chain price deflator (2013‑14 = 100) (table 2A.51). See chapter 2 (sections 2.5‑6) for details. b Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. c Figures vary from year to year as a result of abnormal funding related to the response to specific major emergencies. (For jurisdiction specific instances see notes to attachment table 9A.30). d Financial and activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of jurisdictional reporting, including the impact of machinery of government changes. e Total levies in ACT and the NT are nil. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); table 9A.30. |
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### Outcomes

Outcomes are the impact of services on the status of an individual or group (while outputs are the services delivered) (chapter 1, section 1.5). Caution should be exercised in interpreting data for some indicators, given the significant fluctuations from year to year, particularly for jurisdictions with relatively small populations.

##### Fire death rate

‘Fire death rate’ is an indicator of governments’ objective to minimise the adverse effects of fire events on the community and enhance public safety (box 9.9).

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| Box 9.9 Fire death rate |
| ‘Fire death rate’ is defined by two measures:   * annual fire death rate — all deaths, per million people, whose underlying cause of death is fire related to smoke, fire and flames, including all (structure and landscape) fires * landscape fire death rate — deaths resulting from a landscape fires only (such as bushfires), excluding self‑harm deaths, per million people.   A low or decreasing fire death rate represents a better outcome.  The annual fire death rate and the landscape fire death rate differ according to:   * source — the annual fire death rate is sourced from *Causes of Death, Australia* (ABS 2014). The landscape fire death rate is provided by the Australasian Fire and Emergency Service Authorities Council, which source data from media and agency reports, PerilAus from Risk Frontiers, and the National Coroners’ Information System * fire type — all fire types versus landscape fires only (such as bushfires) * location — the landscape fire death rate records the location according to the location of the fire (not residential address of the victim) * cause of death — in addition to deaths primarily caused due to smoke, fire and flames, the landscape fire death rate includes deaths that may have resulted from the landscape fire, but whose primary cause may be related to other factors (such as the onset of a stress related coronary death or from attempting to flee fire).   Data for these measures are:   * comparable (subject to caveats) across jurisdictions and over time * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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##### Fire death rate — Annual fire death rate

The annual fire death rate was 4.3 deaths per million people in 2012 (98 fire deaths) a decrease from 5.6 deaths per million people in 2011 (figure 9.15). Nationally, exposure to smoke, fire and flames accounted for the majority of fire deaths in 2012 (56 deaths). Intentional self‑harm by smoke, fire and flames accounted for 28 deaths and 7 deaths were due to assault by smoke, fire and flames (table 9A.7).

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| Figure 9.15 Annual fire death rate, 1983–2012**a, b, c, d, e** |
| |  | | --- | | **Figure 9.15 Annual fire death rate, 1983-2012  More details can be found within the text surrounding this image.**Figure 9.15 Annual fire death rate, 1983-2012  More details can be found within the text surrounding this image. | |
| a Data for 2011 and 2012 are preliminary and subject to a revisions process. Data for 2006–2010 have been subject to revisions and may differ from data published in earlier reports. See *Causes of Death, Australia* (cat. no. 3303.0). b Fire deaths are coded according to the International Classification of Diseases (ICD) and Related Health Problems Revision 10 (ICD‑10) and include ICD fire death codes X00‑X09 plus X76, X97 and Y26. c  Population data used to derive rates are as at 30 June. Estimated Resident Population (ERP) data for 2003 to 2011 are final, based on the 2011 Census of Population and Housing. Estimates for 2012 onwards are preliminary. See chapter 2 (table 2A.1) for details. d  Australian totals includes Other Territories. |
| *Source*: ABS (2014) *Causes of Death, Australia*, Cat. no. 3303.0; table 9A.6. |
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Annual fire death rates can be particularly volatile because of the small number of fire deaths and the influence of large irregular fire events (box 9.10). One method to overcome data volatility is to present fire death rates as three‑year averages (table 9A.6). Alternatively, annual death rates can be viewed over a longer time series to help identify any underlying trends. Nationally, in the ten years from 1983–92 the average deaths per million people was 10.8. In the most recent decade (2003–12), the average deaths per million people was 6.3 (figure 9.15).

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| Box 9.10 Recent history of Australian bushfires |
| Bushfire is an environmental factor that has been a part of the Australian landscape for millions of years. The biodiversity of Australian fauna and flora have evolved with fire and come to depend on it for their survival (CSIRO 2012).  Bushfires are most common over the savannas of tropical Australia, where some parts of the land burn annually.  The southern parts of Australia, where the majority of the population resides, are susceptible to large bushfires that threaten life and property. Recent examples include:   * Tasmanian Bushfires — In January 2013, up to 40 fires were burning across Tasmania. One person died — a Victorian volunteer firefighter — and 203 homes were destroyed. Thousands of locals and tourists were stranded, requiring evacuation (many by sea). The insured cost was $87 million. * Perth Hill Bushfires (WA) — In February 2011, 71 homes were destroyed and an estimated 39 homes damaged by two major fires that affected metropolitan Perth. Approximately 1540 hectares were burned, 517 families were evacuated and at least 12 people were hospitalised. The insured cost was $35 million. |
| * Black Saturday Bushfires (Victoria) — In February 2009, the ‘Black Saturday’ fires caused 173 deaths and caused many injuries, burnt 430 000 hectares of land (including 51 towns, 78 communities) destroying homes, businesses, schools and kindergartens. The insured cost was greater than $1 billion.   Fire services across Australia strive to establish fire management regimes that take a systematic approach to risk management and identify the assets and potential consequences of wildfires, and possible impacts of mitigation and management options. |
| *Source*: CSIRO (2012); AEM (2014); ABS (2014). |
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##### Fire death rate — Landscape fire death rate

Nationally, comparatively few deaths are related to landscape fires annually (0.3 fire deaths per million people in 2013‑14), although the landscape fire death rate is punctuated by large, irregular events (table 9.2 and 9A.8). Parts of Australia are susceptible to large bushfires that threaten life and property (box 9.10). To assist in identifying underlying trends in the annual landscape fire death series, a 30 year time series is provided in table 9A.8.

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| Table 9.2 Landscape fire deaths |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust | | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 2009-10 | 1 | 1 | – | – | – | – | – | – | 2 | | 2010-11 | 2 | – | – | 1 | – | – | – | – | 3 | | 2011-12 | – | 1 | 1 | – | – | – | – | – | 2 | | 2012-13 | – | 5 | – | 3 | – | 1 | – | – | 9 | | 2013-14 | 2 | 1 | – | 1 | – | – | – | – | 4 | | | | | | | | | | | |
| a Data may be subject to a revision process as new or amended information is made available. – Nil or rounded to zero. |
| *Source*: Australasian Fire and Emergency Service Authorities Council (unpublished); table 9A.8. |
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##### Fire injury rate

‘Fire injury rate’ is an indicator of governments’ objective to minimise the adverse effects of fire events on the community and enhance public safety and is measured by the annual fire hospitalisation rate (box 9.11).

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| Box 9.11 Fire injury rate |
| ‘Fire injury rate’ 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) 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. 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.  Data for this measure are:   * comparable (subject to caveats) across jurisdictions and over time * complete (subject to caveats) for the current reporting period. All required 2012‑13 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally in 2012‑13, there were 4114 hospital admissions due to fire injury (table 9A.9) and the rate per 100 000 people was 18.0 (figure 9.16).

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| Figure 9.16 Annual fire hospitalisation rate**a, b, c, d** |
| |  | | --- | | Figure 9.16 Annual fire hospitalisation rate  More details can be found within the text surrounding this image. | |
| a Fire injuries are represented by hospital admissions and are reported by the State or Territory where the injury is treated. b Fire injuries are coded according to the ICD and Related Health Problems Revision 10 (ICD‑10) and include ICD fire injury codes X00‑X09 plus X76, X97 and Y26. c The reference period for these data is 2008‑09 to 2012‑13. Data are not available for 2013‑14. d  Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details. |
| *Source*: Australian Institute of Health and Welfare (AIHW), *National Hospital Morbidity Database* (unpublished); table 9A.9. |
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Fire hospitalisation rates need to be interpreted with caution because of the small number of fire injuries. There is also strong anecdotal evidence that reliance on hospital separation data may result in a significant underestimation of the number of people affected by burn injuries (Australian Government 2012). One method to overcome data volatility is to present fire hospitalisation rates as three‑year averages, which are reported in the attachment tables (table 9A.9).

The Australian Institute of Health and Welfare (AIHW) has provided analysis of the trends in hospitalised accidental burn injury from the years 2001‑02 to 2010‑11 (which includes burn injuries related to contact with heat and hot substances). It shows that the following vulnerable groups were at risk of suffering accidental burns injuries (AIHW 2013).

* *Young children* — Burn injury rates are highest for young children aged 0–4. The national incidence rate is higher for boys than girls aged 0–4.
* *Adolescent/young adult males* — Young adult males show consistently higher burn injury rates, with higher proportions of burn injuries from exposure to ignition of highly flammable material (such as petrol) and exposure to controlled fire, not in building or structure (such as campfire).
* *Remoteness of usual residence* — Burn injuries increased with remoteness. In 2010‑11, the lowest national rate was in Major cities (22 per 100 000 people in the population) and the highest in Very remote areas (97 per 100 000 people).
* *Aboriginal and Torres Strait Islander people* — The age‑standardised burn injury rates among Aboriginal and Torres Strait Islander people are more than twice that of non‑Indigenous people. Aboriginal and Torres Strait Islander people are also more likely to sustain severe burns injuries (APH 2010).

##### Confinement to room/object of origin

‘Confinement to room/object of origin’ is an indicator of governments’ objective to reduce the adverse effects of fire emergency events on the community through a combination of its prevention/mitigation, preparedness, and response (box 9.12).

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| Box 9.12 Confinement to room/object of origin |
| ‘Confinement to room/object of origin’ is defined by two measures.   * Proportion of building fires confined to room of origin — A building fire is a fire that has caused some damage to a building structure (such as a house). Confinement of building fires to room of origin is a measure of the proportion of building fires confined to the room in which the fire originated. * Proportion of building and other structure fires confined to room/object of origin — Other structure fires are fires within a building structure (such as fires confined to rubbish bins, burnt foodstuffs and fires confined to cooking equipment). Confinement of building and other structure fires to object, part room and room of origin is a measure of both the proportion of building fires andother structure fires confined to the room and/or object from which the fire originated.   A high or increasing proportion of structure fires confined to the object or room of origin is desirable.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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##### Confinement to room/object of origin — Proportion of building fires confined to room of origin

The proportion of fires, from all ignition types, confined to room of origin varies across jurisdictions, and within jurisdictions over time (figure 9.17). Confinement of building fires to room of origin reflects the response strategies of the fire services to extinguish structure fires before they cause extensive building damage. It also reflects the community’s overall mitigation and preparedness strategies, such as constructing buildings that are fire resistant or installing and maintaining smoke alarms.

