Ministry of Housing, Communities & Local Government

English Housing Survey

Fire and fire safety, 2016-17

50th Anniversary ENGLISH HOUSING SURVEY 1967 - 2017

Contents

Introduction and main findings

1. The English Housing Survey (EHS) is a national survey of people's housing circumstances and the condition and energy efficiency of housing in England. In its current form, it was first run in 2008-09. Prior to then, the survey was run as two standalone surveys: the English House Condition Survey and the Survey of English Housing. It is one of the longest standing surveys in government, with 2017 marking the 50th anniversary since the first survey in 1967.

2. Each year the EHS includes a number of questions relating to fire safety. More detailed questions on the incidence of fires at home are included on a rotating basis. These more detailed questions were included in 2015-16 and 2016-17[1]. Fieldwork concluded in March 2017, before the Grenfell Tower tragedy.

3. This report examines the incidence and prevalence of fires at home, what fire safety measures households have in place, and the prevalence of serious fire hazards in the home[2].

4. Chapter 1 looks at the incidence and prevalence of fires at home, and how this varies by tenure and household characteristics. It also examines how and where the fire started, and how it was put out.

5. Chapter 2 examines the extent to which households have smoke alarms and other fire safety measures in the home. It covers whether smoke alarms are in working order, and whether they are regularly tested. The extent to which this has changed over time is also explored.

6. The final chapter explores the existence of serious fire hazards in different types of homes and the characteristics of households who live in these homes. The chapter examines both the structural risk of fire (as assessed by a surveyor) and the behavioural risks of fire (e.g. the use of chip pans, candles and/or open fires).

7. This report complements fire statistics published by the Home Office[3] which are produced from records of all incidents attended by local authority fire and rescue services. Headline data from fire and rescue incident records can be found in the 'Fire and rescue incident statistics' collection.[4]

[1] Collecting data over two consecutive years means that the sample of households which had experienced a fire at home is large enough for detailed analysis. It also means that it is possible to link the household and physical survey data.
[2] Unlike previous EHS reports on fire and fire safety, multivariate regression analysis was not undertaken for this report. Readers interested in understanding more about the predictors of smoke alarm ownership and fires at home can refer to: *Smoke Alarms in English homes* https://www.gov.uk/government/statistics/english-housing-survey-2014-to-2015-smoke-alarms-in-english-homes-report; and *Fire and Fire Safety* https://www.gov.uk/government/statistics/english-housing-survey-2013-to-2014-fire-and-fire-safety-report.
[3] Before April 2016 these statistics were published by MHCLG.
[4] https://www.gov.uk/government/collections/fire-statistics#fire-and-rescue-incident-statistics:-latest-version

Main findings

1% of households in England had a fire at home in the last two years, the majority of which were put out without the fire and rescue services.

- In 2016-17, 332,000 households in England had experienced a fire at home in the last two years. In the majority of these households, the fire was put out by someone in the household, or the fire went out by itself. A quarter (25%) of fires were put out by the fire and rescue services.
- Most fires started inside the house or flat (86%); 14% started outside (e.g. in the garden or communal area).
- Of those fires that started inside the house or flat, two thirds (67%) started in the kitchen. It is therefore not surprising that fires in the home were most commonly caused by cooking related activities, such as a grill or chip pan catching fire.

Compared with owner occupiers, a greater proportion of social renters had experienced a fire at home in the last two years.

- In 2016-17, 2% of social renters had a fire at home in the last two years, compared with 1% of owner occupiers. However, the size of the owner occupied sector means that a greater number of owner occupiers had experienced a fire than social and private renters combined.

Most households in England have a working smoke alarm.

- In 2016-17, 95% of households reported having a smoke alarm. A slightly smaller proportion (90%) reported having at least one working smoke alarm, up from 84% in 2008-09.

Private renters are less likely to have a working smoke alarm in the home, though rates have increased in recent years.

- The proportion of households with working smoke alarms varied depending on tenure. Housing association tenants were most likely to have at least one working smoke alarm (95%), compared with 89% of owner occupiers, 88% of private renters and 93% of households renting from a local authority.
- Between 2008-09 and 2016-17, the proportion of households with a working smoke alarm increased from 84% to 90%. This increase was observed across all tenures. Since 2015-16, the proportion of private renters with a working smoke alarm has increased from 83% to 88%.

4% of homes in England have a significantly higher than average risk of fire; of which, 0.4% had a Category 1 fire hazard.

- In 2016, 4% of all dwellings (about 1,017,000 homes) were assessed by a surveyor as having a significantly higher than average risk of fire, where remedial action should be taken to mitigate the risk of harm. This included 4% of dwellings (about 912,000 homes) with a risk of fire that was significantly higher than

average, but not a Category 1 hazard[5], and 0.4% of all dwellings (about 105,000 homes) with a Category 1 fire hazard such as no door to the kitchen and other missing doors enabling fire to spread.

- Privately rented dwellings (6%) were more likely to have a significantly higher than average risk of fire than owner occupied (4%), local authority (2%) and housing association (1%) homes.
- For the 4% of dwellings assessed as having a significantly higher than average risk of fire, the most common actions identified by surveyors were providing suitable openable windows (49%) and installation of smoke alarms (45%).

Acknowledgements and further queries

8. Each year the English Housing Survey relies on the contributions of a large number of people and organisations. The Ministry of Housing, Communities and Local Government (MHCLG) would particularly like to thank the following people and organisations, without whom the 2016-17 survey and this report, would not have been possible: all the households who gave up their time to take part in the survey, NatCen Social Research, the Building Research Establishment (BRE) and CADS Housing Surveys.

9. This report was produced by Busola Siyanbola and Helen Garrett at BRE in collaboration with NatCen Social Research and MHCLG.

10. If you have any queries about this report, would like any further information or have suggestions for analyses you would like to see included in future EHS reports, please contact ehs@communities.gsi.gov.uk.

11. The responsible analyst for this report is: Reannan Rottier, Housing and Planning Analysis Division, MHCLG. Contact via ehs@communities.gsi.gov.uk.

[5] A category 1 hazard is the most serious type of hazard under the Housing Health and Safety Rating System (HHSRS), and where this exists the dwelling fails to reach the statutory minimum standard for housing in England.

Ministry of Housing, Communities & Local Government

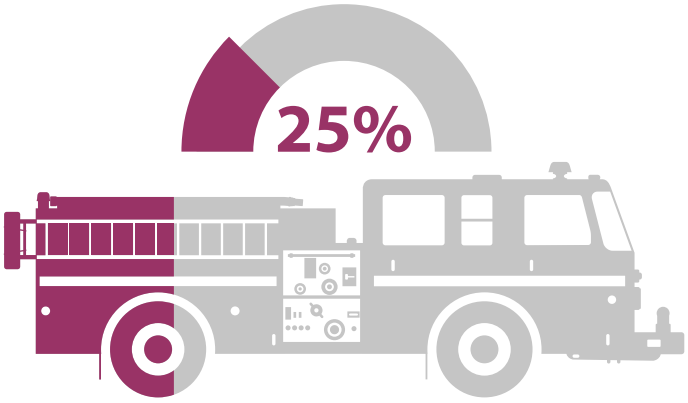
50th Anniversary ENGLISH HOUSING SURVEY 1967 - 2017

NatCen Social Research

bre

Fire and Fire Safety

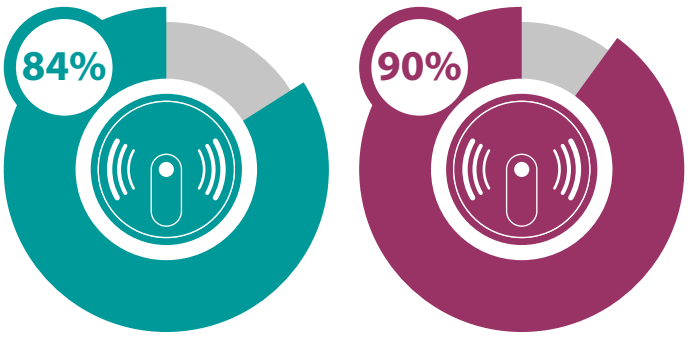
1% of households in England had a fire at home in the last two years.



A quarter of these fires were put out by the fire and rescue services.

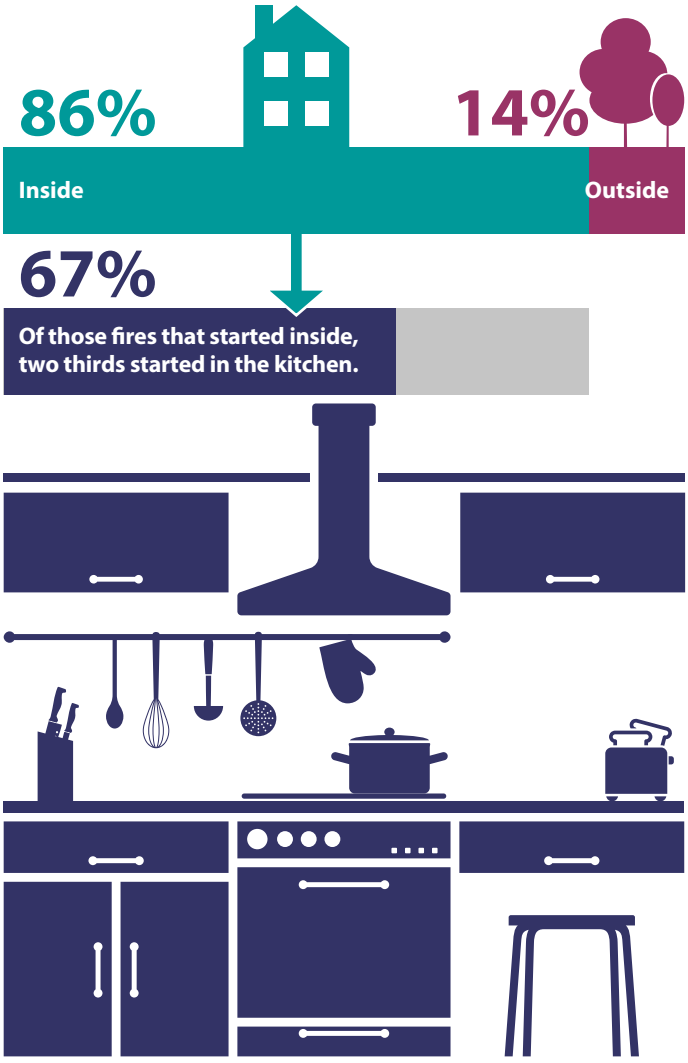
Most households in England had a working smoke alarm.

Households having at least one working smoke alarm.



2008-09 2016-17

Most fires started inside the house or flat.



Privately rented dwellings were more likely to have a serious fire hazard.

