



# Detailed analysis of fires attended by fire and rescue services, England, April 2019 to March 2020

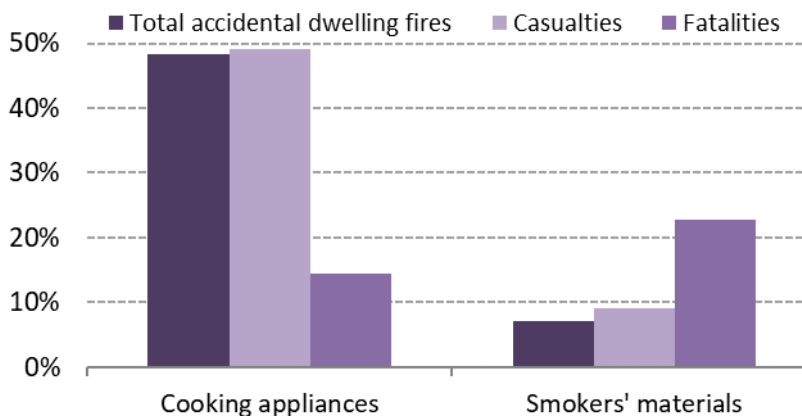
This release presents detailed statistics on fire incidents which covers the financial year 2019/20 (1 April 2019 to 31 March 2020) for fire and rescue services (FRSs) in England.

## Key results

The **fire-related fatality rate per million is higher for men and older people**. For men aged 65 to 79 the fatality rate was 10.6 per million population while the equivalent rate for women was 6.4 per million. For those aged 80 and over, the rate for men was 22.6 per million and for women was 13.1 per million.



Whilst **cooking appliances** were by far the biggest ignition category for **accidental dwelling fires** in 2019/20 (48% of fires) those fires were responsible for 14 per cent of fatalities. **Smoking materials** showed the reverse with only seven per cent of fires resulting in 23 per cent of **fatalities** in accidental dwelling fires.



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# 1 Overview of incidents attended

## Key results

- In 2019/20, **557,299 incidents were attended by FRSs** in England. This was a three per cent decrease compared with the previous year (576,391) and was driven by a decrease in the number of fires attended, and in particular, secondary fires due to the hot, dry summer of 2018 now being in the comparator year. (Source: [FIRE0102](#))
- Of all incidents attended by FRSs in 2019/20, **fires accounted for 28 per cent, fire false alarms 42 per cent and non-fire incidents 31 per cent**. (Source: [FIRE0102](#))
- These results are affected, in a small way, by the [coronavirus lockdown](#) which started in March 2020.

## Types of fire as recorded in the Incident Recording System (IRS)

- Primary – potentially more serious fires that cause harm to people or damage to property. To be categorised as primary these fires must either: occur in a (non-derelict) building, vehicle or outdoor structure, involve fatalities, non-fatal casualties or rescues, or be attended by 5 or more pumping appliances.
- Secondary – are generally small outdoor fires, not involving people or property.
- Chimney fires – are fires in buildings where the flame was contained within the chimney structure and did not meet any of the criteria for primary fires.

The IRS also captures the motive for a fire, which is recorded as either accidental, deliberate or unknown. Those recorded as unknown are included in the accidental category for the purposes of this report. Accidental fires are therefore those where the motive for the fire was presumed to be accidental or is unknown. Deliberate fires include those where the motive was 'thought to be' or 'suspected to be' deliberate and includes damage to own or other's property. These fires are not the same as (although include) arson, which is defined under the Criminal Damage Act of 1971 as 'an act of attempting to destroy or damage property, and/or in doing so, to endanger life'.

The [Fire and Rescue Incident Statistics](#) publication provides information on a quarterly basis on types of and trends in fires, non-fire incidents and fire false alarms attended by fire and rescue services (FRSs). Key points are included here for background to the following chapters.

## Trends in all incidents

In 2019/20, FRSs in England attended around 557,000 incidents, three per cent fewer than in 2018/19 (576,000) and 12 per cent more than five years ago in 2014/15 (496,000). The number of incidents has been on a general downward trend since the peak of around 1,016,000 incidents attended in 2003/04, levelling off between 2012/13 and 2014/15, then increasing in the next four years before decreasing in 2019/20. The recent increases were mainly driven by higher numbers of non-fire incidents attended, whereas this year's

decrease in total incidents was driven by a decrease in the number of fires attended due to the hot, dry summer of 2018 being in the comparator year. (Source: [FIRE0102](#)).

Of the total incidents attended in 2019/20 around 154,000 (28%) were fires, around 231,000 (42%) were fire false alarms and around 172,000 (31%) were non-fire incidents (also known as special service incidents). (Source: [FIRE0102](#)).

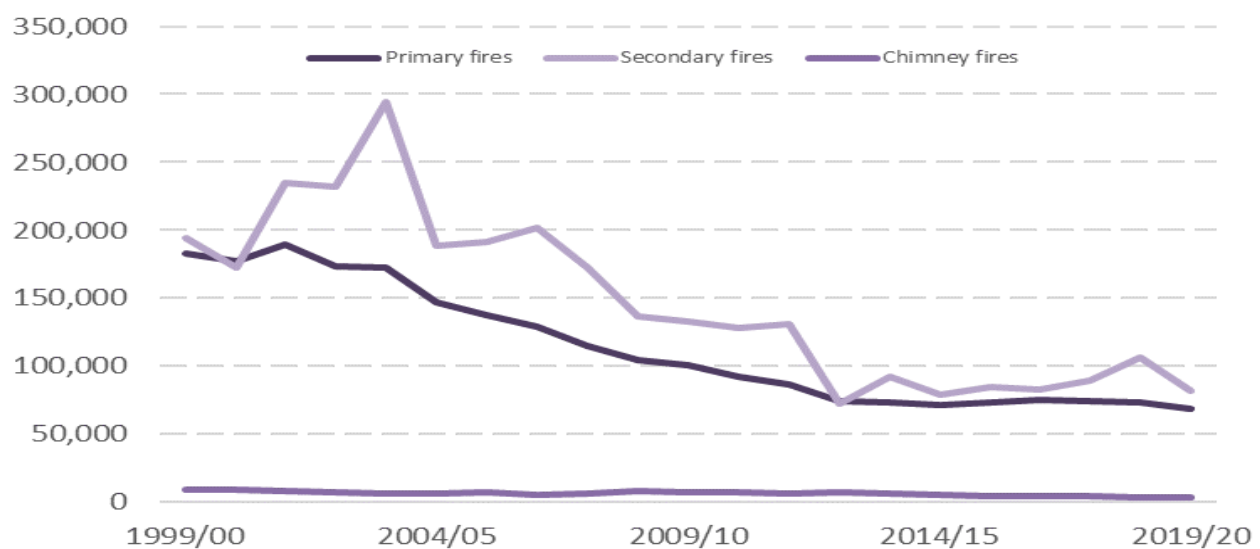
### Fires attended

The total number of fires attended by FRSs decreased for around a decade, falling from a peak of around 474,000 in 2003/04 to the previous series low of just over 154,000 in 2012/13 ([Figure 1.1](#)). After that the number of fires varied between 155,000 (in 2014/15) and 183,000 (in 2018/19), changes that can in part be explained by the weather. In 2019/20 there was a new series low of just under 154,000, a 16 per cent decrease on the previous year.

**Table 1: Number of fires, comparing 2019/20 with 2018/19, five years previously in 2014/15 and ten years previously in 2009/10**

Incident type	2019/20 compared with:					
	2018/19		2014/15		2009/10	
<b>153,957</b> fires	182,915	-16% ↓	155,040	-1% ↓	241,462	-36% ↓
<b>68,677</b> primary fires	<b>73,278</b>	<b>-6%</b> ↓	<b>71,116</b>	<b>-3%</b> ↓	<b>101,159</b>	<b>-32%</b> ↓
<b>28,447</b> dwelling fires	29,595	-4% ↓	31,334	-9% ↓	38,376	-26% ↓
<b>25,484</b> accidental dwelling fires	26,562	-4% ↓	28,321	-10% ↓	33,032	-23% ↓
<b>82,150</b> secondary fires	106,303	-23% ↓	78,743	+4% ↑	132,941	-38% ↓

**Figure 1.1: Fires attended by type of fire, England; 2003/04 to 2019/20**



Source: Home Office, [FIRE0102](#)

## 2 Fire-related fatalities, non-fatal casualties, rescues and evacuations

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As the Incident Recording System (IRS) is a continually updated database, the statistics published in this release may not match those held locally by FRSs and revisions may occur in the future (see the [revisions section](#) for further detail). This may be particularly relevant for fire-related fatalities where a coroner's report could lead to revisions in the data some time after the incident. It should also be noted that the numbers of fire-related fatalities are prone to year-on-year fluctuations due to relatively low numbers.

