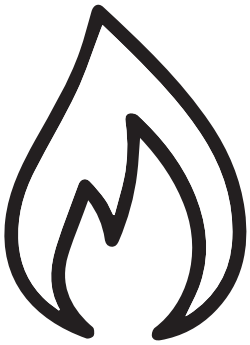
APPENDIX A



Fire Deaths in Hertfordshire

1st January 2000 to 31st March 2017

Hertfordshire Fire and Rescue Service

Working to protect. Acting to save.

Overview

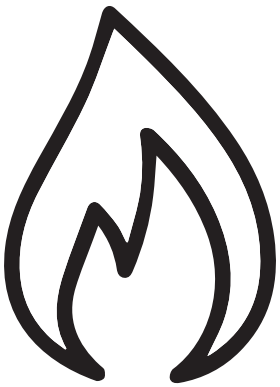
This document provides an analytical summary of accidental fatal fires occurring within homes, in Hertfordshire, between 1 January 2000 and 31 March 2017.

The report has been compiled using research data, from a total of 45 deaths*, collected by fire investigators across Hertfordshire's Fire and Rescue Service.

The societal cost of a fire death in the home is estimated at over £1.65 million[1]; this highlights the massive potential benefit to society if these could be prevented.

Fire statistics show that individuals at greatest risk from fire injury or death are often from hard to reach groups and known to other agencies. An independent research report published in 2006[2] concluded that "overall, nearly 80 percent of all fires involved victims who were impaired in some way, either through substance use, mental or physical impairment (whether or not related to age), or a combination of these factors". The report goes on to state that "alongside the immediate causes of a fire (e.g. carelessly discarded cigarettes), alcohol, mobility and mental illness are the biggest single influences on whether a fire starts and/or whether it has fatal consequences".

The research has successfully identified similar common factors present in incidents resulting in death in Hertfordshire which have been reflected nationally.



Department of Communities and Local Government (2011), The economic cost of fire: estimates for 2008: fire research report 2/2011.

Communities and Local Government (2006). Learning Lessons from Real Fires: Findings from Fatal Fire Investigation Reports. Research Bulletin No. 9, July. Arson Control Forum.

* Two fatalities were sadly firefighters whilst on duty but they have been removed for the purpose of this study.

Fire death risk factor

Hertfordshire Fire and Rescue Service already work closely with key partner agencies. However, more work still needs to be undertaken to ensure a fully joined up approach to support the most vulnerable in our society.

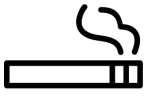
Mental Health

Drugs (prescription or illegal)

Poor health

Alcohol

Limited mobility



Smoking

Living alone

Gender and age of victims

Results from the study show an almost equal number of male to females were victims of accidental fires, with 23 male fatalities compared to 22 female fatalities.

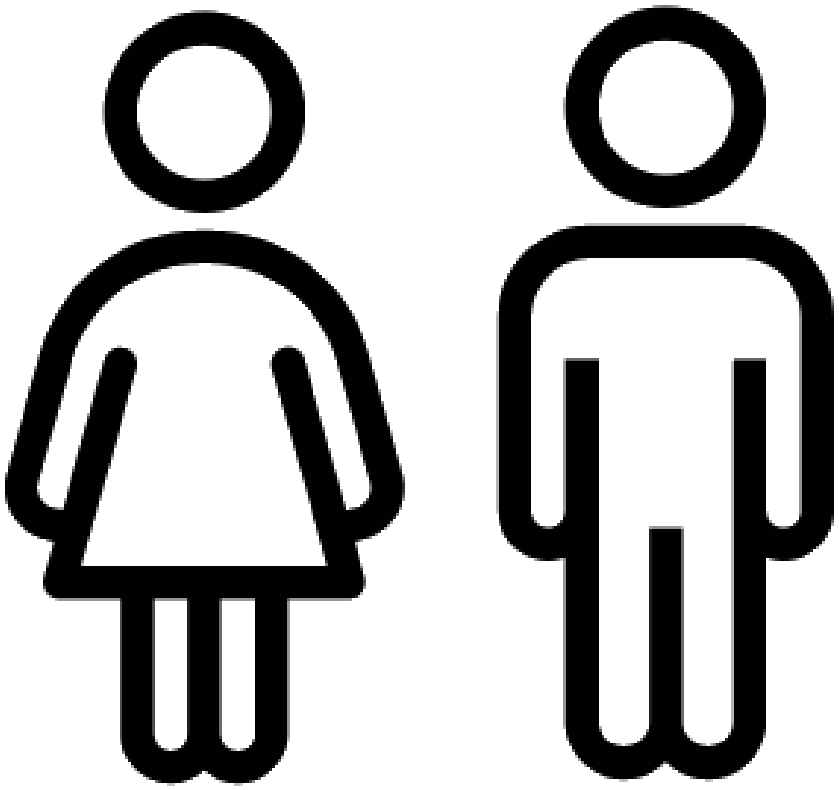
- 60% of both male and female victims were aged 65 and over
- Over a third (36%) of female victims were aged 80+
- 43% of all male victims were in the 65-79 age group
- The average age of a male victim was 64 years compared to 70 years for a female victim.