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| Figure 9.17 Proportion of building fires confined to room of origin, all ignition types**a, b, c, d, e** |
| |  | | --- | | Figure 9.17 Proportion of building fires confined to room of origin, all ignition types  More details can be found within the text surrounding this image. | |
| a Financial and activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of agencies’ reporting. b Jurisdictions provide data for both urban and rural services and for both career and volunteer services, other than Queensland (see note c) and the NT. c Qld: Structure fires within the Urban Service Administrative Areas are included. Non‑emergency calls and those where QFES experienced delays due to either extreme weather conditions or where the initial response was by another agency or brigade are excluded. d WA: Total confinement percentages include fires confined but not classified as either accidental or suspicious. Data exclude incidents where containment codes are not completed. e SA: Total confinement percentages include fires confined but not classified as either accidental or suspicious. |
| *Source*: State and Territory governments (unpublished); tables 9A.10. |
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##### Confinement to room/object of origin — Proportion of building and other structure fires confined to room/object of origin

The proportion of building and other structure fires confined to room/object of origin is generally greater than for building fires confined to room of origin (figure 9.17 and figure 9.18). The measure incorporates object fires that do not spread to the building. Other structure fires confined to object of origin reflects the community’s overall mitigation and preparedness strategies such as constructing ‘objects’ (electronic appliances, cooking equipment, chimneys) that are fire resistant. It also reflects the community’s response abilities to contain a fire by having working fire alarms, fire extinguishers and/or fire blankets.

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| Figure 9.18 Proportion of building and other structure fires confined to room/object of origin, all ignition types**a, b, c, d, e, f, g** |
| |  | | --- | | Figure 9.18 Proportion of building and other structure fires confined to room/object of origin, all ignition types  More details can be found within the text surrounding this image. | |
| a Financial and activity data are affected by the reporting scope of each jurisdiction’s ‘fire service organisation’. See table 9A.3 for details for the scope of agencies’ reporting. b Jurisdictions provide data for both urban and rural services and for both career and volunteer services, other than Queensland (see note c) and the NT. c Qld: Structure fires within the Urban Service Administrative Areas are included. Non‑emergency calls and those where QFES experienced delays due to either extreme weather conditions or where the initial response was by another agency or brigade are excluded. d WA: Total confinement percentages include fires confined but not classified as either accidental or suspicious. Data exclude incidents where containment codes are not completed. f SA: Data include the SA Metropolitan Fire Service, but exclude the SA Country Fire Service as they do not routinely collect the source data. |
| *Source*: State and Territory governments (unpublished); tables 9A.11. |
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Incendiary and suspicious structure fires (those that are, or suspected of being, deliberately lit) are less likely to be confined to the object or room of origin than for accidental structure fires (tables 9A.10‑11).

##### Value of asset losses from fire events

‘Value of asset losses from fire events’ (box 9.13) is an indicator of the effect of fire on property.

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| Box 9.13 Value of asset losses from structure fire |
| Value of asset losses from fire events is defined as the estimated monetary value of the damage to property and contents caused by the fire and fire‑fighting operations based on insurance claims. It does not include land value.  The value of insurance claims from fire events is the sum of the incurred claims on insurance companies related to fires and explosions reported to Insurance Statistics Australia (ISA). Data are presented as: average domestic insurance claim from fire events; total domestic insurance claims from fire events per person; and total commercial insurance claims from fire events per person.  From this edition, firefighter assessed property losses from structure fire is no longer reported as a measure of value of asset losses from fire events.  Data reported for this measure are:   * comparable (subject to caveats) across jurisdictions and over time * incomplete for the current reporting period. ISA estimate that their data cover approximately 69 per cent of the potential domestic insurance market (including uninsured dwellings) and 60 per cent of the commercial property market (table 9A.12).   Lower or decreasing asset losses from fire events represent a better outcome.  Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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The value of insurance claims from fire events is the cost to insurers related to fire event claims. Nationally in 2013‑14, household and commercial property insurance claims in relation to fire events (excluding major events) totalled $720.9 million (table 9A.12).

Nationally from 2009‑10 to 2013‑14, domestic insurance fire event claims increased for:

* average claims — a 33.0 per cent increase in real terms from an average claim of $33 619 in 2009‑10 to an average claim of $44 714 in 2013‑14
* claim per person — a 10.2 per cent increase in real terms from $16.99 per person in the population in 2009‑10 to $18.74 per person in the population in 2013‑14 (table 9A.12 and figure 9.19).

However, there was a reduction in the number of claims nationally — from 11 053 claims in 2009‑10 to 9771 claims in 2013‑14 (table 9A.12).

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| Figure 9.19 Total value of fire event insurance claims (2013‑14 dollars)a, b, c, d, e, f, g |
| |  | | --- | | Figure 9.19 Total value of fire event insurance claims (2013-14 dollars)  More details can be found within the text surrounding this image. | |
| a Time series financial data are adjusted to 2013‑14 dollars using the Domestic Final Demand (DFD) deflator (2013‑14 = 100). The DFD deflator is preferred to the General Government Final Consumption Expenditure deflator for these data, as asset losses are more closely aligned to the range of consumption and capital goods represented in the DFD than general government consumption. b Population data used to derive rates are as at 31 December. Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2012 onwards are preliminary. See chapter 2 (table 2A.2) for details. c Building and content insurance data are subject to revisions. d Not to be reproduced, published or used without the permission of Insurance Statistics Australia Limited. Please include acknowledgements of Insurance Statistics Australia Ltd as the source. e Data for commercial property are not available by State and Territory. f Data exclude major events (total claims greater than $100 million). g Tas: a large increase in the fire event insurance claims in 2012‑13 coincides with the Tasmanian 2013 bushfires. The insurance claims did not exceed $100 million and have therefore not been classified as a major event. |
| *Source*: ISA Database (2014), unpublished; table 9A.12. |
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Nationally, there were 2309 commercial insurance claims from fire events in 2013‑14 (table 9A.12). In real terms, total commercial insurance claims from fire events per person in the population increased 9.2 per cent from $11.16 per person in the population in 2009‑10 to $12.18 per person in the population in 2013‑14 (figure 9.19).

Data need to be interpreted with caution as actual asset losses may differ from incurred claims due to:

* *under insurance* — insurance payouts are limited by the estimated value of assets a policy holder provides when taking out insurance
* *market coverage* — data provided by ISA cover an estimated 68.9 per cent of Australian dwellings and 60 per cent of the commercial property market (table 9A.12)
* *new for old* — new for old policies replace an old asset for a new equivalent
* *excess policy* — most small fire incidents will not be recorded in the insurance data due to the need for policy holders to pay an excess prior to claim.

## 9.4 Profile of emergency services for ambulance events

This section provides information on the performance of emergency service organisations in providing services for ambulance events and in preparing the community to respond to emergencies. Ambulance events are incidents that result in demand for ambulance services. Ambulance services include preparing for, providing and enhancing:

* emergency and non‑emergency pre‑hospital and out‑of‑hospital patient care and transport
* inter‑hospital patient transport including the movement of critical patients
* specialised rescue services
* the ambulance component of multi‑casualty events
* the community’s capacity to respond to emergencies.

### Ambulance service organisations

Ambulance service organisations are the primary agencies involved in providing services for ambulance events. In a limited number of cases, other organisations provide services such as medical transport for emergencies (Emergency management sector overview — table DA.1). The descriptive information provided below on funding, incidents and human resources are for ambulance service organisations only.

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 (table 9A.31). Across jurisdictions the role of ambulance service organisations serves as an integral part of the health system.

The role of paramedics is expanding to include the assessment and management of patients with minor illnesses and injuries to avoid transport to hospital (Thompson et. al. 2014). In some rural and remote communities paramedics provide extended access to health service delivery. Access to health services in these areas is often lower than metropolitan areas (chapter 11), in part, due to the difficulty of recruiting and retaining health professionals. Expanding roles are also developing in some metropolitan areas, where paramedics provide care for patients through community health services as alternatives to emergency departments.

### Revenue and funding

#### Revenue of ambulance service organisations

Total revenue of ambulance service organisations covered in this chapter was approximately $2.6 billion in 2013‑14. Nationally, revenue increased each year from 2009‑10 to 2013‑14 (in real terms), with an average annual growth rate of 3.7 per cent (table 9.3).

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| Table 9.3 Revenue of ambulance service organisations (2013‑14 dollars) ($ million)**a, b, c, d** |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust | | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 2009-10 | 713.4 | 591.3 | 536.7 | 148.2 | 197.1 | 55.6 | 25.4 | 20.6 | 2 288.3 | | 2010-11 | 703.0 | 600.2 | 564.9 | 180.4 | 205.4 | 56.4 | 29.2 | 22.9 | 2 362.5 | | 2011-12 | 732.1 | 623.9 | 585.5 | 214.2 | 212.2 | 60.0 | 36.7 | 24.1 | 2 488.8 | | 2012-13 | 776.8 | 687.0 | 576.3 | 228.5 | 242.9 | 62.7 | 37.0 | 25.8 | 2 637.1 | | 2013-14 | 798.1 | 659.6 | 582.3 | 241.0 | 235.9 | 59.5 | 40.2 | 25.4 | 2 641.9 | | | | | | | | | | | |
| a Time series financial data are adjusted to 2013‑14 dollars using the General Government Final Consumption Expenditure (GGFCE) chain price deflator (2013‑14 = 100) (table 2A.51). See chapter 2 (sections 2.5‑6) for details. b  Due to differences in definitions and counting rules, data reported may differ from data in agency annual reports and other sources. c Totals may not sum due to rounding. d Vic: 2012‑13 revenue from Government grants/contributions has been overstated, which has impacted this table. |
| *Source*: State and Territory governments (unpublished); table 9A.32. |
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The primary sources of revenue across all jurisdictions in 2013‑14 were grants from State and Territory governments and transport fees (from public hospitals, private citizens and insurance). Ambulance subscriptions is also a source of funding for some jurisdictions (table 9A.32).

#### Ambulance service organisation assets and aero‑medical arrangements

In 2013‑14, ambulance service organisations operated 1138 response locations (across all jurisdictions) and operated 3572 ambulance general transport and patient transport vehicles (across all jurisdictions) (table 9A.39).

There are fixed and rotary wing (helicopter) ambulance services in all jurisdictions, although arrangements for air ambulance or aero‑medical services vary. In Queensland, WA, SA and NT, all or most of the funding of air ambulance services is external to the ambulance service organisations. Elsewhere the ambulance service organisations fund the service entirely, or they provide the air ambulance staff and an external organisation provide aircraft and crew. The Australian Government provides some capital and recurrent funding for the Royal Flying Doctor Service.

The Council of Ambulance Authorities (CAA) has identified that 88 air ambulance aircraft were available nationally in 2013‑14 (table 9A.40). As a result of the varying funding arrangements air ambulance expenditure varies substantially across jurisdictions, with some jurisdictions recording low (or no) expenditure (table 9A.40). (The expenditure figures do not represent the total cost of air ambulances, only that component funded through the ambulance service organisation.)

### Human resources

Nationally in 2013‑14, 15 503 FTE salaried personnel were involved in the delivery of ambulance services. The majority (81.8 per cent) of salaried ambulance personnel in 2013‑14 were ambulance operatives (comprising patient transport officers, students and base level ambulance officers, qualified ambulance officers, other clinical personnel and communications operatives) (table 9A.35).

Nationally, 5972 volunteer personnel (comprising 5749 operatives and 223 support personnel) participated in the delivery of ambulance services in 2013‑14. 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 relatively higher number of volunteer operational and corporate support personnel (table 9A.35).

Nationally, there were 2456 ambulance community first responders in 2013‑14 (table 9A.35). Community first responders are trained volunteers that provide an emergency response (with no transport capacity) and first aid care before ambulance arrival. In some locations the first responder service is provided by another emergency service agency (for example, by fire service organisations).

