Historical Analysis of Fatalities in Accidental Dwelling Fires between 2004/05 and 2023/24

AUDIENCE

TO BE PRESENTED TO:
Authority

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PREVENTION
STRATEGY & PERFORMANCE

Date work received: 01/04/2024
Date work completed: 20/08/2024

1. Agreement

For the purpose of this report, the following agreement was made between the client and the Strategy & Performance Directorate.

This work was requested by AM Thomas and received on 01/04/2024.

The Manager[1] has approved this report/ piece of work can be undertaken by the Strategy & Performance Directorate.

If the scope of the work changes, authorisation must be again obtained and would be noted within the version control document sheet.

It was agreed that this report would be produced in draft format by July 2024, and would be sent electronically to the Director of Strategy & Performance and Client for comment.

The Manager / Client agreed that their comments would be received back by July 2024.

The final report, which will always be in PDF format, would be produced by August 2024, subject to receiving comments.

[1] Deb Appleton

2. Summary

The purpose of this report is to analyse the circumstances and contributing factors concerning deaths in accidental dwelling fires attended, between 2004/05 and 2023/24. Fatalities in accidental dwelling fires are relatively rare compared to other incidents that Merseyside Fire and Rescue Service attends, though their impact is most severe to the families and friends of the deceased.

In summary, this report presents the following findings:

Victim Summary

- Between 2004/05 and 2023/24 there were **148** fire deaths due to accidental dwelling fires; these deaths are attributed to **141** fire incidents.
- Prior to 2016/17, there was an upward trend in the count of fatalities; though this upward trend was halted with the 7 deaths during 2016/17, this was then followed by lows of 4 deaths between 2017/18 to 2018/19 and 2021/22. During 2023/24 there was a single fatality, the lowest in Merseyside Fire & Rescue history.
- When analysed by district, Wirral saw 46 deaths, followed by Liverpool with 45. When aggregated to incidents per 100,000 population; Wirral has the greatest number of deaths with 14.4 deaths per 100,000 population, while Liverpool's ratio is much lower, with 9.3 per 100,000 population. Sefton is the 2nd highest with 11.5 deaths per 100,000 population, St Helens is at least risk with 6.6 deaths per 100,000 population.
- The risk of death in accidental dwelling fires increases with age, with ages above 70 being at greatest risk, this is especially true for males above the age of 85.
- There is a bias towards male victims with 85 fatalities (57.4% overall), female victims accounted for 63 deaths (42.6% overall).
- White British or Irish ethnic group accounted for 143 victims or 96.6% overall, Other Ethnicities accounted for 5 deaths. Proportionally, the 5 Other Ethnicity victims equate to 3.4% of deaths, short of the Merseyside proportion of other ethnicity population which according to the 2021 Census sits at 8.3%.
- In 97 out of 148 fire fatalities, the victim was the sole occupier. Taking all living circumstances into account, 109 (73.6%) victims were alone at the time of the fire that claimed their lives.

Incident Summary

- Concerning deprivation and the use of Department for Levelling Up, Housing and Communities Index of Deprivation (IOD) 2019, the general trend is that fatalities tend to occur more often in deprived areas, with fewer fire deaths occurring in areas of less deprivation. When the average age of victims is added to the equation it has been found that victims tend to die younger in deprived areas with older victims being found in areas of less deprivation.
- In 79 incidents a smoke alarm was fitted and actuated (56.0% in total). There were 10 incidents where smoke alarms were fitted and did not actuate. On 26 occurrences there was no smoke alarm and a further 12

incidents where the fitted smoke alarm was inoperable (i.e. no batteries). There were 11 occurrences where it was unknown whether the smoke alarm actuated and 3 incidents where the level of damage done to the property was so severe it was unknown whether a smoke alarm had been fitted.

- 74 Home Fire Safety Checks (HFSC) were completed with victims prior to the incidents (equal to 52.4%), which claimed their lives. 60 (42.5%) did not have a HFSC.
- When analysing ignition sources, it was found that of the 141 fatal incidents, 73 (51.8%) were a result of smokers' materials. Since 2009/10, when 7 deaths were the result of smokers' materials, there was a gradual reduction with only 1 death attributable to this ignition source between 2011/12 and 2012/13. However, since 2013/14, deaths from smokers' materials have increased leading to a high of 8 during 2015/16, though this has fallen since. During 2022/23, 3 deaths were attributed to smokers' materials and 1 during 2023/24.
- When analysing the ignition source and room of origin; smokers' materials were responsible for the majority of fire fatalities in both the living room and the bedroom.
- When smokers' materials are combined with alcohol, 35 incidents (24.8%) were the related to this combination.
- Victims aged above 65 are more likely to be involved in a fire where the careless use of heating appliance has taken place; this ignition source is most predominant in the living room.
- By month, the greatest number of deaths occurred during the autumn/winter months, particularly between November and January. The month of April also tends to have high counts of fire deaths.
- Peak times for incidents where a fatality occurs are between 02:00 - 03:59, 07:00 - 08:59, 14:00 - 15:59 and 20:00 – 20:59.

3. Introduction

The purpose of this report is to analyse fatalities from accidental dwelling fires (ADF) between 2004/05 and 2023/24; analysing the circumstances and demographic background of such occurrences, using business intelligence to target risk and prevention work.

Compared to other incident types that Merseyside Fire & Rescue Authority (MFRA) attends, fire fatalities are relatively low in number, although their impact is most significant to family members, friends and the community of the deceased.

Fatalities in accidental dwelling fires are reported in Merseyside Fire & Rescue Authority's Service Delivery Plan as Key Performance Indicator DC12, which is reported to Authority on a quarterly and annual basis.

4. Methodology

The software used in this report includes:

- Microsoft Excel 365 to interpret and graphically represent figures.
- MapInfo Professional 17 which was used to tag incidents with geographical information

The calculation for fatalities per 100,000 population is:
*(sum of Fatalities / sum of Population) * 100,000*

Population figures are based on Mid-Year 2022 estimates published by the Office for National Statistics. Although this data takes place over a 20-year period, for clarity a single year of population is used for calculations.

Index of Deprivation 2019 (IOD 2019) has been used to measure the levels of deprivation where fire fatalities took place[2].

The IOD 2019 data was then analysed in two ways:

- At a local level the IOD 2019 data was restricted to solely Merseyside, this data was then split into 10 bands with equal counts, each representing a decile of relative localised deprivation. This data is merged with fatality incident data and analysed.
- At a national level the IOD 2019 data has not been restricted to Merseyside, the national dataset is split into 10 equal bands, with each band being a decile of deprivation. This data was merged with fatality incident data and analysed.

The Index of Deprivation 2019 was sourced from the Department for Levelling Up, Housing and Communities.

Data used in this report was supplied by the Merseyside Fire & Rescue Authority Incident Investigation Team; with the Coroner ultimately determining the cause of death.

Data used within this report is based on fatal incidents occurring in the home where the motive for the incident is judged to have been accidental. Please note the data contained within this report includes some information that is still awaiting Coroner agreement and as such the figures contained may be subject to change.

Fire fatalities include any person who has died as the direct or indirect result of injuries caused by a fire incident even if death occurred weeks or months later. There are also occasional cases where it transpires subsequently that fire was not the cause of death. For all of these reasons, fatalities data may therefore be subject to revision.

Concerning the Long Time Series Analysis, counts are sourced from the following:

[2] IOD ranks deprivation in the form of an index, where low numbers indicate Super Output Areas (LSOA) which have high levels of deprivation and high numbers indicating Super Output Areas with least deprivation

- Between 1991/1992 – 1999/2000: Freedom of Information Request from Department for Communities and Local Government
- Between 2000/2001 – present: Incident Investigation Team archives

The time of call analysis is based on incidents, which were **NOT** late calls, accounting for 122 incidents within the entire dataset.