See English Housing Survey *Fire and Fire Safety report, 2016* **for more information.**

Chapter 1
Prevalence of fires at home

1.1 This chapter examines the incidence and prevalence of fires at home (both inside and outside the home), and how this varies by tenure and household characteristics. It also examines how and where the fire started, and how it was put out.

1.2 As the number of households reporting a fire at home tends to be small, the chapter is based on data collected over two years (2015-16 and 2016-17). For ease of reporting these data are referred to as '2016-17'. For those households that had experienced one or more fires, the cause of the most recent fire is explored in more detail.

Prevalence of fires

1.3 Households were asked about the outbreak of any fire at their home in the previous 12 months as well as in the last two years. In 2016-17, 1% (221,000) of households said that they had experienced a fire in the previous 12 months; 1.4% (332,000 households) had had a fire in the previous two years. Most (95%) households that had experienced a fire in the previous 12 months had one fire outbreak; 5% had two or more outbreaks, Annex Table 1.1.

1.4 The remainder of this section explores the extent to which the prevalence of fires at home varies by household and dwelling characteristics.[6]

Household characteristics

1.5 Social tenants were more likely to have experienced a fire in the last 2 years than owner occupiers; 2% and 1% respectively.[7] However, the size of the owner occupied sector means that a greater number of owner occupiers have experienced a fire than social and private renters combined, Annex Table 1.2.

1.6 Younger households were more likely to experience a fire than older households. Overall households where the household reference person (HRP)[8] was under 60 years (2%) were more likely to have had a fire in the last two years than households where the HRP was 60+ (1%). Similarly, HRPs

[6] Readers interested in understanding more about the predictors of fires at home can refer to *Fire and Fire Safety* https://www.gov.uk/government/statistics/english-housing-survey-2013-to-2014-fire-and-fire-safety-report.
[7] The apparent differences between private tenants and social tenants, and between private tenants and owner occupiers, were not statistically significant.
[8] The HRP is the person in whose name the dwelling is owned or rented or who is otherwise responsible for the accommodation. See glossary for more details.

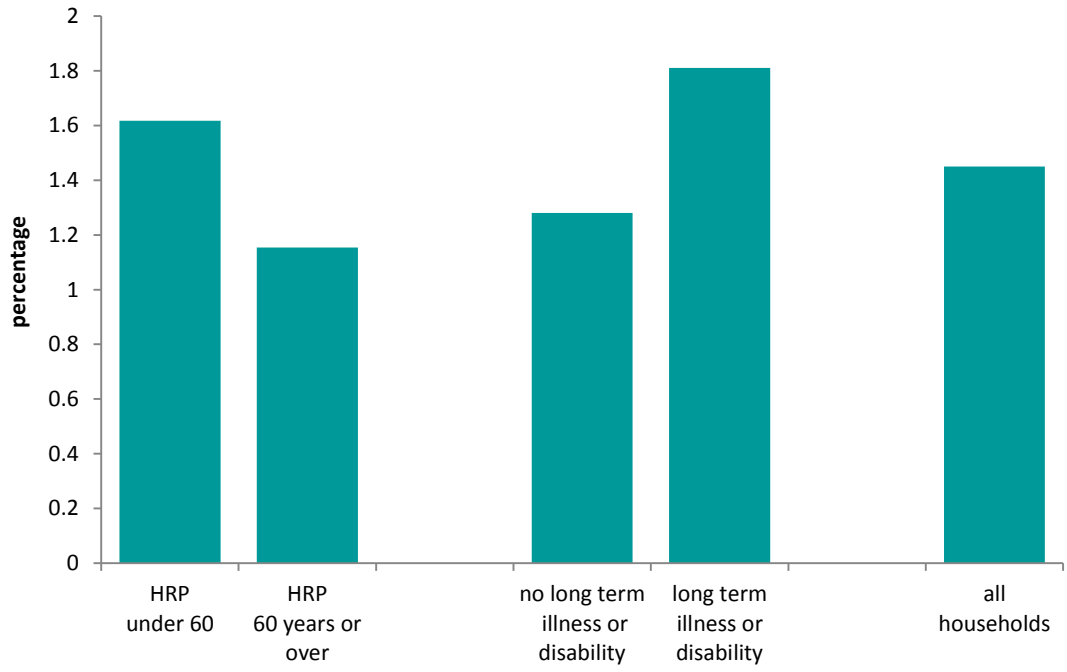
aged 25-34 (2%) or 35-44 (2%) were more likely to have had a fire in the last two years than HRPs aged 65-74 (1%).

1.7 In terms of employment status, households where the HRP was 'other inactive' were more likely to have had a fire at home in the last two years (3%). The 'other inactive' group includes those with a long-term illness or disability (as well as those that look after the home), so this finding is likely to be linked to the findings on disability described below.

1.8 Households with a person who had a long-term illness or disability (2%) were more likely to have had a fire in the last two years than other households (1%).

1.9 Couples with dependent children (2%) were more likely to have had a fire in the last two years than couples with no children (1%), lone parents with independent children (1%) and single person households (1%). There was, however, no difference in the likelihood of having a fire in the last two years between lone parents with dependent children and other types of households, Figure 1.1.

Figure 1.1: Households that had a fire at home in the previous two years, by age of HRP and disability, 2016-17



Base: all households
Notes:
1) underlying data are presented in Annex Table 1.2
2) data are based on two year averages, which are the average of the two years up to and including the labelled date
Source: English Housing Survey, full household sample

1.10 According to the ACORN classification of neighbourhoods[9], households that lived in areas categorised as comfortably off (1%) were less likely to have had a fire than households who lived in areas that were categorised as hard pressed (2%).

1.11 There was no difference in the prevalence of having a fire at home by household income, size of the household or the ethnicity or nationality of the HRP.

Dwelling characteristics

1.12 Fires were more likely to have occurred in older homes. Those who lived in dwellings built before 1919 (2%) were more likely to have had a fire in the last two years compared with those who lived in homes built after 1980 (1%), Annex Table 1.3.

1.13 There was no difference in the likelihood of having a fire at home by the type of dwelling. Apparent differences between flats and houses are not statistically significant.

Profile of fires

1.14 This section examines the cause and location of fires. For those households who experienced one or more fires at home, the most recent fire is explored.

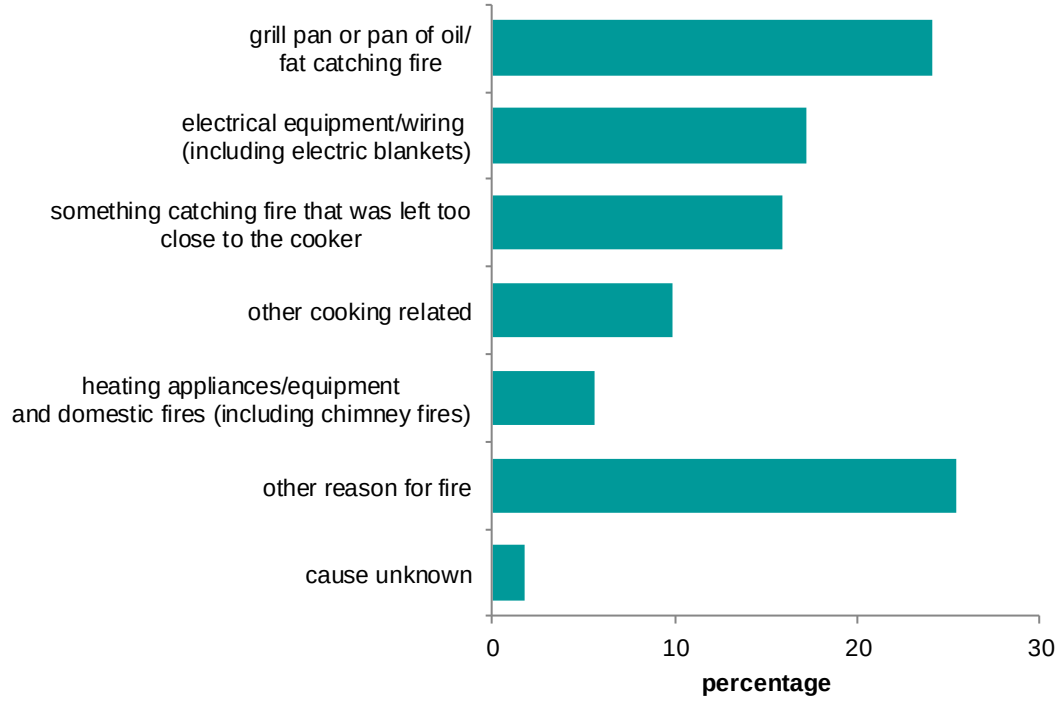
Cause of fire

1.15 Fires in the home were most commonly caused by cooking related activities, such as a grill or chip pan catching fire. 24% of households reported that their fire was caused by a grill pan or pan of oil or fat catching fire, and 16% reported that the fire was caused by something catching fire that was left too close to the cooker. 'Other cooking related activities' (which includes the use of toasters and microwaves) were reported as the cause of 10% of fires, Figure 1.2.

1.16 Electrical equipment/wiring (including electric blankets) was reported as the cause of fire by 17% of households. A quarter of households reported other causes of fire such as arson, candles, bonfires, barbecues and 'other' causes. Some 2% of households did not know the cause of the fire at their home.

[9] See the glossary for further information.

Figure 1.2: How the fire started, 2016-17



Base: all households that had a fire in the previous two years
Notes:
1) underlying data are presented in Annex Table 1.4
2) data are based on two year averages, which are the average of the two years up to and including the labelled data
Source: English Housing Survey, full household sample

Location of fire

1.17 Most fires started inside the house or flat (86%); 14% started outside (e.g. in the garden or communal area). Annex Table 1.5.

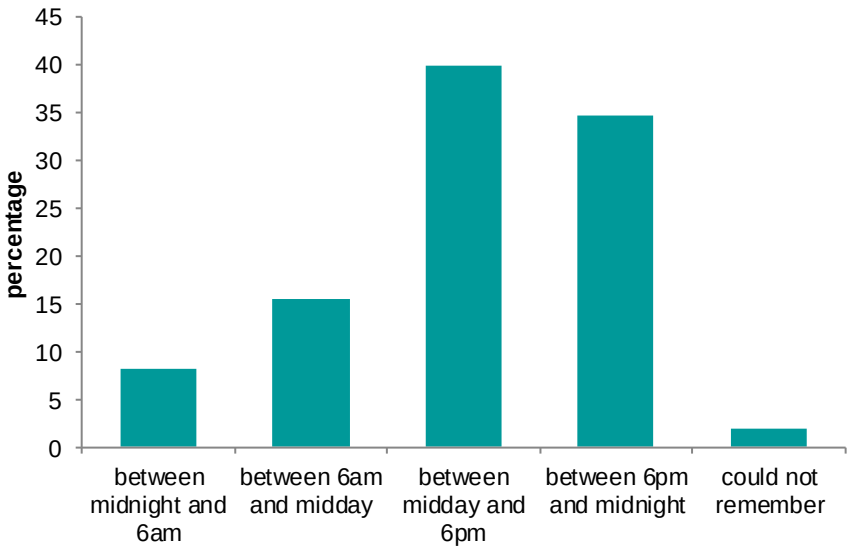
1.18 Of those fires that started inside the house or flat, two thirds (67%) started in the kitchen, 19% in the lounge, living room or dining room and 6% in the bedroom. Smaller proportions of fires started in the hallway or landing (3%), the toilet or bathroom (2%), or elsewhere in the home (2%).