### Demand for ambulance services

#### Ambulance incidents, responses and patients per 1000 people

The numbers of incidents, responses and patients are interrelated. Nationally in 2013‑14:

* 3.1 million incidents — events that result in a demand for ambulance resources to respond — were reported to ambulance service organisations (134 responses per 1000 people)
* 4.2 million responses resulted — where an ambulance vehicle or vehicles are sent to an incident (181 responses per 1000 people). There can be multiple responses sent to a single incident. There can also be responses to incidents that do not have people requiring treatment and/or transport
* 3.2 million patients assessed, treated or transported by the ambulance service organisations (139 patients per 1000 people) — (figure 9.20 and table 9A.33).

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| Figure 9.20 Reported ambulance incidents, responses and patients, 2013‑14**a, b, c, d, e** |
| |  | | --- | | Figure 9.20 Reported ambulance incidents, responses and patients, 2013-14  More details can be found within the text surrounding this image. | |
| a Population data used to derive rates are revised to the ABS’ final 2011 Census rebased estimates. See chapter 2 (table 2A.1‑2) for details. bVic: Incidents and responses are for road ambulances only. c Qld: Responses are for road ambulances only, and do not include counts of responding units that are cancelled prior to arrival on scene. Incident and response counts include Code 2C cases where arrival is desirable within 60 minutes. d NT: A response is counted as an incident. Data for incidents are not available and are not included in the rate for Australia. In 2013‑14, patients data are not available due to protected Industrial Action. e Australian incidents and patients data exclude NT. |
| *Source*: State and Territory governments (unpublished); table 9A.33. |
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#### Incidents

Ambulance service organisations prioritise incidents as:

* emergency — immediate response under lights and sirens required (code 1)
* urgent — undelayed response required without lights and sirens (code 2)
* non‑emergency — non‑urgent response required (codes 3, 4)
* casualty room attendance.

Nationally in 2013‑14, of the 3.1 million incidents ambulance service organisations attended, 44.5 per cent were prioritised by the ambulance service organisations as emergency incidents. Ambulance service organisations also attended a large number of urgent incidents (30.7 per cent) and non‑emergency incidents (24.8 per cent) (table 9A.33). There were fewer than 1000 casualty room attendance incidents (all of which occurred in Queensland).

#### Emergency department triage category by ambulance transport rate

Emergency department presentation rates and demand for ambulance services are closely linked. In 2013‑14, 1.7 million patients arrived at an emergency department by ambulance, air ambulance, or helicopter (24.1 per cent of all emergency department patients) (table 9A.34 and figure 9.21). Of these, 39 256 patients were assessed by emergency department staff to have immediately life threatening conditions on arrival at hospital (triage category ‘resuscitation’). In total, 84.0 per cent of all emergency department resuscitation patients arrived by ambulance, air ambulance, or helicopter in 2013‑14.

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| Figure 9.21 Proportion of total emergency department patients, by triage category, who arrived by ambulance, air ambulance or helicopter rescue services 2013‑14 (per cent) |
| |  | | --- | | Figure 9.21 Proportion of total emergency department patients, by triage category, who arrived by ambulance, air ambulance or helicopter rescue services 2013-14 (per cent)   More details can be found within the text surrounding this image. | |
| *Source*: AIHW (2013) *Australian Hospital Statistics 2013‑14: emergency department care*, Health services series 52, Cat. no. HSE 142; table 9A.34. |
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## 9.5 Framework of performance indicators for ambulance events

Performance can be defined in terms of how well a service meets its objectives, given its operating environment. Performance indicators focus on outcomes and/or outputs aimed at meeting common, agreed objectives. The Steering Committee has identified four objectives of ambulance services for the purposes of this Report (box 9.14).

The performance indicator framework provides information on equity, efficiency and effectiveness, and distinguishes the outputs and outcomes of ambulance services (figure 9.22). The performance indicator framework is based on the general framework for the health section of the 2015 Report and shows which data are complete and comparable in the 2015 Report. For data that are not considered directly comparable, text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability and data completeness from a Report‑wide perspective (see section 1.6).

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| Box 9.14 Objectives for emergency services for ambulance events |
| Governments’ involvement in ambulance services is aimed at providing pre‑hospital and out‑of‑hospital care and patient transport services, that:   * are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care * are equitable and accessible * are effectively, efficiently and sustainably delivered * reduce the adverse effects of emergency events on the community by providing specialised medical care in emergency situations.   Ambulance services also contribute to managing community risks and enhancing public safety through various measures including fostering public education in first aid. |
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The Report’s statistical context chapter contains data that may assist in interpreting the performance indicators presented in this chapter. These data cover a range of 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) (chapter 2).

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| Figure 9.22 Ambulance events performance indicator framework |
| |  | | --- | | Figure 9.22 Ambulance events performance indicator framework  More details can be found within the text surrounding this image. | |
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Data quality information (DQI) is being progressively introduced for all indicators in the Report. The purpose of DQI is to provide structured and consistent information about quality aspects of data used to report on performance indicators, in addition to material in the chapter or sector overview and attachment tables. DQI in this Report cover the seven dimensions in the ABS’ data quality framework (institutional environment, relevance, timeliness, accuracy, coherence, accessibility and interpretability) in addition to dimensions that define and describe performance indicators in a consistent manner, and key data gaps and issues identified by the Steering Committee. All DQI for the 2015 Report can be found at www.pc.gov.au/rogs/2015.

## 9.6 Key performance indicator results for ambulance events

### Outputs

Outputs are the services delivered (while outcomes are the impact of these services on the status of an individual or group) (see chapter 1, section 1.5).

#### Equity — access

Equity indicators in RoGS measure how well a service is meeting the needs of particular groups that have special needs or difficulties in accessing government services. Data on ambulance services provided to special needs groups are not available in this Report. However, the ambulance events equity indicators presented provide information on whether ambulance services are equally accessible to everyone in the community with a similar level of need.

##### Response locations

‘Response locations’ is an indicator of governments’ objective of providing equitable and accessible pre‑hospital and out‑of‑hospital care and patient transport services (box 9.15).

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| Box 9.15 Response locations |
| ‘Response locations’ is defined as the number of paid (or salaried), mixed and volunteer response locations per 100 000 people. Locations are primary ambulance response locations where paid, volunteer or a mix of paid and volunteer ambulance operatives respond in an ambulance vehicle and providing pre‑hospital care.  Higher or increasing numbers of paid, mixed and/or volunteer response locations, after adjusting for population, suggests better ambulance service response capacity.  Data reported for this measure are:   * comparable (subject to caveats) across jurisdictions and over time * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally in 2013‑14, the number of salaried, mixed and volunteer response locations was  per 100 000 people, but varied across jurisdictions (table 9A.38 and figure 9.23). Since 2009‑10, the number of response locations has remained between 4.9 and 5.0 locations per 100 000 people nationally.

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| Figure 9.23 Total number of ambulance response locations, per 100 000 people, by type of station**a, b, c, d, e** |
| |  | | --- | | Figure 9.23 Total number of ambulance response locations, per 100 000 people, by type of station  More details can be found within the text surrounding this image. | |
| a Population data used to derive rates are revised to the ABS’ final 2011 Census rebased estimates. See chapter 2 (table 2A.1‑2) for details. b Some jurisdictions do not satisfy the criteria for all the staffing categories. c Vic: From 2012‑13, volunteer response locations that do not have a physical building present have also been included. d Qld: There are no mixed response locations in Queensland. e ACT: There are no mixed or volunteer only response locations in the ACT. |
| *Source*: State and Territory governments (unpublished); table 9A.38. |
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This indicator should be considered in context of the ‘availability of paramedics’ indicator (box 9.16), which shows the ambulance workforce can comprise a large proportion of volunteers. Similarly, ambulance locations may be staffed by paid ambulance officers, volunteer ambulance officers, or a mix. Some jurisdictions comprise a large proportion of volunteer ambulance locations, particularly in rural and remote locations.

The number and type of ambulance locations also helps explain variation in expenditure for ambulance services across jurisdictions. For example, in some jurisdictions, smaller rural areas are serviced by paid ambulance personnel whereas in others, there may be a mix of paid and volunteer personnel or wholly volunteer personnel. Service delivery strategies have a significant impact on cost and help to explain differentials in expenditure per person between jurisdictions.

##### Availability of ambulance officers/paramedics

‘Availability of ambulance officers/paramedics’ is an indicator of governments’ objective of providing equitable and accessible pre‑hospital and out‑of‑hospital care and patient transport services (box 9.16).

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| Box 9.16 Availability of ambulance officers/paramedics |
| ‘Availability of ambulance officers/paramedics’ is defined as the number of full time equivalent ambulance officers/paramedics per 100 000 people. Ambulance officers/paramedics includes student and base level ambulance officers and qualified ambulance officers but excludes patient transport officers.  High or increasing availability of ambulance officers/paramedics per 100 000 people (indicating high or increasing ambulance service availability) is desirable.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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Nationally, there were 46.8 FTE ambulance officers per 100 000 people in 2013‑14. The total number of ambulance officers and the proportion of student and base level ambulance officers varied across jurisdictions (table 9A.35 and figure 9.24).

In jurisdictions that utilise a higher number of volunteers, the number of paid FTE ambulance officers may be lower — suggesting a lower level of access according to the indicator. However, volunteers are often utilised to provide ambulance access to small rural areas which have low frequency of medical emergencies. Providing paid paramedics in these locations is costly and raises issues with skills maintenance for paramedics whose caseload is low. This indicator is complemented by the response locations indicator, which identifies jurisdictions that provide an ambulance response utilising volunteers (box 9.15).

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| Figure 9.24 Number of full time equivalent ambulance officers**a, b** |
| |  | | --- | | Figure 9.24 Number of full time equivalent ambulance officers  More details can be found within the text surrounding this image. | |
| a Population data used to derive rates are revised to the ABS’ final 2011 Census rebased estimates. See chapter 2 (table 2A.1‑2) for details. b ACT: 2012‑13 human resources include direct staffing within the ACT Ambulance Service. Indirect staffing from the umbrella department and supporting services including Shared Services has been reported based on an attribution model. |
| *Source*: State and Territory governments (unpublished); table 9A.35. |
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##### Ambulance response times

Urban centre response times, state wide response times, and triple zero (000) call answering time relate to ambulance response times as defined in box 9.17.

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| Box 9.17 Ambulance response times definition |
| ‘Response times’ (as illustrated below) is defined as the time taken between the arrival of the first responding ambulance resource at the scene of an emergency and the initial receipt of the call for an emergency ambulance at the communications centre.  Box 9.17 Ambulance response times definition  More details can be found within the text surrounding this image. |
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| Box 9.17 (continued) |
| For this Report, response times are calculated:   * in code 1 situations — responses to potentially life threatening situations that necessitates the use of ambulance warning devices (lights and sirens) * at the 50th and 90th percentile — the time taken for 50 per cent of the first responding ambulance resources to arrive at the scene of an emergency is equal to or below the 50th percentile. The time taken for 90 per cent of the first responding ambulance resources to arrive at the scene of an emergency is equal to or below the 90th percentile.   Although definitions of response times are consistent, not all jurisdictions have systems in place to capture all components of response time for all cases. |
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##### Urban centre response times

‘Urban centre response times’ is an indicator of governments’ objective of providing equitable and accessible pre‑hospital and out‑of‑hospital care and patient transport services (box 9.18).

