# 9 Fire and ambulance services

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This chapter reports performance information for government services for fire events and emergency ambulance events. 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:

* two new measures under the ‘firefighter workforce’ output indicator — firefighter workforce by age group and firefighter workforce attrition — which provide information on fire service organisations’ human resource preparedness for fire events
* a mini case study on managing emergency vehicle demand through the Queensland Government’s Emergency Vehicle Priority System (EVP) program, resulting in improved ambulance priority one response times.

All abbreviations used in this Report are available in a complete list in volume A: Approach to performance reporting.

## 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 burn
* other fires, including vehicle and other mobile property fires, and outside rubbish fires.

### Roles and responsibilities

Fire service organisations are one of 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. Detailed activities by jurisdiction are available in table 9A.1.

Each jurisdiction operates multiple fire service agencies, which service different populations and geographic areas according to specified governance arrangements (table 9A.2). Separate urban and rural fire service agencies operate 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 (tables 9A.2–3).

### Funding and revenue

Total revenue of the fire service organisations was $3.5 billion in 2014‑15 (table 9.1). Fluctuations for individual jurisdictions over time 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 by fire service organisations), for which data are currently not available.

Jurisdictions have 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. Fire levies are 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.

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| Table 9.1 Real revenue of fire service organisations (2014‑15 dollars) ($ million)**a** |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust | | 2010-11 | 1 017.3 | 1 063.5 | 519.9 | 420.3 | 176.6 | 68.9 | 52.5 | 31.3 | 3 350.4 | | 2011-12 | 997.7 | 1 219.1 | 526.2 | 428.4 | 187.0 | 71.4 | 67.4 | 37.9 | 3 535.1 | | 2012-13 | 1 046.2 | 1 183.3 | 520.1 | 374.2 | 184.0 | 86.0 | 63.1 | 50.4 | 3 507.3 | | 2013-14 | 1 120.9 | 1 217.2 | 632.9 | 347.0 | 211.4 | 75.4 | 63.9 | 33.1 | 3 701.8 | | 2014-15 | 1 019.0 | 1 138.6 | 622.1 | 365.2 | 212.1 | 73.9 | 68.2 | 38.7 | 3 537.7 | |
| a  See table 9A.4 for detailed caveats. |
| *Source*: State and Territory governments (unpublished); table 9A.4. |
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### Human resources

Nationally in 2014‑15, 18 853 full time equivalent (FTE) paid personnel were employed by fire service organisations. The majority (75.8 per cent) were paid firefighters.

A large number of volunteer firefighters (226 052 people) also participated in the delivery of services in 2014–15. The proportion of volunteer personnel and the nature of their role varied across jurisdictions (table 9A.5).

### 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,

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fire service organisations attended a total of 385 118 emergency incidents in 2014‑15, of which 97 545 were fire events (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

The performance indicator framework for fire events is based on governments’ common 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 in this chapter also uses the prevention/mitigation, preparedness, response and recovery framework (sector overview D). The performance indicator framework shows which data are complete and comparable in the 2016 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).

In addition to selection 9.1, 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 (chapter 2).

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| Figure 9.1 Fire events performance indicator framework |
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## 9.3 Key performance indicator results for fire events

Different delivery contexts, locations and types of clients can affect the equity, effectiveness and efficiency of fire services.

Data Quality Information (DQI) is included where available for performance indicators in this 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. All DQI for the 2016 Report can be found at www.pc.gov.au/rogs/2016.

### 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). Output information is also critical for equitable, efficient and effective management of government services.

### 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.

#### Prevention/mitigation — 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 in the population. Fire events cover structure fires, landscape fires and other fires.  As contextual information, data are also provided for false alarm events and non‑fire events and false alarms 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2014‑15, fire service organisations attended 413 fire incidents per 100 000 people, a decrease from 438 fire incidents per 100 000 people in 2013‑14 (figure 9.2).

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| Figure 9.2 Fire incidents that fire service organisations attended, per 100 000 people**a** |
| |  | | --- | | 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 See box 9.2 and table 9A.14 for detailed definitions, footnotes and caveats. |
| *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 volume of structure fires, landscape fires and other fires.

* S*tructure fire incidents* — Nationally in 2014‑15, there were 19 356 structure fires, a decrease from 2013‑14 (with an associated change in rate from 84 to 82 per 100 000 people) (table 9A.14)
* *Landscape fire incidents* — Nationally in 2014‑15, 41 791 landscape fire incidents were reported by fire service and land management agencies, a decrease from 2013‑14 (with an associated change in rate from 188 to 177 fires per 100 000 people, or 5.7 to 5.4 per 100 000 hectares) (table 9A.16)

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. 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

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landscape fires triggered by human activity (AIC 2008). For the 2014‑15 fire season, Australia generally experienced warmer conditions with near average rainfall conditions nationally (BoM 2015).

* *Other fire incidents* — Nationally in 2014‑15, there were 36 398 other fires (such as vehicle fires or outside storage fires), a decrease from 2013‑14 (with an associated change in rate from 166 to 154 per 100 000 people) (tables 9A.13–14).

##### 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 2014‑15, of all incidents attended by fire service organisations, 30.8 per cent (116 636) were false alarms (system initiated or malicious false calls), with around 97 per cent of these false alarms system initiated (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 resources can be delayed responding to an actual 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 2014‑15, attendance at other emergencies and incidents accounted for 43.7 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 |
| |  | | --- | | Figure 9.3 Non fire incidents that fire service organisations attended (excluding false alarms) per 100 000 people  More details can be found within the text surrounding this image. | |
| a See box 9.2 and table 9A.13 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); derived using data from table 9A.13 and chapter 2, table 2A.2. |
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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 65 438 non‑fire rescue incidents (table 9A.13), of which over one third (34.7 per cent) involved road crash rescue (table 9A.19). 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).
* *Hazardous materials incidents* — Fire service organisations attended 25 280 incidents where materials that have hazardous properties must be controlled or contained in 2014‑15 (table 9A.13). Of these, 4227 incidents (or 17.9 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)
* *Calls to floods, storm and tempest and other natural disasters* — In coordination with other emergency services, fire service organisations responded to 19 582 natural disaster incidents (actual or imminent) in 2014‑15 (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).