### Key results

- There were **243 fire-related fatalities** in 2019/20; this year's figure is the lowest number in the annual series (from 1981/82).
- **82 per cent (199)** of fire-related fatalities were in **dwelling fires** in 2019/20.
- For every million people in England, there were **4.3 fire-related fatalities** in 2019/20. The fatality rate was highest among older people: 8.4 people per million for those aged 65 to 79 years old and 16.9 for those aged 80 years and over ([Figure 2.1](#)). The fatality rates for age bands within 54 years and younger were all below 5 fatalities per million population.
- **Men have a greater likelihood of dying in a fire than women.** The overall fatality rate per million population for males in 2019/20 was 5.5 while the rate for females was 3.1 per million. For men aged 65 to 79 the fatality rate was 10.6 per million while the equivalent rate for women was 6.4 per million. For those aged 80 and over, the rate for men was 22.6 per million and for women was 13.1 per million.
- The most common cause of death for fire-related fatalities in 2019/20 (where the cause of death was known) was '**overcome by gas or smoke**', given in 30 per cent (73) of fire-related fatalities.
- In 2019/20, there were **2,998 rescues from primary fires**. This was virtually unchanged compared with 2018/19 (2,987) and a decrease of six per cent from five years ago in 2014/15 (3,184).
- In 2019/20, there were **5,172 primary fires that involved an evacuation**. This was a decrease of eight per cent compared with 2018/19 (5,650) and a decrease of 25 per cent from five years ago in 2014/15 (6,867).

In 2019/20, there were 243 fire-related fatalities and 6,910 non-fatal casualties in fires, a decrease of 10 fatalities and around 150 non-fatal casualties since 2018/19. The majority of fire-related fatalities in 2019/20 occurred in single occupancy dwellings (175; 72%) with the next largest category being other buildings (17; 7%). Single household occupancy (as opposed to homes in multiple occupancy) dwelling fires accounted for 70 per cent of non-fatal casualties in 2018/19 but, in contrast to fire-related fatalities, the next largest category was other buildings (15%) (Source: [FIRE0501](#), [FIRE0502](#), [FIRE0503](#)).

**Fire-related fatalities** are those that would not have otherwise occurred had there not been a fire. For the purpose of publications, a 'fire-related' fatality includes those that were recorded as 'don't know'.

**Non-fatal casualties** are those resulting from a fire, whether the injury was caused by the fire or not.

- The majority, **199 (82%) of fire-related fatalities**, were in **dwelling fires** in 2019/20. This percentage is greater than the 198 (78%) in 2018/19, 264 (74%) five years previously in 2014/15 and 257 (76%) ten years previously in 2009/10.
- There were **17 fire-related fatalities in other buildings** in 2019/20, an increase of one from 16 fire-related fatalities in 2018/19.
- **Seventy-four per cent (5,133) of non-fatal casualties** were in **dwelling fires** in 2019/20. This is a similar proportion to previous years: 73 per cent in 2018/19, 78 per cent five years previously in 2014/15 and 77 per cent ten years previously in 2009/10.
- The number of **non-fatal casualties in other buildings decreased by 17 per cent** from 1,062 in 2018/19 to 877 in 2019/20. Non-fatal casualties in other buildings have fluctuated over the last six years. Before this, the number of non-fatal casualties in other buildings was on a downward trend.

### Fire-related fatalities and non-fatal casualties by gender and age

The likelihood of dying in a fire is not uniform across all age groups or genders. Generally, the likelihood increases with age, with those aged 80 and over by far the most likely to die in a fire. Overall, men are nearly twice (1.7 times) as likely to die in a fire as women. Although the overall number of fire-related fatalities is relatively low, and so prone to fluctuation, these general patterns have been consistent since data became available in 2009/10. (Source: [FIRE0503](#))

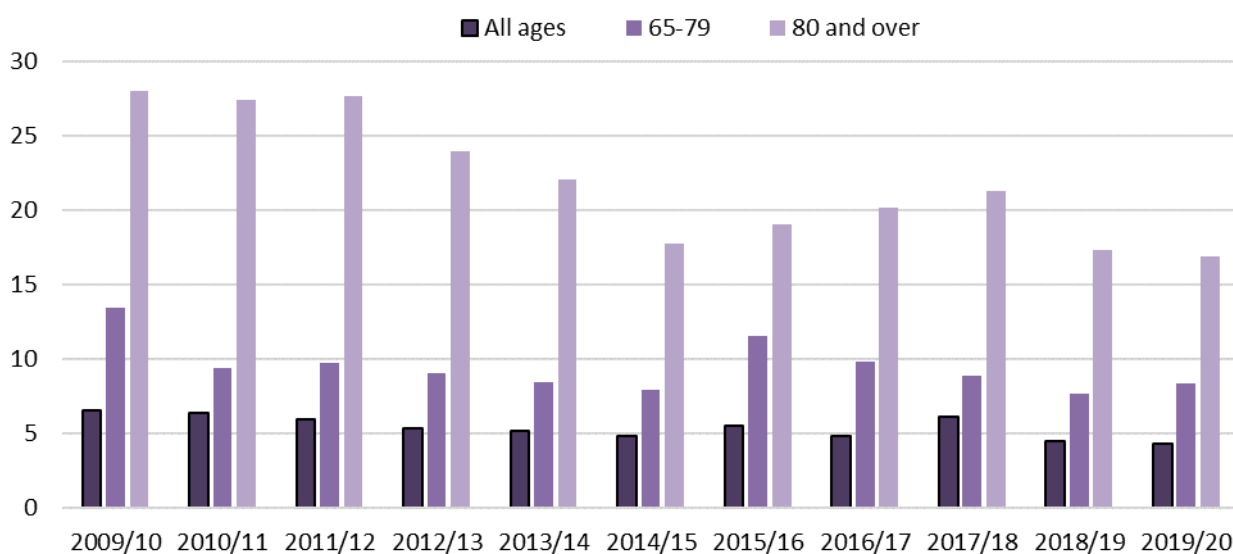
Specifically:

- **Forty-six per cent** of all fire-related fatalities in England (105 fatalities) were **65 years old and over** in 2019/20, compared with 21 per cent (1,451) of all non-fatal casualties. These proportions are similar to the previous year, with 42% for all fire-related fatalities and 20% for non-fatal casualties. The figures for dwellings show a similar story.
- For every million people in England, there were **4.3 fire-related fatalities** in 2019/20. The fatality rate was highest among older people: 8.4 people per million for those aged 65 to 79 years old and 16.9 for those aged 80 and over ([Figure 2.1](#)). The

fatality rates for age bands for 54 years and younger were all below five fatalities per million population.

