



# **Historical Analysis of Fatalities in Accidental Dwelling Fires between 2006/07 and 2020/21**

## **AUDIENCE**

**TO BE PRESENTED TO:  
Authority  
Strategic Leadership Team**

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**COMMUNITY RISK MANAGEMENT  
PREVENTION**

***Date work received: 01/04/2021***  
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## **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 Oakford and received on 01/04/2021.

The Manager<sup>1</sup> 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 May 2021, 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 May 2020.

The final report, which will always be in PDF format, would be produced by May 2021, subject to receiving comments.

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<sup>1</sup> 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 2006/07 and 2020/21. 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 2006/07 and 2020/21 there were a total of **111** fire deaths as a result of accidental dwelling fires; these deaths are attributed to **105** fire incidents.
- Between 2006/07 and 2010/11, the trend for fire deaths was falling, with (at the time) lows of 5 deaths during both 2010/11 and 2011/12. However, from 2012/13 the count of fatalities increased year on year leading to a 10 year high of 16 during 2015/16. Since 2015/16 fire deaths have dropped, with 7 during 2016/17 and lows of 4 for both 2017/18 and 2018/19. During 2019/20, there were 5 deaths, which then further increased to 7 for 2020/21.
- When analysed by district, both Liverpool and Wirral have seen 35 deaths. When aggregated to incidents per 100,000 population; Wirral has the greatest number of deaths with 10.8 deaths per 100,000 population, while Liverpool's ratio is much lower, with 7.0 per 100,000 population. Of note, during 2020/21 Knowsley and St Helens both saw fire fatalities, their first in 5 years.
- The risk of death in accidental dwelling fires increases with age, with the 45-49 and particularly the 75 and above age groups being at greatest risk.
- Concerning the demographic of fire fatalities, there is a bias towards male victims with 60 fatalities (54% overall). Female victims accounted for 51 accidental dwelling fire fatalities (46% overall).
- Concerning racial profile, the vast majority of victims were White British – accounting for 106 victims or 95.5% overall.
- In 69 out of 111 fire fatalities, the victim was the sole occupier. Taking all living circumstances into account, 79 victims were alone at the time of the fire that claimed their lives.

### Incident Summary

- Concerning deprivation and the use of Ministry of Housing, Communities and Local Government's (MHCLG) 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.
- Taking smoke alarm ownership performance into account, in 62 incidents a smoke alarm was fitted and actuated (55% in total). There were 7 incidents where smoke alarms were fitted and did not actuate. On 19 occurrences there was no smoke alarm and a further 6 incidents where

the fitted smoke alarm was inoperable (i.e. no batteries). There were 9 occurrences where it was unknown whether the smoke alarm actuated and 2 incidents where the level of damage done to the property was so great it was unknown whether a smoke alarm had been fitted.

- 63 Home Fire Safety Checks (HFSC) were completed with victims prior to the incidents which claimed their lives. 38 did not have an HFSC.
- When analysing ignition sources it has been found that of the 105 fatal incidents, 56 were as a result of smoker's materials. Since 2009/10, when 7 deaths were the result of smoker's materials, there was a gradual reduction with only 1 death attributable to this ignition source during both 2011/12 and 2012/13. However, since 2013/14, deaths as a result of smoker's materials have increased leading to a high of 8 during 2015/16, though this has fallen since. During 2020/21, 5 deaths were attributed to smoker's materials.
- When analysing the room of origin of the fire and the ignition source, smoker's materials were responsible for the majority of fire fatalities in both the living room and the bedroom.
- When smoker's materials are combined with alcohol, overall 28 incidents (25.6%) were the result of this combination.
- Those over 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 March. 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 and 15:00 - 15:59.

### **3. Introduction**

The purpose of this report is to analyse fatalities from accidental dwelling fires (ADF) between 2006/07 and 2020/21; 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 and 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 2016 to interpret and graphically represent figures.
- MapInfo Professional 11 which was used to tag incidents with geographical information

The calculation for fatalities per 100,000 population is:

*(sum of Fatalities over 10 years / sum of Population over 10 years) \* 100,000*

Population figures are based on Mid 2019 estimates published by the Office for National Statistics. Although this data takes place over a 15 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<sup>2</sup>.

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 obtained from the Ministry for Housing, Communities and Local Government.

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 have been sourced from the following:

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<sup>2</sup> 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 93 incidents within the entire dataset.

**Data Limitations:**

The findings within this report is 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 as a result of an accidental dwelling fire. In total between 2006/07 and 2020/21 there were 111 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 2020/21