#### Prevention/mitigation — 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 2014‑15 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 2014‑15 data are not available for SA, Tas, ACT and NT.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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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
* *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 owner misuse)
* *effective emergency warning systems* (table 9A.21).

A summary of selected fire risk management/mitigation strategies implemented in each jurisdiction is in 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 84.5 per 100 000 households in 2014‑15 (figure 9.4). 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 9.4 Accidental residential structure fires per 100 000 households**a** |
| |  | | --- | | Figure 9.4 Accidental residential structure fires per 100 000 households  More details can be found within the text surrounding this image. | |
| a See box 9.3 and table 9A.15 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); ABS (2015) *Household and Family Projections, 2011 to 2036*, Cat. no. 3236.0; 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.

Nationally in 2014‑15, firefighter assessments reported that:

* 9712 structure fires had an ignition factor of misuse, failure or deficiency (55.9 per cent of all structure fires), of which 2348 fires had an ignition factor of unattended heat sources and 3068 fires had an ignition factor of mechanical failure or malfunction
* 1882 structure fires were deliberately or suspiciously set fires (10.8 per cent)
* the ignition factor for 3964 structure fires (22.8 per cent) was ‘undetermined or not reported’ (figure 9.5).

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| Figure 9.5 Ignition factors for structure fires, 2014‑15a |
| |  | | --- | | Figure 9.5 Ignition factors for structure fires, 2014-15  More details can be found within the text surrounding this image. | |
| a See table 9A.17 for detailed definitions, footnotes and caveats. |
| *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 estimate that 94.4 per cent, 97.2 per cent, 94.9 per cent and 80.0 per cent of households in NSW, Victoria, Queensland and the NT respectively, had an installed smoke alarm/detector in 2014‑15 (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 2014‑15, 85.9 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.

#### Preparedness — 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 of this Report included 2007 data for household preparedness for emergencies (ABS 2008). 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* have 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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#### Preparedness — 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 by four measures:   * ‘number of full time equivalent firefighter personnel per 100 000 people’ where firefighter personnel is defined as the count of all paid firefighters employed on a FTE basis. * ‘workforce by age group’ 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. * ‘workforce attrition’ 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   Low or decreasing levels of staff attrition are desirable.   * ‘number of fire service organisation volunteers (firefighters and support volunteers) per 100 000 people’ where the number of volunteers of fire service organisations is defined as the sum of volunteer firefighters and volunteer support staff on a head count basis.   A workforce of paid firefighter personnel and volunteers which has sufficient capacity and capability to respond to a range of fire and other emergency events 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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The number of full time equivalent firefighter personnel per 100 000 people, workforce by age group, volunteers and staff attrition measures should be considered together. Each provides a different aspect of the changing profile and sustainability of fire service organisations’ workforces.

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

Paid fire‑fighters are predominantly responsible for preventing and responding to fire emergencies including rescues and hazardous materials incidents, providing direct protection in the major cities, metropolitan areas and towns. They support a range of government agencies, including the land management agencies, and work closely with local communities and volunteers to protect lives and property.

Nationally in 2014‑15, 60.5 FTE paid firefighters were employed by fire service organisations per 100 000 people, which represents a decrease from 63.5 FTE paid firefighters per 100 000 people in 2013‑14 (figure 9.6).

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| Figure 9.6 Number of full time equivalent paid firefighting personnel**a** |
| |  | | --- | | Figure 9.6 Number of full time equivalent paid firefighting personnel  More details can be found within the text surrounding this image. | |
| a See box 9.5 and tables 2A.2 and 9A.24 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished), table 9A.24. |
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#### Firefighter workforce — Workforce by age group

Nationally in 2014-15, 64.1 per cent of the firefighter workforce were aged under 50 years (figure 9.7). Time series data are not available for this measure.

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| Figure 9.7 Firefighter workforce, by age group, 2014–15**a** |
| |  | | --- | | Figure 9.7 Firefighter workforce, by age group, 2014–15  More details can be found within the text surrounding this image. | |
| a See box 9.5 and table 9A.5 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished), table 9A.5. |
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#### Firefighter Workforce — Workforce attrition

Nationally in 2014-15, the staff attrition rate was 1.7 per cent, which varied considerably across jurisdictions (table 9A.5). Time series data are not available for this measure.

##### Firefighter workforce — fire service organisation volunteers per 100 000 people

Australia’s fire service organisations 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 2014‑15, there were 956.8 fire service organisation volunteers per 100 000 people, which varied across jurisdictions. This represents a decrease from 959.4 volunteer firefighters per 100 000 people in 2013‑14 (figure 9.8).

Over the past 10 years the number of fire service organisation volunteers per 100 000 people has decreased by 13.5 per cent (figure 9.8 and 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).

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| Figure 9.8 Fire service organisation volunteers per 100 000 people**a** |
| |  | | --- | | Figure 9.8 Fire service organisation volunteers per 100 000 people  More details can be found within the text surrounding this image. | |
| a See box 9.5 and tables 2A.2 and 9A.24 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished), table 9A.24. |
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#### Equity and effectiveness — response

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

#### Response — 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).

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.

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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.)  Figure within 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 * capital cities — measured as the geographic area that incorporates the jurisdictions’ capital city. Boundaries are based on the ABS Australian Statistical Geography Standard (ASGS) 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 ASGS 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).   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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##### Response times to structure fires — state‑wide

Nationally in 2014‑15, the time within which 90 per cent of the first responding fire resources arrived at the scene of a structure fire (including call taking time) varied from 10.9 minutes to 23.2 minutes across jurisdictions (figure 9.9).

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 9.9 Response times to structure fires, state‑wide, 90th percentile **a, b** |
| |  | | --- | | **Figure 9.9 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 9.9 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 See box 9.6 and tables 9A.26–27 for detailed definitions, footnotes and caveats.b SA: data including call taking time are not available prior to 2014‑15. |
| *Source*: State and Territory governments (unpublished); tables 9A.26–27. |
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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 9.1 minutes to 20.2 minutes (figure 9.10). Population density across Australian capital cities varies considerably and this can impact on response time performance.