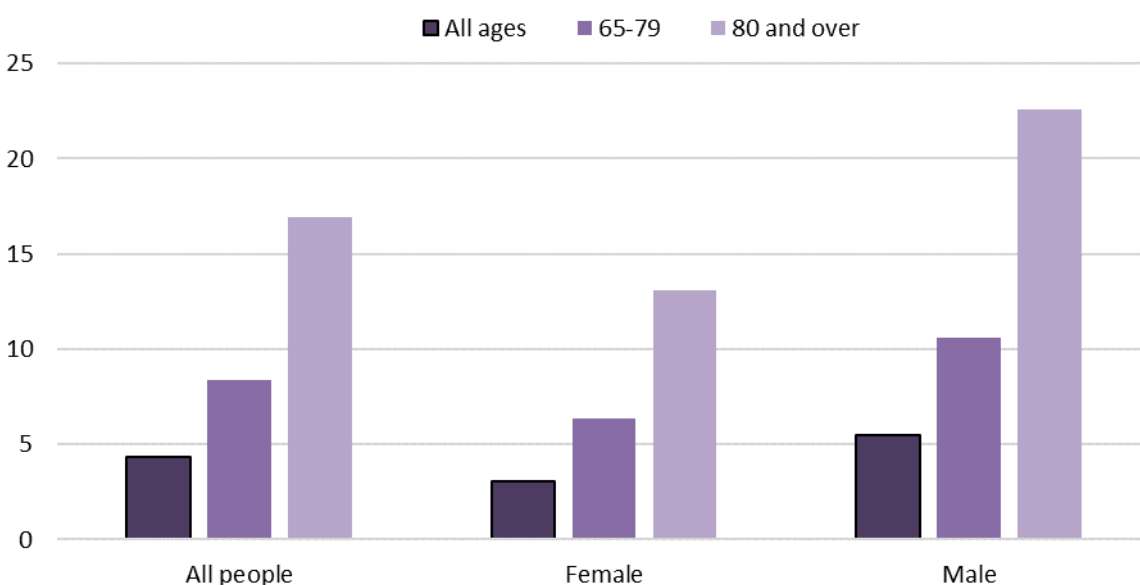
- **Men have a greater likelihood of dying in a fire than women.** The overall fatality rate per million population for males in 2019/20 was 5.5 while the rate for females was 3.1 per million. For men aged 65 to 79 the fatality rate was 10.6 per million while the equivalent rate for women was 6.4 per million. For those aged 80 and over, the rate for men was 22.6 per million and for women was 13.1 per million ([Figure 2.2](#)).
- There were **152 male and 87 female fire-related fatalities** in 2019/20, with four recorded as 'not known'.

**Figure 2.1: Fatality rate (fatalities per million people) for all ages and selected age bands, England; 2009/10 to 2019/20**



Source: Home Office, [FIRE0503a](#)

**Figure 2.2: Fatality rate (fatalities per million people) for all ages and selected age bands by gender, England; 2019/20**



Source: Home Office, [FIRE0503a](#)

## Causes of deaths and injuries

The IRS records the cause of death or nature of injury for fire-related fatalities and non-fatal casualties in fires. As for almost every year since the start of the online IRS in 2009/10, the most common cause of death for fire-related fatalities in 2019/20, where known, was 'overcome by gas or smoke'.

Specifically:

- The most common cause of death for fire-related fatalities in 2019/20 (where the cause of death was known) was '**overcome by gas or smoke**', given in 30 per cent (73) of fire-related fatalities. This was followed by 'burns alone' (29%; 70 fire-related fatalities) and the combination of 'burns and overcome by gas and smoke' (20%; 48 fire-related fatalities).
- The proportions for causes of death in fire-related fatalities are fairly stable across most years, except for 2017/18 where the 'unspecified' category was higher (27% compared with a usual range of between 10–20%) due to the Grenfell Tower fire, where a large proportion of the fatalities are recorded as 'unspecified' while the public inquiry into the fire is still ongoing. (Source: [FIRE0506](#))
- There were **4,531 non-fatal casualties from accidental dwelling fires** in 2019/20, including those who received first aid (1,450) and who were advised to seek precautionary checks (1,172). When these two groups are removed and non-fatal casualties requiring hospital treatment are looked at, the largest category of injury was 'overcome by gas or smoke' (913; 48%) followed by 'burns' (385; 20%) and 'other breathing difficulties' (297; 16%). All other categories combined comprised the remaining 16 per cent of injuries. (Source: [FIRE0506](#))

## Rescues and evacuations

The IRS records the exact number of people rescued from primary fires attended by FRSs. The number of people rescued from primary fires attended by FRSs has been on a downward trend since the online IRS was introduced, decreasing from around 4,400 in 2009/10 to around 3,000 in 2019/20 ([Figure 2.3](#)). This has been driven by a decrease in rescues from primary dwelling fires.

**A rescue** is where a person has received physical assistance to get clear of the area involved in the incident.

**An evacuation** is the direction of people from a dangerous place to somewhere safe.

For evacuations from fires attended by FRSs, the IRS records how many people were assisted in eight separate bands (e.g. 6-20 means there were between 6 and 20 people evacuated from a fire). The number of primary fires attended that involved an evacuation has also been on a downward trend ([Figure 2.4](#)), decreasing from around 9,300 in 2009/10 to around 5,200 in 2019/20. This decrease has been mainly driven by those in primary other building fires but also by primary road vehicle and dwelling fires.

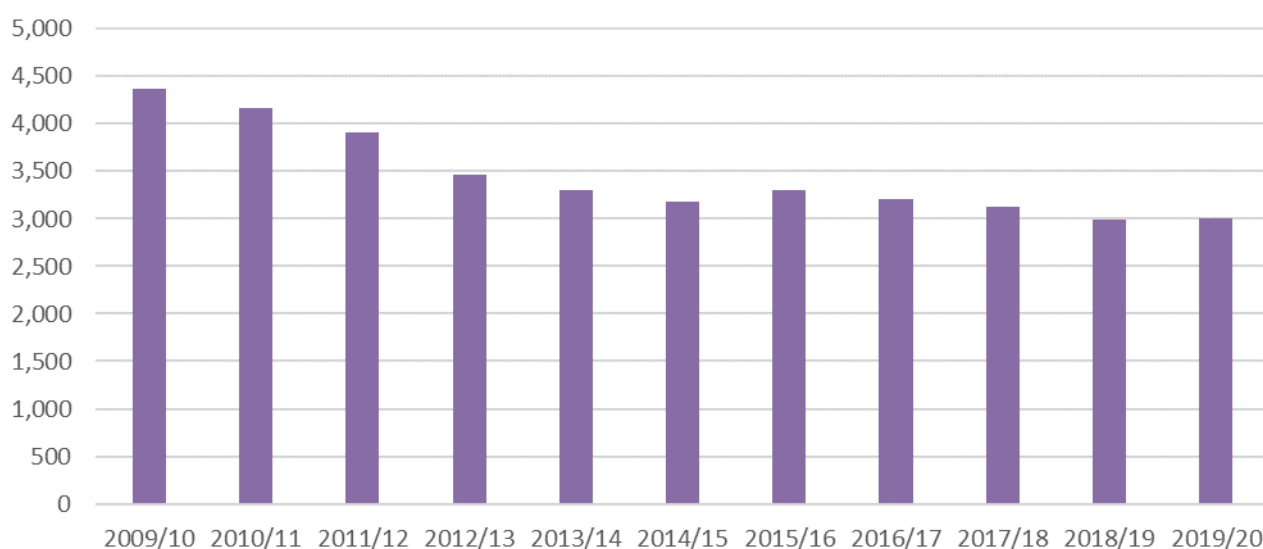
Specifically:

- In 2019/20, there were **2,998 people rescued** from primary fires. This was virtually unchanged compared with 2018/19 (2,987) and a decrease of six per cent from five

years ago in 2014/15 (3,184). In 2019/20, over three quarters (78%) of rescues were from primary dwelling fires with other building, road vehicle and other outdoor fires accounting for 16 per cent, four per cent and two per cent, respectively.