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| Box 9.18 Urban centre response times |
| ‘Urban centre response times’ (as illustrated in box 9.17) is defined as the time taken between the arrival of the first responding ambulance resource at the scene of an emergency in code 1 situations and the initial receipt of the call for an emergency ambulance at the communications centre, in urban centres.  Urban centre response times are currently measured by the response times within each jurisdictions’ *capital city* — boundaries based on the ABS Urban Centres Localities structure. Capital cities are Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart, Canberra and Darwin.  Short or decreasing response times suggest the adverse effects on patients and the community of emergencies requiring ambulance services are reduced.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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In 2013‑14, the time within which 90 per cent of the capital city first responding ambulance resources arrived at the scene of an emergency in code 1 situations ranged from 12.9 to 19.8 minutes across jurisdictions (figure 9.25). The median (50th percentile) response times ranged from 8.2 to 10.8 minutes (table 9A.44).

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| Figure 9.25 Ambulance response times, capital city, 90th percentile**a, b, c** |
| |  | | --- | | Figure 9.25 Ambulance response times, capital city, 90th percentile  More details can be found within the text surrounding this image. | |
| a Response times commence from the following time points: NSW, Queensland and WA from transfer to dispatch; Victoria, SA, Tasmania and the ACT from the first key stroke; and, the NT from when a crew is dispatched. b Capital city response times are calculated using urban centre boundaries based on the ABS Urban Centres Localities structure. Response times for NSW and SA do not strictly adhere to the urban centre boundaries. c Qld: Casualty room attendances are not included in response count and, therefore, are not reflected in response times data. |
| *Source*: ABS (2008 and unpublished) *Statistical Geography: Volume 3 — Australian Standard Geographical Classification (ASGC) Urban Centres Localities, 2006,* Cat. no. 2909.0, Canberra; State and Territory governments (unpublished); table 9A.44. |
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Differences across jurisdictions in the geography and personnel mix can affect capital city response times data. Factors that can impact on capital city response time performance include:

* land area, and population size and density, which varies considerably across Australian capital cities
* capital city topography, road/transport infrastructure and traffic densities
* crewing configurations, response systems and processes, and travel distances.

Since 2009‑10, the ACT has implemented a range of strategies targeted at:

* the effective management of demand for ambulance services
* improved response time to priority one cases
* appropriate triage of demand
* provision of the right care to the right patient. (box 9.19).

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| Box 9.19 Mini‑case study: Improving ambulance code 1 response times in the ACT |
| In the four years to 30 June 2009, the ACT Ambulance Service (ACTAS) experienced declining code 1 response times. A key contributor to the declining response times was the management of demand for services.  In the 2009 Report on *Delivery of ambulance services to the ACT Community*, the ACT Auditor General found:   * demand for emergency ambulance attendance had increased by 68 per cent between 2000‑01 and 2007‑08. ACTAS had managed demand periods by reprioritising emergency responses and to a lesser extent, by dispatching non‑Intensive Care Paramedic ambulance and fire brigade crews, and using single response units (non‑stretcher vehicles crewed by a single Intensive Care Paramedic) as emergency response measures. Accordingly, some patients had possibly not received the level of care that could be provided by an Intensive Care Paramedic in a timely manner * response times to emergency incidents had worsened in recent years and had not met targets set by the ACT Government, leading to higher risks of adverse patient outcomes, especially in life‑threatening incidents * a number of factors drive demand. However, ACTAS had yet to determine what demand driver data it would collect and analyse in order to estimate and plan for future demand (ACTAGO 2009).   An independent review (Lennox 2010) identified that ACTAS faced a number of challenges in providing high quality and safe clinical care to every emergency in a timely manner. One reason provided for this was escalating demand for ambulance services and the impact of that demand on response capacity.  Responses to the findings  To address worsening response times, ACTAS, with support from the ACT Government, implemented a range of short and long term strategies targeted at: the effective management of demand for ambulance services; improved response time to priority one cases; appropriate triage of demand and provision of appropriate care for each patient; and significant improvements in quality assurance.  Ambulance crewing  In 2009, ACTAS, in collaboration with industrial representatives, successfully introduced demand modelled shifts to ensure that maximum crewing levels would be maintained during periods of peak community demand for services.  Independent modelling indicated that frontline resourcing of ACTAS was insufficient to meet existing and projected future community demand. The modelling suggested that three additional 24x7 crews were necessary to meet community demand and deliver code 1 services in an acceptable timeframe. During 2011‑12 and 2012‑13, ACTAS introduced an additional 51 personnel, of whom 45 were dedicated to front line operations. |
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| Box 9.19 continued |
| In 2011‑12, ACTAS changed its service delivery model from two Intensive Care Paramedics per ambulance to a mix of Intensive Care Paramedics and Ambulance Paramedics. This strategy had a positive impact on attrition and strengthened the ability of ACTAS to maintain front line crewing levels on a 24/7 basis without compromising patient care.  Emergency Services Agency station upgrade  The modelling also informed the ACT Emergency Services Agency station upgrade and relocation program, by helping to identify the most appropriate locations for fire and ambulance resources to enable code 1 responses to occur within target timeframes. As a result, a number of ambulance and fire emergency facilities in the ACT are being constructed, which will significantly strengthen ambulance and fire resource deployment in the ACT.  Communications Centre — ‘Clinician’ role  Appropriate triage of demand and provision of appropriate care for each patient was another area of focus. In 2011, ACTAS introduced a ‘Clinician’ role into the Communications Centre. The Clinician utilises highly experienced Intensive Care Paramedics to triage triple zero (000) calls, ensuring that the appropriate level of response and clinical care is provided to the patient. The Clinician also endeavours to refer a patient to an alternate service provider where an emergency ambulance response is unnecessary or inappropriate for the patient’s condition.  Extended Care Paramedics  In 2011‑12, ACTAS, in conjunction with Health Workforce Australia, introduced a pilot of an Extended Care Paramedic service. The objectives of the Extended Care Paramedic service were: to strengthen consultation and collaboration between ACTAS and the primary health care network; to reduce the number of patients unnecessarily transported to hospital; and to permit choice for patients to be safely treated in their own home for selected conditions, where clinically appropriate.  A 2014 report on the Extended Care Paramedic pilot indicated that, of the 963 patients seen by Extended Care Paramedics between January 2013 and March 2014, 70 per cent were not transported. In comparison, in 2012‑13 20 per cent of patients seen by ACTAS operational paramedic crew were not transported (Thompson et al. 2014). These data suggest that the Extended Care Paramedic pilot program resulted in 480 fewer hospital transports to a hospital emergency department than under the existing operational procedures. This represented a cost saving to hospital services of approximately $400 000 (based on the average cost of an emergency department presentation (SCRGSP 2014, table 10A.65).  Delayed offload of a patient at a hospital  Delayed offload of a patient at a hospital — otherwise known as ‘ramping’ — is where an ambulance crew is unable to hand over a patient to a hospital for ongoing assessment or care. Where ramping occurs, the ambulance crew is unavailable to respond to new incidents, placing pressure on other ambulance resources. |
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| Box 9.19 continued |
| To reduce the impact of ramping on service provision, ACTAS, in collaboration with ACT Health, has established mandatory offloading protocols for a patient, which ‘trigger’ 20 minutes after ambulance arrival at a hospital emergency department. At the 20 minute mark, the ambulance crew is required to effect the transfer of care of the patient to the Triage Coordinator, allowing the crew to return immediately to operational duties or emergency responses.  Impact on the ACT code‑1 response times  The combination of these strategies has resulted in the ACT code 1 response times, at the 90th percentile, to decrease from 16.8 minutes in 2008-09 to 12.9 minutes in 2013‑14 — an improvement of 3.9 minutes. At the 50th percentile, ACT code 1 response times have decreased from 10.3 minutes in 2008-09 to 8.2 minutes in 2013‑14 — an improvement of 2.1 minutes. |
| *Source*: ACT Government; ACTAGO (2009); Lennox (2010); Lennox (2014); SCRGSP (2014); Thompson et al. (2014). |
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#### Effectiveness — access

Effectiveness of access indicators measure how well the outputs of a service achieve the stated objective(s) of that service in a timely and affordable manner to the community.

##### State‑wide response times

‘State‑wide response times’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.20).

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| Box 9.20 State‑wide response times |
| ‘State‑wide response times’ (as illustrated in box 9.17) is defined as the time taken between the arrival of the first responding ambulance resource at the scene of an emergency in code 1 situations and the initial receipt of the call for an emergency ambulance at the communications centre, for state‑wide responses.  Short or reducing response times suggest the adverse effects on patients and the community of emergencies requiring ambulance services are reduced.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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In 2013‑14, the time within which 90 per cent of the state‑wide first responding ambulance resources arrived at the scene of an emergency in code 1 situations ranged from 12.9 to 23.7 minutes. Over the past 5 years, the change in response times has varied between jurisdictions (figure 9.26). The median (50th percentile) response times ranged from 7.6 to 11.4 minutes (table 9A.44).

Differences across jurisdictions in the geography, personnel mix, and system type for capturing data, affect state‑wide response times data. Factors that can impact on state‑wide response time performance include:

* the dispersion of the population (particularly rural/urban population proportions), topography, road/transport infrastructure and traffic densities
* crewing configurations, response systems and processes, and travel distances — for example, some jurisdictions include responses from volunteer stations (often in rural areas) where turnout times are generally longer because volunteers are on call as distinct from being on duty
* land area, and population size and density — for example, data calculated on a state‑wide basis for some jurisdictions represent responses to urban, rural and remote areas, while others include urban centres only.

For a range of general descriptive information for each jurisdiction, including information on each jurisdiction’s population, spatial distribution, and dwelling stock see the Report’s Statistical context chapter (chapter 2).

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| Figure 9.26 Ambulance response times, state‑wide, 90th percentile**a, b** |
| |  | | --- | | Figure 9.26 Ambulance response times, state-wide, 90th percentile  More details can be found within the text surrounding this image. | |
| a Response times commence from the following time points: NSW, Queensland and WA from transfer to dispatch; Victoria SA and the ACT from the first key stroke; Tasmania from the time at which enough details to initiate an ambulance response have been recorded; and, the NT from when a crew is dispatched. b Qld: Casualty room attendances are not included in response count and, therefore, are not reflected in response times data. Response time calculations for percentiles for state‑wide were sourced from the Computer Aided Dispatch system. |
| *Source*: State and Territory governments (unpublished); table 9A.44. |
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##### Triple zero (000) call answering time

‘Triple zero (000) call answering time’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.21).

*The Telecommunications (Emergency Call Persons) Determination 1999* (Cwlth), recognises Telstra as the national operator of emergency call services for the triple zero (000) and 112 emergency service numbers. The emergency call service answers triple zero (000) calls and transfers them, with relevant associated information, to the requested emergency service organisation. The Australian Communication Exchange has the same responsibility with regard to the emergency service number 106 Text Emergency Relay Service number, for callers who are deaf or who have a hearing or a speech impairment (AGD 2013).

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| Box 9.21 Triple zero (000) call answering time |
| ‘Triple zero (000) call answering time’ for ambulance services (as illustrated in box 9.17) is defined as the time interval commencing when the emergency call service has answered the triple zero (000) call and selected the desired emergency service organisation to when the ambulance service organisation has answered the call.  It is measured as the percentage of triple zero (000) calls that were answered by ambulance service communication centre staff in a time equal to or less than 10 seconds.  A greater percentage of triple zero (000) calls answered within 10 seconds suggests the adverse effects on patients and the community of emergencies requiring ambulance services are reduced.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally in 2013‑14, ambulance service organisations answered 89.4 per cent of calls from the emergency call service for triple zero (000) within ten seconds or less, although this proportion varied across jurisdictions (figure 9.27).