Data Limitations:

The findings within this report are based on available data. As fire fatalities are a relatively rare occurrence the volume of data is small. Therefore, some conclusions based on the data should be approached with caution.

The injury analysis within Appendix A is based on criteria used to measure Performance Indicator: DC13 Number of injuries from accidental dwelling fires. This is based on a count of persons injured by fire and required hospital treatment.

5. Results

5.1 Victims of Fatal Accidental Dwelling Fires

The following section is based on the details of victims who died because of an accidental dwelling fire. In total between 2004/05 and 2023/24 there were **148** victims and as such the following tables and charts all equate to this figure.

5.1.1 Long Time Series Analysis

Chart 1: Long Time Series of fatalities in Accidental Dwelling Fires between 1991/92 and 2023/24

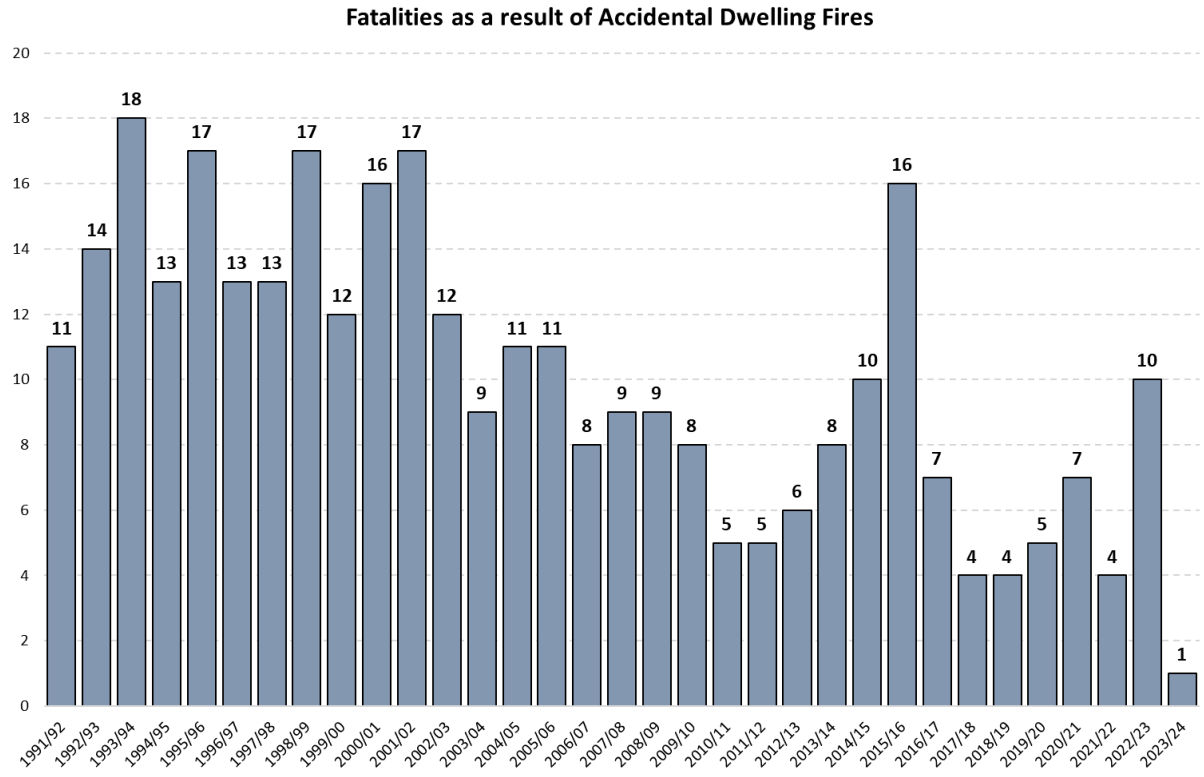


Chart 1 provides a count of accidental dwelling fire fatalities between 1991/92 and 2023/24. The chart identifies that 2015/16 resulted in the greatest number of fire fatalities in recent years (though in the past there were higher counts). Prior to 2016/17, there was an upward trend in the count of fatalities; though this upward trend was halted with the 7 deaths during 2016/17, this was then followed by lows of 4 deaths between 2017/18 to 2018/19 and 2021/22. During 2023/24 there was a single fatality, the lowest in Merseyside Fire & Rescue history.

5.1.2 Comparison of Fatalities by District

Chart 2: Fatalities in Accidental Dwelling Fires between 2004/05 and 2023/24 by District

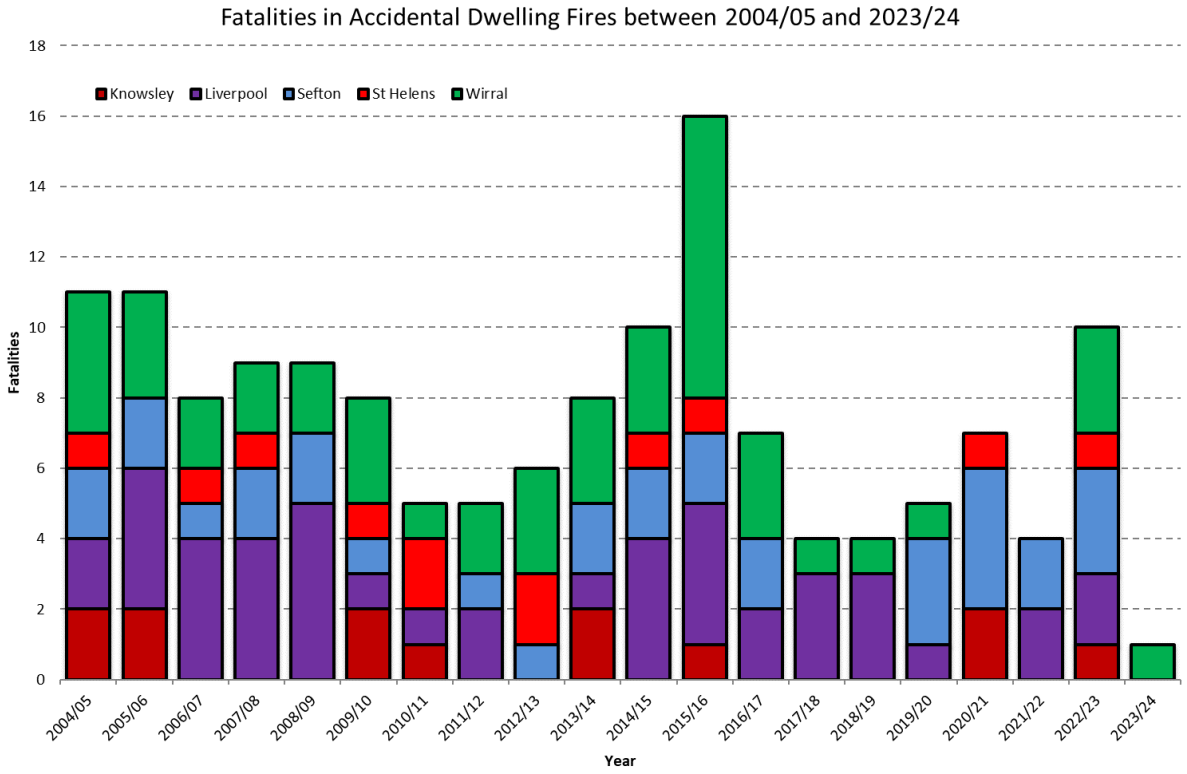


Chart 2 identifies that over the 20-year period, fatalities have fluctuated. Prior to 2010/11, accidental dwelling fire fatalities were on a downward trend, only for the opposite to occur between 2012/13 and 2015/16.