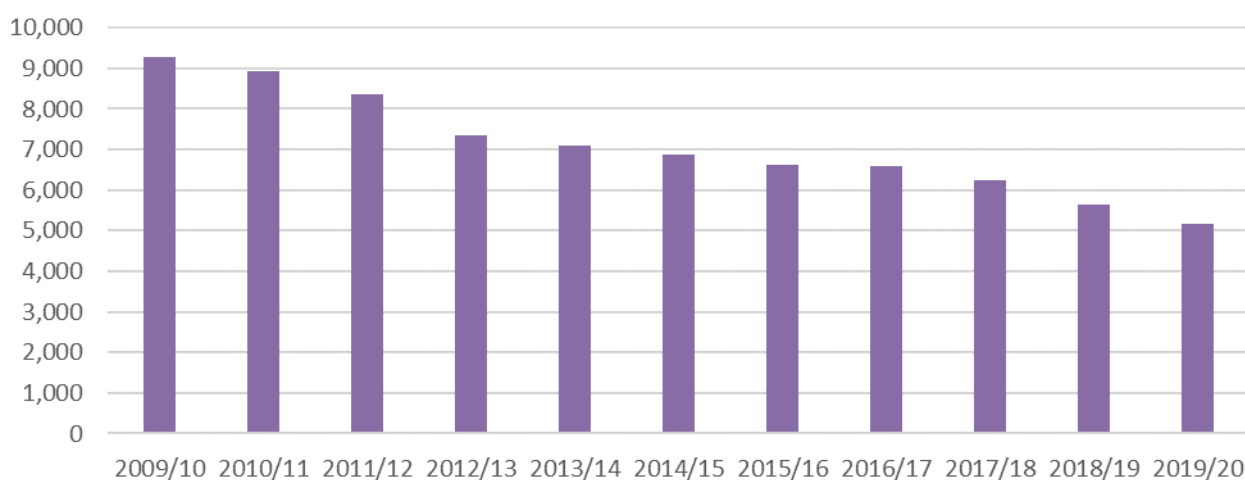
- In 2019/20, there were **5,172 primary fires that involved an evacuation**. This was a decrease of eight per cent compared with 2018/19 (5,650) and a decrease of 25 per cent from five years ago in 2014/15 (6,867). Whilst the decreases can in part be explained by a reduction in primary fires, they only decreased by six per cent (compared with 2018/19) and three per cent (compared with 2014/15). The most common evacuation band was '1 to 5' (i.e. there were 1 to 5 people evacuated from the fire), accounting for 89 per cent of primary fires that involved an evacuation. (Source: [FIRE0511](#))

**Figure 2.3: Number of people rescued from primary fires, England; 2009/10 to 2019/20**



Source: Home Office, [FIRE0511](#)

**Figure 2.4: Number of primary fires with an evacuation, England; 2009/10 to 2019/20**



Source: Home Office, [FIRE0511](#)



### 3 Extent of damage and spread of fire

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The IRS also records the extent of damage and the spread of fire. The extent of damage (due to smoke, heat, flame and water etc.) to dwellings and other buildings is recorded by the area in square metres broken down into thirteen categories, from 'None' up to 'Over 10,000' square metres.<sup>1</sup> The spread of fire in dwellings and other buildings is recorded according to the extent the fire reached different parts of the building based on eight categories from 'no fire damage' to 'fire spread to the whole building'.

#### Key results

- The **average area of damage to dwellings** (excluding those over 5,000m<sup>2</sup>) in England in 2019/20 was 16.2m<sup>2</sup>, **no change** compared with the previous two years but a decrease of eight per cent from five years ago (17.6m<sup>2</sup> in 2014/15) and an 18 per cent decrease from ten years ago (19.7m<sup>2</sup> in 2009/10)
- The **average area of damage to other buildings** (excluding those over 1,000m<sup>2</sup>) **increased by one per cent** to 28.5m<sup>2</sup> in 2019/20 compared with 28.3 m<sup>2</sup> in 2018/19. This was a decrease of four per cent from five years ago (29.6m<sup>2</sup> in 2014/15) and a decrease of three per cent from ten years ago (29.4m<sup>2</sup> in 2009/10).
- In 2019/20, **seven per cent of fires in purpose-built high-rise (10+ storeys) flats spread beyond the room of origin**, compared with seven per cent of fires in purpose-built medium-rise flats (4-9 storeys), nine per cent in purpose-built low-rise (1-3 storeys) flats and 14 per cent of fires in houses, bungalows, converted flats and other dwellings combined.

#### Extent of damage

The average extent of damage to **dwellings** has generally fallen since 2003/04 but has levelled off over the last five years. The average extent of damage to **other buildings** has fluctuated since 2009/10 (from when the average extent of damage to other buildings started being more accurately recorded).<sup>2</sup>

Specifically:

- In 2019/20, the **average area of damage to dwellings** (excluding those over 5,000m<sup>2</sup>) in England was 16.2m<sup>2</sup>. This was **no change** compared with 2018/19 but an eight per cent decrease since 2014/15 (17.6m<sup>2</sup>) and an 18 per cent decrease since 2009/10 (19.7m<sup>2</sup>). (Source: [FIRE0204](#))
- The **average area of damage to other buildings** (excluding those over 1,000m<sup>2</sup>) **increased by one per cent** from 28.3m<sup>2</sup> in 2018/19 to 28.5m<sup>2</sup> in 2019/20. This has fluctuated over the years: a decrease of four per cent since 2014/15 (29.6m<sup>2</sup>) and a decrease of three per cent since 2009/10 (29.4m<sup>2</sup>). (Source: [FIRE0305](#))

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<sup>1</sup> For a list of the damaged area size bands, see the [Fire Statistics Definitions](#) document.

<sup>2</sup> For detail on the discontinuity between 2008/09 and 2009/10 please see page 17 in the 2011/12 Fire incidents response times report:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6759/21721295.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6759/21721295.pdf)

Dwelling fires with more than 5,000m<sup>2</sup> of damage and other buildings fires with more than 1,000m<sup>2</sup> of damage can skew the averages, so were removed for the averages reported here. However, for completeness, other calculations are available in tables [FIRE0204](#) and [FIRE0305](#), which accompany this release. It should be noted that excluding these area categories removed 1 dwelling fire (less than 0.01% of all dwelling fires) and 170 other building fires (1.2% of all other building fires) for 2019/20.

## Spread of fire

In 2019/20, nearly one third (30%) of dwelling fires had no fire damage, in just under a third (32%) the damage was limited to the item first ignited and in just under a quarter (24%) the damage was limited to the room of origin. The remaining 13 per cent of dwelling fires were larger fires, either “limited to floor of origin”, “limited to 2 floors”, “affecting more than 2 floors”, “limited to roofs and roof spaces” and the “whole building”.

Seven per cent of fires in purpose-built **high-rise** (10 or more storeys) flats spread beyond the room of origin<sup>3</sup>, a similar percentage to purpose-built **medium-rise** (4-9 storeys) flats (7%) and purpose-built **low-rise** (1-3 storeys) flats (9%) and lower than the 14 per cent for houses, bungalows, converted flats and other dwellings combined, all of which were similar to previous years.

In 2019/20, the proportion of fires affecting the ‘whole building’ in primary other building fires was 15 per cent, which is similar to previous years. Between 2010/11 and 2019/20 the proportion of primary other building fires that were ‘limited to item 1<sup>st</sup> ignited’ has been on a slow increasing trend from 26 per cent to 29 per cent. Over the same time period, the percentage of primary other building fires that had no fire damage has been on a slow decreasing trend from 27 per cent to 23 per cent.

In contrast, the proportion of fires affecting the ‘whole building’ in primary dwelling fires was two per cent in 2019/20, much lower than the 15 per cent for primary other building fires and is similar to previous years. Between 2010/11 and 2019/20 the proportion of primary dwelling fires that were ‘limited to item 1<sup>st</sup> ignited’ has been on a slow increasing trend from 28 per cent to 32 per cent, a trend shared with primary other building fires. Over the same time period, the percentage of primary dwelling fires that had no fire damage has been on a slow decreasing trend 33 per cent to 30 per cent.

Specifically:

- In 2019/20, **57 (7%) of the 775 fires in purpose-built high-rise flats spread beyond the room of origin** compared with 68 (8%) in the previous year in 2018/19 and 38 (5%) five years ago in 2013/14. (Source: [FIRE0203](#))
- In 2019/20, **2,084 (15%) of the 14,308 primary other building fires affected the ‘whole building’** compared with 2,454 (16%) of the 15,025 primary other building fires in the previous year in 2018/19 and 2,084 (13%) of the 16,524 primary other building fires five years ago in 2014/15. (Source: [FIRE0304](#))

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<sup>3</sup> Fire spread beyond the room of origin comprises the following IRS categories: where the spread of fire was limited to the floor of origin, where the spread of fire was limited to 2 floors, where the spread of fire was affecting more than 2 floors and where the fire spread to the whole building.