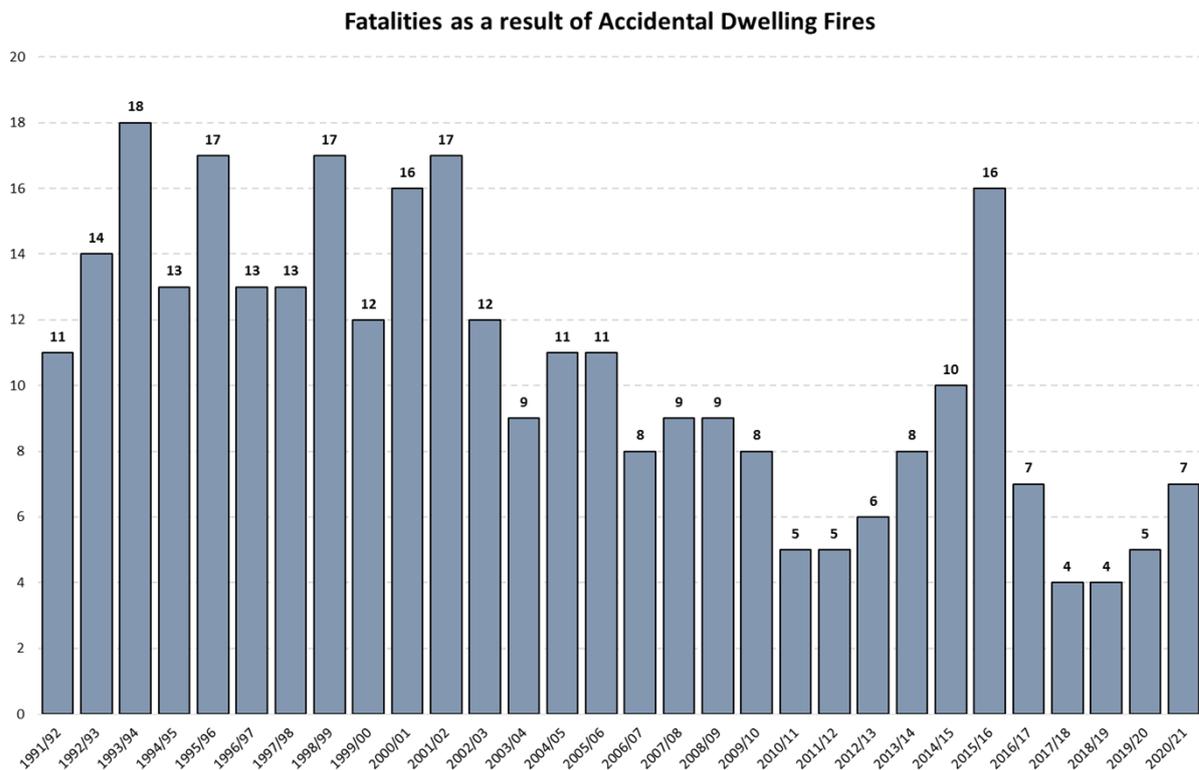


Chart 1 provides a count of accidental dwelling fire fatalities between 1991/92 and 2020/21. The chart identifies that 2015/16 resulted in the greatest number of fire fatalities in recent years, though in the past there were higher counts. Prior to 2016/17, there was an upward trend in the count of fatalities, however this upward trend was halted with the 7 deaths for 2016/17 and a low of 4 during 2017/18 and 2018/19. Over the 30-year period, 1993/94 had the highest number of fatalities with 18, followed by 1995/96, 1998/99 and 2001/02 with 17 each. In recent years there has been a moderate increase in incidents since 2018/19, with 5 during 2019/20 and 7 during 2020/21<sup>3</sup>.

<sup>3</sup> It is unknown whether the impacts of the Covid 19 lockdowns have had an impact on 2020/21.

## 5.1.2 Comparison of Fatalities by District

Chart 2: Fatalities in Accidental Dwelling Fires between 2006/07 and 2020/21 by District

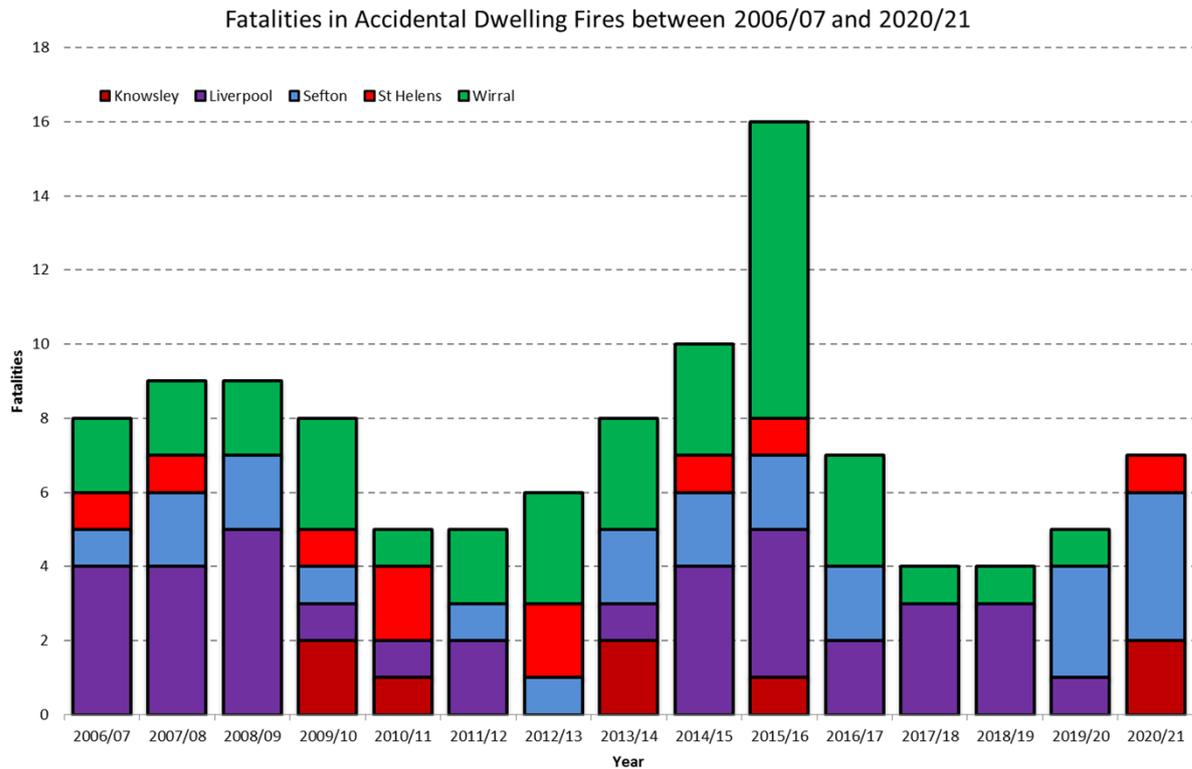


Chart 2 identifies that over the 15-year period, fatalities have fluctuated. Prior to 2010/11, accidental dwelling fire fatalities were on a downward trend, only for an upward trend to occur between 2012/13 and 2015/16. Since the high of 16 during 2015/16, fire deaths have fallen - leading to a low of 4 for both 2017/18 and 2018/19. Since 2019/20, there has been a moderate increase in fatal incidents with 5 occurring during 2019/20 and 7 during 2020/21.

During 2020/21, there were 0 fatalities in Wirral (for the 1<sup>st</sup> time in recent years) and Liverpool, however there were fatalities in both Knowsley (2) and St Helens (1) – the first to have occurred in 5 years.