With these figures to compare, separate gendered risk groups can be more clearly identified.

One possible explanation for the slightly higher average age of female victims could be that more elderly women live alone, compared to men, due to a longer life expectancy.

Just 15.17% of men in Hertfordshire are aged 65 and over compared to 18.08% of women[1].

Females live on average 3.4 years longer than males (83.8 and 80.4 respectively)[2].



1) Office for National Statistics, Mid-2015 population estimates.
2) Life Expectancy Segment Tool http://www.lho.org.uk

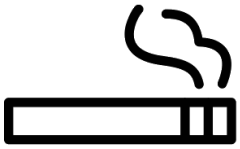
Gender and age of victims

Age group	Number of fatalities per sex	Ratio	Total per age group	% of age group per sex	% of total females	% of total males
80+	**8 Female** 4 Male	8 / 4	12	67 / 33	37%	17%
65-79	6 Female **10 Male**	6 / 10	16	37 / 63	27%	44%
51-64	2 Female 3 Male	2 / 3	5	40 / 60	9%	14%
36-50	5 Female 4 Male	5 / 4	9	56 / 44	23%	17%
26-35	1 Female 1 Male	1 / 1	2	50 / 50	4%	4%
17-25	0 Female 1 Male	0 / 1	1	0 / 100	-	4%
6-16	0 Female 0 Male	0 / 0	0	-	-	-
0-5	0 Female 0 Male	0 / 0	0	-	-	-

Highest weighted female group: 80+ - 67%
Highest weighted male group: 65-79 - 63%

Cause of fire

There were a number of ignition sources identified in the study, however smoking materials accounted for almost half of the total single cause of fire.



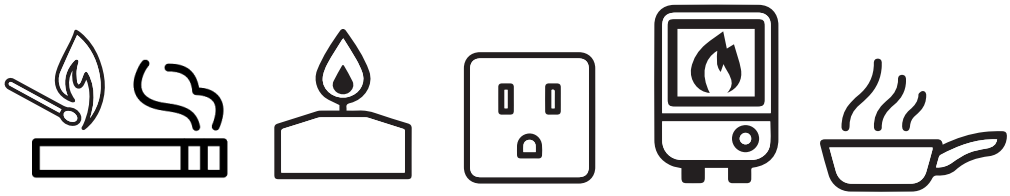
Even with fire safety campaigns specifically focused on preventing fires as a result of discarded cigarettes, this was the highest type of smoking material identified as the main source of ignition, resulting in 17 fatalities throughout Hertfordshire.

Two fatalities whose main cause was 'electric/gas heater' were also known to have had a slip/trip/fall as part of the fire incident.

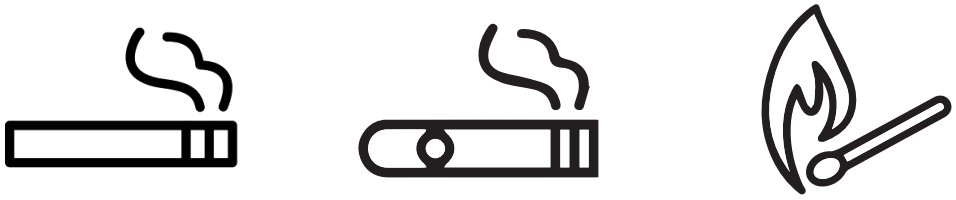
Cooking related fires accounted for just 5 of the 45 accidental deaths.

Accidental Fire Deaths

Cause	Number of Fatalities	%
Smoking Materials	22	49
Candles	5	11
Electrical	8	18
Electric/Gas Heating Appliance	5	11
Cooking	5	11
Total	**45**	**100**



Types of Smoking Materials	Number of Fatalities	%
Cigarettes	17	77
Cigar	1	5
Matches/Lighters	4	18
Total	**22**	**100**



Risk factors

During the study of each fire death the presence of seven lifestyle, medical or behavioural factors were identified as key influencers.