Since the 20-year high of 16 during 2015/16, fire deaths have fallen – leading to an all-time low of 1 during 2023/24.[3]

Table 1: Comparison of overall fatality counts by district and population

Counts	Knowsley	Liverpool	Sefton	St Helens	Wirral	Total
Overall Fatalities	13	45	32	12	46	148
Rate per 100,000 population	**8.4**	**9.3**	**11.5**	**6.6**	**14.4**	**10.4**
Fatal Incidents	*13*	*43*	*29*	*12*	*44*	*141*
Population	154,500	486,100	279,300	183,200	320,200	1,423,300

Table 1 allows a direct comparison of overall fatality counts between the Merseyside districts by aggregating the data to deaths per 100,000 head of population for direct comparison.

The table shows that over the 20-year period, there have been 46 accidental dwelling fire deaths in Wirral, closely followed by Liverpool with 45. When population counts are considered – Wirral proportionally has had the greatest

[3] Based on the limited data available, it is not possible to determine if any of these deaths were related to the cost-of-living crisis. https://www.gov.uk/cost-of-living. Any increase in deaths and the crisis were purely coincidental.

number of fatalities with 14.4 per 100,000 population, Liverpool had a far lower ratio of 9.3 per 100,000 population. Sefton saw the 2nd highest ratio with 11.5 per 100,000 population and St Helens saw the lowest ratio with 6.6 per 100,000 population.

Accounting for the number of fatal incidents by district, the table identifies that of the 148 deaths, 7 incidents involved 2 victims – resulting in a total of 141 incidents.

5.1.3 Demographic Analysis

Chart 3: Fatalities by Age and Sex (with fatalities per 100,000 population ratio)

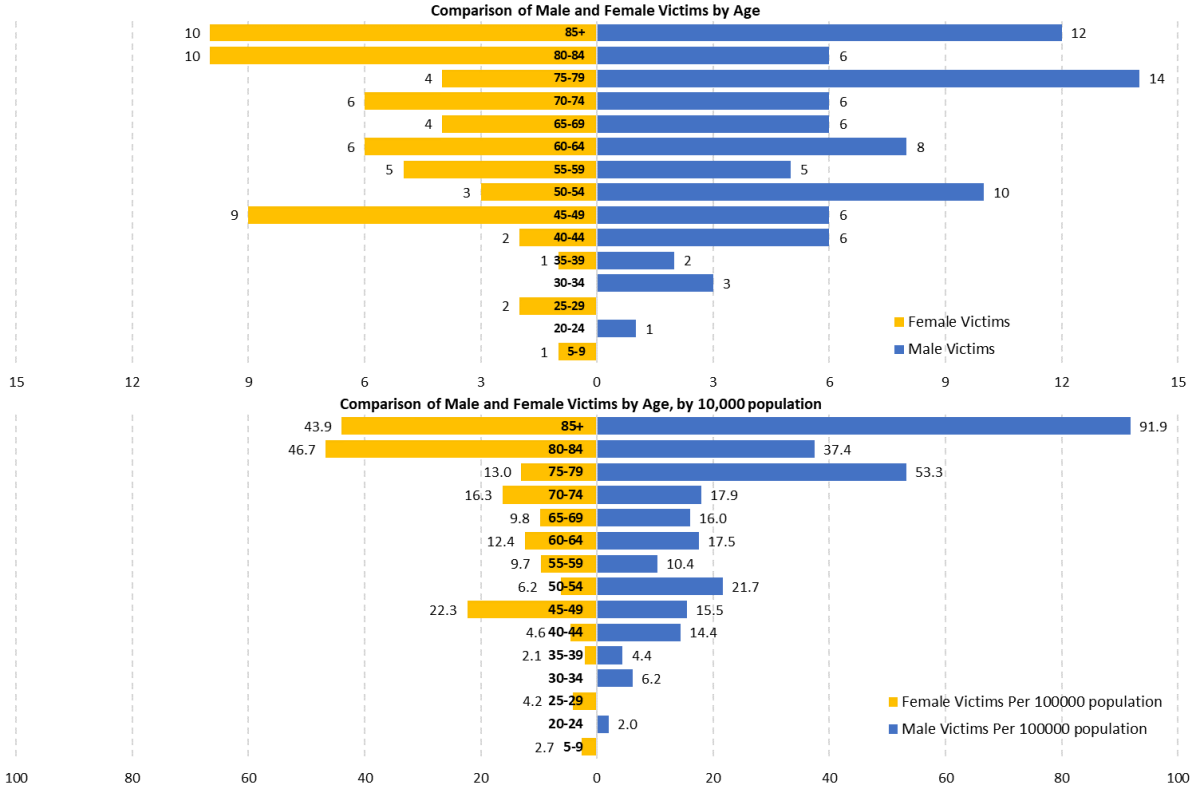


Chart 3 provides the count of fire deaths by age and sex along with the ratio of fire deaths per 100,000 head of population. The table identifies several age groups at greatest risk from a fatality - especially the 75 and above age groups (and even more so - males in the 85+ group with a ratio of 91.9 deaths per 100,000 population).

When the ratio of deaths to proportion of population is accounted for; it is apparent that with age the risk of death resulting from an accidental dwelling fire increases significantly. Applying a regression analysis to the available data a R^2 value of 0.85 is achieved indicating a strong statistical link between age and fire related mortality.

There is a bias towards male victims with 85 or 57.4% of total fatalities. Female victims accounted for 63 or 42.6% of accidental dwelling fire fatalities.

Concerning the victim racial profile; 143 (96.6%) victims were described as White – British or Irish, and 5 being another ethnic minority. Proportionally, the 5 other ethnicity victims equate to 3.4% of deaths, short of the Merseyside proportion of other ethnicity population which according to the 2021 Census sits at 8.3%.

5.1.4 Habitation and Carer Status

Table 2: Habitation and carer status

Status	Lived alone		Cohabited		Other Circumstance		
Carer	Alone at Time	Accompanied	Alone at Time	Accompanied	Alone at Time	Accompanied	Total
Yes	40		1	12			53
No	50	1	8	24	2	2	87
Unknown	7		1				8
Grand Total	97	1	10	36	2	2	148

Table 2 identifies that most victims (97, 65.5%) lived alone and were alone at the time of the incident. Of the victims who cohabited, 10 were alone at the time and 36 were accompanied. In combination, 109 of the 148 victims (73.6%) were alone at the time of the incident.

Most victims did not have a carer (87, 58.8%), whilst 53 or 35.8% did. Concerning victims who lived alone, 40 from 97 (or 41.2%) needed a carer.

Table 3: Habitation and carer status– OVER 70 Age Group Only

Status	Lived alone		Cohabited		
Carer	Alone at Time	Accompanied	Alone at Time	Accompanied	Total
Yes	28		1	7	36
No	19		2	6	27
Unknown	5				5
Grand Total	52	0	3	13	68

Table 3 identifies that most victims above the age of 70, lived alone and were alone at the time of the incident (76.4%, 52). Of the victims who cohabited, 13 were accompanied and 3 were alone at the time. Overall, 55 of the 68 victims (80.9%) were alone at the time of the incident. In the age group analysed, 36 victims (52.9%) required carers in some capacity.