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| Figure 9.10 Response times to structure fires, capital cities, 2014‑15, 90th percentile**a** |
| |  | | --- | | Figure 9.10 Response times to structure fires, capital cities, 2014-15, 90th percentile  More details can be found within the text surrounding this image. | |
| a See box 9.6 and tables 9A.26–27 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); tables 9A.26–27. |
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##### Response times to structure fires — remoteness areas

Response times are generally higher for all jurisdictions in regional and remote areas, compared to capital cities (figure 9.11).

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| Figure 9.11 Response times to structure fires, regional and remote areas, 2014‑15, 90th percentile**a** |
| |  | | --- | | Figure 9.11 Response times to structure fires, regional and remote areas, 2014-15, 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 See box 9.6 and tables 9A.26–27 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); tables 9A.26–27. |
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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 should be interpreted with caution. 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.  The role of volunteers needs to be considered when interpreting this indicator. 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).  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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2014‑15, the total expenditure of fire service organisations was $3.7 billion, or $156 per person in the population (figure 9.12). Expenditure data disaggregated by labour, capital and other costs are available in table 9A.28.

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| Figure 9.12 Fire service organisations’ expenditure (2014‑15 dollars)**a** |
| |  | | --- | | Figure 9.12 Fire service organisations’ expenditure (2014-15 dollars)  More details can be found within the text surrounding this image. | |
| a See box 9.8 and table 9A.29 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); ABS (unpublished); table 9A.29. |
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Nationally in 2014‑15, levies and government grants and indirect government funding were the largest sources of fire services revenue (62.8 and 28.0 per cent of total funding and $94 per person and $42 per person respectively (table 9A.30).

### 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).

#### 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 landscape fires only, 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 2015). 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 * 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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##### Fire death rate — Annual fire death rate

The annual fire death rate was 4.3 deaths per million people in 2013 (99 fire deaths) (figure 9.13 and table 9A.6). Nationally, exposure to smoke, fire and flames accounted for the majority of fire deaths in 2013 (56 deaths) (table 9A.7).

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| Figure 9.13 Annual fire death rate, 1984–2013**a** |
| |  | | --- | | Figure 9.13 Annual fire death rate, 1984–2013  More details can be found within the text surrounding this image.  Figure 9.13 Annual fire death rate, 1984–2013  More details can be found within the text surrounding this image. | |
| a See box 9.9 and table 9A.6 for detailed definitions, footnotes and caveats. |
| *Source*: ABS (2015) *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 1984–93 the average deaths per million people was 10.0. In the most recent decade (2004–13), the average deaths per million people was 6.0 (figure 9.13).

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| Box 9.10 Recent history of Australian bushfires |
| 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 many injuries, and 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 (2 deaths in 2014‑15, equating to 0.1 fire deaths per million people), although the landscape fire death rate is punctuated by large, irregular events (table 9.2 and 9A.8). 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**a** |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust | | 2010-11 | 2 | - | - | 1 | - | - | - | - | 3 | | 2011-12 | - | 1 | 1 | - | - | - | - | - | 2 | | 2012-13 | - | 5 | - | 3 | - | 1 | - | - | 9 | | 2013-14 | 2 | 1 | - | 1 | - | - | - | - | 4 | | 2014-15 | - | - | - | - | 2 | - | - | - | 2 | |
| a See box 9.9 and table 9A.8 for detailed caveats. – 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 (box 9.11).

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| Box 9.11 Fire injury rate |
| ‘Fire injury rate’ is defined as the number of fire‑related hospital admissions 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. Data reported exclude deaths from fire injuries after hospitalisation (counted in the fire death rate data).  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 2013‑14 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2013‑14, there were 4000 hospital admissions due to fire injury, equating to a rate of 17.2 per 100 000 people (table 9A.9 and figure 9.14).

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| Figure 9.14 Annual fire hospitalisation rate per 100 000 people**a** |
| |  | | --- | | Figure 9.14 Annual fire hospitalisation rate per 100 000 people  More details can be found within the text surrounding this image. | |
| a See box 9.11 and table 9A.9 for detailed definitions, footnotes and caveats. |
| *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. One method to overcome data volatility is to present fire hospitalisation rates as three‑year averages (table 9A.9). 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).

AIHW (2013) analysis of the trends in hospitalised accidental burn injury from the 10 years to 2010‑11 shows that the following groups were at risk of suffering accidental burns injuries:

* young children aged 0‑4 years (highest burn injury rate)
* adolescent/young adult males, particularly burns from exposure to ignition of highly flammable material (such as petrol) and exposure to controlled fire, not in building or structure (such as campfire)
* Aboriginal and Torres Strait Islander people.

#### 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 — Confinement 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 — Confinement is a measure of the proportion of building fires andother structure fires confined to the room and/or object from which the fire originated   A building fire is a fire that has caused some damage to a building structure (such as a house). Other structure fires are fires within a building structure (such as fires confined to rubbish bins, burnt foodstuffs and fires confined to cooking equipment).  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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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##### Confinement to room/object of origin — Proportion of building fires confined to room of origin

The proportion of building fires, from all ignition types, confined to room of origin varies across jurisdictions, and within jurisdictions over time (figure 9.15).

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| Figure 9.15 Proportion of building fires confined to room of origin, all ignition types**a** |
| |  | | --- | | Figure 9.15 Proportion of building fires confined to room of origin, all ignition types  More details can be found within the text surrounding this image. | |
| a See box 9.12 and table 9A.10 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); table 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 9.15 and figure 9.16). The measure incorporates object fires that do not spread to the building.

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).

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| Figure 9.16 Proportion of building and other structure fires confined to room/object of origin, all ignition types**a** |
| |  | | --- | | Figure 9.16 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 See box 9.12 and table 9A.11 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); tables 9A.11. |
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#### Value of asset losses from fire events

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

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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.  Firefighter assessed property losses from structure fires is no longer reported as a measure.  The value of these insurance claims 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.  Lower or decreasing asset losses from fire events represent a better outcome.  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 * 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.   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 and 60 per cent of the potential domestic and commercial insurance markets respectively.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2014‑15, household and commercial property insurance claims in relation to fire events (excluding major events) totalled $801.6 million (table 9A.12).