## 4 Causes of dwelling fires and fire-related fatalities

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The IRS collects information on the source of ignition (e.g. ‘smokers’ materials’), the cause of fire (e.g. ‘fault in equipment or appliance’), which item or material was mainly responsible for the spread of the fire (e.g. ‘clothing/textiles’), as well as other factors, including ignition power (e.g. gas).<sup>4</sup>

### Key results

- **Cooking appliances** were the largest ignition category for accidental dwelling fires in 2019/20, accounting for **48 per cent of these fires** and 49 per cent of non-fatal casualties but only accounted for 14 per cent of the fire-related fatalities.
- **Smokers’ materials** were the source of ignition in **seven per cent of accidental dwelling fires** and nine per cent of accidental dwelling fire non-fatal casualties but were the largest ignition category for fire-related fatalities in accidental dwelling fires, accounting for 23 per cent in 2019/20.
- Of the 25,555 accidental dwelling fires in 2019/20, **34 per cent were caused by “misuse of equipment or appliances”**, no change from 2018/19. The second largest cause category was “faulty appliances and leads” which caused 15 per cent of all accidental dwelling fires.

### Sources of ignition in accidental dwelling fires

Since 2010/11, the number of accidental dwelling fires has decreased by 20 per cent. This was in large part driven by a 22 per cent decrease (between 2010/11 and 2019/20) in fires where the ignition source was “cooking appliances”, as these make up nearly half of all accidental dwelling fires. Other ignition types that have contributed to the decrease include “space heating appliances” and “other electrical appliances” (decreases of 44% and 23% over the same time period, respectively). (Source: [FIRE0602](#))

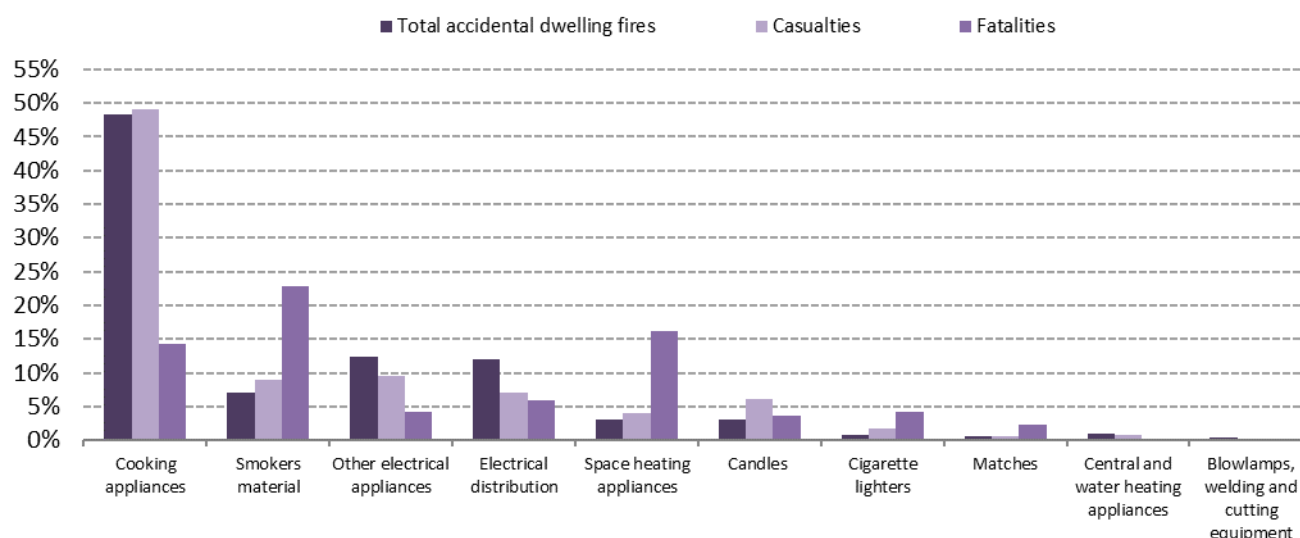
[Figure 4.1](#) shows the proportion of accidental dwelling fires, and their resulting non-fatal casualties and fire-related fatalities, attributable to different sources of ignition.<sup>5</sup> It shows that while some ignition sources cause many fires, they often result in relatively few fire-related fatalities, and vice versa. (Source: [FIRE0601 to FIRE0605](#))

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<sup>4</sup> For a more detailed definition on the different types of cause of fire, see the [definitions document and IRS Guidance](#).

<sup>5</sup> This excludes ‘Other/Unspecified’.

**Figure 4.1: Percentage of fires, non-fatal casualties and fire-related fatalities in accidental dwelling fires by selected sources of ignition, England; 2019/20**



Source: Home Office, [FIRE0602](#)

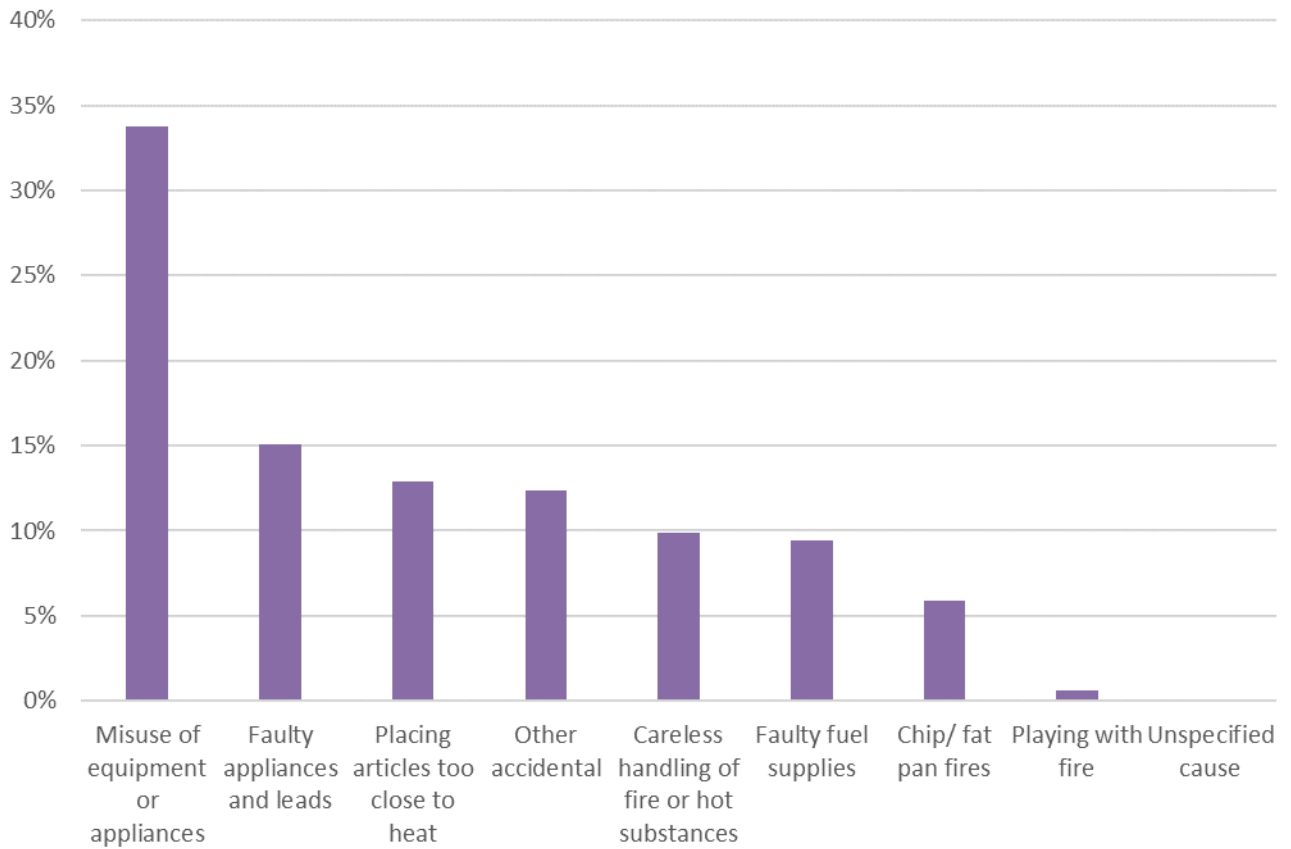
### Main cause of, and material mainly responsible for, dwelling fires

Exactly how a fire originated, and then the material which was mainly responsible for its spreading, are both important determinants in the outcomes of fires. Notably, and similarly to sources of ignition, the most common causes and materials responsible for the spread of fires are not those that lead to the greatest proportion of fire-related fatalities.