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

Counts	Knowsley	Liverpool	Sefton	St Helens	Wirral	Total
Overall Fatalities	8	35	23	10	35	111
Rate per 100,000 population	<b>5.3</b>	<b>7.0</b>	<b>8.3</b>	<b>5.5</b>	<b>10.8</b>	<b>7.8</b>
Fatal Incidents	8	33	21	10	33	105

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 there have been 35 fatal fire victims in both Liverpool and Wirral. When population counts are considered – Wirral proportionally has had the greatest number of fatalities with 10.8 per 100,000 population over the 15-

year period, compared to Liverpool having a lower ratio of 7.0 per 100,000 population.

Taking into account the number of fatal incidents by district, the table identifies that of the 105 incidents, 6 incidents involved 2 victims; with 2 of such incidents occurring in: Sefton and Wirral and Liverpool.

### 5.1.3 Demographic Analysis

Table 2: Fatalities by Age and Sex (with fatalities per 100,000 population ratio)

Age group	Male		Female		Total	
5-9	0	(0)	1	(2.5)	1	(1.2)
25-29	0	(0)	2	(3.9)	2	(1.9)
30-34	1	(2.1)	0	(0)	1	(1)
35-39	1	(2.3)	1	(2.3)	2	(2.3)
40-44	5	(13.2)	2	(5.1)	7	(9.1)
45-49	4	(9.4)	8	(17.7)	12	(13.6)
50-54	7	(15.2)	2	(4)	9	(9.3)
55-59	4	(8.4)	3	(5.9)	7	(7.1)
60-64	5	(12.1)	5	(11.3)	10	(11.6)
65-69	3	(8.1)	4	(10.2)	7	(9.2)
70-74	4	(11.8)	3	(8.1)	7	(9.9)
75-79	10	(43.7)	3	(10.9)	13	(25.7)
80-84	5	(30.2)	9	(39.8)	14	(35.7)
85-89	9	(77.4)	6	(32.3)	15	(49.7)
90+	2	(51.3)	2	(23)	4	(31.8)
Total	60	(8.5)	51	(7)	111	(7.8)

Table 2 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 in an accidental dwelling fire, including the 45-49<sup>4</sup> group and particularly the 75 and above age groups (especially the 85-89 group with a ratio of 49.7 deaths per 100,000 population).

When the ratio of deaths to proportion of population is taken into account it is apparent that with age the risk of mortality as a result of an accidental dwelling fire increases significantly. Applying a regression analysis to the available data a R<sup>2</sup> value of 0.46 is achieved indicating a moderate statistical link between age and fire related mortality.

There is a bias towards male victims with 60 or 54% of total fatalities. Female victims accounted for 51 or 46% of accidental dwelling fire fatalities.

Concerning the racial profile of the deceased; 106 victims were described as White – British, 1 was described as White – Irish and 4 being Black Asian

<sup>4</sup> Of note within the 45-49 age group, 9 of the 12 victims had consumed alcohol prior to the incident. 6 of the 8 female victims had consumed alcohol prior to the incident.

Minority Ethnicity (BAME). When analysed proportionally 95.5% of victims were White British, which is slightly higher than the Census 2011 population ratio of 91.8%.

### 5.1.4 Habitation and Carer Status

Table 3: Habitation and carer status

Status	Lived alone		Cohabited		Other Circumstance		Total
	Alone at Time	Accompanied	Alone at Time	Accompanied	Alone at Time	Accompanied	
Yes	26		1	10			37
No	35	1	6	20	2	1	65
Unknown	8		1				9
<b>Total</b>	<b>69</b>	<b>1</b>	<b>8</b>	<b>30</b>	<b>2</b>	<b>1</b>	<b>111</b>

Table 3 identifies that the majority of victims (69 from 111 or 62.2%) lived alone and were alone at the time of the incident. Of the victims who cohabited; 8 were alone at the time and 30 were accompanied. In combination, 79 of the 111 victims (71.2%) were alone at the time of the incident.

Concerning whether a victim had need of a carer or not, the majority of victims did not have a carer (65 from 111, or 58.6%). Concerning victims who lived alone, 26 from 69 (or 37.7%) were known to need a carer.

Table 4: Habitation and carer status– OVER 70 Age Group Only

Status	Lived alone		Cohabited		Total
	Alone at Time	Accompanied	Alone at Time	Accompanied	
Yes	10		1	3	14
No	11		1	4	16
Unknown	4				4
<b>Grand Total</b>	<b>25</b>	<b>0</b>	<b>2</b>	<b>7</b>	<b>34</b>

Table 4 identifies that the majority of victims above the age of 70 (25 from 34 or 73.5%) lived alone and were alone at the time of the incident. Of the victims above the age of 70 who cohabited, 7 were accompanied with 2 being alone at the time. Overall, 27 of the 34 victims (or 79.4%) were alone at the time of the incident. In the age group analysed, 14 victims (41.2%) 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 **105**.

### 5.2.1 Comparison of Fatal Incidents and Deprivation

Chart 3: Fatalities in Accidental Dwelling Fire incidents between 2006/07 and 2020/21 linked to deprivation<sup>5</sup>