5.2 Incident Related Analysis

The following analysis is based on the **count** of incidents, not the count of victims – as in the previous section therefore, the counts in the following analysis equate to **141.**

5.2.1 Comparison of Fatal Incidents and Deprivation

Chart 4: Fatalities in Accidental Dwelling Fire incidents between 2004/05 and 2023/24 linked to deprivation[4]

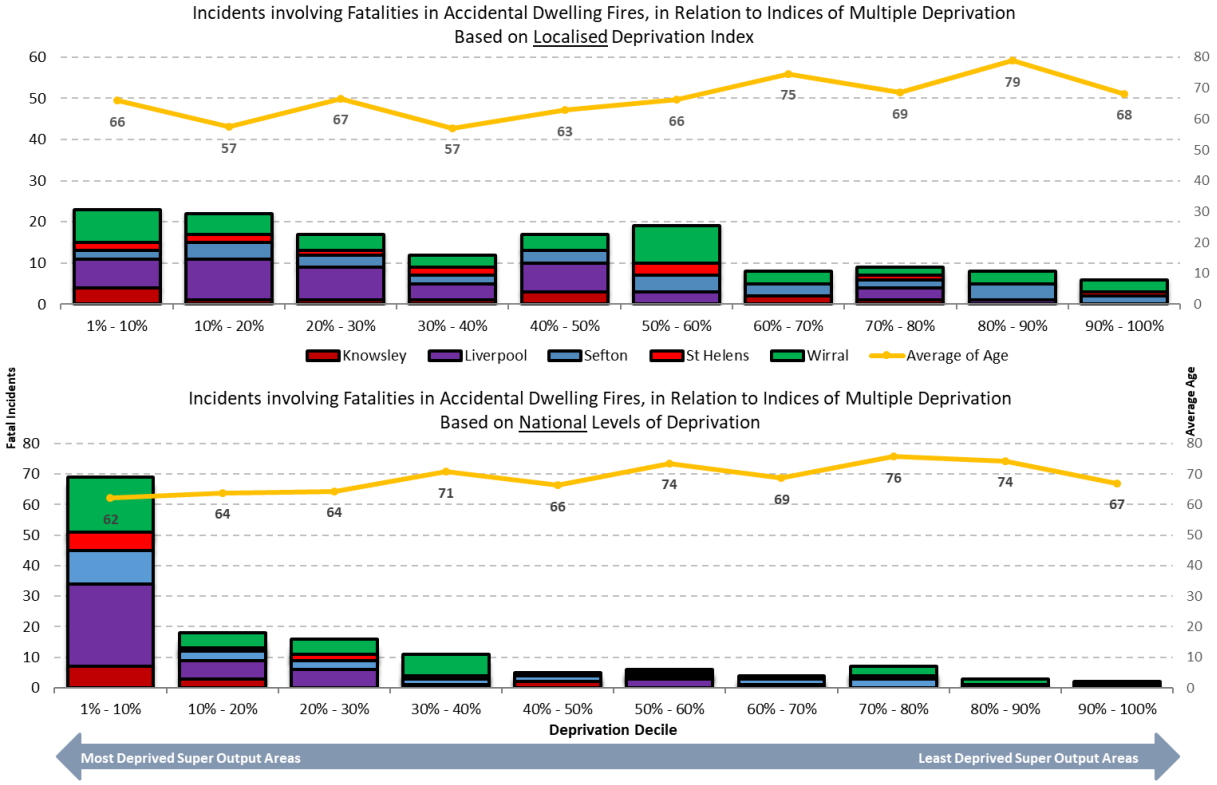


Chart 4 ranks the location of fire fatalities to the level of deprivation in the area in which the incident took place using the Index of Deprivation 2019 (IOD). Utilising a localised deprivation index, the chart demonstrates that (in general) as deprivation increases the number of fire deaths gradually increases. When applying the national IOD dataset to the fatality data, there is far more skewing[5] of the data particularly within the 10% most deprived areas. **As such, based on national levels of deprivation, the most deprived 10% decile accounted for 69 fatal incidents – 48.9% of total fatal incidents within Merseyside.**

The chart also identifies the average ages of the victims by each deprivation decile group. In general terms, the chart identifies that fatal fire victims in deprived areas tend to be younger. By contrast, in less deprived areas victims tend to be slightly older.

[4] As per the Department for Levelling Up, Housing and Communities document Index of Deprivation 2019
[5] Due to the high levels of deprivation, the National IOD chart is skewed because Merseyside has more locations within the 10% most deprived areas of England.

When analysed at a district level:

District	Local Index of Deprivation	National Index of Deprivation
Knowsley	Like Liverpool, Knowsley is one of the most deprived local authorities in England. Taking this into account, more than two thirds of fatal fire incidents within the district occurred within the 50% most deprived areas of Merseyside	All fatal fire incidents in Knowsley took place in 50% most deprived areas, with 7 occurring in the 10% most deprived decile
Liverpool	Like Knowsley, Liverpool is one of the most deprived Local Authorities in England, with high deprivation skewing the data with fatal incidents tending to occur in areas of higher deprivation. Within Liverpool, 36 fatal fire incidents took place within the 50% most deprived areas and 7 took place in the 50% least deprived areas.	In Liverpool, most fatal fire incidents (27) took place in the 10% most deprived area. Overall, 39 from 43 fatal fire incidents took place in the 50% most deprived parts of Merseyside (equal to 90.7%)
Sefton	Sefton has a more balanced profile, with 14 taking place in the most deprived 50% of Merseyside and 15 occurring in the 50% least deprived.	Within Sefton 21 of the 29 fatal fire incidents (72.4%) took place in the 50% most deprived areas. 11 of which took place in the 10% most deprived decile. There were 2 deaths that took place in the 2 least deprived deciles for deprivation
St Helens	Just under two thirds of fatal fire incidents in St Helens occurred in the 50% most deprived areas.	Most fatal fire incidents in St Helens took place in the 50% most deprived areas, especially the 1% - 10% decile, where 6 took place.
Wirral	Wirral has a sporadic pattern, with concentrations occurring in the most deprived 1% - 20% and 40% - 60% quintiles. Within Wirral, fatal fire incidents are spread more evenly with 24 incidents taking place in the 50% most deprived areas and a further 20 taking place in the 50% least deprived areas.	Most fatal fire incidents in Wirral took place in the 50% most deprived areas accounting for 36 of the 44 deaths (81.8%), the 1% - 10% decile accounted for 18 incidents overall. There were 3 deaths that took place in the 2 least deprived deciles for deprivation

5.2.2 Smoke Alarm Analysis

Smoke alarms provide an important early warning to residents should a fire occur within a property. It must be emphasised that in most incidents the actuation of a smoke alarm can and does save lives; however, this is not always the case, as personal mitigating circumstances like: mobility, underlying medical conditions, prescription medicines, hoarding and alcohol consumption can impede a victim escaping regardless of the actuation of a smoke alarm.

The following section analyses the performance of smoke alarms as well as whether a HFSC (Home Fire Safety Check) had taken place.

Table 4: Smoke Alarm Functionality & HFSC Status

	HFSC				
Smoke alarm status	Yes	No	Unknown	Grand Total	%
Fitted & Actuated	60	16	3	79	56.0%
Fitted Did Not Actuate	2	8		10	7.1%
Fitted No Batteries	5	6	1	12	8.5%
Fitted Unknown if Actuated	6	5		11	7.8%
None Fitted	1	23	2	26	18.4%
Unknown		2	1	3	2.1%
Grand Total	74	60	7	141	

Table 4 identifies that in most properties (79 or 56%) a smoke alarm was fitted and operational. In 10 cases the smoke alarm was fitted and failed to actuate, though this is more likely due to the nature of the incident rather than the performance of the smoke alarm.[6]