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| Figure 9.27 Proportion of calls from the emergency call service answered by ambulance service communication centre staff in a time equal to or less than 10 seconds, 2013‑14a, b, c |
| |  | | --- | | Figure 9.27 Proportion of calls from the emergency call service answered by ambulance service communication centre staff in a time equal to or less than 10 seconds, 2013-14  More details can be found within the text surrounding this image. | |
| a Ambulance Service triple zero (000) call answering time is defined as the time interval commencing when the emergency call service has answered the triple zero (000) call and selected the desired emergency service organisation to when the ambulance service organisation has answered the call. b Data sourced from Telstra may include additional time as the Emergency Call Person (Telstra) ensures the call has been answered which may involve some three way conversation. Some services subtract a fixed time from the Telstra reported times to allow for the time after the call is answered until the Telstra agent disconnects from the call. c SA: SA Ambulance Service sources data from internal systems and might not be comparable with other services where data are provided by Telstra. |
| *Source*: State and Territory governments; table 9A.45. |
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#### Effectiveness — appropriateness

Appropriateness indicators measure governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.22).

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| Box 9.22 Performance indicator — appropriateness |
| ‘Appropriateness’ indicators measure how well services meet clients’ needs.  Appropriateness has been identified as a key area for development in future reports. |
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#### Effectiveness — quality — safety

Quality indicators reflect the extent to which a service is suited to its purpose and conforms to specifications that can measure specific aspects of quality.

Safety is the avoidance, or reduction to acceptable levels, of actual or potential harm from ambulance services. Safety has been identified as a key area for development in future reports.

##### Clinical incidents

‘Clinical incidents’ has been identified as an overarching indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.23).

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| Box 9.23 Clinical incidents |
| ‘Clinical incidents’ are broadly defined as adverse events that occur because of ambulance service system failure, which result in death or serious harm to a patient.  Clinical incidents will incorporate a wider range of categories than the national core set of hospital sentinel events. Hospital sentinel events are adverse events that occur because of hospital system and process deficiencies, and which result in the death of, or serious harm to, a patient (chapter 11).  This indicator has been identified for development (through the CAA and in accordance with national health‑wide reporting standards) and reporting in future. |
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#### Effectiveness — quality — clinical

Clinical indicators measure the effectiveness and quality of clinical interventions and treatments. Clinical indicators have been identified as a key area for development in future reports.

##### Clinical interventions and treatments

‘Clinical interventions and treatments’ has been identified as an overarching indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.24).

The indicator ‘cardiac arrest survived event rate’ reported in the outcomes section of this chapter has strong links to clinical interventions and treatments.

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| Box 9.24 Clinical interventions and treatments |
| ‘Clinical interventions and treatments’ is yet to be defined.  In the short to medium term, the clinical dimension is likely to provide indicators of service outputs and outcomes. In the longer term additional clinical measures might include indicators of the effectiveness of ambulance services interventions and treatments.  Current development work is focused on the pain management indicator (in the ambulance events outcomes section) and an indicator of cardiac arrest survival to hospital discharge.  This indicator has been identified for development (through the CAA) and reporting in future. |
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#### Effectiveness — quality — responsiveness

Responsiveness is the provision of services that are client orientated and respectful of clients’ dignity, autonomy, confidentiality, amenity, choices, and social and cultural needs.

Patient satisfaction reported in the outcomes section of this chapter has strong links to responsiveness.

#### Effectiveness — quality — continuity

Continuity is the provision of uninterrupted, timely, coordinated healthcare, interventions and actions across programs, practitioners and organisations. The Steering Committee has identified continuity as a key area for development in future reports.

##### Continuity of care

‘Continuity of care’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.25).

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| Box 9.25 Continuity of care |
| ‘Continuity of care’ has been broadly defined as transporting patients to the right hospital. Some ambulance services have developed protocols under which patients with particular conditions (for example, cardiac and stroke) are transported directly to the hospital or specialised centre where the best treatment for their needs can be provided, rather than transported to the closest hospital where those services might not be available. Transporting critically injured patients directly to specialised Trauma Centres is a further example of these protocols.  This indicator has been identified for development (through the CAA) and reporting in future. |
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#### Effectiveness — sustainability

Sustainability is the capacity to provide infrastructure (that is, workforce, facilities, and equipment) into the future, be innovative and respond to emerging needs of the community.

The workforce by age group, staff attrition and paramedics in training indicators should be considered together. Each provides a different aspect of the changing profile and sustainability of ambulance service organisations’ workforces.

##### Workforce by age group

‘Workforce by age group’ is an indicator of governments’ objective of pre‑hospital and out‑of‑hospital care and patient transport services, that are effectively, efficiently and sustainably delivered (box 9.26).

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| Box 9.26 Workforce by age group |
| ‘Workforce by age group’ is defined as the age profile of the workforce, measured by the proportion of the operational workforce in 10 year age brackets (under 30, 30–39, 40–49, 50–59 and 60 and over).  A low or decreasing proportion of the workforce who are in the younger age groups and/or a high or increasing proportion who are closer to retirement, suggests sustainability problems may arise in the coming decade as the older age group starts to retire.  Data reported for this measure are:   * comparable (subject to caveats) across jurisdictions and over time * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally in 2013‑14, 78.6 per cent of the ambulance workforce were aged under 50, a slight decrease from 79.1 in 2012‑13 (table 9A.36 and figure 9.28).

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| Figure 9.28 Ambulance workforce, by age group, 2013‑14 |
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| *Source*: State and Territory governments (unpublished), table 9A.36. |
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##### Staff attrition

‘Staff attrition’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are effectively, efficiently and sustainably delivered (box 9.27).

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| Box 9.27 Staff attrition |
| ‘Staff attrition’ is defined as level of attrition in the operational workforce. It is calculated as the number of FTE employees who exit the organisation as a proportion of the number of FTE employees. It is based on staff FTE defined as operational positions where paramedic qualifications are either essential or desirable to the role.  Low or decreasing levels of staff attrition are desirable.  Data reported for this measure are:   * comparable (subject to caveats) across jurisdictions and over time * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally, the staff attrition rate was 3.6 per cent in 2013‑14, which varied across jurisdictions (figure 9.29).

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| Figure 9.29 Ambulance staff attrition**a** |
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| a Staff attrition volatility in some jurisdictions is partially due to the relatively small number of staff. |
| *Source*: State and Territory governments (unpublished), table 9A.36. |
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##### Paramedics in training

‘Paramedics in training’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are effectively, efficiently and sustainably delivered (box 9.28).

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| Box 9.28 Paramedics in training |
| ‘Paramedics in training’ is defined as the number of students enrolled in paramedic training courses accredited by the Paramedic Education Programs Accreditation Scheme per million people in the population. Two measures are presented:   * total number of students enrolled in accredited paramedic training courses per million people in the population * students enrolled in the final year of accredited paramedic training courses. This segment is reported to show the number of potential new trained paramedics who will enter the workforce in the coming year.   High or increasing levels of enrolments are desirable.  Data reported for this measure are:   * comparable (subject to caveats) across jurisdictions and over time * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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The Paramedic Education Programs Accreditation Scheme is administered by the CAA in cooperation with professional bodies and the tertiary sector — 16 universities are at various stages of accreditation or evaluation of their programs. The accreditation of tertiary courses is designed to ensure paramedic graduates are equipped to meet the needs of ambulance service organisations.

Nationally, there was a total of 5871 students were enrolled at accredited paramedic training courses for the 2013 course year, representing 253.8 enrolments per million people in the population (figure 9.30 and table 9A.37). Nationally, 984 students were enrolled in the final year of their course in 2013 (table 9A.37).

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| Figure 9.30 Enrolments in accredited paramedic training courses, per million people in the population, 2013**a, b, c, d** |
| |  | | --- | | Figure 9.30 Enrolments in accredited paramedic training courses, per million people in the population, 2013  More details can be found within the text surrounding this image. | |
| a Student enrolments are compiled by the Council of Ambulance Authorities, as administrative data from tertiary institutions participating in the Paramedic Education Programs Accreditation Scheme. The scheme is a voluntary program and as such might not represent all students enrolled in paramedic courses around Australia. b Data are counted as the number of students enrolled as at 31 December for the completed course year. c Population data used to derive rates are as at 30 June. Estimated Resident Population (ERP) data are preliminary. See chapter 2 (table 2A.2) for details. d NT: There are no higher education providers based in the NT that offer courses accredited by the Paramedic Education Programs Accreditation Scheme. Student paramedics employed by St John Ambulance NT study at Edith Cowan University, WA. |
| *Source*: State and Territory governments (unpublished), table 9A.37. |
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#### Efficiency

Care needs to be taken when comparing efficiency 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 relative to levies compared with other jurisdictions. Also, differences in geographic size, terrain, climate, and population dispersal may affect costs of infrastructure and numbers of service delivery locations per person.

##### Ambulance service organisation’s expenditure per person

‘Ambulance service organisations’ expenditure per person’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are effectively, efficiently and sustainably delivered (box 9.29).

Both the total cost of ambulance service organisations and the cost to government of funding ambulance service organisations are reported, because revenue from transport fees is significant for a number of jurisdictions.

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| Box 9.29 Ambulance service expenditure per person |
| ‘Ambulance service organisations’ expenditure per person’ is defined as total ambulance service organisation expenditure per person in the population.  Expenditure per person is employed as a proxy for efficiency. All else being equal, lower expenditure per person represents greater efficiency. However, efficiency data are difficult to interpret. For example:   * high or increasing expenditure per person may reflect deteriorating efficiency. Alternatively, it may reflect changes in: aspects of the service (such as improved response); resourcing for first aid and community safety; or the characteristics of events requiring ambulance service response (such as more serious para‑medical challenges) * low or declining expenditure per person may reflect improving efficiency. Alternatively, it may reflect lower quality responses or less challenging cases.   Expenditure per ambulance patient is not employed as a measure of efficiency because an organisation that applies more resources to the prevention and preparedness components of community safety — to reduce the demand for ambulance services —- could erroneously appear to be less efficient.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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Nationally, total expenditure on ambulance service organisations was $2.7 billion, or $113.90 per person in 2013‑14 (table 9A.47 and figure 9.31).