From 2010‑11 to 2014‑15, whilst the number of claims decreased (from 10 837 to 9630) domestic insurance fire event claims increased for:

* average claims — a 34.7 per cent increase in real terms from an average claim of $37 133 in 2010‑11 to an average claim of $50 013 in 2014‑15
* claim per person — a 12.3 per cent increase in real terms from $18.15 per person in the population in 2010‑11 to $20.38 per person in the population in 2014‑15 (table 9A.12 and figure 9.17).

Nationally, there were 2297 commercial insurance claims from fire events in 2014‑15 (table 9A.12). In real terms, total commercial insurance claims from fire events per person in the population increased 26.2 per cent from $10.74 per person in the population in 2010‑11 to $13.55 per person in the population in 2014‑15 (figure 9.17).

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| Figure 9.17 Total value of fire event insurance claims (2014‑15 dollars)a |
| |  | | --- | | Figure 9.17 Total value of fire event insurance claims (2014-15 dollars)  More details can be found within the text surrounding this image. | |
| a See box 9.13 and table 9A.12 for detailed definitions, footnotes and caveats. |
| *Source*: ISA Database (2015), unpublished; table 9A.12. |
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## 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.

### Roles and responsibilities

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).

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.

### Funding and revenue

#### Revenue of ambulance service organisations

Total revenue of ambulance service organisations covered in this chapter was $2.8 billion in 2014‑15. Nationally, revenue increased each year from 2010‑11 to 2014‑15 (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 (2014‑15 dollars) ($ million)**a** |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust | | 2010-11 | 717.2 | 612.3 | 576.3 | 184.0 | 209.6 | 57.6 | 29.8 | 23.4 | 2 410.1 | | 2011-12 | 747.4 | 637.0 | 597.8 | 218.7 | 216.6 | 61.3 | 37.4 | 24.6 | 2 540.8 | | 2012-13 | 794.5 | 702.6 | 589.4 | 233.7 | 248.4 | 64.1 | 37.8 | 26.4 | 2 696.9 | | 2013-14 | 811.9 | 671.0 | 592.4 | 245.1 | 239.9 | 60.6 | 40.9 | 25.9 | 2 687.6 | | 2014-15 | 838.1 | 725.1 | 595.7 | 251.5 | 244.1 | 57.3 | 43.2 | 27.3 | 2 782.3 | |
| a See table 9A.32 for detailed footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); table 9A.32. |
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The primary sources of revenue across all jurisdictions in 2014‑15 were grants from State and Territory governments (68.0 per cent) and transport fees (from public hospitals, private citizens and insurance). Ambulance subscriptions are also a source of funding in some jurisdictions (table 9A.32).

#### Ambulance service organisation assets and air ambulance resources

In 2014‑15, ambulance service organisations operated 1139 response locations and 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 (also called aero‑medical) services vary. In Queensland, WA, SA and the 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 90 air ambulance aircraft were available nationally in 2014‑15 (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.)

Information on the treatment of assets by emergency management agencies is presented in table 9A.50.

### Human resources

Nationally in 2014‑15, 15 976 FTE salaried personnel were involved in the delivery of ambulance services for ambulance service organisations reported in this chapter. The majority (81.0 per cent) of these personnel 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, 6211 volunteer personnel (comprising 5990 operatives and 221 support personnel) participated in the delivery of ambulance services in 2014‑15. 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 1122 ambulance community first responders in 2014‑15 (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 2014‑15:

* 3.4 million incidents — events that result in a demand for ambulance resources to respond — were reported to ambulance service organisations (144.1 incidents per 1000 people)
* 4.2 million responses resulted — where an ambulance vehicle or vehicles are sent to an incident (177.6 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 (136.9 patients per 1000 people) — (figure 9.18 and table 9A.33).

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| Figure 9.18 Reported ambulance incidents, responses and patients, 2014‑15**a** |
| |  | | --- | | Figure 9.18 Reported ambulance incidents, responses and patients, 2014-15  More details can be found within the text surrounding this image. | |
| a See table 9A.33 for detailed footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); table 9A.33. |
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#### Prioritisation of 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 2014‑15, of the 3.2 million incidents ambulance service organisations attended, 44.2 per cent were prioritised by the ambulance service organisations as emergency incidents. Ambulance service organisations also attended a large number of urgent incidents (31.9 per cent) and non‑emergency incidents (23.9 per cent) (table 9A.33). There were 520 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 2014‑15, 1.8 million patients arrived at an emergency department by ambulance, air ambulance, or helicopter (24.4 per cent of all emergency department patients) (table 9A.34 and figure 9.19). Of these, 41 216 patients were assessed by emergency department staff to have immediately life threatening conditions on arrival at hospital (triage category ‘resuscitation’). In total, 84.1 per cent of all emergency department resuscitation patients arrived by ambulance, air ambulance, or helicopter in 2014‑15.

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| Figure 9.19 Proportion of total emergency department patients, by triage category, who arrived by ambulance, air ambulance or helicopter rescue services 2014‑15 (per cent)**a** |
| |  | | --- | | Figure 9.19 Proportion of total emergency department patients, by triage category, who arrived by ambulance, air ambulance or helicopter rescue services 2014-15 (per cent)  More details can be found within the text surrounding this image. | |
| a See table 9A.34 for detailed footnotes and caveats. |
| *Source*: AIHW (2015), *Emergency department care 2014‑15: Australian hospital statistics*. Health services series no. 65. Cat. no. HSE 168. Canberra. |
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## 9.5 Framework of performance indicators for ambulance events

The performance indicator framework for fire events is based on governments’ common objectives for emergency services for ambulance events (box 9.14).

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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 performance indicator framework provides information on equity, efficiency and effectiveness, and distinguishes the outputs and outcomes of ambulance services (figure 9.20). The performance indicator framework shows which data are complete and comparable in the 2016 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).

In addition to section 9.4, 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 (chapter 2).