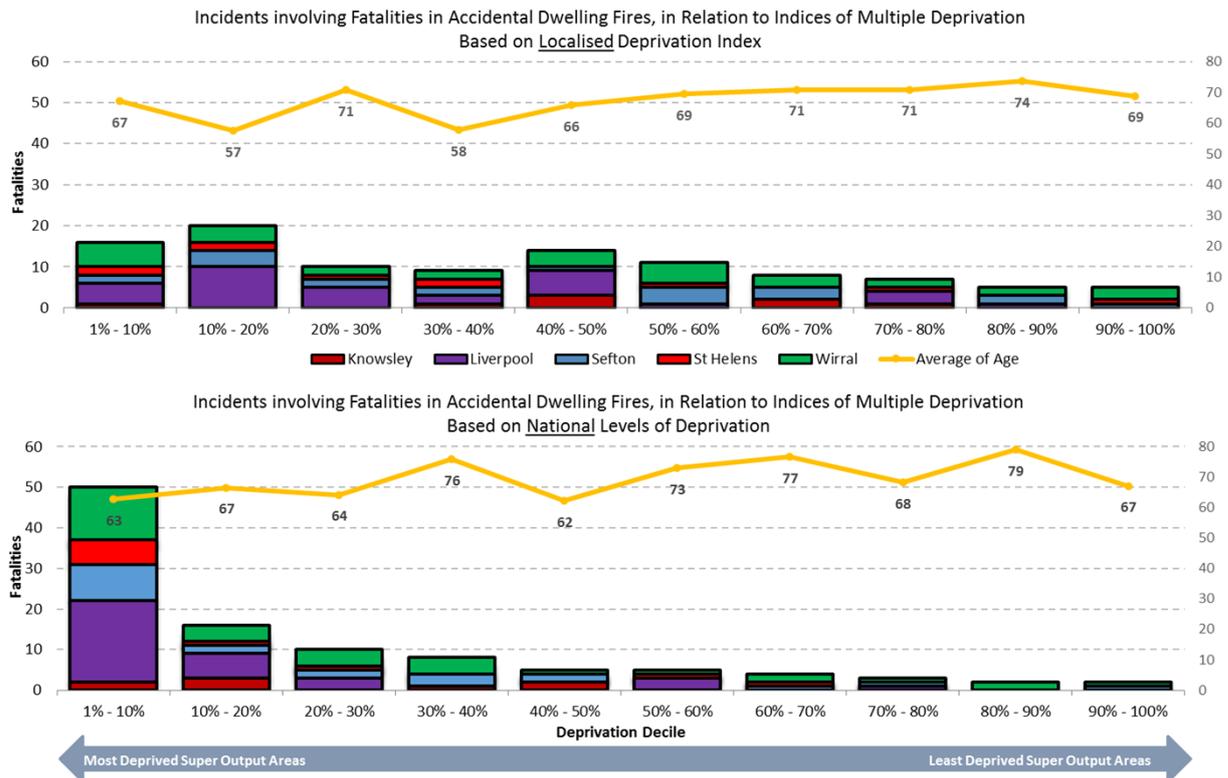


Chart 3 ranks the location of fire fatalities to the level of deprivation in the area in which the incident took place using the Index of Deprivation 2019 (IOD). Utilising a localised deprivation index, the chart demonstrates that (in general) as deprivation increases the number of fire deaths gradually increase. When applying the national IOD dataset to the fatality data, there is far more skewing<sup>6</sup> of the data particularly within the 10% most deprived areas.

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.

<sup>5</sup> As per the MHCLG document Index of Deprivation 2019

<sup>6</sup> 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 IOD	National IOD
Knowsley	Knowsley generally had fatalities within the more deprived 50% of deciles, though this is due in part to the district being one of the most deprived Local Authorities in England.	All of the fire deaths in Knowsley took place in 50% most deprived areas
Liverpool	Fire deaths in Liverpool tend to occur in areas of higher deprivation, though this is due in part to the district being one of the most deprived Local Authorities in England. Within Liverpool, 28 fatalities took place within the 50% most deprived areas and 5 took place in the 50% least deprived areas.	In Liverpool, the majority of fire deaths (20) took place in the 10% most deprived area. Overall 29 from 33 fire deaths took place in the 50% most deprived parts of Liverpool (equal to 87.9%)
Sefton	Sefton has a different pattern with a grouping of fatal incidents occurring in the moderately deprived 40%-50% decile. Within Sefton, 11 fatalities took place within the 50% most deprived areas and 10 took place in the 50% least deprived areas.	Within Sefton 18 of the 21 deaths (85.7%) took place in the 50% most deprived areas.
St Helens	St Helens generally had fatalities within the more deprived 50% of deciles.	The majority of fire deaths in St Helens took place in the 50% most deprived areas.
Wirral	Wirral has a sporadic pattern, with concentrations occurring in the most deprived 1% - 10% and 50% - 60% deciles. Within Wirral, fatalities are spread more evenly with 18 fatalities took place within the 50% most deprived areas and 15 took place in the 50% least deprived areas.	The majority of fire deaths in Wirral took place in the 50% most deprived areas accounting for 26 of the 33 deaths (78.8%). There were 3 deaths in Wirral 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 the vast majority of 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 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 5: Smoke Alarm Functionality & HFSC Status

Status	HFSC			Total	%
	Yes	No	Unknown		
Fitted & Operated	51	8	3	62	59.0%
Fitted Did Not Operate	4	3		7	6.7%
Fitted No Batteries	1	5		6	5.7%
Fitted Unknown if operated	6	3		9	8.6%
None Fitted	1	17	1	19	18.1%
Unknown		2		2	1.9%
<b>Total</b>	<b>63</b>	<b>38</b>	<b>4</b>	<b>105</b>	

Table 5 identifies that in the majority of properties (60 or 55%) a smoke alarm was fitted and operational. In 7 cases the smoke alarm was fitted and failed to actuate, though this is possibly due to the nature / severity / location of the fire itself.<sup>7</sup>

In 6 properties (5.7%), there were smoke alarms fitted, but with no batteries therefore not providing the early warning system a smoke alarm provides, additionally in 5 cases a HFSC had not taken place. Also of note, is that in 19 cases there was no smoke alarm fitted – again meaning no early warning system being available in the property. During 2 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, 60% (63 from 105) of properties had previously had a HFSC. Of these properties, 51 had a smoke alarm fitted which operated. 38 properties (36.2%) did not have a HFSC prior to the incident.