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| Figure 9.31 Ambulance service organisations’ expenditure per person (2013‑14 dollars)a, b, c, d |
| |  | | --- | | Figure 9.31 Ambulance service organisations' expenditure per person (2013-14 dollars)  More details can be found within the text surrounding this image. | |
| a Time series financial data are adjusted to 2013‑14 dollars using the General Government Final Consumption Expenditure (GGFCE) chain price deflator (2013‑14 = 100) (table 2A.51). See chapter 2 (sections 2.5‑6) for details. b Population data used to derive rates are revised to the ABS’ final 2011 Census rebased estimates. See chapter 2 (table 2A.1‑2) for details. c WA and NT: use a contracted service model for ambulance services. d SA: 2011‑12 SA Ambulance Service results include some significant once‑off items. In 2012 revaluations caused increases in (1) Long Service Leave Liability, rising approximately $9 million, and (2) the Defined Benefit Superannuation Fund liability which experienced an actuarial loss of about $24 million. The 2011‑12 results also include back‑pay for an Enterprise Bargaining Agreement resulting in a retrospective adjustment of approximately $4 million. |
| *Source*: State and Territory governments (unpublished); table 9A.47. |
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Within Australia, different jurisdictions have selected different funding models to provide resourcing to ambulance service organisations. The proportions of funding sources varied across jurisdictions (figure 9.32). Nationally in 2013‑14:

* total government grants and indirect government funding formed the greatest proportion of ambulance service organisations funding at $76.20 per person in the population (67.3 per cent of total funding for ambulance service organisations)
* transport fees (such as fees collected from (uninsured) citizens or from motor accident insurers) in 2013‑14 averaged $29.22 per person (25.8 per cent of total funding for ambulance service organisations)
* funding from other revenue was $7.44 per person (table 9A.48), which includes subscription (or ambulance membership) fees, which are substantial in some jurisdictions (table 9A.32 and 9A.48).

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| Figure 9.32 Sources of ambulance service organisations’ revenue per person, 2013‑14**a, b, c, d** |
| |  | | --- | | Figure 9.32 Sources of ambulance service organisations' revenue per person, 2013-14  More details can be found within the text surrounding this image. | |
| a Time series financial data are adjusted to 2013‑14 dollars using the General Government Final Consumption Expenditure (GGFCE) chain price deflator (2013‑14 = 100) (table 2A.51). See chapter 2 (sections 2.5‑6) for details. b Population data used to derive rates are as at 31 December, . Estimated Resident Population (ERP) data for 2009 to 2010 are final, based on the 2011 Census of Population and Housing. Estimates for 2011 onwards are preliminary. See chapter 2 (table 2A.2) for details.c Subscriptions and other income comprises revenue from subscriptions, donations and miscellaneous revenue. d Vic: 2012‑13 revenue from Government grants/contributions has been overstated, which has impacted this figure. |
| *Source*: State and Territory governments (unpublished); table 9A.48. |
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##### Expenditure per urgent and non‑urgent response

‘Expenditure per urgent and non‑urgent response’ has been identified for development as an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are effectively, efficiently and sustainably delivered (box 9.30).

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| Box 9.30 Expenditure per urgent and non‑urgent response |
| ‘Expenditure per urgent and non‑urgent response’ is yet to be defined.  This indicator has been identified for development (through the CAA) and reporting in future. |
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### Outcomes

Outcomes are the impact of services on the status of an individual or group (while outputs are the services delivered) (see chapter 1, section 1.5).

##### Cardiac arrest survived event rate

‘Cardiac arrest survived event rate’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.31).

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| Box 9.31 Cardiac arrest survived event rate |
| ‘Cardiac arrest survived event rate’ is defined by the percentage of patients, aged 16 years and over, who were in out‑of‑hospital cardiac arrest and had a return to spontaneous circulation (that is, the patient having a pulse) until administration and transfer of care to the medical staff at the receiving hospital (Jacobs, et al. 2004).  Three measures are provided as the percentage of patients aged 16 years and over who had a return to spontaneous circulation in the following circumstances:   * *Adult cardiac arrest where resuscitation attempted* — where: (1) a person was in out‑of‑hospital cardiac arrest (which was not witnessed by a paramedic); and (2) chest compressions and/or defibrillation was undertaken by ambulance or emergency medical services personnel. * *Adult VF/VT cardiac arrests* — where: (1) a person was in out‑of‑hospital cardiac arrest (which was not witnessed by a paramedic); and (2) the arrest rhythm on the first electrocardiogram (ECG) assessment was either Ventricular Fibrillation or Ventricular Tachycardia (VF/VT) (an irregular and/or fast heartbeat). * *Paramedic witnessed cardiac arrest* — where a person was in out‑of‑hospital cardiac arrest that occurred in the presence of ambulance paramedic or officer.   A high or increasing cardiac arrest survived event rate is desirable.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * incomplete for the current reporting period. All required 2013-14 data are not available for NSW.   Data quality information for this indicator is under development. |
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For those jurisdictions for which data are available, most jurisdictions show improving out‑of‑hospital cardiac arrest survival rates over eight years (table 9A.41).

Across jurisdictions the survival rate for patients in Ventricular Fibrillation (VF) or Ventricular Tachycardia (VT) cardiac arrest are higher than for other adult cardiac arrests (figure 9.33). VF or VT are electrical rhythms of the heart but are not associated with effective beating of the heart to produce a pulse. Patients that suffer a VF/VT cardiac arrest are more likely to have better outcomes compared with other causes of cardiac arrest as these conditions are primarily correctable through defibrillation. This is because the definitive treatment for VF/VT is defibrillation and the early this intervention is applied (either by ambulance or within the community through the use of Automated External Defibrillators) the chance of survival is greatly improved.

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| Figure 9.33 Cardiac arrest survived event rate, 2013‑14**a, b, c, d, e, f, g, h** |
| |  | | --- | | Figure 9.33 Cardiac arrest survived event rate, 2013-14  More details can be found within the text surrounding this image. | |
| a A ‘survived event’ is defined as the patient having return of spontaneous circulation on arrival to hospital (that is, the patient having a pulse). This is not the same as the patient surviving the cardiac arrest as this is only one factor that contributes to the overall likelihood of survival. b The measure ‘adult cardiac arrests where resuscitation attempted’ provides an overall indicator of outcome without specific consideration to other factors known to influence survival. c NSW: (1) Extraction only uses data that are available in the electronic Medical Record (eMR). (2) The quality of eMR documentation and resulting difficulties in confident interpretation and subsequent comparisons are: (i) Within all areas of healthcare, clinical databases (such as eMR or the Patient Health Care Records) are known to have limitations around the accuracy and completeness of data recorded within them. (ii) The NSW Ambulance source of information in relation to out‑of‑hospital cardiac arrest are the datasets populated by paramedics. Therefore, return of spontaneous circulation rates determined from these sources can only reflect a ‘best estimate’ of actual rates. dVic: Excludespatients with unknown rhythm on arrival at hospital. eQld: 2013‑14 data pertain to the 2013 calendar year. Patients with ‘Do not attempt resuscitation orders’ are excluded from the cardiac arrest data collection from 1 July 2013 as this information was not coded prior to this date. f Tas: Data inconsistency issues — resulting from the introduction of improved counting procedures in 2013 — mean that Paramedic Witnessed event data are unable to be reported. g SA: In 2013, due to a redesign in the Patient Report Form, mapping issues between HP‑admin and the SA Ambulance Service data base occurred, leading to incomplete data for cardiac arrest cases and therefore lower numbers being reported on than in previous years. h Cardiac arrest data are not comparable between jurisdictions due to different methods of reporting. |
| *Source*: State and Territory governments (unpublished); table 9A.41. |
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Similarly, the survival rate from paramedic witnessed out‑of‑hospital cardiac arrests are higher than for other adult out‑of‑hospital cardiac arrests (excluding VF/VT cardiac arrests). Cardiac arrests that are treated immediately by the paramedic have a better likelihood of survival due to immediate and rapid intervention. This is substantially different to cardiac arrests occurring prior to the ambulance arriving where such increasing periods of treatment delay are known to negatively influence outcome (figure 9.33).

##### Cardiac arrest survival to hospital discharge

‘Cardiac arrest survival to hospital discharge’ has been identified for development as an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.32).

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| Box 9.32 Cardiac arrest survival to hospital discharge |
| ‘Cardiac arrest survival to hospital discharge’ is yet to be defined.  A high or increasing survival rate is a desirable outcome.  This indicator has been identified for development (through the CAA) and reporting in future. |
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##### Pain management

‘Pain management’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.33).

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| Box 9.33 Pain management |
| ‘Pain management’ is defined as the percentage of patients who report a clinically meaningful pain reduction. Clinically meaningful pain reduction is defined as a minimum 2 point reduction in pain score from first to final recorded measurement.  Included are patients who:   * are aged 16 years and over and received care from the ambulance service, which included the administration of pain medication (analgesia) * recorded at least 2 pain scores (pre‑ and post‑treatment) on a Numeric Rating Scale * recorded an initial pain score of 7 or above on the Numeric Rating Scale of 1–10.   Patients who refuse pain medication for whatever reason are excluded.  A higher or increasing percentage of patients with relieved pain at the end of ambulance service treatment suggests improved patient outcomes.  Data reported for this measure are:   * comparable (subject to caveats) within jurisdictions over time but are not comparable across jurisdictions * incomplete for the current reporting period. All required 2013‑14 data are not available for the NT.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Ambulance services aim to control pain to a comfortable level for all patients (or in selected cases aim for the abolition of pain). This may be achieved by providing out‑of‑hospital treatment and care to the injury or illness, the use of pain relief medications (analgesics), or a combination of the two. In 2013‑14, across the jurisdictions for which data are available, 87.7 per cent of patients who initially reported severe pain to an ambulance service (a pain score of 7 or above on the Numeric Rating Scale), reported clinically meaningful pain reduction at the end of the service (figure 9.34).

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| Figure 9.34 Patients who report a clinically meaningful pain reduction, 2013‑14a, b, c, d |
| |  | | --- | | Figure 9.34 Patients who report a clinically meaningful pain reduction, 2013-14  More details can be found within the text surrounding this image. | |
| a Qld: For cardiac patients analgesia includes Glyceryl trinitrate and Morphine. For trauma and non‑specified aetiology patients analgesia includes Morphine, Ketamine, Fentanyl and Methoxyflurane. b WA: Where the date of birth of the patient is not recorded/missing, the case is excluded. c 2012–13 data are not available for the ACT and the NT. Australian total excludes the ACT and the NT. d NT: 2013‑14 data are not available due to the protected industrial action. Australian total excludes the NT. |
| *Source*: State and Territory governments (unpublished); table 9A.42. |
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##### Level of patient satisfaction

‘Level of patient satisfaction’ is an indicator of governments’ objective of providing pre‑hospital and out‑of‑hospital care and patient transport services, that are high quality, timely, and meet clients’ needs through delivery of coordinated and responsive health care (box 9.34).

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| Box 9.34 Level of patient satisfaction |
| ‘Level of patient satisfaction’ 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 that responded to the *National Patient Satisfaction Survey* (CAA 2013).  A higher level or increase in the proportion of patients who were either ‘satisfied’ or ‘very satisfied’ suggests greater success in meeting patient needs.  Data for these measures are:   * comparable (subject to caveats) across jurisdictions and over time * complete (subject to caveats) for the current reporting period. All required 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2015. |
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Nationally in 2014, 98 per cent of patients indicated that they were satisfied or very satisfied with the ambulance services received, with no statistically significant differences across jurisdictions. Similarly, there are small differences across jurisdictions for particular aspects of the ambulance service (figure 9.35). Over ten years, the estimated overall satisfaction levels for ambulance patients were similar across all jurisdictions (table 9A.43).

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| Figure 9.35 Proportion of ambulance users who were satisfied or very satisfied with the ambulance service, 2014**a** |
| |  | | --- | | Figure 9.35 Proportion of ambulance users who were satisfied or very satisfied with the ambulance service, 2014  More details can be found within the text surrounding this image. | |
| a 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. Standard errors for the 95 per cent confidence interval for overall patient satisfaction are included. |
| *Source*: CAA 2013, *Council of Ambulance Authorities Patient Satisfaction Survey 2013*; table 9A.43. |
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## 9.7 Future directions in performance reporting

A number of developments are underway to improve the comparability and accuracy of data, and to expand the scope of reporting on emergency services. Performance indicators for fire and ambulance services are being improved with the assistance of the Australasian Fire and Emergency Service Authorities Council, the Australian Council of State Emergency Services and the CAA.