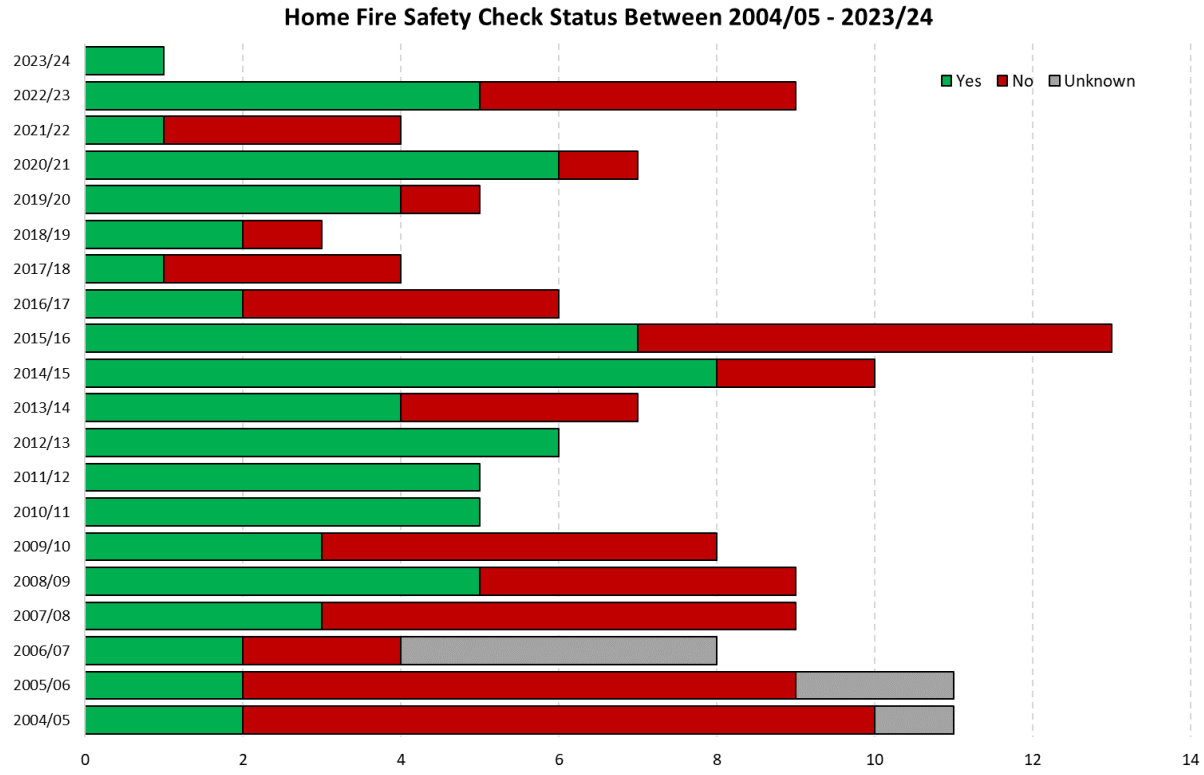
In 12 properties (8.5%), there were smoke alarms fitted, but with no batteries therefore not providing the early warning system a smoke alarm provides, additionally in 6 of these cases a HFSC had not taken place.

In 26 cases there was no smoke alarm fitted – again meaning no early warning system being available in the property. During 3 incidents, the level of damage done to the property was so great, it was unknown whether a smoke alarm had been fitted or not.

When analysing smoke alarm functionality against HFSC status, 52.4% (74 from 141) of properties had previously had a HFSC. Of these properties, 60 had a smoke alarm fitted, which actuated successfully. 60 properties (42.6%) did not have a HFSC visit prior to the incident and 7 were unknown.

[6] 112 from 141 (79%) properties had a fitted smoke alarm – regardless of whether it was operational.

Chart 5: Home Fire Safety Check Status 2004/05 to 2023/24



The above chart shows that when focused on properties that did not receive a HFSC, there is a lot of fluctuation between the years. In the earlier period of the analysis particularly between 2004/05 and 2009/10 the majority of fatal incidents involved properties that had not received a HFSC, or data is unavailable.

Between 2010/11 to 2014/15, HFSC's are no-longer the exception with most properties receiving a HFSC. Following between 2015/16 to 2023/24, counts of properties to have received a HFSC fluctuate from year to year, as to why is open to conjecture.

5.2.3 Ignition Source Analysis

Table 5: List of Fatal Incident Ignition Sources

Ignition Source	Detail	Total
Smokers Materials	Smokers Materials including Cigarettes, Lighters, E-Cigarettes	73
	Subtotal	**73**
Careless Use of Heating Appliance	Careless Use of Heating Appliance	16
	Electrical Heater too close to combustibles	4
	Collapsed Onto Gas Fire	2
	Coal or Spark from Open Fire	1
	Subtotal	**23**
Cooking	Cooking - unattended food left on hob - misadventure	9
	Cooking - Accidental Ignition of Clothing	4
	Combustible Materials too close to heat source	2
	Chip Pan Left Unattended in Kitchen	2
	Cooking - Chip Pan Fire - Misadventure	2
	Cooking - Misuse of Microwave	1
	Subtotal	**20**
Candles	Candles	7
	Subtotal	**7**
Electrical Fault	Electrical Fault	6
	Rupture of Lithium-Ion battery	3
	Overloaded Multi-tap	1
	Subtotal	**10**
Explosion Of Leaking Gas	Smoking Explosion of Gas released from broken main	1
	Spark From Fridge/Freezer - Ignition of gas mistakenly left on	1
	Electric Spark - Ignition of Gas from faulty cooker installation	1
	Ignition Of Gas from Cooker - Gas Leak	1
	Subtotal	**4**
Radiated Heat	Radiated Heat - from tabletop lamp	2
	Radiated Heat - from halogen spotlight igniting bedding which was in contact with it	1
	Subtotal	**3**
Burning Waste	Burning waste in garden which then got out of hand	1
	Subtotal	**1**
Grand Total		**141**

Table 5 lists the ignition sources along with limited detail concerning circumstance. During the 20-year period analysed smokers' materials account for the majority of fatal incidents with 73 or 52%. Careless use of heating appliances follows, with 23 incidents and cooking with 20 incidents.

The average age of victims, where the cause of the fire was related to the careless use of a heating appliance was 75 years. The average age where smokers' materials were involved was 63 and for cooking it was 61. Therefore, the data suggests people above the age of 65 are more likely to be involved in a fire where the careless use of heating appliance has taken place.

5.2.4 Room of Origin and Ignition Source

Table 6: Room of Origin with Ignition Source and whether prior alcohol consumption had taken place

			Of which involved consumption of Alcohol		
Room Of Origin	Ignition Cause	Total	Yes	No	Unknown
Living Room	Smokers Materials	36	16	17	3
	Careless Use of Heating Appliance	16	4	12	
	Candles	3	1	2	
	Electrical Fault	2		2	
	Radiated Heat	1		1	
	Subtotal	**58**	**21**	**34**	**3**
Bedroom	Smokers Materials	29	13	13	3
	Careless Use of Heating Appliance	7	1	6	
	Candles	3	2	1	
	Electrical Fault	3	1	2	
	Radiated Heat	2		2	
	Cooking	1		1	
	Subtotal	**45**	**17**	**25**	**3**
Kitchen	Cooking	18	11	4	3
	Smokers Materials	4	3	1	
	Explosion Of Leaking Gas	3		3	
	Electrical Fault	3	1	1	1
	Subtotal	**28**	**15**	**9**	**4**
Hallway	Electrical Fault	2		2	
	Smokers Materials	2	1	1	
	Subtotal	**4**	**1**	**3**	
Bedsit	Smokers Materials	2	2		
	Subtotal	**2**	**2**		
Bathroom	Explosion Of Leaking Gas	1		1	
	Candles	1	1		
	Subtotal	**2**	**1**	**1**	
External	Burning Waste	1		1	
	Subtotal	**1**		**1**	
Caravan	Cooking	1		1	
	Subtotal	**1**		**1**	
Grand Total		**141**	**57**	**74**	**10**

Table 6 provides a breakdown including: room of origin, respective ignition source and whether a victim was under the influence of alcohol at the time. The table identifies that smokers' materials are a significant cause in fires in the living room (36 from 58, 62.1%) and bedroom (29 from 45, 64.4%), with the cause of careless use of heating appliance also being common to these rooms.

Alcohol had a potential influence in 57 (40.4%) fatal incidents which were linked to the consumption of alcohol. Where alcohol consumption is combined with

smokers' materials, then 24.8% (35) of incidents are linked to this combination of factors.

Within the living room, just over a third (21 or 36.2%) of fatal fire incidents involved the consumption of alcohol. A similar trend also occurred for the bedroom, where 37.8% (17) fatal fire deaths were associated with alcohol consumption.

Within the kitchen, cooking is the most common cause of fatal fire incident with 18 overall, with 11 involving the consumption of alcohol.