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| Figure 9.20 Ambulance events performance indicator framework |
| |  | | --- | | Figure 9.20 Ambulance events performance indicator framework  More details can be found within the text surrounding this image. | |
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## 9.6 Key performance indicator results for ambulance events

Different delivery contexts, locations and types of clients can affect the equity, effectiveness and efficiency of ambulance services.

Data Quality Information (DQI) is included where available for performance indicators in this 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 of sector overview and attachment tables. All DQI for the 2016 Report can be found at www.pc.gov.au/rogs/2016.

### 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). Output information is also critical for equitable, efficient and effective management of government services.

### Equity

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.

#### Access — 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2014‑15, the number of salaried, mixed and volunteer response locations was 4.9 per 100 000 people (table 9A.38 and figure 9.21).

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| Figure 9.21 Total number of ambulance response locations, per 100 000 people, by type of station**a** |
| |  | | --- | | Figure 9.21 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 See box 9.15 and table 9A.38 for detailed definitions, footnotes and caveats. |
| *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. Some jurisdictions comprise a large proportion of volunteer ambulance locations, particularly in rural and remote locations.

#### Access — 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 FTE 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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Nationally, there were 46.7 FTE ambulance officers per 100 000 people in 2014‑15. The total number of ambulance officers and the proportion of student and base level ambulance officers varied across jurisdictions (table 9A.35 and figure 9.22).

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 9.22 Number of full time equivalent ambulance officers, per 100 000 people**a** |
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| a See box 9.16 and table 9A.35 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); table 9A.35. |
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#### Access — 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 9.17).

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| Box 9.17 Urban centre response times |
| ‘Urban centre response times’ (as illustrated in box 9.18) 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.  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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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| Box 9.18 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.  Figure within Box 9.18 Ambulance response times definition  More details can be found within the text surrounding this image.  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 (in minutes) within which 50 per cent of the first responding ambulance resources arrive at the scene of an emergency. The 90th percentile is the time (in minutes) within which 90 per cent of the first responding ambulance resources arrive at the scene of an emergency.   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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In 2014‑15, 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 12.5 to 21.2 minutes across jurisdictions (figure 9.23). The median (50th percentile) response times ranged from 8.0 to 11.2 minutes (table 9A.44).

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.

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| Figure 9.23 Ambulance response times, capital city, 90th percentile**a** |
| |  | | --- | | Figure 9.23 Ambulance response times, capital city, 90th percentile  More details can be found within the text surrounding this image. | |
| a See boxes 9.17–18 and tables 9A.44 for detailed definitions, footnotes and caveats. |
| *Source*: ABS (2010) *Australian Statistical Geography Standard (ASGS): Volume 1 ‑ Main Structure and Greater Capital City Statistical Areas, July 2011*, Cat. no. 1270.0.55.001, Canberra; State and Territory governments (unpublished); table 9A.44. |
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Since 2010-11, Queensland has implemented a range of strategies targeted at:

* the effective management of demand for emergency response services
* improved response time to priority one cases (box 9.19).

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| Box 9.19 Mini‑case study: Managing emergency vehicle demand to improve emergency response times |
| Emergency Vehicle Priority (EVP) is a revolutionary approach to creating safer communities through integrating Intelligent Transport Systems (ITS) with emergency service dispatch systems. First conceptualised in 2006, an initial proof of concept project was introduced in Bundaberg in 2008 to explore its feasibility. The concept evolved to a successful trial of EVP on the Gold Coast from November 2012, and ongoing state‑wide rollout (where appropriate).  EVP is the result of a successful collaboration between the Department of Transport and Main Roads (TMR), Transmax, Public Safety Business Agency (PSBA), Queensland Ambulance Service (QAS), Queensland Fire and Emergency Services (QFES), and the Queensland Police Service (QPS), with local government support. The broad objectives of the program are to:   * improve emergency response times and patient outcomes * avoid confusion and traffic accidents associated with emergency vehicles proceeding through red lights * reduce traffic flow disruption and unnecessary unpredictable behaviour by road users due to stress, anxiety or panic * reduce stress and risk for emergency service workers and the community * reduce costs (WorkCover, legal, fleet, admin, insurance) * manage for future increases in demand and congestion.   The EVP solution deployed in Queensland is a dynamic intelligent transport system which is constantly tracking the position of QAS emergency vehicles in a code 1 operation or QFES appliances in a turn–out operation, and automatically, without human intervention, interrupts normal traffic signal operations at the optimal timing for any given traffic conditions. It provides a green traffic light signal to emergency response vehicles, when safe to do so, considering the movement of pedestrians and the emergency vehicle itself through traffic. If the vehicle changes course, the EVP system adjusts itself accordingly to clear the way for the new route.  EVP is one of the earliest large scale deployments of co‑operative ITS with information exchanged between on‑board vehicle communication devices, centralised systems and roadside infrastructure; as illustrated in the diagram below. It has been designed to work with existing technology to deliver a solution which required a slight modification to equipment already installed in emergency vehicles.  There is a four‑year program to roll out EVP across Queensland.  Over the course of 2015‑16 an additional 250 QAS vehicles and 107 QFES appliances will be equipped with EVP, along with a rolling plan aimed at widespread activation of additional intersections over the coming years.  (continued next page) |
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| Box 9.19 (continued) |
| Picture within Box 9.19 Mini case study: Managing emergency vehicle demand to improve emergency response times  Photos of: Photos of: Emergency Vehicle, person working on Computer Aided Dispatch (CAD) system, Traffic Signals  More details can be found within the text surrounding this image.  Program evaluation  ARRB Group was engaged by TMR to evaluate the performance of the pilot EVP system in the Gold Coast area. The purpose of the study was to ascertain the performance of EVP using GPS and survey data.  As at June 2015, a total of 215 ambulance vehicles, 68 fire appliances and 676 intersections have been equipped with the EVP technology since the introduction of this initiative. In 2014‑15, the EVP initiative resulted in 232 516 green light activations for QAS vehicles, and 28 879 green light activations for QFES vehicles. Of these, QAS vehicles progressed through the intersections in 81 per cent of instances, and QFES vehicles in 77 per cent of instances.  The impact of the project on QAS responses underwent an independent evaluation, conducted by the ARRB Group (Australian Road Research Board (ARRB) – *Performance Evaluation of Gold Coast Emergency Vehicle Priority System*; 2015).  http://www.aitpm.com.au/ArticleDocuments/278/Clarissa%20Han%202015%20Session%206.pdf.aspx  Improved code one response time performance for EVP‑enabled vehicles  The EVP demonstrates a capacity for effective interface of computer‑aided dispatch (CAD) and ITS to generate improved response time performance, reduce traffic congestion and enhance community safety.  The independent project evaluation demonstrated a 17 per cent to 26 per cent improvement in travel time for ambulance vehicles. Detailed findings from the comparison between vehicles with‑EVP and without‑EVP were summarised as follows:   * when compared to without‑EVPS vehicles, the average normalised travel time (NTT) for EVPS‑equipped vehicles was reduced by 16.88 per cent, from 0.79 to 0.68 seconds per metre, and the difference was statistically significant at the 95 per cent confidence level (CL) * for EVPS‑equipped vehicles, the mean travel times of all 24 road links were reduced. The mean travel times of 21 out of the 24 links (88 per cent) showed a reduction that was statistically significant at the 95 per cent CL. For these 21 links, the mean travel time was reduced by 11 per cent to 36 per cent.   (continued next page) |
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| Box 9.19 (continued) |
| When comparing the travel time data between trips without‑EVPS and trips with‑EVPS, for vehicles travelling through EVP equipped intersections, further travel time reductions were identified as follows:   * with‑EVPS and a validated successful intervention[[1]](#footnote-1), the average NTT was reduced by 26.08 per cent, from 0.79 to 0.58 seconds per metre, and the difference was statistically significant at the 95 per cent CL.   with‑EVPS and a validated successful intervention, the mean travel times along all 24 links were reduced. The mean travel times of 19 out of the 24 links (79 per cent) showed a reduction that was statistically significant at the 95 per cent CL. For these 19 links, the mean travel time was reduced by 17 per cent to 49 per cent. |
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### Effectiveness