1.19 Of those fires that started outside the house or flat, 29% started in the garden, 21% in the shed or greenhouse, 15% in the communal area, 9% in the neighbour's house, garden or garage, and 7% in the dustbin. A further 15% of fires started elsewhere outside the house.

Time of day fire was discovered

1.20 Three quarters of fires were discovered between midday and midnight (40% between midday and 6pm, and 35% between 6pm and midnight). Smaller proportions were discovered between 6am and midday (16%) and between midnight and 6am (8%), Figure 1.3.

Figure 1.3: Time of day fire was discovered, 2016-17



Base: all households that had a fire in the previous two years
Notes:
1) underlying data are presented in Annex Table 1.6
2) data are based on two year averages, which are the average of the two years up to and including the labelled data
Source: English Housing Survey, full household sample

How the fire was discovered

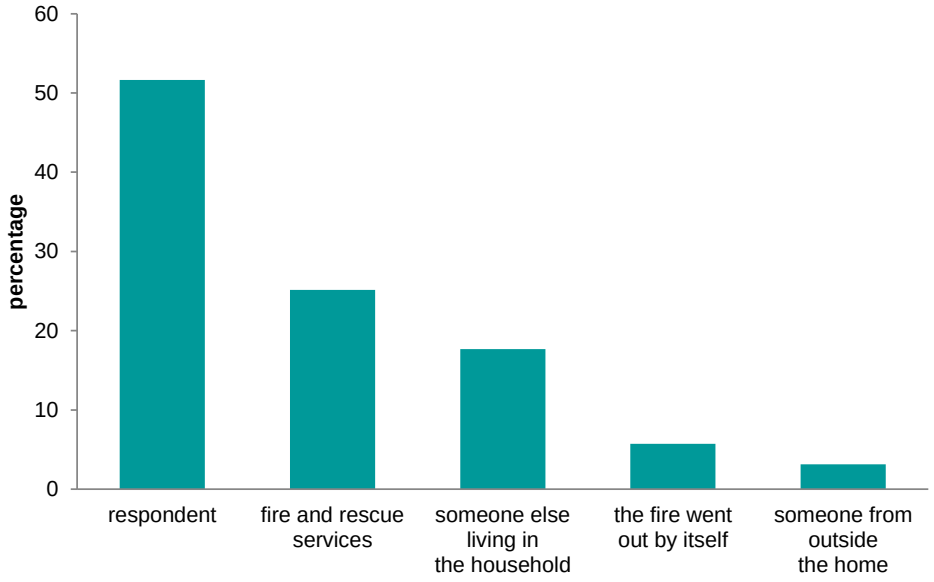
1.21 Households who had experienced a fire in the last two years were asked how the fire was discovered. The most common ways fires were discovered were: being in the room when it started (24%), noticing smoke/flames/sparks (24%), smoke alarm going off (24%), smell of smoke (21%), and just happened to find it (10%), Annex Table 1.7.

How fires were put out

1.22 Most fires were put out by the respondent (52%), someone else in the household (18%), or the fire went out by itself (6%)[10]. A quarter (25%) of fires were put out by the fire and rescue services, Figure 1.4.

[10] This question in the English Housing Survey has 'respondent' as well as 'someone else in the household' as possible responses. Summing up the percentages from these two options would not accurately give a combined total for the household, as some respondents may have selected both these options and this would result in double counting.

Figure 1.4: How fires were put out, 2016-17



Base: all households that had a fire in the previous two years
Notes:
1) underlying data are presented in Annex Table 1.8
2) respondents can give more than one answer
3) data is based on two year averages, which is the average of the two years up to and including the labelled data
Source: English Housing Survey, full household sample

Injuries from fires

1.23 Of those who had experienced a fire in the last two years, 89% reported having no injury, while 7% reported smoke inhalation and 5% reported burns/scalds, Annex Table 1.9[11].

Smoke alarms at the time of fire

1.24 Most (86%) households that experienced a fire in the last two years had a smoke alarm installed at the time of the fire, Annex Table 1.10.

1.25 Of those who had a smoke alarm installed at the time of the fire, 51% of households reported that the alarm went off at the time of the incident.

1.26 For households where the alarm didn't go off, reasons given included; the fire was put out before the smoke alarm was triggered (36%); the fire was too far away from the smoke alarm (23%); the fire was outside the house (15%); and no battery was installed in the alarm or it was either not working or switched off (7%). Around 19% of these households did not know why the alarm didn't go off, Annex Table 1.11.

[11] The relevant table for comparison published by the Home Office is 'Table FIRE0506: Fatalities and non-fatal casualties from accidental dwelling fires by age and cause', https://www.gov.uk/government/statistical-data-sets/fire-statistics-data-tables#fatalities-and-casualties.

Chapter 2
Smoke alarms and fire safety measures

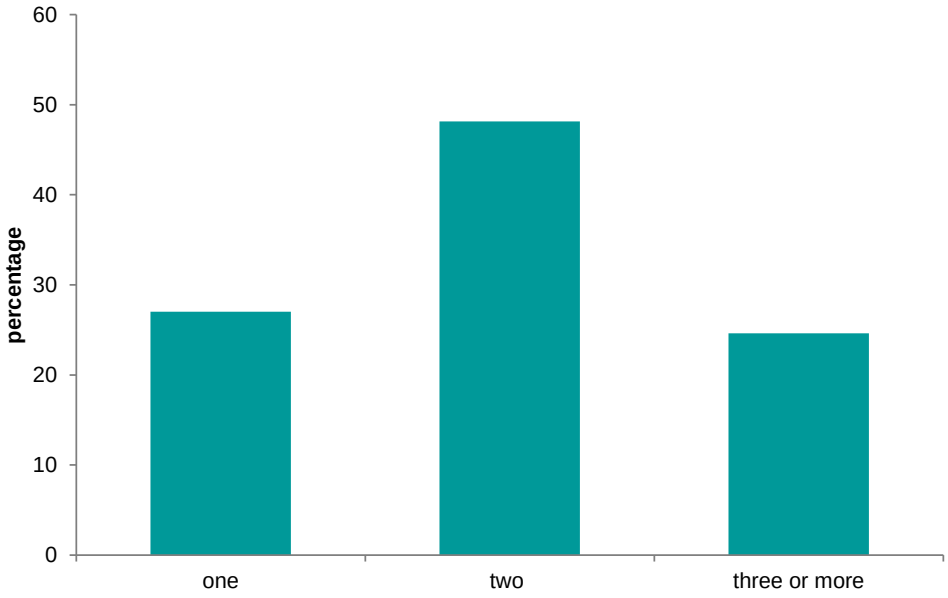
2.1 This chapter examines the extent to which households have smoke alarms and other fire safety measures in the home. It covers whether smoke alarms are in working order, and whether they are regularly tested. The extent to which this has changed over time is also explored.

Prevalence of smoke alarms

2.2 In 2016-17, 95% (21.8 million) of all households in England reported having a smoke alarm, Annex Table 2.1.

2.3 Of those households with smoke alarms, 27% had one smoke alarm, 48% had two smoke alarms and 25% had three smoke alarms, Figure 2.1.

Figure 2.1: Number of smoke alarms, 2016-17



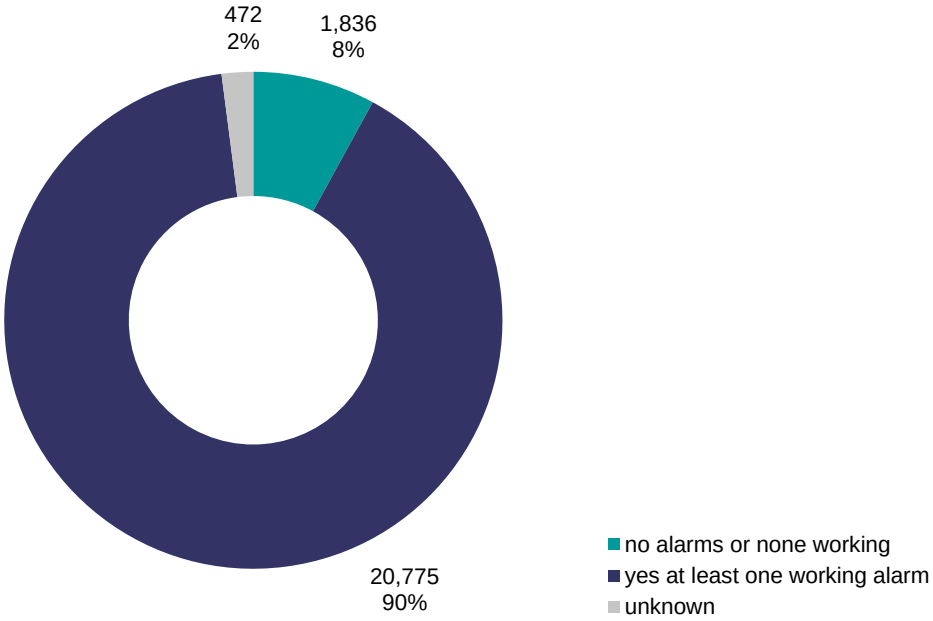
Base: all households with a smoke alarm
Note: underlying data are presented in Annex Table 2.1
Source: English Housing Survey, full household sample

2.4 Owner occupiers (94%) and private renters (94%) were less likely to have a smoke alarm than housing association (98%) and local authority (98%) renters, Annex Table 2.2. The prevalence of *working* smoke alarms by tenure, examined in the next section, differs from that for all smoke alarms.

Working smoke alarms

2.5 In addition to asking if they had smoke alarms, respondents were also asked about the working order of their smoke alarms[12]. Across England, 20.8 million households (90%) had at least one working smoke alarm in 2016-17. Around 1.8 million households (8%) had no smoke alarms or lacked a working smoke alarm and around 472,000 households (2%) did not know if their smoke alarm worked or not, Figure 2.2.