5.2.5 Fatal Incidents by Year and Ignition Source

Chart 6: Breakdown of Ignition Source by Year

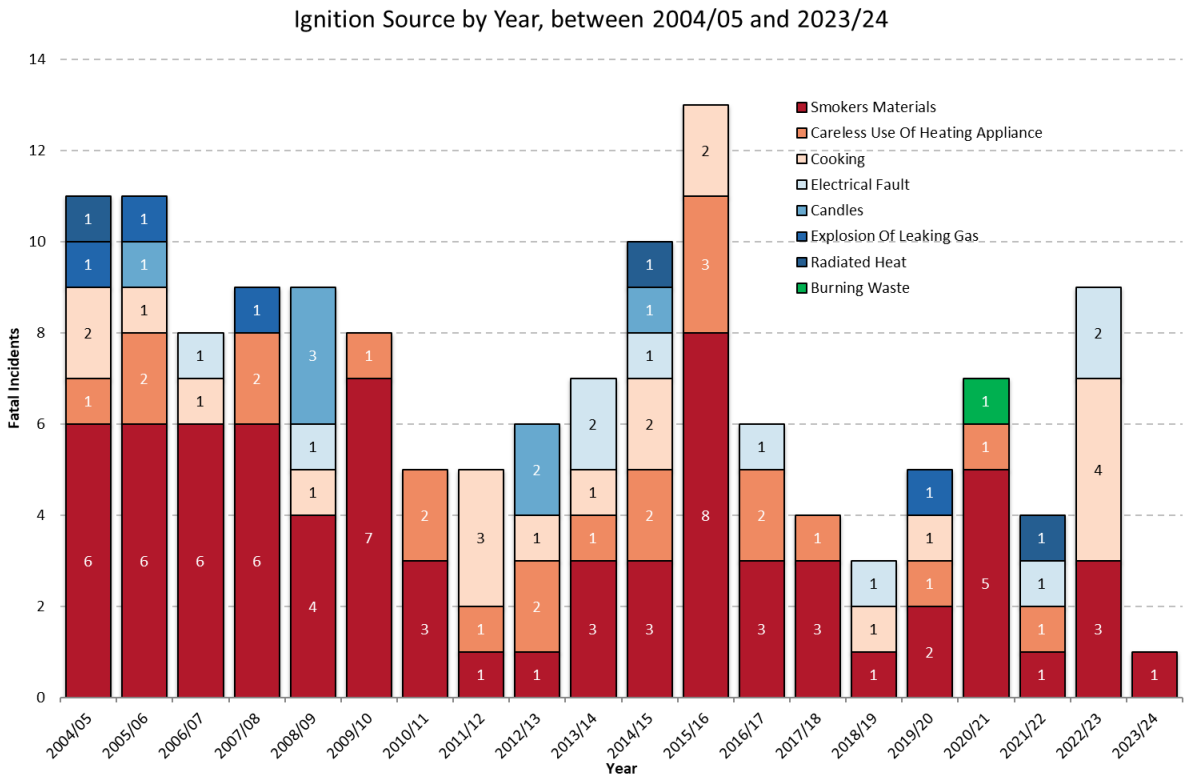


Chart 6 provides an annual breakdown of the ignition sources involved in fatal fires. The chart shows that smokers' materials was the most common ignition source in 17 of the 20 years analysed.

Smokers' materials deaths had been falling between 2009/10 and 2011/12, however since 2013/14, these incidents were on the rise culminating in a high of 8 during 2015/16. Since 2015/16 the overall numbers of fatal incidents related to smokers' materials have fallen, although there were 5 deaths related to smokers' materials during 2020/21.

Incidents involving careless use of heating appliances have remained relatively consistent, in 14 years there were deaths related to this cause.

Fatal incidents linked directly to cooking and cooking practices have fluctuated over the years, with the exceptions of 4 incidents during 2022/23.

Of note was that during 2022/23, one of the incidents related to an Electrical Fault was due to a lithium-ion battery rupturing on an E-Bike. This incident resulted in 2 deaths.

5.2.6 Fatalities by Month and Ignition Source

Chart 7: Fatal Fire Incidents by Month and Ignition Source

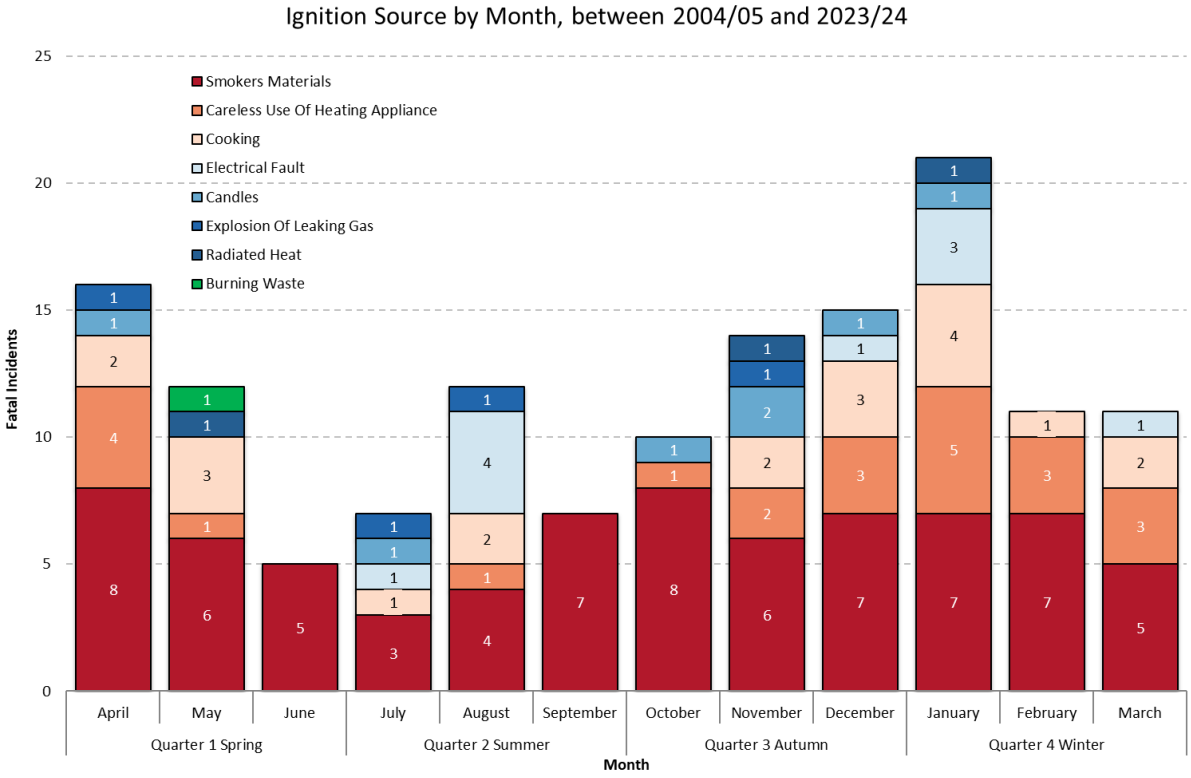


Chart 7 identifies that there are more fatal fire incidents taking place during quarters 3 (autumn) and 4 (winter).

Concerning the quarterly breakdown of smokers' materials; the overall numbers of fatalities are relatively consistent, with 19 incidents in Quarter 1, 14 in Quarter 2, 21 in Quarter 3 and 19 in Quarter 4. There is evidence of seasonality with fewer counts of incidents occurring during quarters 1 (spring) and 2 (summer).

Fatalities involving smokers' materials are lower during the spring and summer months, especially between: June to August. The months of: April and October narrowly have the highest counts with 8 each and the months of September, December, January and February have high counts of 7 each.

During winter/early spring, when the weather is most inclement - careless use of heating appliances is more common.

Electrical faults occur most during August and January, coincidentally two months with extreme contrasts in weather.

Cooking related deaths are sporadic with groupings in December and January as well as April and May.