#### Access — 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 9.18) 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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In 2014‑15, across jurisdictions 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 12.5 to 24.0 minutes. Over the past 5 years, the change in response times has varied between jurisdictions (figure 9.24). The median (50th percentile) response times ranged from 7.5 to 11.6 minutes (table 9A.44).

Differences across jurisdictions in the geography, personnel mix, and system type for capturing data, affect state‑wide response times data including:

* 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.

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| Figure 9.24 Ambulance response times, state‑wide, 90th percentile**a** |
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| a See box 9.20 and table 9A.44 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); table 9A.44. |
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#### Access — 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).

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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 9.18) 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 higher or increasing 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2014‑15, ambulance service organisations answered 89.5 per cent of calls from triple zero (000) within ten seconds (figure 9.25).

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| Figure 9.25 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, 2014‑15a |
| |  | | --- | | Figure 9.25 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, 2014-15  More details can be found within the text surrounding this image. | |
| a See box 9.21 and table 9A.45 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments; table 9A.45. |
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#### 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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#### Quality — Safety — Clinical incidents

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’ 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 (in accordance with national health‑wide reporting standards) and reporting in future. |
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#### Quality — Clinical — Clinical interventions and treatments

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’ has been identified 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 9.24).

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 and reporting in future. |
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#### 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.

#### Quality — Continuity — Continuity of care

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’ 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 and reporting in future. |
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#### 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.

#### Sustainability — 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2014‑15, 75.2 per cent of the ambulance workforce were aged under 50, a decrease from 78.6 in 2013‑14 (table 9A.36 and figure 9.26).

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| Figure 9.26 Ambulance workforce, by age group, 2014‑15**a** |
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| a See table 9A.36 for detailed footnotes and caveats. |
| *Source*: State and Territory governments (unpublished), table 9A.36. |
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#### Sustainability — 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 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally, the staff attrition rate was 3.6 per cent in 2014‑15, which varied across jurisdictions (figure 9.27).

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| Figure 9.27 Ambulance staff attrition**a** |
| |  | | --- | | Figure 9.27 Ambulance staff attrition  More details can be found within the text surrounding this image. | |
| a See box 9.27 and table 9A.36 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished), table 9A.36. |
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#### Sustainability — 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 courses per million people in the population * students enrolled in the final year of accredited courses. This subset 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/2016. |
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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 6372 students were enrolled at accredited paramedic training courses for the 2014 course year (or 271.3 per million people), an 8.5 per cent increase from 2013 (figure 9.28 and table 9A.37). Nationally, 1253 students were enrolled in the final year of their course in 2014 (table 9A.37).

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| Figure 9.28 Enrolments in accredited paramedic training courses, per million people in the population, 2014**a** |
| |  | | --- | | Figure 9.28 Enrolments in accredited paramedic training courses, per million people in the population, 2014  More details can be found within the text surrounding this image. | |
| a See box 9.28 and table 9A.37 for detailed definitions, footnotes and caveats. |
| *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 should be interpreted with caution. 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.  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.  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 2014‑15 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 $2.8 billion, or $119.44 per person in 2014‑15 (tables 9A.46–47 and figure 9.29).

Within Australia, different jurisdictions have selected different funding models to provide resourcing to ambulance service organisations. The proportions of funding sources varied across jurisdictions. Nationally in 2014‑15, government grants and indirect government funding formed the greatest source of ambulance service organisations funding (68.1 per cent of total funding, and $80.18 per person), followed by transport fees (25.2 per cent of total funding, or $30.15 per person) (table 9A.48).