Figure 2.2: Working smoke alarms, 2016-17



Base: all households
Note: underlying data are presented in Annex Table 2.1
Source: English Housing Survey, full household sample

2.6 The rest of this section explores the extent to which the prevalence of smoke alarms varies by household and dwelling characteristics. Unlike previous EHS reports on smoke alarms[13], multivariate regression analysis was not undertaken for this report. We have therefore not explored the complex interrelationships behind some or all of the statistics presented.

Household characteristics

2.7 In 2016-17, households renting from housing associations (95%) were more likely to have a working smoke alarm than local authority renters (93%), owner occupiers (89%) and private renters (88%). Since 2008-09, the proportion of households with a working smoke alarm has increased for all

[12] This is self-reported; the interviewer is not required to test the alarms as part of the survey.
[13] Readers interested in understanding more about the predictors of having a working smoke alarm can refer to: *Smoke Alarms in English homes* https://www.gov.uk/government/statistics/english-housing-survey-2014-to-2015-smoke-alarms-in-english-homes-report.

tenures, but this rise was most notable for private renters, up from 76% in 2008-09 to 88% in 2016-17.[14] Over the same period, the prevalence of working smoke alarms rose among local authority renters from 82% to 93%, among housing association renters from 89% to 95% and among owner occupiers from 85% to 89%, Annex Table 2.3.

2.8 Households with a HRP aged 35-44 (92%) were more likely to have a working smoke alarm than households with a HRP aged16-24 (90%), 45-64 (90%), 65-74 (89%) and 75 or older (89%). Between 2008-09 and 2016-17, there was an increase in the prevalence of working smoke alarms for all age groups except 75 or over. The most notable rise was among households with a HRP aged 16-24 where the proportion with working smoke alarms rose from 74% in 2008-09 to 90% in 2016-17.

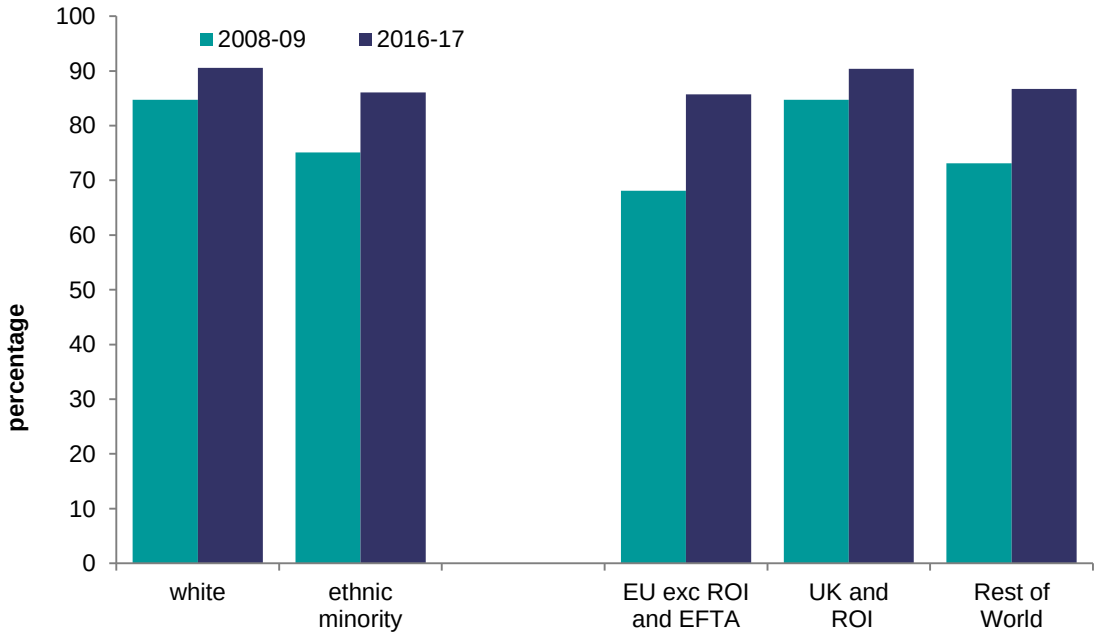
2.9 The proportion of households with a working smoke alarm increased between 2008-09 and 2016-17 irrespective of employment status. The rise in provision was most notable among households with an unemployed HRP up from 74% in 2008-09 to 89% in 2016-17.

2.10 Households with a white HRP (91%) were more likely to have a working smoke alarm than households with an ethnic minority HRP (86%). The disparity in the prevalence of working smoke alarms between white and ethnic minority HRP households was greater in 2008-09 (85% and 75% respectively) than in 2016-17 (91% and 86% respectively), Figure 2.3.

2.11 In 2016-17, households with a HRP that was a UK national (90%) were more likely to have a working smoke alarm than households with HRP that was an EU (86%) or rest of the world (87%) national. Between 2008-09 and 2016-17, the proportion of households with working smoke alarms rose for all nationalities; UK nationals (85% to 90%), EU nationals (68% to 86%) and rest of the world nationals (73% to 87%).

[14] Since 2015-16, the proportion of private renters with a working smoke alarm has increased from 83% to 88%, as reported in the English Housing Survey Headline Report 2016-17, Annex Table 2.15.

Figure 2.3: Working smoke alarms, by ethnicity and nationality, 2008-09 and 2016-17



Base: all households
Notes:
1) underlying data are presented in Annex Table 2.3
2) ROI is Republic of Ireland, EFTA is European Free Trade Association
Source: English Housing Survey, full household sample

2.12 Couples with dependent children were more likely to have experienced a fire in the previous two years than many other types of households[15]. They were, however, also more likely (93%) to have a working smoke alarm than lone parents with independent children (88%), single person households (87%) and other multi-person households (86%).

2.13 The proportion of households with a working smoke alarm increased between 2008-09 and 2016-17 for all household types except couples with independent children. The increase was particularly pronounced for lone parents with independent children (up from 79% to 88%).

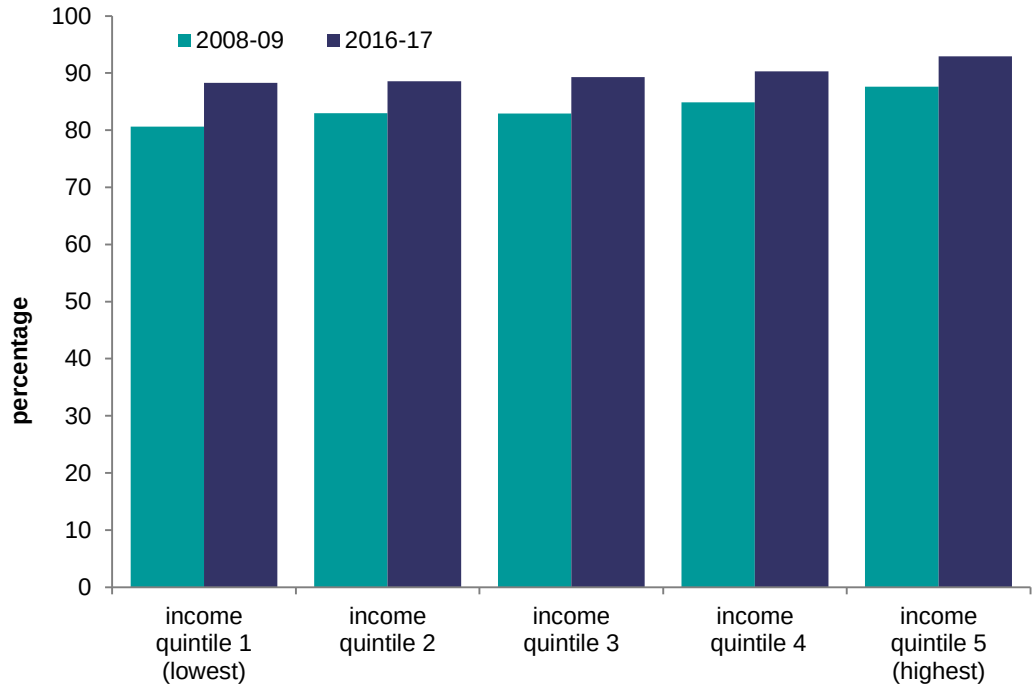
2.14 Single person households (87%) were less likely to have a working smoke alarm than households with two (91%), three (91%), or four (93%) people. Between 2008-09 and 2016-17, the most notable rise in having a working smoke alarms occurred for one and two-person households; an increase from 79% to 87% and from 83% to 91% respectively.

2.15 In 2016-17, households in the fifth income quintile (highest 20% of incomes) were more likely to have a working smoke alarm (93%) than households in all other income quintiles. Between 2008-09 and 2016-17, the proportion of

[15] See Chapter 1 of this report.

households with a working smoke alarm increased across all income quintiles. This was most notable among households in the first income quintile (lowest 20% of incomes) where the proportion of households with a smoke alarm had increased from 81% to 88%, Figure 2.4.

Figure 2.4: Working smoke alarms by income, 2008-09 and 2016-17



Base: all households
Note: underlying data are presented in Annex Table 2.3
Source: English Housing Survey, full household sample

Dwelling characteristics

2.16 In 2016, those living in houses (90%) were more likely to have a working smoke alarm than those in flats (87%), Annex Table 2.4.

2.17 Households living in detached houses (93%) were more likely to have working smoke alarms than households living in bungalows (88%). Households living in purpose built high-rise flats (91%) were more likely to have working smoke alarms than households in converted flats (84%).

2.18 Between 2008 and 2016, the proportion of households with a working smoke alarm increased for all dwelling types except converted flats. The most notable rise was for households who lived in purpose built high rise flats; an increase from 78% in 2008 to 91% in 2016.

2.19 In 2016, households living in the newest homes were more likely to have a working smoke alarm than other households. Most (95%) households living in post 1990 built homes had a working smoke alarm compared with, for

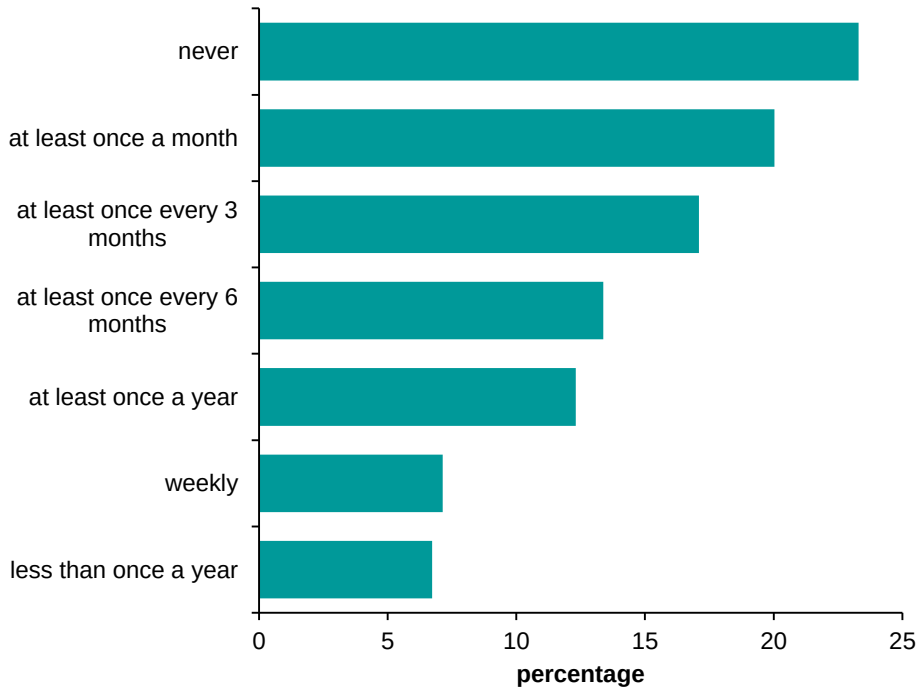
example, households living in homes built pre-1919 (86%) and between 1919 and 1944 (85%).