These factors in order of prevalence were:

- victim lived alone
- smoking
- limited mobility*
- alcohol
- poor health**
- drugs (both prescription and illegal)
- mental health.

The most common factor was that the victim lived alone, which was identified in 30 of the 45 cases (67%).

The strong link between living alone and risk of fire death is reinforced when comparing this research with Census statistics for the County.

Risk Factor	Number of victims	% of total victims
Victim lived alone	30	67
Smoking	27	60
Limited mobility*	25	56
Alcohol	21	47
Poor health**	16	36
Drugs (both prescription and illegal)	8	18
Mental Health	7	16

*Limited mobility includes victims known to have a disability.
**Poor health includes those victims that previously suffered from long term health conditions or terminal illnesses including cancer, multiple sclerosis, osteoarthritis, diabetes, crohn's disease, emphysema, heart murmur, oedema, liver disease, chronic obstructive pulmonary disease, oxygen user, blindness, angina, and peripheral neuropathy.

What is also noticeable is the number of cases where more than one factor is present.

There was at least one risk factor present for each victim

- In 6 (13%) cases one factor was present
- In 39 (87%) cases more than one factor was present

This has clear implications from the perspective of targeting prevention work at those who are likely to be most vulnerable.

- 1 factor 6 (13%)
- 2 factors 12 (27%)
- 3 factors 11 (25%)
- 4 factors 10 (22%)
- 5 factors 6 (13%)
- 6 factors 0 (0%)
- 7 factors 0 (0%)

Percentage of fatal fire incidents identifying 1-5 risk factors.

Risk factors and causes combined

When combining the risk factors for each accidental fire death cause it presents a valuable profile of what victims are most vulnerable to for each cause.

Living alone and limited mobility feature strongly in each cause apart from candles, where the prevalence of alcohol and smoking is a more important factor.

Smoking is a key risk factor for smoking materials, candles and electrical causes of accidental fire death.

Smoking materials

81 combined risk factors for 22 victims (average 4 factors each)
Risk factors included:
21 Smoking (95% of victims)
16 Lived alone (73%)
13 Alcohol (59%)
12 Limited mobility (55%)
9 Poor health (41%)
5 Drugs (23%)
5 Mental health (23%)

Electrical

14 combined risk factors for 8 victims (average 2 factors each)
Risk factors included:
5 Limited mobility (63%)
3 Lived alone (38%)
3 Smoking (38%)
2 Alcohol (25%)
1 Poor health (13%)

Electrical / Gas Heating Appliance

11 combined risk factors for 5 victims (average 2 factors each)
Risk factors included:
5 Lived alone (100%)
3 Limited mobility (60%)
1 Alcohol (20%)
1 Poor health (20%)
1 Mental health (20%)