<sup>7</sup> 83 from 105 (79%) properties had a fitted smoke alarm – regardless of whether it was operational. This is a lower proportion than the 2017/18 English Housing Survey where 89% of owner occupier dwellings had fitted smoke alarms

## 5.2.3 Ignition Source

Table 6: List of Fatal Incident Ignition Sources

Ignition Source	Detail	Total
<b>Smokers Materials</b>	Smokers Materials	55
	Explosion of lighter fluid, whilst filling a lighter	1
	<b>Sub Total</b>	<b>56</b>
<b>Careless Use Of Heating Appliance</b>	Careless Use Of Heating Appliance <sup>8</sup>	13
	Collapsed Onto Gas Fire	1
	Coal or Spark From Open Fire	1
	Electrical Heater too Close to combustibles	2
	<b>Sub Total</b>	<b>17</b>
<b>Cooking</b>	Chip Pan Left Unattended in Kitchen	1
	Combustible Materials Left on Hob	1
	Cooking - Accidental Ignition Of Clothing	4
	Cooking - Misuse of Microwave	1
	Cooking - unattended food left on hob - misadventure	5
	Candle or Butane Camping Stove igniting flammable materials	1
	<b>Sub Total</b>	<b>13</b>
<b>Candles</b>	Candles	6
	<b>Sub Total</b>	<b>6</b>
<b>Electrical Fault</b>	Electrical	2
	Electrical - Fridge burning out	1
	Mains Electric Fault Overload	1
	Overloaded E-Cigarette Battery leading to rupture	1
	Overloaded Multi-tap	1
	Fault with old wiring	1
	<b>Sub Total</b>	<b>7</b>
<b>Explosion Of Leaking Gas</b>	Ignition Of Gas From Cooker - Gas Leak	1
	Explosion of Gas released from broken main	1
	<b>Sub Total</b>	<b>2</b>
<b>Radiated Heat</b>	Heat Lamp Igniting Combustible Materials	1
	Radiated Heat - from table top lamp	1
	<b>Sub Total</b>	<b>2</b>
<b>Collapsed Onto Gas Fire</b>	Collapsed Onto Gas Fire	1
	<b>Sub Total</b>	<b>1</b>
<b>Burning Waste</b>	Burning waste in garden which then got out of hand	1
	<b>Sub Total</b>	<b>1</b>
<b>Grand Total</b>		<b>105</b>

Table 6 lists the ignition sources along with limited detail concerning the unfortunate circumstances. During the 15-year period analysed smoker's materials account for 56 incidents, equal to 53.3% of fire death incidents. Careless use of heating appliances follows, with 17 incidents and cooking with 13 incidents.

<sup>8</sup> The majority of which involve placing clothing too close to an electric heater

The average age of victims, where the cause of the fire was related to the careless use of a heating appliance was 79 years. The average age where smoker's materials were involved was 62 and for cooking was 61. Therefore, 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 7: Room of Origin with Ignition Source and whether alcohol consumption had taken place - prior to the incident

Room Of Origin	Ignition Cause	Total	Of which involved consumption of Alcohol		
			Yes	No	Unknown
<b>Living Room</b>	Smokers Materials	27	15	9	3
	Careless Use Of Heating Appliance	13	3	10	
	Candles	3	1	2	
	Electrical Fault	1		1	
	Radiated Heat	1		1	
	Collapsed Onto Gas Fire	1		1	
	<b>Sub Total</b>	<b>46</b>	<b>19</b>	<b>24</b>	<b>3</b>
<b>Bedroom</b>	Smokers Materials	24	11	11	2
	Careless Use Of Heating Appliance	4		4	
	Cooking	1		1	
	Candles	2	1	1	
	Electrical Fault	2	1	1	
	Radiated Heat	1		1	
	<b>Sub Total</b>	<b>34</b>	<b>13</b>	<b>19</b>	<b>2</b>
<b>Kitchen</b>	Smokers Materials	3	2	1	
	Cooking	11	5	4	2
	Electrical Fault	3	1	1	1
	Explosion Of Leaking Gas	1		1	
	<b>Sub Total</b>	<b>18</b>	<b>8</b>	<b>7</b>	<b>3</b>
<b>Hallway</b>	Smokers Materials	1		1	
	Electrical Fault	1		1	
	<b>Sub Total</b>	<b>2</b>		<b>2</b>	
<b>Bathroom</b>	Candles	1	1		
	Explosion Of Leaking Gas	1		1	
	<b>Sub Total</b>	<b>2</b>	<b>1</b>	<b>1</b>	
<b>Bedsit</b>	Smokers Materials	1	1		
	<b>Sub Total</b>	<b>1</b>	<b>1</b>		
<b>Garden</b>	Burning Waste	1		1	
	<b>Sub Total</b>	<b>1</b>		<b>1</b>	
<b>Caravan</b>	Cooking	1		1	
	<b>Sub Total</b>	<b>1</b>		<b>1</b>	
<b>Grand Total</b>		<b>105</b>	<b>42</b>	<b>55</b>	<b>8</b>

Table 7 provides a breakdown of the fire's room of origin, its respective ignition source and whether a victim was under the influence of alcohol at the time. The table identifies that smoker's materials have a root cause in the majority of fires in the living room (27 from 46, 58.7%) and bedroom (24 from 34, 70.6%); with the cause careless use of heating appliance also being common to these rooms.

42 (40%) fatal incidents were linked to the consumption of alcohol. Where alcohol consumption is combined with smoker's materials, then 27.6% (29 from 105) of incidents are linked to this combination of factors.

Within the living room, approximately two fifths (19 or 41.3%) of fatal fire incidents involved the consumption of alcohol. A similar trend also occurred for the bedroom, where 38.2% (13) fatal fire deaths were related to alcohol consumption.

Within the kitchen, cooking, is the most common cause of fatal fire incident with 11 overall; though 5 of these still involved the consumption of alcohol.