2.20 Between 2008 and 2016, the largest rise in the proportion of households with working smoke alarms was observed for pre-1919 built homes; an increase from 79% to 86%. Over the same period, the proportion of households with working smoke alarms also increased for households living in homes built between 1945 and 1964 and 1965 and 1980.

Frequency of testing smoke alarms

2.21 Those with smoke alarms were asked how often they tested them. Weekly testing was carried out by 7% of households. A fifth (20%) of households tested their alarms at least once a month, 17% at least once every three months and 13% at least once every six months. Other households tested less frequently; at least once a year (12%) and less than once a year (7%). Almost a quarter (23%) of households never tested their smoke alarms, Figure 2.5. Between 2008-09 and 2016-17, the proportion of households who never tested their alarm more than doubled from 9% to 23%. This may in part be due to a fall in the prevalence of battery operated alarm systems (described below).

Figure 2.5: Frequency of testing smoke alarms, 2016-17



Base: all households with a smoke alarm
Note: underlying data are presented in Annex Table 2.5
Source: English Housing Survey, full household sample

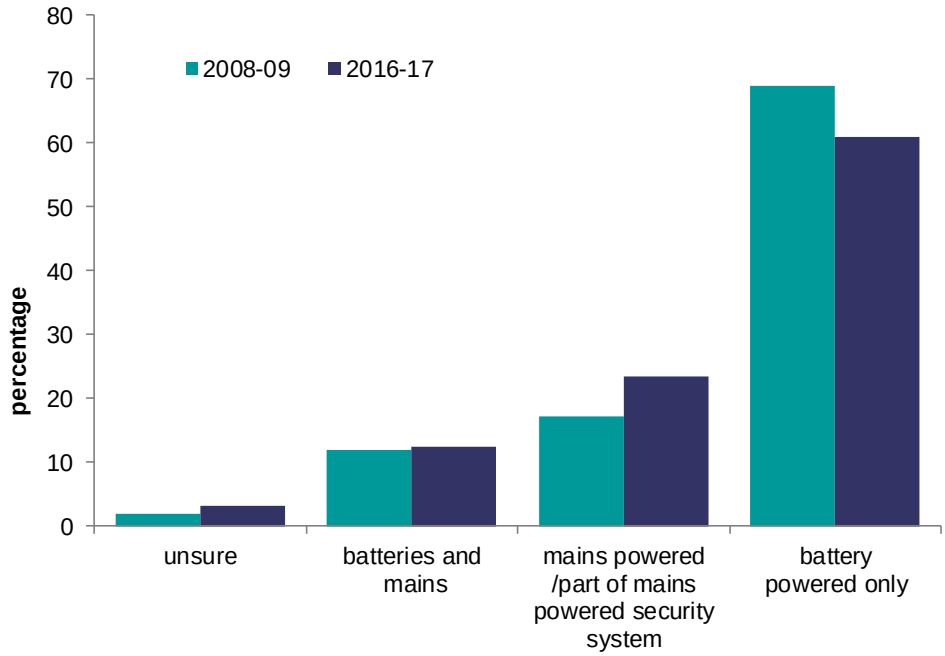
2.22 Renters were less likely to test their smoke alarms than owner occupiers: 19% of owner occupiers never tested their alarm compared with almost a third of

private renters, local authority renters and housing association renters, Annex Table 2.6.

How smoke alarms are powered

2.23 Those with smoke alarms most commonly reported that smoke alarms were powered by battery alone (61%). About a quarter (23%) reported that the smoke alarms were mains powered or part of the mains powered security system, 12% were powered by batteries and mains and 3% of households were unsure about how their smoke alarm was powered. The proportion of smoke alarms powered by battery alone decreased between 2008-09 and 2016-17 from 69% to 61% while those powered by the mains/mains powered security system increased from 17% to 23%, Figure 2.6

Figure 2.6: How smoke alarms are powered, 2008-09 and 2016-17



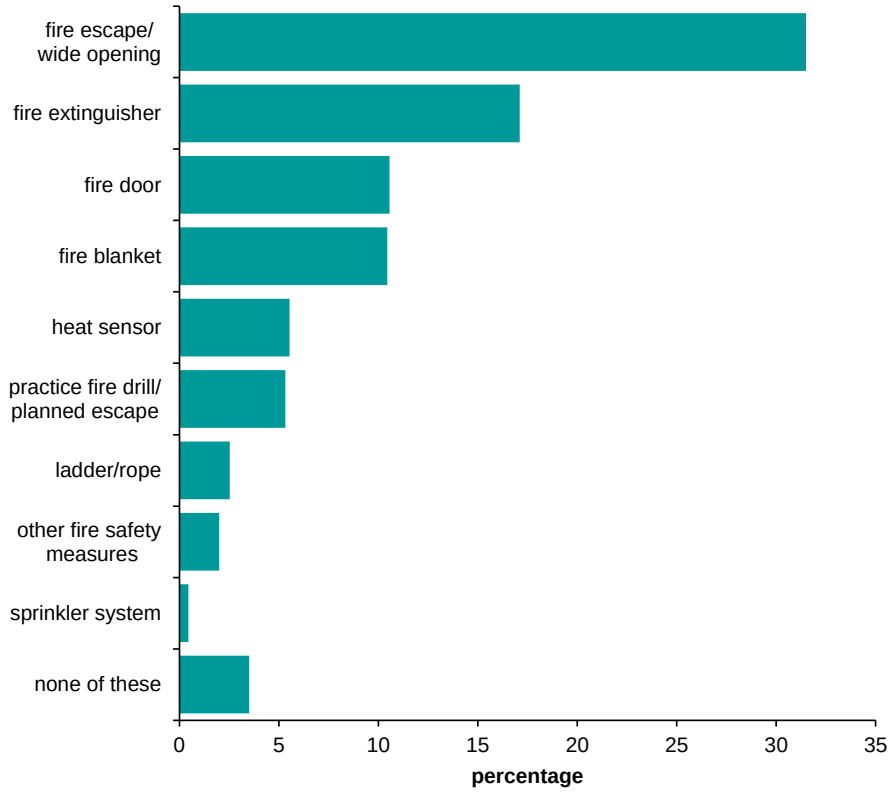
Base: all households with a smoke alarm
Note: underlying data are presented in Annex Table 2.7
Source: English Housing Survey, full household sample

Other fire safety measures

2.24 Households were also asked about the presence of other fire safety measures in their home. About a third of households (32%) reported that they had a fire escape/wide opening, 17% reported having a fire extinguisher, 11% had a fire door and 10% had a fire blanket, Figure 2.7.

2.25 Other less common fire safety measures were; heat sensors (6%); a practice fire drill/planned escape (5%); a ladder/rope (3%). A small proportion of households (4%) indicated that they had no fire safety measures at home.

Figure 2.7: Other fire safety measures, 2016-17



Base: all households
Note: underlying data are presented in Annex Table 2.8
Source: English Housing Survey, full household sample

2.26 In 2008-09, 26% of all households had a fire escape/wide opening and 3% had a heat sensor; by 2016 the proportion of households with a fire escape/wide opening (32%) and heat sensor (6%) had increased. The proportion of households with no fire safety measures declined from 8% in 2008-09 to 4% in 2016-17.

Fire safety in communal areas

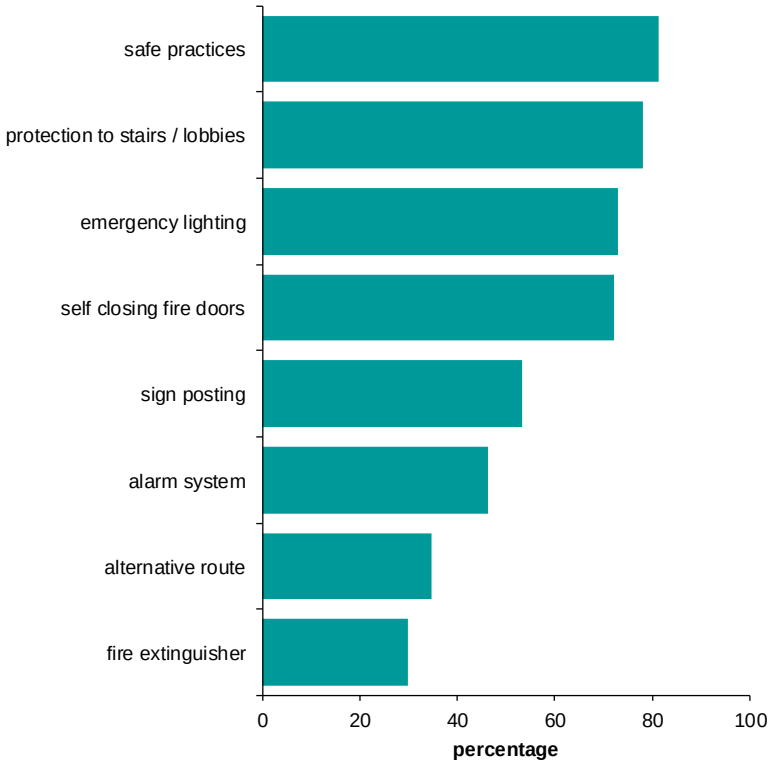
2.27 Where flats have communal areas, the EHS records details of the whole fire escape route from the door of the flat to the nearest exit from the building. The survey also collects information on the presence of some common fire precautions[16].

[16] The surveyor's assessment of fire safety in common areas is not a full assessment of the adequacy of the fire safety measures against current Building Regulations or standards adopted by local authorities under their statutory obligations. The Regulatory Reform (Fire Safety) Order 2005 requires a 'responsible person' (usually in the case of flats, the landlord, freeholder or managing agent) to carry out and review regularly a fire risk assessment of the premises, to ensure adequate and appropriate fire safety measures are put in place and maintained to manage the risk that lives could be lost in the event of a fire. The Fire Safety Order is not prescriptive – the fire precautions put in place are a decision for the responsible person based on the findings of the risk assessment.