### Fire events

#### Review of performance data for fire and emergency services

The Australasian Fire and Emergency Service Authorities Council (AFAC) have commenced a review of fire and emergency services performance measures, in the context of the strategic priorities outlined in *Strategic Directions for Fire and Emergency Services in Australia and New Zealand 2014–2016* (AFAC 2013). The Emergency Management Working Group (EMWG) recognises that the outcome of the review will be an important source for indicator development, including:

* the consideration of alternate performance indicators for emergency services (and their link to emergency service objectives)
* the development of data by emergency service organisations participating in the review
* the availability and comparability of data.

#### Landscape fire

Performance measures are currently being developed for the reporting of fires in the landscape. The long‑term aim is to report annually on the measures for each relevant jurisdiction across Australia. The key landscape fire performance measures that have been agreed to in concept for inclusion in future editions of the Report, subject to identification of appropriate denominators to facilitate comparative reporting ‘number of primary dwellings affected by landscape fire’ and ‘total number of hours by volunteers on landscape fire suppression’.

#### Other fire events

The EMWG is also investigating:

* new indicators of fire risk prevention/mitigation activities. The usefulness of proportion of households with smoke alarms as a performance measure is diminishing as it approaches 90–100 per cent in many jurisdictions (where measured)
* alternative fire service response indicators. Response time to structure fire measures do not fully address fire service organisation effectiveness in responding to and managing fires.

### Ambulance events

A new ambulance events indicator (paramedics in training) was introduced in this Report. Ambulance event reporting will focus on further developing this indicator and those introduced since the 2009 Report. In particular, the EMWG will aim to:

* improve the comparability of the cardiac arrest survived event indicator
* expand the scope of the urban centre response time indicator to report data for urban centres with populations of 50 000 and above.

Several indicators of the ambulance events performance indicator framework that not yet able to be measured. The EMWG, supported by the CAA, will define data requirements, and develop and implement new data collections for these indicators in the forthcoming years, with the current priorities for development being.

### Other event types

The EMWG is also developing descriptive data related to the involvement of emergency services at other event types as a part of the Emergency management sector overview (sector overview D).

## 9.8 Jurisdictions’ comments

This section provides comments from each jurisdiction on the services covered in this chapter.

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| **“** | New South Wales Government comments  NSW responded to a number of disasters during the year, with the bushfires of 16–23 October 2013 causing major destruction and damage to over 300 homes, primarily in the Blue Mountains, west of Sydney. Bushfires throughout the state resulted in 18 evacuation centres opening, with 3458 people registered,  249 people were accommodated onsite and a further 292 people accommodated by commercial providers. There were relatively few applications for Disaster Relief Grants, as most damaged and destroyed homes were, to some extent, insured.  NSW Ambulance provided 1 234 843 emergency and non‑emergency responses; an average of 3383 responses per day or a call every 26 seconds. The new vision for NSW Ambulance will see changes in our concept of operations, benefiting staff and patients. The Mental Health Acute Assessment Team transports appropriate patients directly to mental health facilities. The Non‑Emergency Assessment and Referral Proof of Concept with NSW Medicare Local on the Central Coast sees suitably identified patients referred and/or transported directly to their GP. Non‑emergency patient transport coordination was separated from the Triple Zero (000) control centre and 62 new paramedics were appointed.  Fire & Rescue NSW responded to 126 966 emergency incidents, including fires, rescues, chemical and medical emergencies and delivered a total of 53 868 community safety activities, such as visiting 9755 homes to install smoke alarms or check batteries, and conducted 2829 fire safety presentations to preschool and primary school children. The Community Fire Unit Program totals 7015 active members in 593 Units. Online home fire safety audits were completed by 14 335 people. Fire & Rescue NSW worked with other agencies to protect the community from numerous bushfires, particularly in October 2013, in the Blue Mountains.  The NSW Rural Fire Service attended 23 375 fires and other incidents. The service continued to implement its risk management framework with over 157 000 hectares of land subject to hazard reduction activity. Property protection works were carried out for 124 414 properties. The Service also investigated 2196 bush fire hazard complaints and processed 4452 fire‑prone development assessments.  The NSW State Emergency Service undertook 21 632 activities recording over 259 000 hours during 2013‑14. Our Storm response operations remained the most significant operational response with over 15 902 activities, including 86 Flood Rescue activations. Further achievements included the implementation of a new Operational Management System and holding a strategic level Hawkesbury Nepean Flood exercise. Community engagement strategic planning included at‑risk community programs, delivering preparedness safety messages to culturally and linguistically diverse (CALD) communities with Flood‑Safe and Tsunami programs. In addition, the NSW flood data‑base project stage 3 was completed with tsunami inundation modelling. | **”** |

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| **“** | Victorian Government comments  Across the summer months, Victoria experienced record breaking extended periods of heat and significant fires in January and February 2014 placing enormous strain on the emergency management system. Nineteen days had Extreme and Severe Fire Danger ratings and 16 days of Total Fire Ban were declared.  From 14 to 17 January, Victoria experienced a significant heatwave which resulted in an estimated 167 deaths more than expected for this time of year. Ambulance Victoria emergency caseload increased by 25 per cent overall with a 44 per cent increase in Code 1 emergency dispatches and 97 per cent increase in Priority '0' immediate life threat dispatches. The Community Health Assessment Centre established for this heat incident managed over 2100 community presentations.  On 17 January, Victoria’s first ‘recommendation to evacuate’ in response to a significant fire threat was issued to Halls Gap and nearby communities.  Conditions peaked on 9 February when Victoria recorded 954 emergency incidents in a 24‑hour period. The Hazelwood Open Cut Mine fire started that day and ran for 45 days challenging more than 7000 individual firefighters and the community.  On 9 February, more than 11 150 calls were made to the Victorian Bushfire Information Line. It was the greatest number of calls received in one day to the Line and 12 per cent greater than the number received on Black Saturday in 2009.  Victoria had more than 4600 grass and bushfires over the 2013‑14 fire season, 78 of which were considered significant. The largest fire covered 165 806 hectares in East Gippsland and burned for 70 days.  International and interstate support was received with a total of 2850 firefighters spending just over two months assisting Victoria crews in firefighting, incident control and community protection at Country Fire Authority fire stations across Victoria. | **”** |

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| **“** | Queensland Government comments  On 1 November 2013, Queensland Fire and Emergency Services (QFES), was established as the primary provider of fire and rescue, emergency management and disaster mitigation programs and services throughout Queensland. QFES includes Fire and Rescue, Emergency Management, Rural Fire Service Queensland and the State Emergency Service. In addition, in October 2013, the Queensland Ambulance Service (QAS) transitioned to the Department of Health (DoH).  During the financial year, QFES continued to work with other emergency services to provide emergency response operations across organisational and jurisdictional boundaries during major disaster events.  QFES also continued to deliver timely services to the community having recorded among the lowest three 90th percentile response times nationwide. QFES also became the first Australasian fire agency to achieve Fire Behaviour Analyst qualification and the Australia Urban Search and Rescue Taskforce 1 (Queensland) achieved International Search and Rescue Advisory Group reclassification as a ‘heavy’ deployable team.  New technologies were introduced to enhance the delivery of emergency services. The State Emergency Service (SES) Assistance App was launched, providing Queenslanders with an additional way to request SES assistance during floods and storms. Emergency Vehicle Priority (EVP) technology was enabled at approximately 200 intersections across the Gold Coast and Bundaberg. The EVP project, which provides green lights to emergency vehicles by automatically interrupting normal traffic signals, continues to be expanded in conjunction with QFES, Department of Transport and Main Roads, the Public Safety Business Agency and QAS.  QAS integration with DoH has led to improvements in service delivery, providing greater capacity for coordinated solutions to managing and responding to the growing demand for emergency health services.  The Queensland Audit Office tabled a report in Parliament on 6 May 2014, examining QAS operational effectiveness. The report favourably concluded QAS focuses appropriately on patient care outcomes through the use of innovative practices; has a mature and robust performance measurement and reporting framework; and provides equitable access to all Queenslanders  A number of new strategies were introduced in 2013‑14, including extension of acute cardiac reperfusion strategies to Advanced Care Paramedics in selected areas of Queensland. Patients suffering acute myocardial infarction (heart attack) are quickly identified using 12‑lead ECG technology, enabling rapid treatment in the field or direct referral to a cardiologist.  The Lower Acuity Response Unit was launched to provide alternative and appropriate treatment pathways for lower‑acuity patients, to reduce emergency department presentations, and enable traditional emergency ambulance units to respond to higher‑acuity cases. | **”** |

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| **“** | Western Australian Government comments  Preparedness to meet service demand was a major focus for Western Australian emergency service providers during 2013‑14.  Educating communities on the concept of a ‘Shared Responsibility’ for managing bushfire risk was a priority. Targeted education programs in high risk locations, pre‑season volunteer forums and the ‘Are You Ready’ media campaign, were designed to encourage preparation for the bushfire season and improve communities’ resilience to potential impacts on their lives and property.  Additional funding this year has enabled the permanent, seasonal addition of an Erickson Sikorsky 64A Aircrane to the aircraft fleet. This provides greater capacity for fire response agencies to manage the impact of large scale bushfires. Significant funding has also been provided to improve the safety of firefighters responding to bushfire. A four year program will provide comprehensive crew cab protection systems to protect crews in case of a burn over or entrapment situation.  During the 2013‑14 season fire agencies responded to a number of large scale bushfires. The most significant of these occurred in January 2014 in the Perth Hills on the outskirts of the metropolitan region. While a total of 57 residential properties were extensively damaged by the fire, it is estimated more than 400 properties were saved through the efforts of career and volunteer firefighters.  Emergency responders were kept busy assisting communities prepare for the impact of Tropical Cyclone Christine and with recovery activities. A Category 3 system, Tropical Cyclone Christine crossed the coast between Karratha and Port Hedland on 31 December 2013, bringing destructive winds, heavy rain and dangerous storm tides. Extensive flooding in Kununurra in February 2014 brought further challenges when floodwaters damaged the town’s sewerage systems and drinking supplies.  State Emergency Services volunteers made a notable and valuable contribution to the international, multiagency search and rescue mission led by the Australian Government to find missing Malaysian Airlines flight MH370, estimated at a total 2 000 hours of support.  The ambulance service in Western Australia continued to expand in 2013‑14 with increased State Government funding. The number of paramedics employed by St John Ambulance (SJA) WA Ltd across WA now includes an additional seven career paramedics at major country sub centres, and an extra four community paramedics. Funding was also provided to increase the number of fully equipped ambulances by three to a total of 127.  In 2013‑14, response time targets were met in the metropolitan area and most country regions. A total of 234 842 patients were transported, which is an increase of 1.4 per cent from the previous year. Emergency ambulance responses increased by 4.2 per cent and non‑emergency responses increased by 0.8 per cent. In 2013‑14, SJA WA Ltd also commenced providing a coordination function for the transportation to hospital by road for those patients arriving at Jandakot Airport by aero medical transfer. | **”** |