Specifically:

- Of the 25,555 dwelling fires with accidental causes in 2019/20, **34 per cent were caused by “misuse of equipment or appliances”** ([Figure 4.2](#)), no change from 2018/19. The second largest cause category was “faulty appliances and leads” which caused 15 per cent of all accidental dwelling fires. (Source: [FIRE0601](#))
- The material mainly responsible for the development of the fire in **24 per cent** of all dwelling fires and the item first ignited in **26 per cent** of all dwelling fires in 2019/20 was **“Textiles, upholstery and furnishings”**. The former caused 59 per cent of all fire-related fatalities in dwellings. (Source: [FIRE0603](#), [FIRE0604](#))
- **“Food”** was the material mainly responsible for the development of the fire in **20 per cent** of all dwelling fires and the item first ignited in **28 per cent** of all dwelling fires in 2019/20. However, it was the material mainly responsible for the development of the fire in only three per cent of all dwelling fire-related fatalities.

**Figure 4.2: Percentage of fires in accidental dwelling fires by cause of fire, England; 2019/20**



**Source:** Home Office, [FIRE0601](#)

## 5 Smoke alarm function

### Key results

- Fires where a **smoke alarm** was not present accounted for 24 per cent (6,988) of all dwelling fires and 26 per cent (52) of all dwelling fire-related fatalities in 2019/20. This is in the context of nine per cent of dwellings not having a working smoke alarm in 2018/19 (the latest year for which data are available).
- **Mains powered smoke alarms** continued to have a lower “failure rate” than battery powered smoke alarms. 21 per cent of mains powered smoke alarms failed to operate in dwelling fires in 2019/20 compared with 37 per cent of battery powered smoke alarms.

The IRS records information on whether a smoke alarm was present at the fire incident, as well as the type (mains or battery powered) and whether or not it functioned as intended i.e. if it operated and if it raised the alarm.

### Reasons alarms did not function as expected

*Did not operate:* alarm battery missing; alarm battery defective; system not set up correctly; system damaged by fire; fire not close enough to detector; fault in system; system turned off; fire in area not covered by system; detector removed; alerted by other means; other; not known.

*Operated but did not raise the alarm:* no person in earshot; occupants did not respond; no other person responded; other; not known.

### Smoke alarms in dwelling fires

Fires where a smoke alarm was present but either did not operate or did not raise the alarm accounted for just under a third (31%) of all dwelling fires in 2019/20, an unchanged percentage compared with 2018/19.

‘Fire products did not reach detector(s)’<sup>6</sup> and ‘fire in area not covered by system’ accounted for 66 per cent of mains powered smoke alarm failures and continued to be the principal reasons mains powered smoke alarms failed to operate in dwelling fires in 2019/20, as in previous years (Table 1). Similarly, the main reasons battery powered smoke alarms failed to operate in dwelling fires were due to ‘fire products did not reach detector(s)’ and ‘fire in area not covered by system’ (60% of dwelling fires in 2019/20). These have also been the principal causes of battery powered smoke alarm failures in previous years.

As for all years since 2010/11, in 2019/20 the most common category of smoke alarm failure in dwelling fires involving any casualties was ‘Other’ (including ‘alerted by other means’, ‘system damaged by fire’, ‘other’ and ‘don’t know’), which accounted for 31 per cent

<sup>6</sup> Fire products did not reach detectors(s) can be where the smoke alarms present were poorly sited (e.g. not on the floor of origin) so the smoke did not reach the detector.

of these fires where battery powered smoke detectors were present and 35 per cent where mains powered detectors were present ([Table 2](#)). (Source: [FIRE0704](#))

**Table 2: Reason smoke alarms did not operate in dwelling fires and dwelling fires resulting in casualties, by type of alarm, England, 2019/20**

Reason for failure	Battery powered		Mains powered	
	Fires	Fire resulting in casualties	Fires	Fire resulting in casualties
Missing battery	10%	12%	1%	3%
Defective battery	9%	17%	0%	3%
Other act preventing alarm from operating	2%	10%	6%	18%
Fire products did not reach detector(s)	47%	12%	51%	21%
Fire in area not covered by system	13%	10%	15%	9%
Faulty system / incorrectly installed	2%	10%	4%	12%
Other	18%	31%	22%	35%

Notes:

Includes all non-fatal casualties and fire-related fatalities.

Mains powered smoke alarms includes those recorded as 'mains and battery' in the IRS, therefore there are a small number of mains powered smoke alarms where the reason for failure is 'missing battery' or 'defective battery'.

(Source: [FIRE0704](#))

### *Smoke alarm function and outcomes*

A smoke alarm was present and raised the alarm (i.e. functioned as desired) in 45 per cent of dwelling fires in 2019/20 but in only 33 per cent of fire-related fatalities, highlighting the importance of having both working smoke alarms and enough of them to cover all areas in a dwelling. (Source: [FIRE0701](#), [FIRE0702](#))

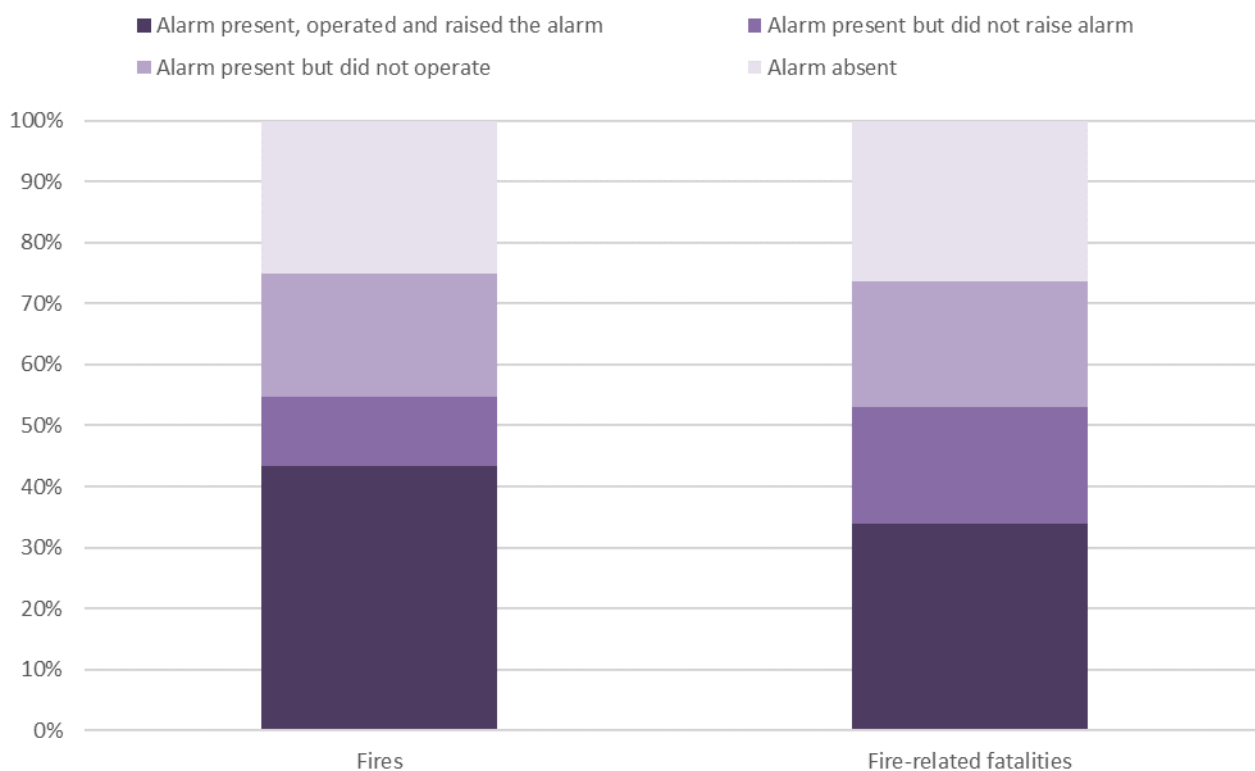
By combining IRS and English Housing Survey data, Home Office statisticians have calculated that you are around eight times more likely to die in a fire if you do not have a working smoke alarm in your home.<sup>7</sup>