2.28 In 2016, for most flats (88%) the fire escape route was through a common area. The flat itself was the final exit point from the building in 11% of cases. The escape route for the remaining 1% of flats was through another flat and common areas, Annex Table 2.9.

2.29 For flats where the fire escape route was through common areas, the most frequently recorded fire safety measures for common areas were: safe practices[17] (81%), protection of stairs/lobbies[18] (78%), emergency lighting (73%), self-closing fire doors (72%), sign posting[19] (53%), alarm system (46%), availability of an alternative route[20] (35%) and fire extinguisher (30%), Figure 2.8.

Figure 2.8: Fire safety measures in communal areas, 2016-17



Base: all dwellings with fire escape route through common areas
Note: underlying data are presented in Annex Table 2.9
Source: English Housing Survey, dwelling sample

[17] For the surveyor to assess safe practices as present, the following must not be present at the time of the survey: propping open fire doors; blocking fire exits/escape routes; use of radiant or portable heaters in escape routes; storage of flammable materials in escape routes; loose carpet on escape route.
[18] Stairwells/lobbies along the fire escape route should be fully enclosed with suitable fire resisting materials in order to be assessed as fully protected.
[19] For the surveyor to assess sign posting as present, these must indicate the escape route along its length, identify emergency exits, indicate firefighting equipment and provide relevant information to occupants during an emergency.
[20] For the surveyor to assess alternative route as present, it must be possible to take an alternative protected route from the exit door of the flat out of the building.

Chapter 3
Fire hazards

3.1 This chapter explores the existence of serious fire hazards in different types of homes and the characteristics of households who live in these homes. The chapter examines both the structural risk of fire (as assessed by a surveyor, using the Housing Health and Safety Rating System[21] (HHSRS)) and the behavioural risks of fire (e.g. the use of chip pans, candles and/or open fires).

3.2 In this report, a serious fire hazard is said to exist where the risk of fire is assessed to be significantly higher than average as part of the surveyor's HHSRS assessment.

Structural risk of fire

3.3 In 2016, 0.4% of all dwellings had a Category 1 fire hazard[22] (about 105,000 dwellings). In addition, 4% of all dwellings (912,000) had a risk of fire that was significantly higher than average, but not a Category 1 hazard. This means that overall 4% of all dwellings (about 1.0 million) were assessed by a surveyor as having a significantly higher than average risk of fire (i.e. a serious fire hazard), where remedial action should be taken to mitigate the risk of harm, Annex Table 3.1.

3.4 Most of the significantly higher than average risks of fire were due to relevant factors identified in the interior of the dwelling.

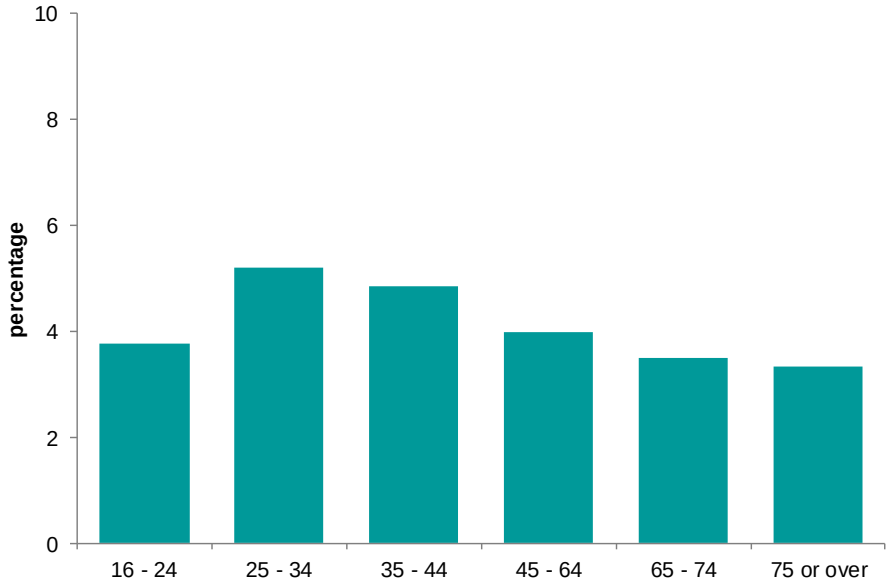
Household characteristics

3.5 This section examines the characteristics of households that were more likely to live in homes with a serious fire hazard, Annex Table 3.2.

3.6 Households with a HRP aged 25-34 (5%) were more likely to live in a home with a serious fire hazard compared with households where the HRP was aged 65-74 (3%) or 75 years or over (3%), Figure 3.1.

[21] For information on the Housing Health and Safety Rating System (HHSRS), please refer to the glossary.
[22] A Category 1 hazard is the most serious type of hazard under the HHSRS and where this exists the dwelling fails to reach the statutory minimum standard for housing in England.

Figure 3.1: Homes with a serious fire hazard, by age of HRP, 2016-17



Base: all households
Note: underlying data are presented in Annex Table 3.2
Source: English Housing Survey, household sub sample

3.7 Lone parents (6%) and couples with dependent children (5%) were more likely to live in homes with a serious fire hazard compared with couples aged 60 or over with no dependent children (3%). Couples with dependent children were more likely to have a working smoke alarms than their lone parent counterparts (see Chapter 2 of this report).

3.8 The likelihood of living in a home with a serious fire hazard was similar irrespective of the ethnicity of the HRP.

3.9 Households with relative low income[23] (6%) were more likely to live in a home with a serious fire hazard compared with other households (4%).

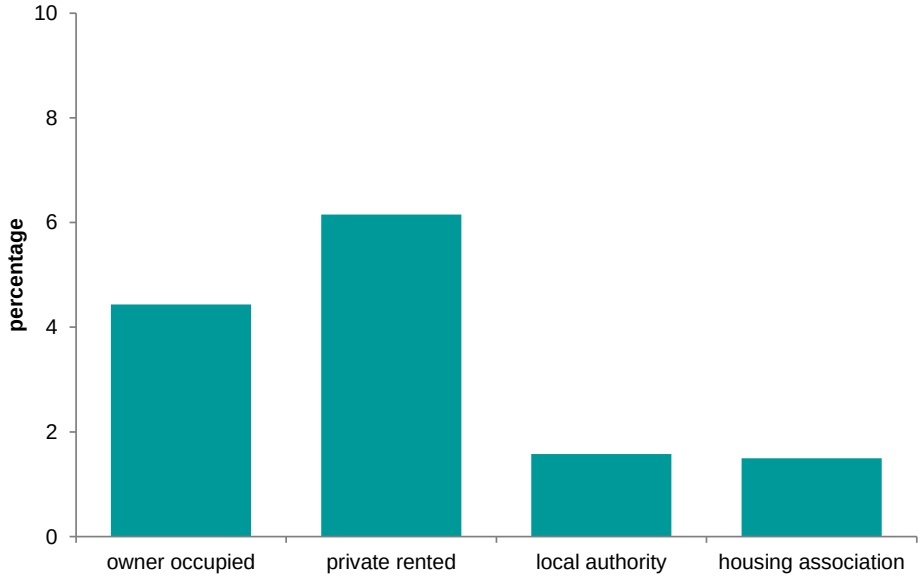
Dwelling characteristics

3.10 This section examines the characteristics of dwellings that were more likely to have a serious fire hazard, Annex Table 3.3.

3.11 Privately rented dwellings (6%) were more likely to have a serious fire hazard than all other tenures. Owner occupied (4%) homes were more likely to have higher than average risks of fire than local authority (2%) and housing association (1%) homes, Figure 3.2.

[23] Households whose equivalised income Before Housing Costs (BHC) is less than 60% of the median value of the BHC equivalised weekly income of all households.

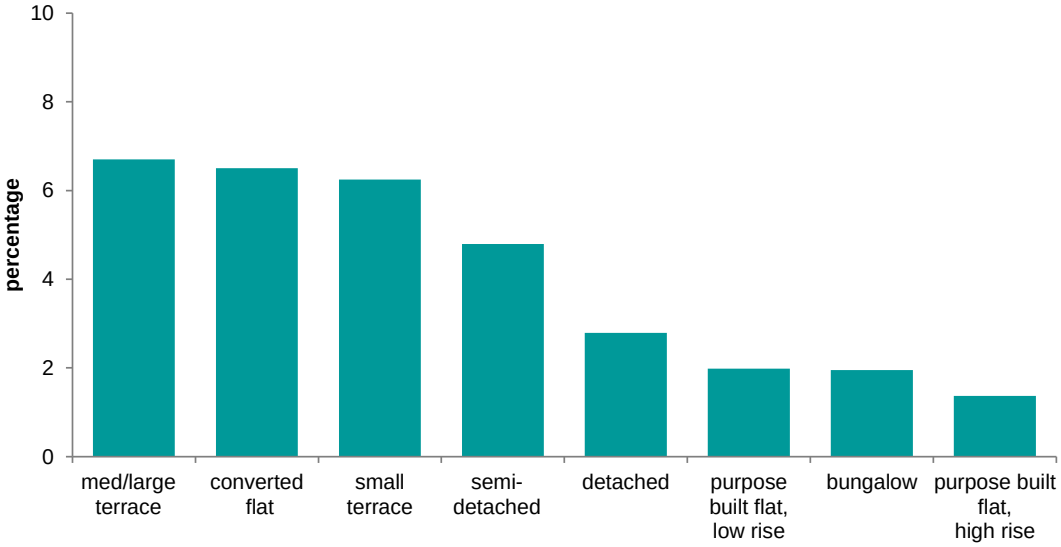
Figure 3.2: Serious fire hazards, by tenure, 2016



Base: all dwellings
Note: underlying data are presented in Annex Table 3.3
Source: English Housing Survey, dwelling sample

3.12 Overall, houses (5%) were more likely to have a serious fire hazard compared with flats (3%). However, converted flats (7%), medium/large terraces (7%), small terraces (6%) and semi-detached (5%) houses were more likely to have a serious fire hazard compared with detached houses (3%), purpose built low-rise flats (2%), and bungalows (2%), Figure 3.3.[24]

Figure 3.3: Serious fire hazards, by dwelling type, 2016



Base: all dwellings

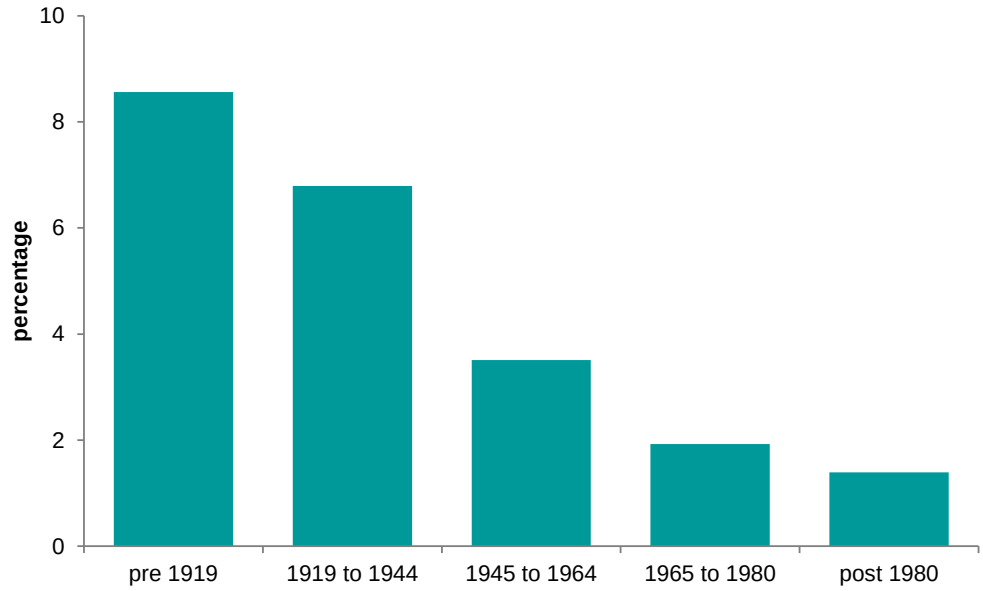
[24] The apparent difference between bungalows and purpose built high rise flats is not statistically significant.