### 5.2.5 Fatal Incidents by Year and Ignition Source

Chart 4: Breakdown of Ignition Source by Year

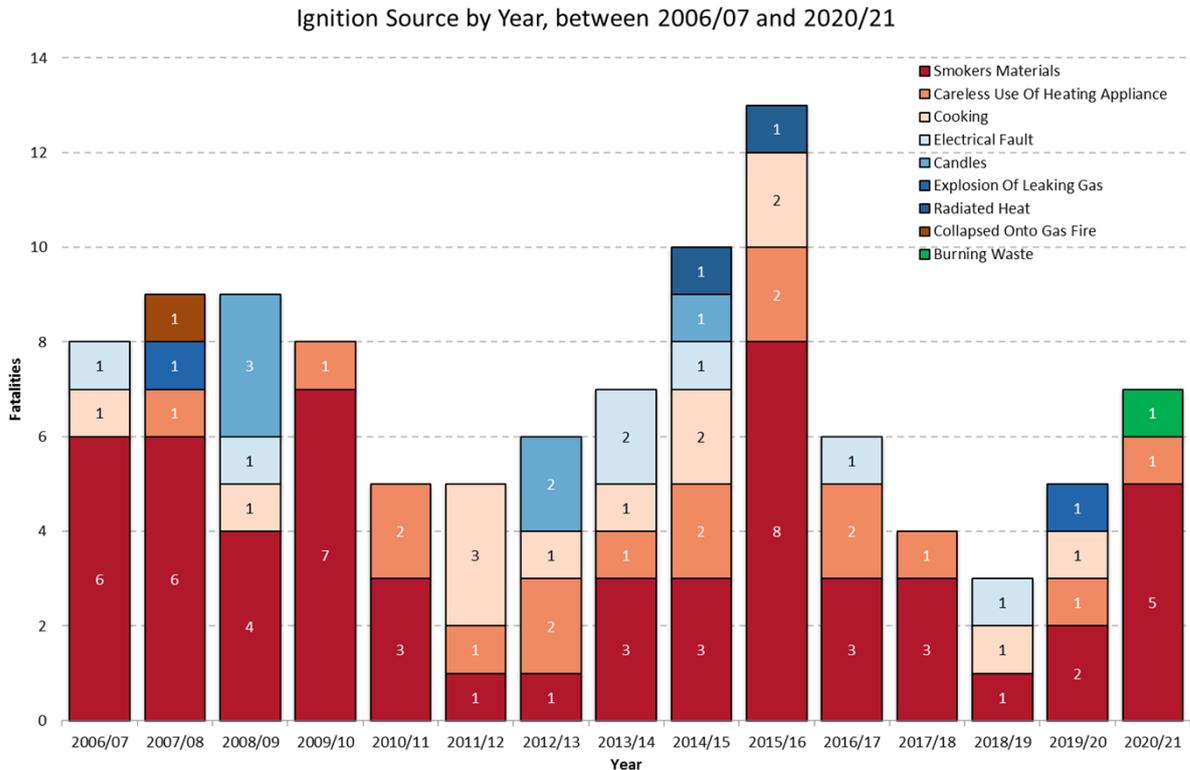


Chart 4 provides an annual breakdown of the ignition sources involved in fatal fires. The chart identifies that fatal incidents relating to smoker's materials had been falling between 2009/10 and 2011/12, however since 2013/14, these incidents were on the rise culminating in a high of 8 during 2015/16. Since 2015/16 the overall numbers of fatal incidents related to smoker's materials dropped, though there were 5 deaths related to smoker's materials during 2020/21.

Incidents involving careless use of heating appliances have remained relatively consistent, with the exception of 2018/19 where no deaths were attributed to this cause.

Fatal incidents linked directly to cooking and cooking practices have fluctuated between the years, with the exception of 3 incidents during 2011/12.

### 5.2.6 Fatalities by Month and Ignition Source

Chart 5: Fatal Fire Incidents by Month and Ignition Source

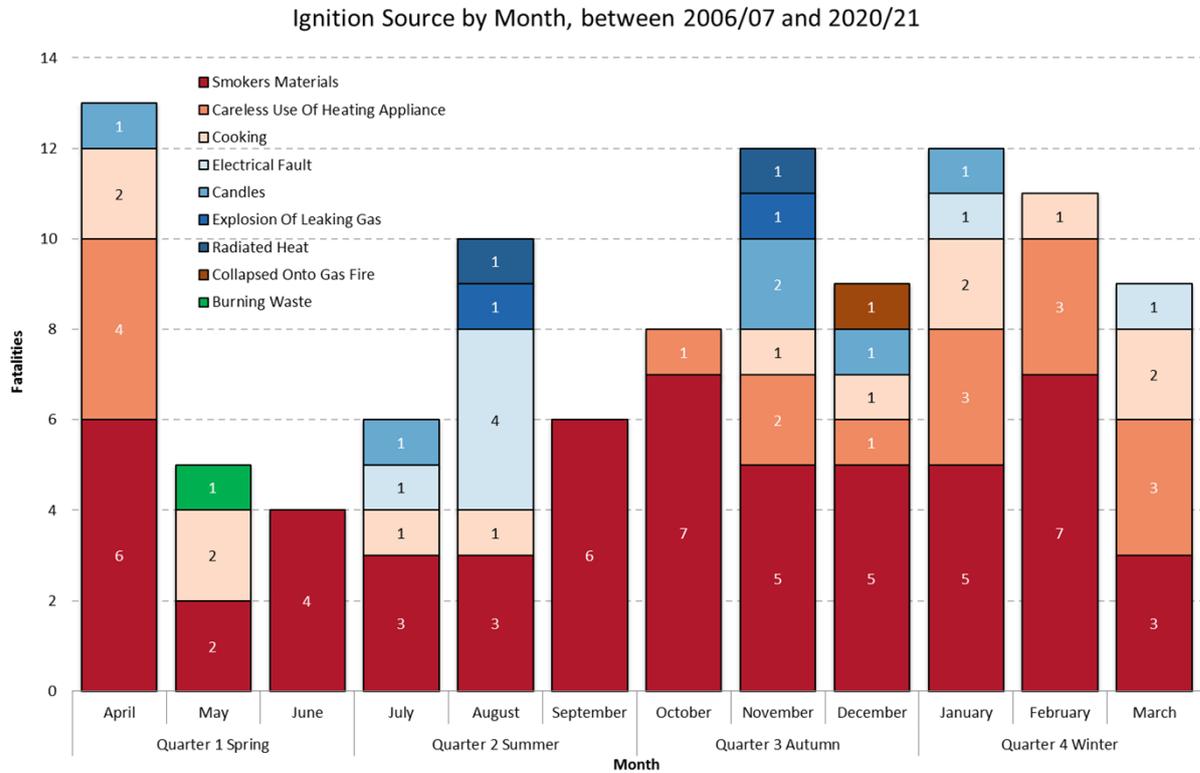


Chart 5 identifies that there are more fatal fire incidents taking place during quarters 3 (Autumn) and 4 (Winter).