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| Figure 9.29 Ambulance service organisations’ expenditure per person (2014‑15 dollars)a |
| |  | | --- | | Figure 9.29 Ambulance service organisations’ expenditure per person (2014-15 dollars)  More details can be found within the text surrounding this image. | |
| a See box 9.29 and table 9A.47 for detailed definitions, footnotes and caveats. |
| *Source*: State and Territory governments (unpublished); tables 9A.47 and 9A.51. |
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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 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 or 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: * a person was in out‑of‑hospital cardiac arrest (which was not witnessed by a paramedic) * chest compressions and/or defibrillation was undertaken by ambulance or emergency medical services personnel. * Adult Ventricular Fibrillation (VF) or Ventricular Tachycardia (VT) cardiac arrests where: * a person was in out‑of‑hospital cardiac arrest (which was not witnessed by a paramedic) * the arrest rhythm on the first ECG assessment was either VF or 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 * complete (subject to caveats) for the current reporting period. All required 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is under development. |
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Across jurisdictions the survival rate for patients in VF or VT cardiac arrest are higher than for other adult cardiac arrests (figure 9.30 and table 9A.41). 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 earlier 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 9.30 Cardiac arrest survived event rate, 2014‑15**a, b** |
| |  | | --- | | Figure 9.30 Cardiac arrest survived event rate, 2014-15  More details can be found within the text surrounding this image. | |
| a See box 9.31 and table 9A. for detailed definitions, footnotes and caveats. b Data not available for Tasmania for 2014‑15 for paramedic witnessed cardiac arrests, and therefore no Australian total is reported. |
| *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 is 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 outcomes (figure 9.30).

#### 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 and reporting in future. |
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This page has been changed since an earlier version of the Report. See errata at  
 http://www.pc.gov.au/research/ongoing/report-on-government-services/2016/emergency-management#errata

#### 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 * complete (subject to caveats) for the current reporting period. All required 2014‑15 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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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. Nationally in 2014‑15, 86.5 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 9.31).

This page has been changed since an earlier version of the Report. See errata at  
 http://www.pc.gov.au/research/ongoing/report-on-government-services/2016/emergency-management#errata

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| Figure 9.31 Patients who report a clinically meaningful pain reduction**a, b** |
| |  | | --- | | Figure 9.31 Patients who report a clinically meaningful pain reduction  More details can be found within the text surrounding this image. | |
| a See box 9.33 and table 9A.42 for detailed definitions, footnotes and caveats. b Data for the ACT and the NT were not available for 2012‑13 and for the NT in 2013-14. Total excludes the ACT and NT in 2012-13 and the NT in 2012-13 and 2013-14 and a national total is not reported. |
| *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 2015).  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 2015 data are available for all jurisdictions.   Data quality information for this indicator is at www.pc.gov.au/rogs/2016. |
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Nationally in 2015, 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 9.32). Over ten years, the estimated overall satisfaction levels for ambulance patients were similar across all jurisdictions (table 9A.43).

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| Figure 9.32 Proportion of ambulance users who were satisfied or very satisfied with the ambulance service, 2015**a** |
| |  | | --- | | Figure 9.32 Proportion of ambulance users who were satisfied or very satisfied with the ambulance service, 2015  More details can be found within the text surrounding this image. | |
| a See box 9.34 and table 9A.43 for detailed definitions, footnotes and caveats. |
| *Source*: CAA 2015, *Council of Ambulance Authorities Patient Satisfaction Survey 2015*; 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 (AFAC), the Australian Council of State Emergency Services and the CAA.

### Fire events

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 outcomes 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.

### Ambulance events

Ambulance event reporting will focus on further developing the comparability of the cardiac arrest survived event indicator and expanding 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 future years.

## 9.8 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. | |
| **Preparedness** | Actions/programmes designed to strengthen the overall capacity and capability of a community to manage disasters; and procedures planned for during a non‑disaster response period to be actioned during a disaster response period to minimise the loss of life, injury and damage to property when a disaster occurs. | |
| **Response** | Actions taken in anticipation of, during and/or immediately after a disaster to ensure that its effects are minimised and that affected people are provided with immediate care, relief and support. | |
| **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’. | |

## 9.9 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/rogs/2016).

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| **Fire events** |  |
| **Table 9A.1** | All activities of fire service organisations |
| **Table 9A.2** | Delivery and scope of activity of primary fire service organisations |
| **Table 9A.3** | Scope of 'fire service organisation' data provided by jurisdictions |
| **Table 9A.4** | Major sources of fire service organisations revenue (2014‑15 dollars) |
| **Table 9A.5** | Fire service organisations human resources |
| **Table 9A.6** | Fire death rate |
| **Table 9A.7** | Fire deaths |
| **Table 9A.8** | Landscape fire deaths |
| **Table 9A.9** | Fire injuries |
| **Table 9A.10** | Confinement of building fires to room of origin (per cent) |
| **Table 9A.11** | Confinement of building and other structure fires to room/object of origin (per cent) |
| **Table 9A.12** | Building and contents insurance, fire event claims (2014‑15 dollars) |
| **Table 9A.13** | Reported fires and other primary incidents attended to by fire service organisations (no.) |
| **Table 9A.14** | Fire incidents attended by fire service organisations (number per 100 000 people) |
| **Table 9A.15** | Accidental residential structure fires reported to fire service organisations per 100 000 households |
| **Table 9A.16** | Fire service organisations (including land management agencies) reported total landscape fires (bush and grass) incidents (no.) and rates |
| **Table 9A.17** | Ignition factors for structure fires |
| **Table 9A.18** | Hazardous materials incidents |
| **Table 9A.19** | Reported road crash rescue incidents (number) |
| **Table 9A.20** | Reported road crash rescue extrications (number) |
| **Table 9A.21** | Prevention activities of fire service organisations |
| **Table 9A.22** | Selected fire risk management/mitigation strategies |
| **Table 9A.23** | Households with a smoke alarm or smoke detector installed |
| **Table 9A.24** | Firefighter workforce per 100 000 people |
| **Table 9A.25** | Number of structure fires, by remoteness area |
| **Table 9A.26** | Structure fire response times to structure fires, including call taking time, by remoteness area |
| **Table 9A.27** | Structure fire response times to structure fires, excluding call taking time, by remoteness area |
| **Table 9A.28** | Fire service organisations' costs ($'000) (2014‑15 dollars) |
| **Table 9A.29** | Fire service organisations' expenditure per person (2014‑15 dollars) |
| **Table 9A.30** | Fire service organisations' person (2014‑15 dollars) |
| **Ambulance events** | |
| **Table 9A.31** | Delivery and scope of activity of ambulance service organisations |
| **Table 9A.32** | Major sources of ambulance service organisations revenue (2014‑15 dollars) |
| **Table 9A.33** | Reported ambulance incidents, responses, patients and transport |
| **Table 9A.34** | Emergency department patients who arrived by ambulance, air ambulance, or helicopter, by triage category |
| **Table 9A.35** | Ambulance service organisations' human resources |
| **Table 9A.36** | Ambulance service organisations' human resources, operational workforce, by age group and attrition |
| **Table 9A.37** | Enrolments in accredited paramedic training courses |
| **Table 9A.38** | Ambulance response locations, by staff type |
| **Table 9A.39** | Ambulance assets (number) |
| **Table 9A.40** | Aero medical resources and expenditure (2014‑15 dollars) |
| **Table 9A.41** | Cardiac arrest survived event rate |
| **Table 9A.42** | Patients who report a clinically meaningful pain reduction |
| **Table 9A.43** | Satisfaction with ambulance service organisations |
| **Table 9A.44** | Ambulance code 1 response times (minutes) |
| **Table 9A.45** | Triple zero (000) call answering time |
| **Table 9A.46** | Ambulance service costs ($'000) (2014‑15 dollars) |
| **Table 9A.47** | Ambulance service organisations' expenditure per person (2014‑15 dollars) |
| **Table 9A.48** | Ambulance service organisations' revenue per person (2014–15 dollars) |
| **Context and other information** | |
| **Table 9A.49** | Communications and dispatching systems |
| **Table 9A.50** | Treatment of assets by emergency management agencies |
| **Table 9A.51** | Deflators |