Note: underlying data are presented in Annex Table 3.3
Source: English Housing Survey, dwelling sample

3.13 Dwellings built after 1980 were less likely to have a serious fire hazard compared with those built before 1965, Figure 3.4.

3.14 Dwellings built pre-1919 (9%) and 1919-1945 (7%) had a higher proportion of serious fire hazards than those built 1945-1964 (4%), 1965-1980 (2%) and post 1980 (1%).

Figure 3.4: Serious fire hazards, by dwelling age, 2016



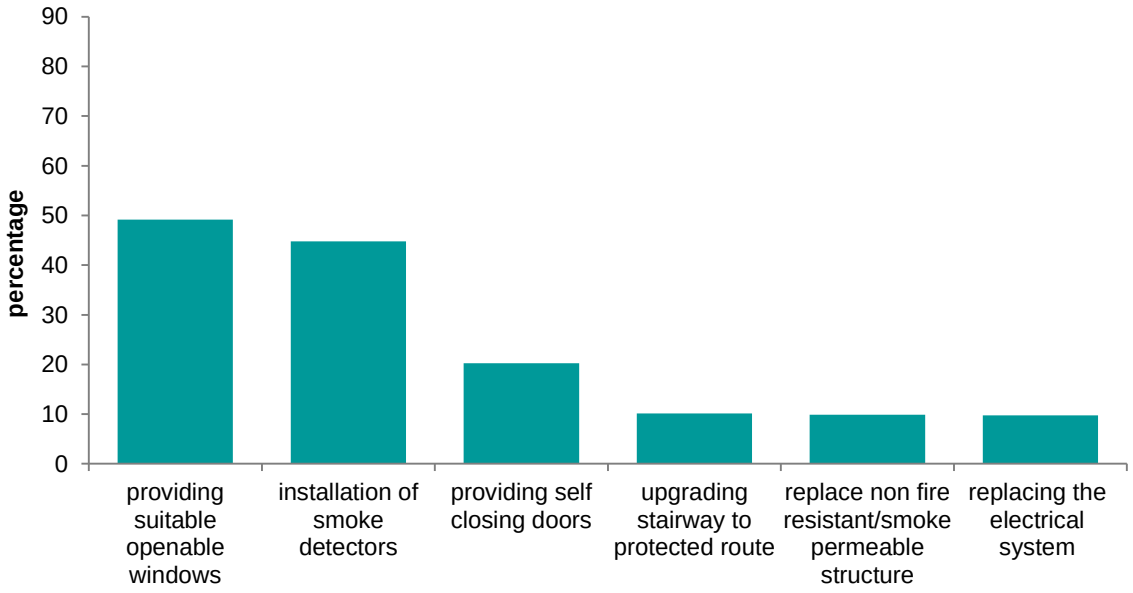
Base: all dwellings
Note: underlying data are presented in Annex Table 3.3
Source: English Housing Survey, dwelling sample

Actions to mitigate serious fire hazards

3.15 Surveyors record actions that could be taken to mitigate serious fire hazards to the point where the risk of fire would be no worse than average for the age and type of dwelling. The actions recorded are associated with preventing ignition of fire, minimising its spread and facilitating escape depending on the factors identified as causing the serious fire hazard. It is possible for surveyors to record more than one action to mitigate fire risks.

3.16 For the 1.0 million dwellings assessed as having a serious fire hazard, the most common actions identified by surveyors were: providing suitable openable windows (49%), installation of smoke detectors (45%), providing self-closing doors (20%), upgrading stairway on the protected route (10%), replacing non fire resistant/smoke permeable structures (10%) and replacing the electrical system (10%), Figure 3.5.

Figure 3.5: Actions to mitigate serious risks of harm from fire, 2016



Base: all dwellings with a significantly higher than average risk of fire
Note: underlying data are presented in Annex Table 3.4
Source: English Housing Survey, dwelling sample

Behavioural risk of fire

3.17 As reported in Chapter 1, most fires are caused by cooking related activities in the home (including using a grill pan or pan of oil, oil catching fire or something left too close to the cooker). This section explores behaviour related risk of fire by looking at prevalence and frequency of usage of chip pans, candles and open fires/free standing room heaters.

3.18 Chip pans were used at least once a week by 8% of households. A quarter (24%) of households lit candles at least once a week. A smaller proportion of households (12%) used an open fire or a free standing room heater at least once a week, Annex Table 3.5.

Technical notes and glossary

Technical notes

1. As the number of households reporting a fire at home tends to be small, results in the first section of the report are based on data collected over two years (2015-16 and 2016-17). For ease of reporting these data are presented as '2016-17'. Results are based on fieldwork carried out between April 2015 and March 2017 on a sample of 26,404 households.

2. The majority of results in the second section of the report relate to households, are presented for '2016-17' and are based on fieldwork carried out between April 2016 and March 2017 on a sample of 12,970 households. Throughout the report, this is referred to as the 'full household sample'. The sub-sections on 'Dwelling characteristics' and 'Fire safety in communal areas' relate to the physical dwelling, are presented for '2016' and are based on fieldwork carried out between April 2015 and March 2017 (a mid-point of April 2016). The sample comprises 12,292 occupied or vacant dwellings where a physical inspection was carried out. Throughout the report, this is referred to as the 'dwelling sample'.

3. The majority of results in the third section of the report relate to dwellings, are presented for '2016' and are based on fieldwork carried out between April 2015 and March 2017 (a mid-point of April 2016). The sub-sections on 'Household characteristics' and 'Behavioural risks of fire' relate to households, are presented for '2016-17' and are based on fieldwork carried out between April 2016 and March 2017.

4. The reliability of the results of sample surveys, including the English Housing Survey, is positively related to the unweighted sample size. Results based on small sample sizes should therefore be treated as indicative only because inference about the national picture cannot be drawn. To alert readers to those results, percentages based on a row or column total with unweighted total sample size of less than 30 are italicised. To safeguard against data disclosure, the cell contents of cells where the cell count is less than 5 are replaced with a "u".

5. Where comparative statements have been made in the text, these have been significance tested to a 95% confidence level. This means we are 95% confident that the statements we are making are true.

6. Additional annex tables, including the data underlying the figures and charts in this report are published on the website: https://www.gov.uk/government/collections/english-housing-survey alongside many supplementary live tables, which are updated each year (in the summer)

but are too numerous to include in our reports. Further information on the technical details of the survey, and information and past reports on the Survey of English Housing and the English House Condition Survey, can also be accessed via this link.

Glossary

ACORN: a classification of residential neighbourhoods that groups households, postcodes and neighbourhoods into six categories, 18 groups and 62 types, according to age, household composition, facilities, household size, income, marital status, mode of travel to work, occupation, ownership of car, ownership of home, etc. This information is matched with EHS data, and the following categories are reported::

- **Affluent achievers**: some of the most financially successful people in the UK. They live in wealthy, high status rural, semi-rural and suburban areas of the country. Middle aged or older people, the 'baby-boomer' generation, predominate with many empty nesters and wealthy retired people.
- **Rising prosperity**: generally younger, well educated, and mostly prosperous people living in our major towns and cities. Most are singles or couples, some yet to start a family, others with younger children. Often these are highly educated younger professionals moving up the career ladder. Most live in converted or modern flats, with a significant proportion of these being recently built executive city flats. Some will live in terraced town houses. While some are buying their home, occasionally through some form of shared equity scheme, others will be renting. While many have good incomes not all might yet have had time to convert these into substantial savings or investments.
- **Comfortable communities**: all life stages are represented in this category. Many areas have mostly stable families and empty nesters, especially in suburban or semi-rural locations. Generally people own their own home. Most houses are semi-detached or detached, overall of average value for the region. Incomes overall are average, some will earn more, the younger people a bit less than average. Employment is in a mix of professional and managerial, clerical and skilled occupations. Educational qualifications tend to be in line with the national average.
- **Financially stretched**: a mix of traditional areas of Britain. Housing is often terraced or semi-detached, a mix of lower value owner occupied housing and homes rented from the council or housing associations, including social housing developments specifically for the elderly. This category also includes student term-time areas. Unemployment is above average as are the proportions of people claiming other benefits.
- **Urban adversity**: this category contains the most deprived areas of large and small towns and cities across the UK. Household incomes are low, nearly always below the national average. The numbers claiming Jobseeker's Allowance and other benefits is well above the national average. Levels of qualifications are low

and those in work are likely to be employed in semi-skilled or unskilled occupations. The housing is a mix of low-rise estates, with terraced and semi-detached houses, and purpose built flats, including high-rise blocks. Properties tend to be small and there may be overcrowding. Over half of the housing is rented from the local council or a housing association.

More details available at: https://acorn.caci.co.uk/downloads/Acorn-User-guide.pdf

Category 1 hazard: The most serious type of hazard under the Housing Health and Safety Rating System (HHSRS). Where such a hazard exists the dwelling fails to reach the statutory minimum standard for housing in England.

Dependent children: Any person aged 0 to 15 in a household (whether or not in a family) or a person aged 16 to 18 in full-time education and living in a family with his or her parent(s) or grandparent(s). It does not include any people aged 16 to 18 who have a spouse, partner or child living in the household.