[Figure 5.1](#), shows the proportion of dwelling fires and fire-related fatalities in dwelling fires where the alarm was “present, operated and raised the alarm”, “present but did not raise the

<sup>7</sup> For details of the calculation and assumptions made, see the [definitions](#) document.

alarm”, “present but did not operate” or “absent”. It shows that the proportion of dwelling fires where the alarm was present, operated and raised the alarm was higher than for fire-related fatalities in those fires. Alarms were absent in a slightly higher proportion for fire-related fatalities (26%) than in dwelling fires (24%). This pattern is consistent with previous years.

**Figure 5.1: Smoke alarm operation outcomes in primary dwelling fires and fire-related fatalities, England; 2019/20**



Source: Home Office, [FIRE0702](#)

### Smoke alarms in primary other building fires

Fires where a smoke alarm was **not** present accounted for 46 per cent of all primary other building fires in 2019/20. This has been relatively stable since 2012/13. (Source: [FIRE0706](#))

Fires where a smoke alarm was not present accounted for 35 per cent of all primary other building fire-related fatalities and non-fatal casualties (combined) in 2019/20, two percentage points greater than in 2018/19. Considering the relatively small numbers involved this has been quite stable since 2012/13 ranging from 42 per cent to 29 per cent. (Source: [FIRE0706](#))

Fires where a smoke alarm was present but did not raise the alarm accounted for five per cent, and fires where an alarm was present but did not operate 12 percent, of primary other building fires in 2019/20. These proportions have been relatively stable since 2010/11. (Source: [FIRE0706](#))



## 6 Temporal and seasonal fire analyses

### Key results

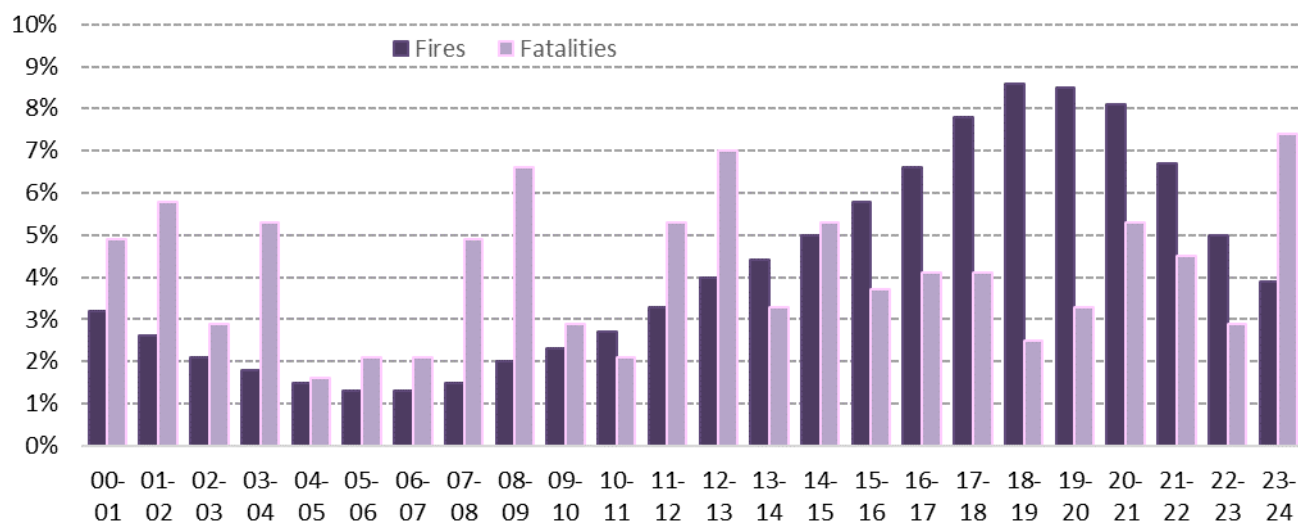
- In 2019/20, the number of fires showed a strong daily pattern, with **46 per cent of all fires occurring where the time of call was between 16:00 and 22:00**.
- The hourly number of fire-related fatalities does not show a daily pattern, with the **number of fire-related fatalities roughly equal between day and night hours**.
- **April experienced the most fires per day** attended by FRSs in 2019/20 (an average of 627), whilst **December and February had the fewest** (both 301 fires per day on average). This is different to the previous year where July averaged the most fires per day (a much higher than average 1,039) while December had the fewest (297). July's figures in 2018/19 were linked to the hot, dry summer of 2018.

Fires and fire-related fatalities are affected by both seasonality and time of day. Similar to previous years, there were generally fewer fires where the time of call was between midnight and 11am, but the number of fire-related fatalities remained relatively high despite lower incidence of fires and with no strong temporal pattern. This difference is also found for accidental dwelling fires.

### Temporal fire analyses

**Forty-six per cent** of all fires in 2019/20 occurred where the time of call was between **16:00 and 22:00** ([Figure 6.1](#)). These were the six individual hours with the highest proportion of fires (by time of call), which was also true in 2018/19 and 2017/18. The peak hours were between 18:00 and 20:00 and accounted for at least 8.5 per cent of fires each in 2019/20, similar to previous years. (Source: [FIRE0801](#))

**Figure 6.1 Percentage of fires and fire-related fatalities by hour of the day, England; 2019/20**



Source: Home Office, [FIRE0801](#)

In contrast to the number of **fires**, the hourly number of fire-related **fatalities** showed less of a pattern across the day in 2019/20, as in previous years. **Fire-related fatalities were roughly equal between day and night hours**. The peak hours were 23:00-00:00 (7.4%), 12:00-13:00 (7.0%) and 08:00-09:00 (6.6%). While the six individual hours with the highest proportion of **fires** were continuous and accounted for 46 per cent of incidents, the six highest for **fatalities** were spread throughout the day and accounted for just 32 per cent ([Figure 6.1](#)).