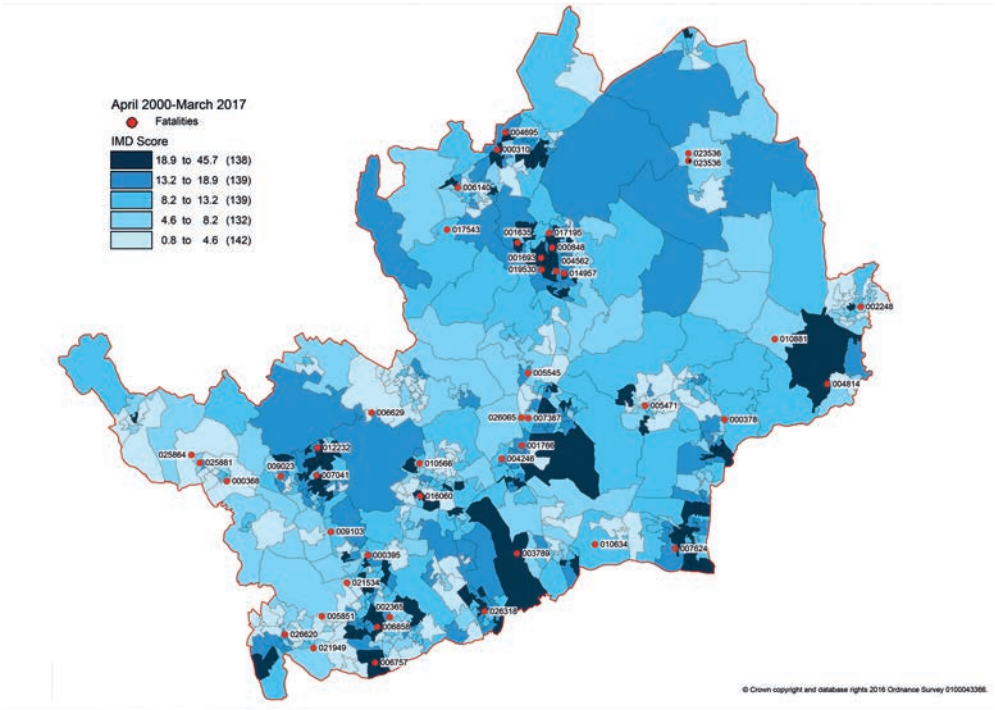
Candles

16 combined risk factors for 5 victims (average 3 factors each)
Risk factors included:
4 Alcohol (80%)
3 Smoking (60%)
3 Lived alone (60%)
2 Drugs (40%)
2 Limited mobility (40%)
2 Poor health (40%)

Cooking

10 combined risk factors for 5 victims (average 2 factors each)
Risk factors included:
3 Lived alone (60%)
4 Limited mobility (80%)
1 Drugs (20%)
1 Alcohol (20%)
1 Mental health (20%)

Map of Hertfordshire detailing the location of fatal accidental dwelling fires mapped against Index of Multiple Deprivation



The mapping of the dwelling fire against Indexes of Multiple Deprivation (IMD score) indicates a strong correlation between dwelling fire fatalities and the property being located in wards with higher levels of deprivation.

Some 82% of overall dwelling fatalities since 2012 are localised into the higher two categories.

The higher IMD scores are located predominately the larger conurbations of Hertfordshire – Stevenage, Hemel Hempstead, Watford, Welwyn Garden City, St Albans and Cheshunt.

The remaining 18% were located in rural or semi-rural locations of North Herts, East Herts ,Welwyn Hatfield and St Albans
The percentage of accidental fire the correlation is towards higher areas of deprivation. Some 60% of accidental fires occur in the higher two categories.

Only 4% of fatalities occurred in the lowest area of IMD score 0.8 to 4.6. The remaining 28% are located in rural and semi-rural areas.

Was a smoke detector present?

In 26 of the 45 fatal cases (58%) a smoke detector was either not present or failed to raise the alarm.

Given that smoke detector ownership was estimated at over 88% (1) at the start of the study period, it is clear that working smoke alarms really do save lives. A fact promoted by Fire and Rescue services for over 20 years.

23 victims died where a smoke detector was present; 70% of these victims lived alone.
1) Department of Communities and Local Government (2013) English

Was a smoke detector present?	
Not applicable	1
Not known	2
No	17
No – previously refused service	2
Yes	14
Yes – didn't raise alarm	7
Yes – raised alarm	2

Housing Survey Fire and fire safety report, 2012-13.

Known to other agencies

Of the 45 cases examined in the study, at least 34 (76%) were known to other agencies who had the opportunity to influence the victim's lifestyle and behaviour.

Closer working relationships with other agencies and Fire and Rescue Service's before the fire may have resulted in a different outcome. Hertfordshire Fire and Rescue Service is endeavouring to work more closely with partnership agencies to reduce this risk.

The data required to understand what other specific agencies were known to the victims are not complete for this study's duration, but from what we do know:

- 10 cases were known to **NHS Hospital services**
- 7 cases were known to **Social Care services**
- 5 cases were known to **Voluntary and Community services**
- (mostly drug & alcohol based)
- 3 cases were known to **NHS Mental Health services**
- 2 cases were known to **NHS Ambulance services**
- 2 cases were know to **Police services**

Did you know?

Emergency response and firefighting represent a fraction of the work carried out by your Fire and Rescue Service.

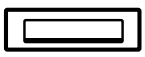
Working to reduce incidents and keep people safe we can also provide:

- targeted home safety visits to assess the risks of fire to the household, whilst supporting and influencing behavioural change

- provision of appropriate equipment to reduce fire risk which may include:


Smoke detectors


fire retardant bedding/throws/chairs


fire proof letterboxes


a range of fire safety leaflets


fire safety talks with community groups

For further information and to work more closely with Hertfordshire Fire and Rescue Service contact:

e: JPSReferrals@hertfordshire.gov.uk
t: 01707 292 495