5.2.7 Analysis of Incidents by Time of Call

Chart 8: Fatalities by hour and whether Alcohol Consumption occurred[7]

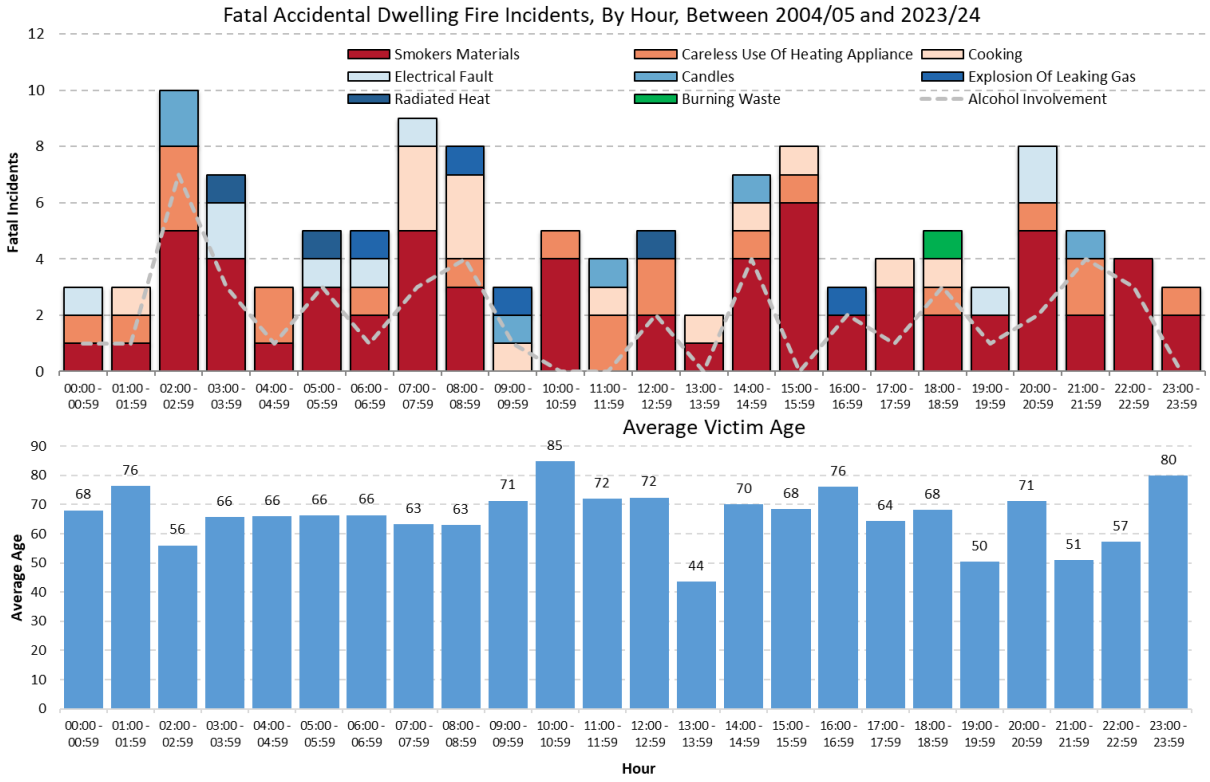


Chart 8 provides an overview by hour of when a fatal fire incident has taken place as well as the ignition source and whether alcohol consumption had taken place as well as the average age of victims.

In summary, the chart provides the following findings:

- Peaks in incidents occur between 02:00 - 03:59, 07:00 - 07:59, 14:00 - 15:59 and 20:00 – 20:59.
- Where there are peaks in fatal incidents, the average age of the victims is younger[8], with an average age of 56 for victims between the hours of 02:00 – 02:59, 63 between 07:00 – 07:59 and 68 between 15:00 - 15:59.
- Alcohol consumption and fire death tend to peak in the early hours (02:00 – 02:59; particularly in combination with smoker's materials), the morning (08:00 – 08:59), afternoon (14:00 – 14:59) and evening (21:00 – 21:59). Relatively few incidents took place during late afternoon and early evening.

[7] This analysis is based on the time of call to a live incident, this does not include late calls, please refer to methodology for details

[8] The average age for this subset of data is 66 years of age

6. *Appendix A: 16 Year analysis of Accidental Dwelling Fire Injuries*

Though every death is a tragedy, the learning from such an occurrence is incorporated into our future planning where our aim is to prevent further deaths by implementing initiatives and activities to target individuals at greatest risk. Though the fatality data is key in identifying risk trends, it is not the only data under consideration. Injury data from accidental dwelling fires provides a far greater data set, which adds richness to the analysis. The following section briefly analyses injuries from accidental dwelling fires and identifies commonalities between fire victims.

Chart 9: Accidental Dwelling Fires and Injuries Long Time Series

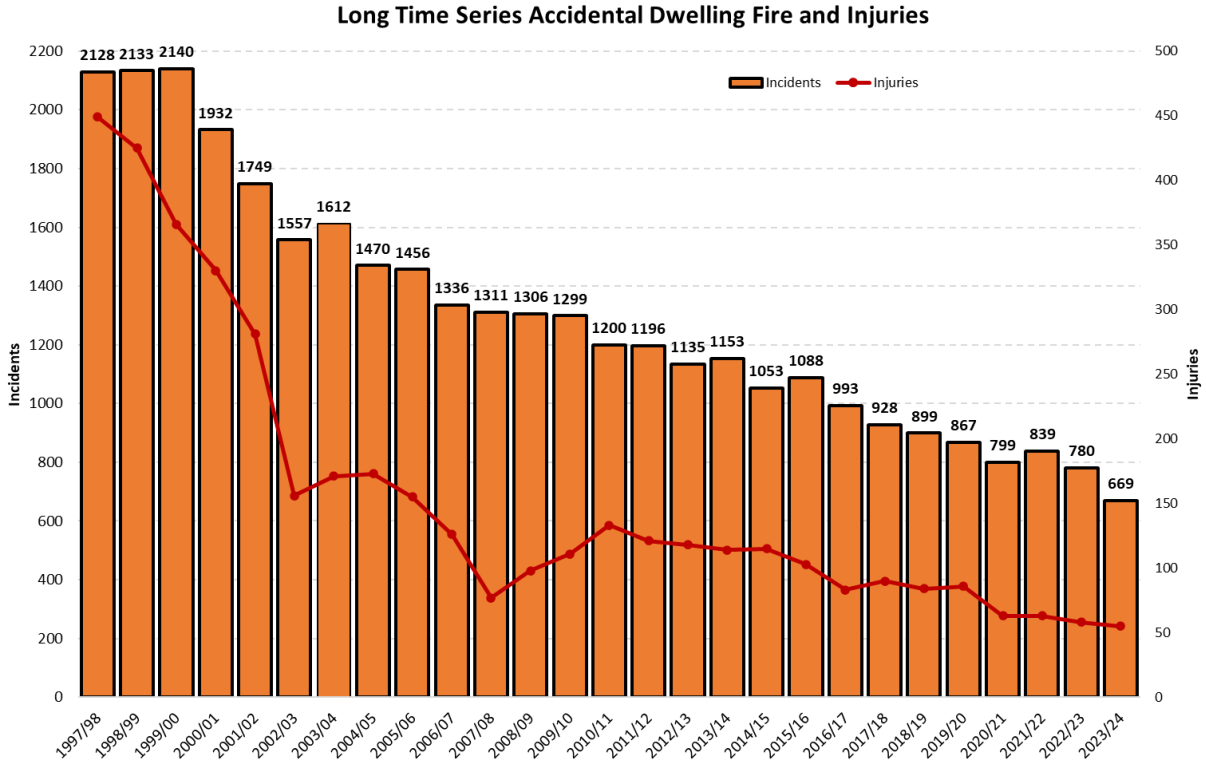
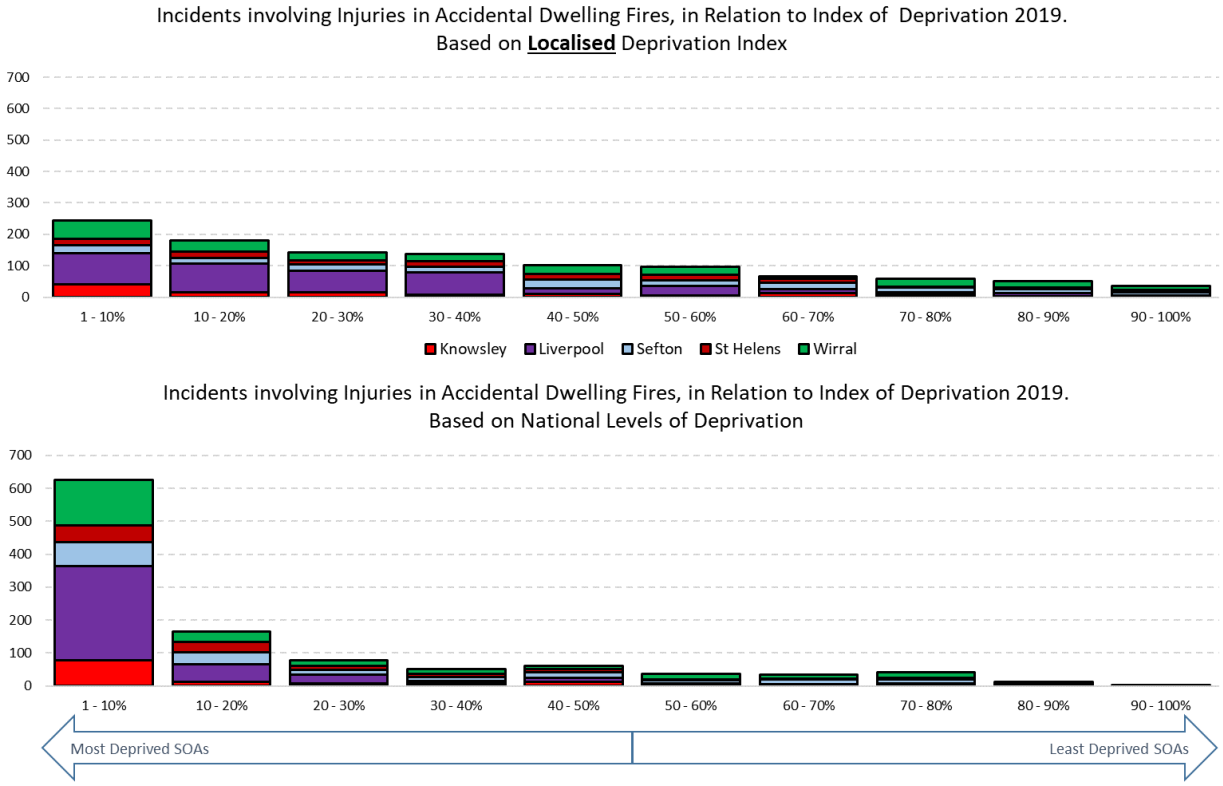