When smoker’s materials are analysed by quarter; the overall numbers of fatalities are relatively consistent, with: 12 incidents in Quarter 1, 12 in Quarter 2, 17 in Quarter 3 and 15 in Quarter 4.

Fatalities involving smoker’s materials are lower during the spring and summer months, especially during: May, June, August and March. The months of: October, December, February and April have the highest counts.

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

Cooking related deaths are sporadic.

## 5.2.7 Analysis of Incidents by Time of Call

Chart 6: Fatalities by hour and whether Alcohol Consumption occurred<sup>9</sup>

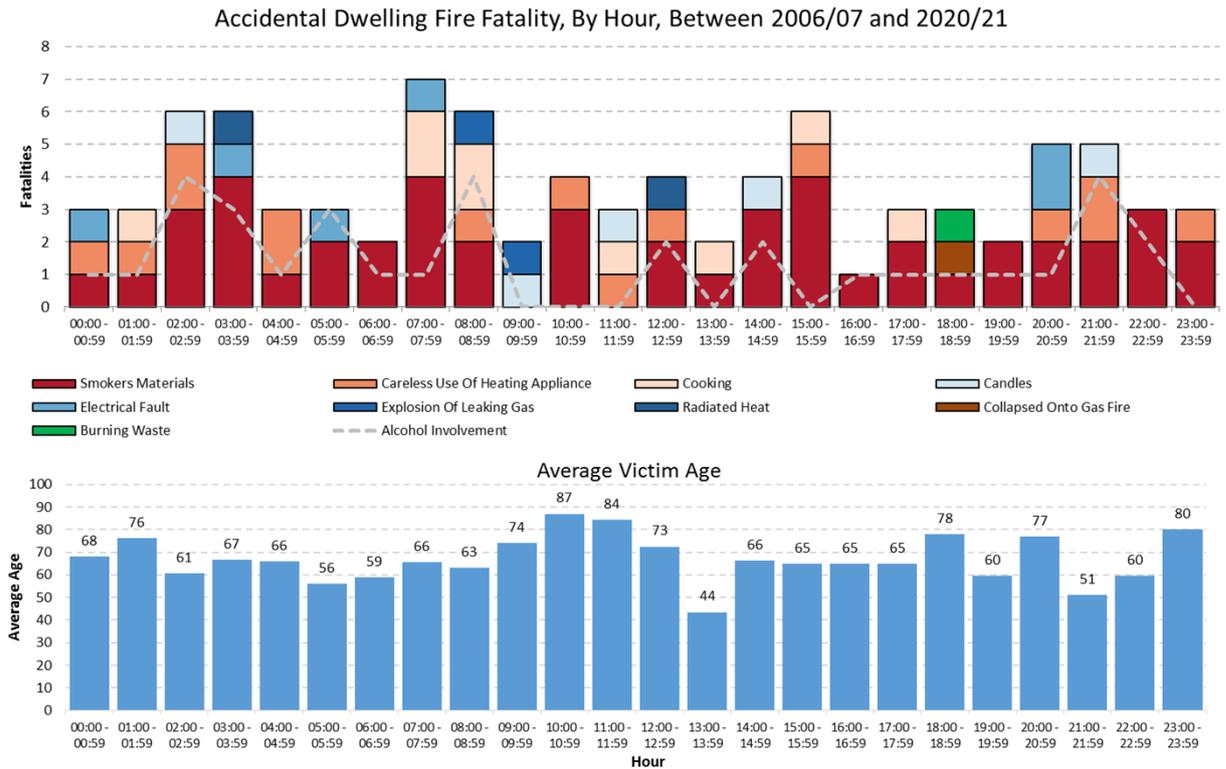


Chart 6 provides an overview by hour of when a fatal fire incident has taken place. The chart also details the ignition source and whether alcohol consumption had taken place as well as the average age of victims.

In summary, the chart provides the following findings:

- Peaks in incidents occur between 02:00 - 03:59, 07:00 - 08:59 and 15:00 - 15:59
- Where there are peaks in fatal incidents, the average of the victims is younger<sup>10</sup>, with an average age of 61 for victims between the hours of 02:00 – 02:59, 66 between 07:00 – 07:59 and 65 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 smoking), the morning (08:00 – 08:59) and evening (21:00 – 21:59, again smoking is the predominant cause of fire). Relatively few incidents take place during the early afternoon and early evening.

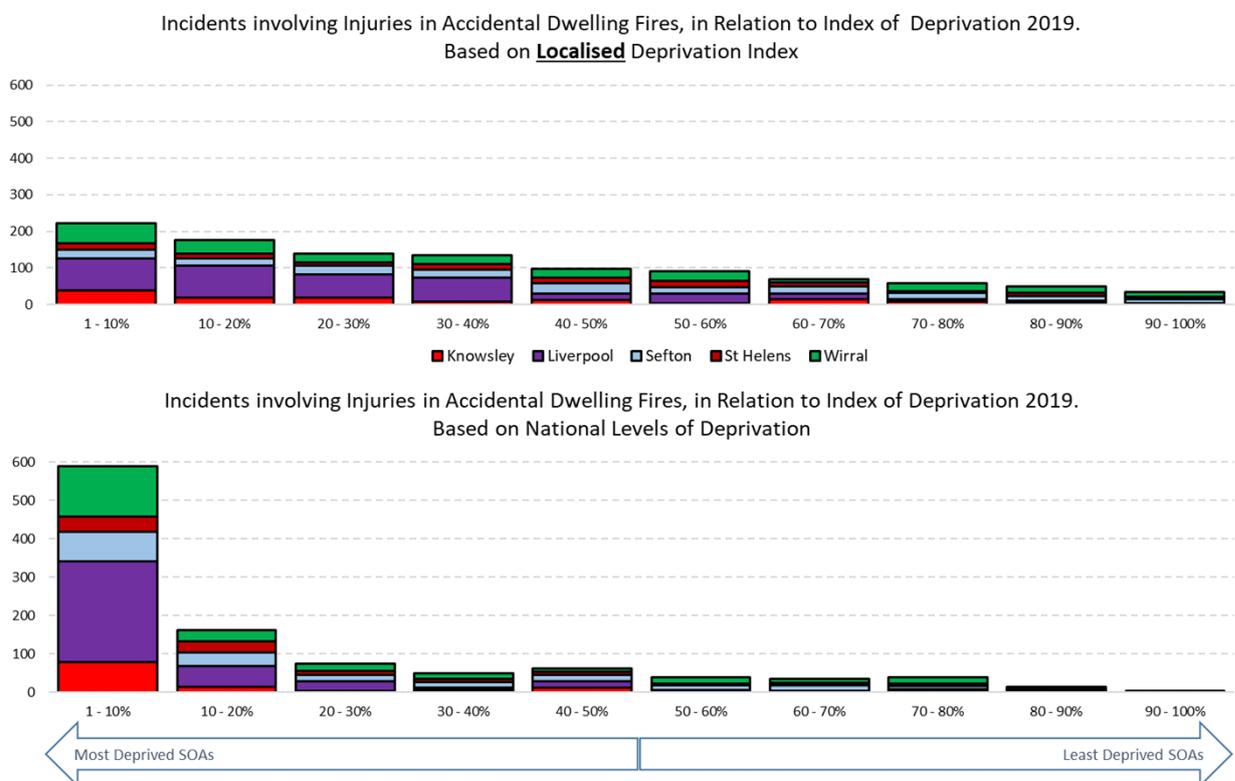
<sup>9</sup> This analysis is based on the time of call to a live incident, this does not include late calls, please refer to methodology for details