### Seasonal fire analyses

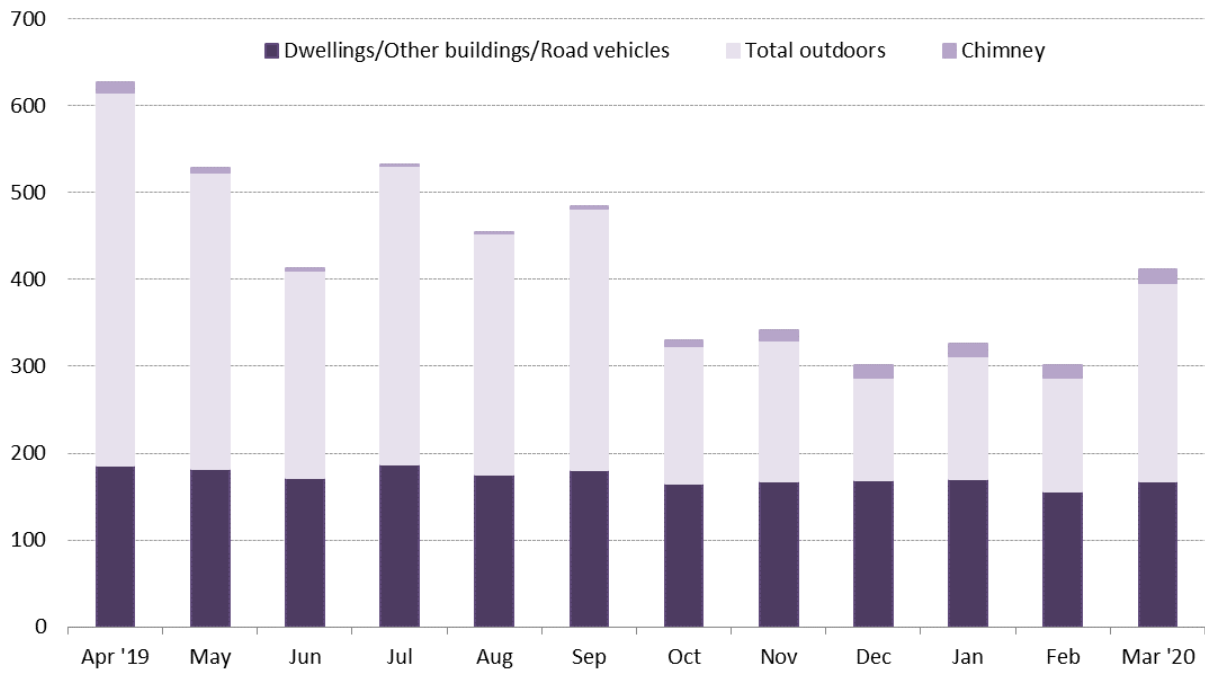
Very little seasonality was evident in dwelling, other building and road vehicle fires, however outdoor fires and chimney fires showed much stronger seasonal effects. There tends to be more grassland, refuse and other outdoor fires in the summer months and these seem to reflect weather patterns. This was particularly so for the exceptionally hot and dry July 2018, which had the highest daily rate of fires for any month of any year recorded in the IRS from 2010/11 to 2019/20 (see [FIRE0802](#)). Conversely, chimney fires are more numerous in the winter months. These seasonal effects are broadly similar each year but are affected by changes in weather patterns specific to that year, e.g. in 2019/20 the values were skewed towards spring/early summer with a peak in April while in 2018/19 they were highest in June and July.

Specifically:

- The high rate of fires in April 2019 was driven by fires in 'grassland, woodland and crops', which had a daily rate 32 per cent greater than any other month (161 fires per day, compared to 122 in July) however refuse fires, other outdoor and secondary fires, dwelling fires and other building fires all recorded their highest rate that month.
- The daily rate of all fires for 2019/20 was **421 fires per day**. 57 per cent (239) of these were all types of outdoor fires.
- Fires in dwellings, other buildings and road vehicles showed relatively little seasonality, with a slight increase in summer months, and the daily rate of these fires attended varied between **156 and 186 per month** in 2019/20.

[Figure 6.2](#) shows the average daily number of dwelling/other building/road vehicle, outdoor, and chimney fires in 2019/20 across the year. It shows how stable dwelling/other building/road vehicle fires are across months, compared with seasonal outdoor fires and, to a lesser extent, chimney fires.

**Figure 6.2: Average daily fire incidents by month and location, England; 2019/20**



**Source:** Home Office, [FIRE0802](#)

## 7 Further information

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This release contains statistics about incidents attended by fire and rescue services (FRSs) in England. The statistics are sourced from the [Home Office's online Incident Recording System \(IRS\)](#). This system allows FRSs to complete an incident form for every incident attended, be it a fire, a false alarm or a non-fire incident (also known as a Special Service incident). The online IRS was introduced in April 2009. Previously, paper forms were submitted by FRSs and an element of sampling was involved in the data compilation process.

Fire and Rescue Incident Statistics and other Home Office statistical releases are available via the [Statistics at Home Office](#) pages on the GOV.UK website.

Data tables linked to this release and all other fire statistics releases can be found on the Home Office's ['Fire statistics data tables'](#) page.

Guidance for using these statistics and other fire statistics outputs, including a Quality Report, is available on the [fire statistics guidance](#) page.

The information published in this release is kept under review, taking into account the needs of users and burdens on suppliers and producers, in line with the [Code of Practice for Statistics](#). If you have any comments, suggestions or enquiries, please contact the team via email using [firestatistics@homeoffice.gov.uk](mailto:firestatistics@homeoffice.gov.uk) or via the user feedback form on the fire statistics collection page.

### Revisions

The IRS is a continually updated database, with FRSs adding incidents daily. The figures in this release refer to records of incidents that occurred up to and including 31 March 2020. This includes incident records that were submitted to the IRS by 14 June 2020, when a snapshot of the database was taken for the purpose of analysis. As a snapshot of the dataset was taken on 14 June 2020, the statistics published may not match those held locally by FRSs and revisions may occur in the future. This is particularly the case for statistics with relatively small numbers, such as fire-related fatalities. For instance, this can occur because coroner's reports may mean the initial view taken by the FRS will need to be revised; this can take many months, even years, to do so.

### COVID-19 and the impact on the IRS

The figures presented in this release relate to incidents attended by FRSs during the period April 2019 to the end of March 2020. In response to the coronavirus pandemic, restrictions in England and Wales started from 12 March 2020 and lockdown was applied on 23 March 2020, which imposed strict limits on daily life. The start of the restrictions and the first eight days of lockdown are therefore captured in IRS data for the year ending March 2020.

Home Office statisticians have been monitoring incidents on the IRS since the beginning of the Covid-19 pandemic lockdown to ensure that data quality has not been reduced, and that all incidents are recorded. In addition, FRSs were asked to upload the information more quickly after attending an incident so that the IRS could be used to produce Management Information to monitor the impact of COVID-19 on FRSs capacity. Analysis of this time

period will be included in the next [Fire and rescue incident statistics release, covering the year ending June 2020](#).

## Changes to this release and future releases

This release has been published using the new Home Office statistical release template. We welcome comments on the new format of release. Please send any comments to [FireStatistics@homeoffice.gov.uk](mailto:FireStatistics@homeoffice.gov.uk).

## Other related publications

[Home Office](#) publish five other statistical releases covering fire and rescue services:

- [Fire and rescue incident statistics, England](#): provides statistics on trends in fires, casualties, false alarms and non-fire incidents attended by fire and rescue services in England, updated quarterly.
- [Detailed analysis of non-fire incidents attended by fire and rescue services, England](#): focuses on non-fire incidents attended by fire and rescue services across England, including analysis on overall trends, fatalities and non-fatal casualties in non-fire incidents, and further detailed analysis of different categories of non-fire incidents.
- [Fire and rescue workforce and pensions statistics](#): focuses on total workforce numbers, workforce diversity and information regarding leavers and joiners; covers both pension fund income and expenditure and firefighters' pension schemes membership; and includes information on incidents involving attacks on firefighters.
- [Fire prevention and protection statistics, England](#): focuses on trends in smoke alarm ownership, fire prevention and protection activities by fire and rescue services.
- [Response times to fires attended by fire and rescue services, England](#): covers statistics on trends in average response times to fires attended by fire and rescue services.

The [Ministry of Housing, Communities & Local Government](#) publish one statistical release on fire:

- [English housing survey: fire and fire safety report](#): focuses on the extent to which the existence of fire and fire safety features vary by household and dwelling type.

Fire statistics are published by the other UK nations:

[Scottish fire statistics](#) and [Welsh fire statistics](#) are published based on the IRS. [Fire statistics for Northern Ireland](#) are published by the Northern Ireland Fire and Rescue Service using data from a system similar to the Incident Recording System, which means that they are not directly comparable to English, Welsh and Scottish data.



## National Statistics

These statistics have been assessed by the UK Statistics Authority to ensure that they continue to meet the standards required to be designated as National Statistics. This statistical bulletin is produced to the highest professional standards and is free from political interference. It has been produced by statisticians working in accordance with the Home Office's Statement of compliance with the Code of Practice for Official Statistics, which covers Home Office policy on revisions and other matters. The Chief Statistician, as Head of Profession, reports to the National Statistician with respect to all professional statistical matters and oversees all Home Office National Statistics products with respect to the Code, being responsible for their timing, content and methodology. This means that these statistics meet the highest standards of trustworthiness, impartiality, quality and public value, and are fully compliant with the [Code of Practice for Statistics](#).

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