Chart 9 provides a long time series of accidental dwelling fire incidents and injuries between 1998/99 and 2023/24.

- The chart shows that over the 27-year period both incidents and injuries have fallen significantly, with a high of 2140 incidents during 1999/00 and low of 669 during 2023/24 – a reduction of 1471 incidents or -68.7%.
- Injuries have fallen from a high of 449 during 1997/98 to 55 during 2023/24 – a reduction of 393 incidents or -87.8%.
- Over the period, incidents have fallen gradually, though injuries have been inconsistent. This inconsistence is likely due to the nature of each dwelling fire including the potential for multiple injuries occurring at the same incident as well as the severity of the incident differing from case to case.

Chart 10: Accidental Dwelling Fires Injury incidents between 2008/09 and 2023/24 in relation to Indices of Deprivation (IOD) 2019



Like Chart 4 earlier in this report, the above chart identifies that when using national IOD data there is a clear link between fire injuries and deprivation, with the majority of incidents involving injury occurring within the most deprived decile. There are more incidents involving injury within the most deprived decile than all other deciles combined (625 against 491)

When a localised deprivation index is applied the changes between the deciles is more gradual, there are still significant differences between the most and least deprived areas, but it is less pronounced than the national comparator.

Chart 10: Injury in Accidental Dwelling fire population pyramid

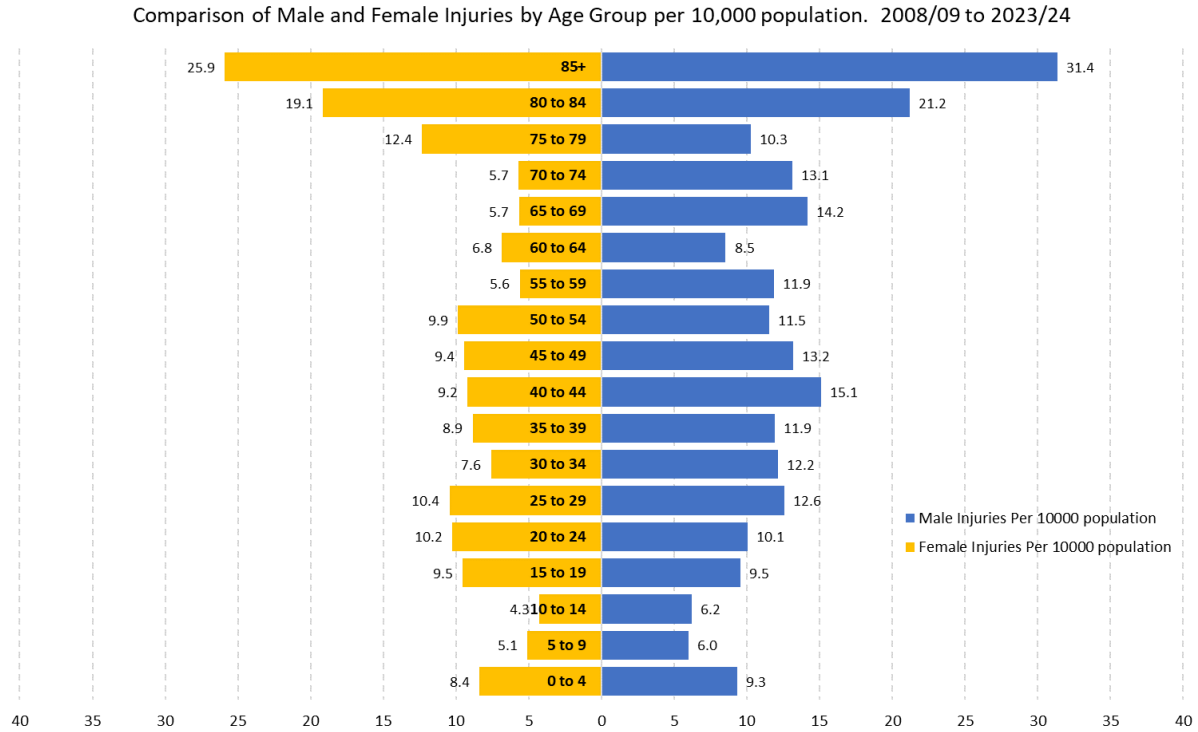


Chart 10 provides a comparison of the different age groups of those injured due to an accidental dwelling fire. The chart mirrors the findings from table 2 (earlier within this report) where there is a disproportionate number of victims above the age of 65 (equal to 25.8% of total injuries from 19.3% of the population).

Taking sex into account, proportionally 44.9% of people injured were female and 55.1% were male. This is marginally more balanced when compared to deaths in accidental dwelling fires, where 42.6% of deaths were female and 57.4% were male.

Concerning the ethnicity profile of people injured due to an accidental dwelling fire, 87.3% were recorded as White British or Irish, with 4.1% being other ethnicities and 7% being unknown.