<sup>10</sup> The average age for this subset of data is 67 years of age

## 6. Appendix A: 13 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 piece of data that is considered. Injury data from accidental dwelling fire data provides a far greater data set which adds richness to the analysis. The following section briefly analyses injuries as a result of accidental dwelling fires and identifies commonalities between fire victims.<sup>11</sup>

Chart 7: Accidental Dwelling Fires Injury incidents between 2008/09 and 2020/21 in relation to Indices of Deprivation (IOD) 2019



Like Chart 3 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 injuries occurring within the most deprived decile.

When a localised deprivation index is applied the chart is flatter in shape, though there is still a clear link between there being more fire injuries in more deprived areas than not.

<sup>11</sup> Please note that for consistency purposes the data is limited to 12 years, the age of the Incident Recording System

## Chart 8: Injury in Accidental Dwelling fire population pyramid

Comparison of Male and Female Injuries by Age Group per 10,000 population. 2008/09 to 2020/21

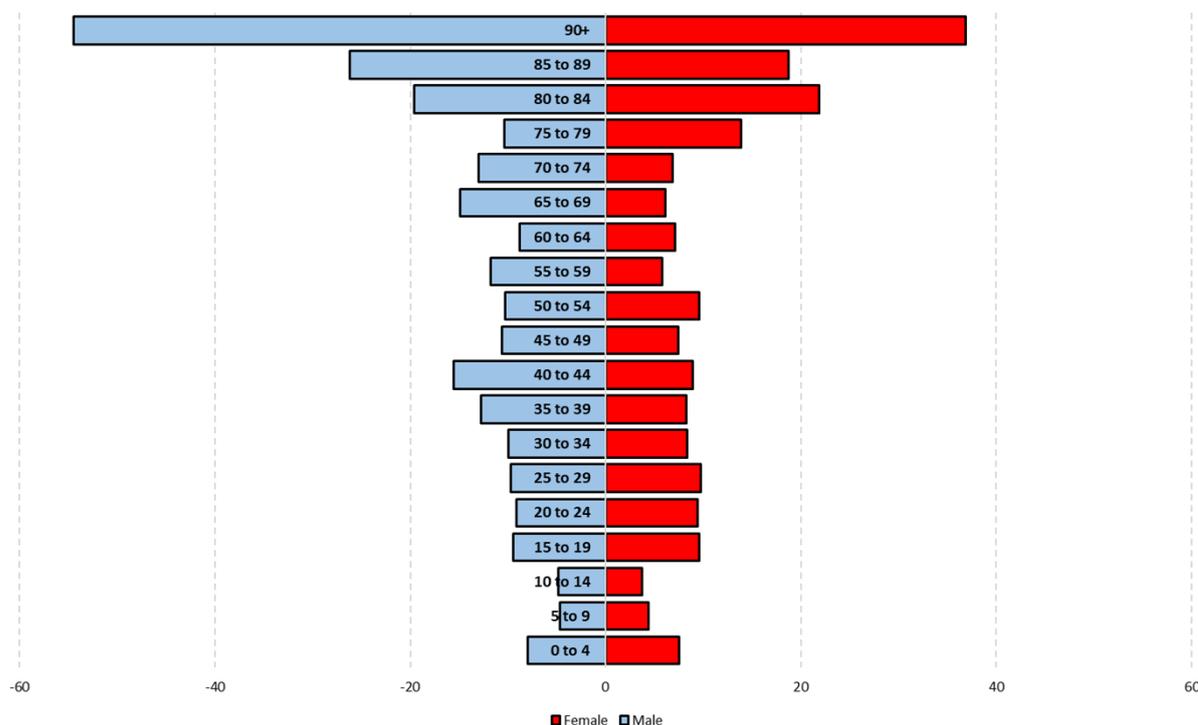


Chart 8 provides a comparison of the different age groups of those injured as a result of an accidental dwelling fire. The chart, mirrors the findings from table 2 (earlier within this report) where there is a disproportionate number of victims above the age of 65.

Taking sex into account, proportionally 46.2% of persons injured were female and 53.8% were male. This approximates the findings in relation to deaths in accidental dwelling fires, where 47% of deaths were female and 53% were male.

Concerning the ethnicity profile of persons being injured as a result of an accidental dwelling fire, 87.1% were recorded as White British, with 6.3% being from a BAME background and 6.5% not stating their ethnicity. Taking the victims who did not provide their ethnicity from the total data set, this amends the proportions of White British victims to 93.2% and BAME is adjusted to 6.8%, which is more in line with findings from the fatality data.