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| **“** | South Australian Government comments  Community education continues to be a major focus of all agencies especially in area such as road awareness program (RAP), Juvenile Firelighters Intervention Program (JFLIP), bushfire readiness and extreme heat awareness. During 2013‑14 less than 5 per cent of JFLIP clients returned to fire lighting behaviours and 100 per cent of RAP participants indicated after the program that they would employ safer responsible driving behaviours.  The SA Metropolitan Fire Service uses its Property Risk Information System (PRISM) database to record details and plans of commercial premises for operational planning and response purposes; during the year 721 new sites were added to the database.  Risk assessment workshops were held by all Hazard Leaders to understand the risk to the state from specific hazards and then identify appropriate risk treatments. The process complied with the National Emergency Risk Assessment Guidelines (NERAG) and included all relevant stakeholders. Follow up meetings continue across the state to ensure the treatments are actioned.  Following the severe and intense 2013‑14 bushfire season that saw many parts of the State impacted by fire, SA Country Fire Service contracted the Bushfire and Natural Hazards Cooperative Research Centre to conduct community engagement surveys affected by the Bangor, Eden Valley and Rockleigh bushfires. The outcome of these surveys will inform and assist SACFS and agencies in other jurisdictions to refine warnings to affected communities. The research will identify the critical information communities seek before, during and after a major natural disaster event.  SA Ambulance Service (SAAS) highlights for 2013–14 include:   * establishment of a new Clinical Performance and Patient Safety Directorate to oversee and steer changes in traditional ambulance service delivery, and to ensure that patient care and the evolution of new practice become central to the leadership of SAAS * development of a revised Clinical Governance Framework to support ongoing service delivery improvements * implementation of Stage 1 of the additional crewing model, which resulted in 19 more paramedic FTE being employed * establishment of a new volunteer regional response team for the Limestone Coast based in Mount Gambier * launch of the new SA Ambulance Service First Emergency Responder (SAAFER) program for regional communities, which trains local volunteers to provide immediate medical assistance to patients suffering cardiac arrest * recognition, through interest from other ambulance services, of SAAS’s successful Manual Tasks Risk Management Program * exceeding international benchmarks for medical priority dispatch system triage standards in the Emergency Operations Centre. | **”** |

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| **“** | Tasmanian Government comments  Tasmania has a number of unique characteristics that influence the provision of emergency services throughout the State and affect response/turnout times and infrastructure costs. These characteristics include a small and dispersed population, diseconomies of scale, reliance on a network of dedicated volunteers in rural and remote areas and the State’s rugged topography. Tasmania’s two major urban centres have low population density compared to the large urban centres in other states.  Tasmania’s data include both urban and rural fire, emergency and ambulance service performance. Tasmania has the highest percentage of all jurisdictions of its population in rural and remote areas (34.4 per cent — compared with a national average of 11.6 per cent). Conversely, Tasmania has the lowest proportion in highly accessible areas making it difficult to reliably compare the response performance of Tasmania with other jurisdictions.  Tasmania Fire Service (TFS) comprises four career brigades and 236 volunteer brigades that respond to fires in all metropolitan and rural areas. Tasmania reports all incidents attended by these brigades, and the TFS bears the full cost of funding both the operating and capital costs of its brigades.  TFS continues to deliver a broad range of educational and promotional programs to assist at‑risk sectors of the community, prevent fires and minimise the impact of fires that occur. The TFS also has a lead role in hazardous materials (hazmat) incidents and technical rescues.  In 2013‑14 TFS contracted additional positions to support the State Fire Management Council with an increased focus on vegetation fire management following from the January 2013 bushfires. This has seen an increase in the non‑operational workforce with a heavy focus on mitigation and planning activities.  TFS has responsibility for road crash rescue in and around metropolitan areas.  Tasmania’s State Emergency Service (SES) continues to provide road crash rescue services outside the main metropolitan centres. SES comprises 34 volunteer units, 24 of which have road crash rescue as their primary role. These units are responsible to the three regional headquarters. This is in addition to the primary role of storm and flood response and general assistance provided to all emergency services and local government.  Ambulance Tasmania (AT) provides emergency ambulance care, medical retrieval services and a non‑emergency patient transport service. In addition, AT provides a fixed‑wing aeromedical and medical retrieval service and staff for helicopter rescue operations.  Tasmania is currently one of two states that waives the fees of its residents for ambulance services and consequently there is a greater reliance on government funding for services than in jurisdictions that are not entirely government funded. Tasmania continues to enjoy a high level of patient satisfaction in ambulance services. This factor reflects positively on its ambulance personnel. | **”** |

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| **“** | Australian Capital Territory Government comments  The ACT Emergency Services Agency (ESA), which is part of the Justice and Community Safety Directorate, comprises the ACT Ambulance Service, ACT Fire and Rescue, ACT Rural Fire Service and the ACT State Emergency Service along with emergency management and support areas. It also incorporates the affiliated Snowy Hydro Southcare aero‑medical service.  The ESA provides services across a broad geographic base to encompass the Bush Capital Planning Model. This geographic spread provides challenges to meet benchmark response standards and community expectations.  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. The operational capability of the ESA was further improved or enhanced through the continued work of the following key projects:   * completion of the construction of the co‑located West Belconnen ambulance and fire station * a major review of the Strategic Bushfire Management Plan commenced during 2013–14. An extensive program of public consultation has been initiated with key stakeholders from within the ACT and surrounding NSW areas involved in the review process * consultations and advice on the review of planning arrangements in the ACT to declare Bushfire Prone Areas (BPA) for the purpose of applying the Building Code of Australia to require higher standards of construction to reduce bushfire risk * strengthening of ESA Triple Zero (000) capability with a highly available telephony system and refresh of the Comcen Business Continuity site. * replacement of the obsolete radio communication console in the Comcen with an IP solution; which is used to dispatch, communicate with and coordinate ESA first responders * replacement of Urban Search and Rescue (USAR) and Chemical, Biological, Radiological and Nuclear (CBRN) technologies.   During 2013‑14, the four services of the ESA provided in excess of 54 000 responses to incidents within the ACT. | **”** |

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| **“** | Northern Territory Government comments  In 2013‑14, the NT Fire and Rescue Service (NTFRS) continued its focus on fire prevention, preparedness, response and recovery in order to minimise the impact of fire and other emergencies on Northern Territory communities.  The NTFRS received a Highly Commended notation in the 2013 Chief Minister’s Awards for Excellence in the Public Sector for the Bushfire Arson Prevention Campaign under the category of ‘Enriching Our Society’. This was significant recognition for the NTFRS fire awareness program and for the work put into this campaign to make it a reality.  NTFRS continues its lead role in providing end user input into the Northern Australia research projects emanating from the Bushfire and Natural Hazards Cooperative Research Centre which commenced in July 2013.  Throughout 2013‑14 the NTFRS continued the renewal of operational frontline appliances for the remote locations with Borroloola receiving a dual cab Toyota grassfire unit and a combination Isuzu pumper rescue for Mataranka Fire and Emergency Response Group. A new Isuzu pumper was introduced into Alice Springs and a new Scania aerial pumper for the Berrimah Fire and Rescue Station in Darwin.  NT Emergency Service (NTES) experienced a moderate level of activity in 2013‑14. Major activities included various road crash rescue operations, logistic sourcing and evacuation shelter preparations for the Daly River community, various search and rescue activities and significant emergency service organisation support.  NTES continued to coordinate emergency management across the NT Government and, prior to the commencement of the wet season, all Regional and Local Emergency Plans were reviewed and updated. The Emergency Management Act 2013 was enacted as at November 2013 and NTES charged with transitioning the Emergency Management Plans across the Territory from the previous Disasters Act.  Bushfires NT responded to predictions of a severe 2014 bushfire season for the top half of the Territory by planning and implementing broad scale fuel reduction programs across much of the Top End and Katherine regions during the early part of the 2014 dry season. Aerial prescribed burning was used extensively to create strategic firebreaks on a regional scale. A series of pre‑season planning workshops brought together volunteer brigades, landholders and fire managers, resulting in a high level of coordination and cooperation for the 2014 season.  Bushfires NT also continued its program of upgrading volunteer brigade firefighting resources by adding three extra 3000 litre medium attack grassfire units and four extra 500 litre light grassfire units to the volunteer fleet. | **”** |

## 9.9 Definitions of key terms

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| **Comparability** | Data are considered comparable if (subject to caveats) they can be used to inform an assessment of comparative performance. Typically, data are considered comparable when they are collected in the same way and in accordance with the same definitions. For comparable indicators or measures, significant differences in reported results allow an assessment of differences in performance, rather than being the result of anomalies in the data. |
| **Completeness** | Data are considered complete if all required data are available for all jurisdictions that provide the service. |
| **Expenditure** | Includes:   * salaries and payments in the nature of salaries to fire and ambulance personnel * capital expenditure (such as the user cost of capital) * other operating expenditure (such as running expenditure, contract expenditure, training expenditure, maintenance expenditure, communications expenditure, provision for losses and other recurrent expenditure).   Excludes interest on borrowings. |
| User cost  of capital | The opportunity cost of funds tied up in the capital used to deliver services. Calculated as 8 per cent of the current value of non‑current physical assets (including land, plant and equipment). |
| **Human resources** | Human resources refers to any person delivering a service, or managing the delivery of this service, including:   * firefighters (qualified paid and volunteer firefighters) * salaried ambulance personnel, remunerated volunteer and non‑remunerated volunteer ambulance personnel * support personnel (any paid person or volunteer directly supporting operational providers, including administrative, technical and communications personnel). |
| **Revenue** | Revenue received directly or indirectly by fire and ambulance service organisations on an accrual accounting basis, including: |
| Government grant funding | Grant funding, as established in legislation, from the Australian, State/Territory and Local governments. |
| Levies | Revenue from levies, as established in enabling legislation, raised on insurance companies and property owners. |
| User/transport charges | Revenue from fees and charges on individuals, private/public organisations and insurers. |
| Subscriptions and other income | Other revenue, including:   * subscriptions and benefit funds received from the community * donations, industry contributions and fundraising received * other income. |
| Indirect revenue | 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. |

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| **Volunteer personnel** | |  |
| Volunteer firefighters /ambulance operatives | All personnel engaged on an unpaid casual basis by the emergency service organisation who:   * are principally involved in the delivery of ambulance services, generally on an on‑call basis. These staff may include categories on the same basis as permanent ambulance operatives (with transport capability) * deliver or manage a firefighting service directly to the community and who are formally trained and qualified to undertake firefighting duties, but do not receive remuneration other than reimbursement of ‘out of pocket expenses’. | |
| Remunerated volunteer ambulance operatives | All personnel who volunteer their availability, however, are remunerated in part for provision of an ambulance response (with transport capability). | |
| Volunteer support staff | All personnel engaged on an unpaid casual basis that are not remunerated and are principally involved in the provision of support services. For fire service organisations, this includes any staff whose immediate client is the firefighter. These can be people in operational support roles provided they do not receive payment for their services other than reimbursement of ‘out of pocket expenses’. | |

## 9.10 List of attachment tables

Attachment tables are identified in references throughout this chapter by an ‘9A’ prefix (for example, table 9A.3 is table 3). Attachment tables are provided on the Review website (www.pc.gov.au/gsp).

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| **Table 9A.3** | Scope of 'fire service organisation' data provided by jurisdictions |
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| **Context and other information** | |
| **Table 9A.48** | Communications and dispatching systems |
| **Table 9A.49** | Treatment of assets by emergency management agencies |

## 9.11 References

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