Dwelling: A unit of accommodation which may comprise one or more household spaces (a household space is the accommodation used or available for use by an individual household). A dwelling may be classified as shared or unshared. A dwelling is shared if:

- the household spaces it contains are 'part of a converted or shared house', or
- not all of the rooms (including kitchen, bathroom and toilet, if any) are behind a door that only that household can use, and
- there is at least one other such household space at the same address with which it can be combined to form the shared dwelling.

Dwellings that do not meet these conditions are unshared dwellings.

The EHS definition of dwelling is consistent with the Census 2011.

Dwelling age: The date of construction of the oldest part of the building.

Dwelling type: Dwellings are classified, on the basis of the surveyor's inspection, into the following categories:

- **small terraced house:** a house with a total floor area of less than 70m^2 forming part of a block where at least one house is attached to two or more other houses. The total floor area is measured using the original EHS definition of useable floor area, used in EHS reports up to and including the 2012 reports. That definition tends to yield a smaller floor area compared with the definition that is aligned with the Nationally Described Space Standard and used on the EHS since 2013. As a result of the difference between the two definitions, some small terraced houses are reported in the 2014 Housing Supply Report as having more than 70m².

- **medium/large terraced house:** a house with a total floor area of 70m^2 or more forming part of a block where at least one house is attached to two or more other houses. The total floor area is measured using the original EHS definition of useable floor area which tends to yield a small floor area compared with the definition used on the EHS since 2013.

- **end terraced house:** a house attached to one other house only in a block where at least one house is attached to two or more other houses.

- **mid terraced house:** a house attached to two other houses in a block.

- **semi-detached house:** a house that is attached to just one other in a block of two.

- **detached house:** a house where none of the habitable structure is joined to another building (other than garages, outhouses etc.).

- **bungalow:** a house with all of the habitable accommodation on one floor. This excludes chalet bungalows and bungalows with habitable loft conversions, which are treated as houses.

- **converted flat:** a flat resulting from the conversion of a house or former non-residential building. Includes buildings converted into a flat plus commercial premises (such as corner shops).

- **purpose built flat, low-rise:** a flat in a purpose built block less than six storeys high. Includes cases where there is only one flat with independent access in a building which is also used for non-domestic purposes.

- **purpose built flat, high-rise:** a flat in a purpose built block at least six storeys high.

Economic status: Respondents self-report their situation and can give more than one answer.

- **working full-time/part-time**: full-time work is defined as 30 or more hours per week. Part-time work is fewer than 30 hours per week. Where more than one answer is given, 'working' takes priority over other categories (with the exception that all those over State Pension Age (SPA) who regard themselves as retired are classified as such, regardless of what other answers they give).

- **unemployed**: this category covers people who were registered unemployed or not registered unemployed but seeking work.

- **retired**: this category includes all those over the state pension age who reported being retired as well as some other activity. For men the SPA is 65 and for women it is 60 if they were born before 6th April 1950. For women born on or

after the 6th April 1950, the state pension age has increased incrementally since April 2010[25].

- **full-time education:** education undertaken in pursuit of a course, where an average of more than 12 hours per week is spent during term time.

- **other inactive**: all others; they include people who were permanently sick or disabled, those looking after the family or home and any other activity.

Electrical safety:

- **wiring**: this is the cabling from the input electrical supply point, which runs through the meters and consumer units and leading out into the dwelling. The earliest types of wiring used lead or black rubber sheathings to enclose the wires. The danger with this type of cable is the degrading of the rubber: any failure of the insulation can cause the outer covering to become live. Modern wiring is PVC sheathed.

- **earthing**: these are the wires joining the components at the electrical distribution centre. The early forms of earthing wires were unsheathed then later covered with green rubber, then green plastic. In 1977 the colour convention changed and all wires had to be coloured green and yellow.

- **consumer unit arrangement (fuse boxes)**: in older systems, each individual electrical circuit was fed through an individual switch and fuse box. From 1960s through to the 1980s, fuses were collected together into a small number of smaller boxes, normally with a switch on the front which controlled all the circuits leading to the box. These boxes were normally fitted with a cover, the removal of which gave access to the fuses hidden inside. From the early 1980s, the newly named consumer unit (some dwellings have two) catered for the whole dwelling and was also designed to accommodate modern safety measures namely circuit breakers and residual current devices.

- **overload protection / miniature circuit breakers (MCBs**): these provide the most modern form of electrical current overload protection by detecting a fault condition and interrupting the current flow. MCBs replaced cartridge fuses and the original wire fuses (these simply melt when overheated) which formed the earliest form of protection.

- **residual current devices (RCDs)**: these are designed to break an electrical current very easily by detecting any abnormality in the circuit, for example, through someone touching a live wire. They are normally located in the consumer unit but a separate RCD may exist to protect an additional circuit, for example, an electrical circuit used in the garden.

[25] For further information see: www.gov.uk/browse/working/state-pension

Ethnicity: Classification according to respondents' own perceived ethnic group.

Ethnic minority background is used throughout the report to refer to those respondents who do not identify as White.

The classification of ethnic group used in the EHS is consistent with the 2011 Census. Respondents are classified as White if they answer one of the following four options:

1. English / Welsh / Scottish / Northern Irish / British
2. Irish
3. Gypsy or Irish Traveller
4. Any Other White background

Otherwise, they are classified as being from an ethnic minority background.

Household: One person or a group of people (not necessarily related) who have the accommodation as their only or main residence, and (for a group) share cooking facilities and share a living room or sitting room or dining area.

The EHS definition of household is slightly different from the definition used in the 2011 Census. Unlike the EHS, the 2011 Census did not limit household membership to people who had the accommodation as their only or main residence. The EHS included that restriction because it asks respondents about their second homes, the unit of data collection on the EHS, therefore, needs to include only those people who have the accommodation as their only or main residence.

Household reference person (HRP): The person in whose name the dwelling is owned or rented or who is otherwise responsible for the accommodation. In the case of joint owners and tenants, the person with the highest income is taken as the HRP. Where incomes are equal, the older is taken as the HRP. This procedure increases the likelihood that the HRP better characterises the household's social and economic position. The EHS definition of HRP is not consistent with the Census 2011, in which the HRP is chosen on basis of their economic activity. Where economic activity is the same, the older is taken as HRP, or if they are the same age, HRP is the first listed on the questionnaire.

Household type: The main classification of household type uses the following categories; some categories may be split or combined in different tables:

- couple no dependent child(ren)
- couple with dependent child(ren)
- couple with dependent and independent child(ren)
- couple with independent child(ren)
- lone parent with dependent child(ren)
- lone parent with dependent and independent child(ren)
- lone parent with independent child(ren)
- two or more families
- lone person sharing with other lone persons

- one male
- one female

Housing Health and Safety Rating System (HHSRS): A risk assessment tool used to assess potential risks to the health and safety of occupants in residential properties in England and Wales. It replaced the Fitness Standard in April 2006.

The purpose of the HHSRS assessment[26] is not to set a standard but to generate objective information in order to determine and inform enforcement decisions. There are 29 categories of hazard, each of which is separately rated, based on the risk to the potential occupant who is most vulnerable to that hazard. The individual hazard scores are grouped into 10 bands where the highest bands (A-C representing scores of 1,000 or more) are considered to pose Category 1 hazards. Local authorities have a duty to act where Category 1 hazards are present, and may take into account the vulnerability of the actual occupant in determining the best course of action.

For the purposes of the decent homes standard, homes posing a Category 1 hazard are non-decent on its criterion that a home must meet the statutory minimum requirements.

The EHS is not able to replicate the HHSRS assessment in full as part of a large scale survey. Its assessment employs a mix of hazards that are directly assessed by surveyors in the field and others that are indirectly assessed from detailed related information collected. For 2006 and 2007, the survey (the then English House Condition Survey) produced estimates based on 15 of the 29 hazards. From 2008, the survey is able to provide a more comprehensive assessment based on 26 of the 29 hazards. See the EHS Technical Note on Housing and Neighbourhood Conditions[27] for a list of the hazards covered.

Income (equivalised): Household incomes have been 'equivalised', that is adjusted (using the modified Organisation Economic Co-operation and Development scale) to reflect the number of people in a household. This allows the comparison of incomes for households with different sizes and compositions.

The EHS variables are modelled to produce a **Before Housing Costs (BHC)** income measure for the purpose of equivalisation. The BHC income variable includes:

Household Reference Person and partner's income from benefits and private sources (including income from savings), income from other household members, housing benefit, winter fuel payment and the deduction of net council tax payment.

[26] https://www.gov.uk/government/organisations/department-for-communities-and-local-government/series/housing-health-and-safety-rating-system-hhsrs-guidance
[27] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211302/Housing_and_Neighbourhood_Conditions.pdf

Income quintiles: All households are divided into five equal groups based on their income (i.e. those in the bottom 20%, the next 20% and so on). These groups are known as quintiles. These can be used to compare income levels of particular groups to the overall population.

Median income: the amount that divides the income distribution into two equal groups, half having income above that amount, and half having income below that amount.

Storeys: The number of storeys *above* ground i.e. it does not include any basements.

Tenure: In this report, households are typically grouped into three broad categories known as tenures: owner occupiers, social renters and private renters. The tenure defines the conditions under which the home is occupied, whether it is owned or rented, and if rented, who the landlord is and on what financial and legal terms the let is agreed.

- **owner occupiers:** households in accommodation which they either own outright, are buying with a mortgage or as part of a shared ownership scheme.

- **social renters:** this category includes households renting from Local Authorities (including Arms' Length Management Organisations (ALMOs) and Housing Action Trusts) and Housing Associations, Local Housing Companies, co-operatives and charitable trusts.

  A significant number of Housing Association tenants wrongly report that they are Local Authority tenants. The most common reason for this is that their home used to be owned by the Local Authority, and although ownership was transferred to a Housing Association, the tenant still reports that their landlord is the Local Authority. There are also some Local Authority tenants who wrongly report that they are Housing Association tenants. Data from the EHS for 2008-09 onwards incorporate a correction for the great majority of such cases in order to provide a reasonably accurate split of the social rented category.

- **private renters:** this sector covers all other tenants including all whose accommodation is tied to their job. It also includes people living rent-free (for example, people living in a flat belonging to a relative).

Vacant dwellings: The assessment of whether or not a dwelling is vacant is made at the time of the interviewer's visit. Clarification of vacancy is sought from neighbours. Both properties in between lets and those that are vacant for a longer period are classified as vacant on the EHS. Surveyors are required to gain access to vacant dwellings and undertake full inspections.

In accordance with the Statistics and Registration Service Act 2007 the United Kingdom Statistics Authority has designated these statistics as National Statistics, signifying that they are fully compliant with the Code of Practice for Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

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July 2018

ISBN: 978-1-4098-5283-4