## 9.10 References

ABS (Australian Bureau of Statistics) 2014, *Causes of Death Australia, 2012*, Cat. no. 3303.0, Canberra

—— 2008, *Household preparedness for emergencies: NSW, Vic., Qld and ACT*,   
Cat. no. 4818.0.55.001), Canberra.

AEM (Australian Emergency Management) 2014, *Australian Emergency Management Knowledge Hub*, www.emknowledge.gov.au/disaster‑information (accessed 10 October 2014).

AFAC (Australasian Fire and Emergency Service Authorities Council) 2013, *Strategic Directions for Fire and Emergency Services in Australia and New Zealand 2014–2016,* www.afac.com.au (accessed 14 November 2014)

—— 2012, *Unwanted False Alarm Technical Group*, www.afac.com.au/operate/  
areas/emergency/technical/ufatg (accessed September 2012).

AIC (Australian Institute of Criminology) 2008, *Bushfire Arson Bulletin No. 51.*

AIHW (Australian Institute of Health and Welfare) 2013, *Trends in hospitalised injury, Australia: 1999‑00 to 2010‑11*, Injury research and statistics series 86, Cat. no. INJCAT 162, Canberra.

APH (Parliament of Australia) 2010, *Roundtable forum on Burns Prevention — Report*, House of Representatives Standing Committee on Health and Ageing, Canberra.

Australian Government 2012, *Australian Government Response to the House of Representatives Standing Committee on Health and Ageing report: Roundtable Forum on Burns Prevention*, www.health.gov.au/internet/main/publishing.nsf/Content/phd‑response‑round‑table‑forum‑on‑burns‑prevention‑july2010.htm (accessed 10 October 2013).

BoM (Bureau of Meteorology) 2015, *Annual climate statement 2014*, http://www.bom.gov.au/climate/current/annual/aus/ (accessed 4 September 2015).

CAA (Council of Ambulance Authorities) 2015, *Council of Ambulance Authorities Patient Satisfaction Survey 2015*, prepared by Ehrennerg‑Bass Institute for Marketing Science, www.caa.net.au (accessed 1 October 2015).

CSIRO (Commonwealth Scientific and Industrial Research Organisation) 2012, *Bushfires in Australia*, www.csiro.au/en/Organisation‑Structure/Divisions/Ecosystem‑Sciences/ BushfireInAustralia.aspx (accessed 1 October 2012).

Jacobs I, et al 2004, AHA Scientific Statement, *Cardiac Arrest and Cardiopulmonary Resuscitation Outcome Reports*, Update of the Utstein Templates for Resuscitation Registries, A Statement for Healthcare Professionals from a Task Force of the International Liaison Committee on Resuscitation (American Heart Association, European Resuscitation Council, Australian Resuscitation Council, New Zealand Resuscitation Council, Heart and Stroke Foundation of Canada, Inter American Heart Foundation, Resuscitation Councils of South Africa), circulation 23 November 2004, 110(21)c pp. 3385–97.

Lennox G. 2014, *Evaluation of progress made in implementing the recommendations of an external review of the ACT Ambulance Service carried out by Grant Lennox in 2009/10*, esa.act.gov.au/community-information/publications/ (accessed 12 September 2014)

—— 2010, *Review of ACT Ambulance Service: Positioning the service to meet future challenges*, ACT Department of Justice and Community Safety, Canberra

McLennan J. 2008, *Issues facing Australian volunteer‑based emergency services organisations: 2008 – 2010*, Prepared For Emergency Management Australia (EMA) as a Response to a Request by the Ministerial Council for Police and Emergency Management, https://www.emknowledge.gov.au/resource/?id=871 (cited 15 September 2014)

SCRGSP (Steering Committee for the Review of Government Service Provision) 2014, *Report on Government Services 2014*, Productivity Commission, Canberra

Thompson C, Williams K, Morris D, Lago L, Kobel C, Quinsey K, Eckermann S, Andersen P and Masso M 2014, *HWA Expanded Scopes of Practice Program Evaluation: Extending the Role of Paramedics Sub‑Project Final Report*. Centre for Health Service Development, Australian Health Services Research Institute, University of Wollongong

VAGO (Victorian Auditor‑General’s Office) 2014, *Managing Emergency Service Volunteers*, 2013‑14:21, Victorian Government Printer, Melbourne.

1. A validated successful intervention is where the traffic management system produced a green light and where the vehicle travelled through the intersection unobstructed. [↑](#footnote-ref-1)