



Analysis of Fatalities in Accidental Dwelling Fires between 1st April 2022 and 31st March 2023

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

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**PREVENTION
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Document Control

Amendment History

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1.0	TBC	J Fielding	Following comments from AM Thomas, GM Woodward and Deb Appleton

Sign-Off List

Name	Position
ACFO D Mottram	Assistant Chief Fire Officer
Deb Appleton	Director of Strategy & Performance
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Distribution List

Name	Position	I / R
Strategic Leadership Team		
Fire Authority		

Related Documents

Reference No.	Title	Author	Version & Date
1	Historical Analysis of Fatalities in Accidental Dwelling Fires between 2008/09 and 2022/23	J Fielding	TBC

Ownership

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1. Agreement

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

This work was requested by AM Thomas and received on 01/04/2023.

The Manager¹ has approved this report/ piece of work can be undertaken by the Strategy and 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 2023 and would be sent electronically to the Director of Strategy and Performance Directorate and Client for comment.

The Manager / Client agreed that their comments would be received back by May 2023.

The final report, which will always be in PDF format, would be produced by May 2023, subject to receiving comments.

¹ Deb Appleton

2. Summary

The purpose of this report is to provide an analysis regarding the circumstances of fatalities in accidental dwelling fires across Merseyside during 2022/23. In summary, the findings within this report are as follows:

- During 2022/23, there were 10 fatalities as a result of accidental dwelling fires, an increase of 6 on the previous year. These deaths were the result of 9 fire incidents.
- By district, Knowsley and St Helens saw 1 fatal incident each, Liverpool and Sefton saw 2 fatal incidents (though there was a double fatality in 1 of the incidents in Sefton) and Wirral saw 3 fatal incidents as below:

District	Number of Fatalities	Number of Fatal Incidents
Knowsley	1	1
Liverpool	2	2
Sefton	3	2
St Helens	1	1
Wirral	3	3
Merseyside Wide	10	9

- The ages of the victims ranged between 23 and 78; 3 victims were known to be above the age of 70, 5 were above the age of 65.
- Concerning sex; 1 victim was female and 9 were male. In terms of racial profile, all 10 were White British. It was known that 5 victims had mobility issues.
- Based on the National Index of Multiple Deprivation, the majority of victims resided in high deprivation neighbourhoods.
- Taking ignition source into account; 3 fatal incidents were related to smokers' materials, 4 were due to cooking and 2 were related to electrical faults (1 of which was due to a ruptured E-bike lithium ion battery).
- 5 of the 9 households had previously received a Home Fire Safety Check.
- 8 of the households had working smoke alarms, 1 property had one installed but the batteries were flat.
- In 7 incidents the victim lived alone, and was alone at the time of the incident.
- 8 of the 9 properties were rented.
- There were no deaths attributed to heating sources. Given the ongoing Cost of Living crisis, the use of mobile heaters etc. was expected to increase and therefore lead to a potential increase in risk. However there were no deaths attributed to this cause.

3. Introduction

This report analyses fire related fatalities across Merseyside during 2022/23. The focus of this report are fatalities that occurred as a result of an Accidental Dwelling Fire (ADF).

This report contains information relating to the circumstances of individuals who have regrettably died in a fire, as well as other information, including: Equality & Diversity protected characteristics, ignition source and temporal analysis, all of which will support the on-going and proactive actions of the staff involved in Prevention activity and their actions to reduce the risk of fire.

4. Case Studies

The following section outlines case studies of incidents where people died as a result of an accidental dwelling fire during 2022/23. Merseyside Fire & Rescue Service has continued to play a significant role in reducing the number of fatalities caused by fire and works closely with partner agencies to ensure that measures have been put in place to reduce the risks associated with fire.

Case 1: May 2022 Wirral

The deceased was a 78-year-old male, who was the sole inhabitant of the sheltered accommodation flat where he lived; the victim was alone at the time of the incident, the victim was known to have mobility issues. At 20:44 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check; the fitted smoke alarms actuated during the incident. The fire occurred in the bedroom with the victim being located in the same room. The suspected cause of the fire was due to a dropped cigarette (smokers materials) igniting bedding.

Case 2: November 2022 Liverpool

The deceased was a 62-year-old male, who was the sole inhabitant of the sheltered accommodation flat where he lived; the victim was alone at the time of the incident, the victim was known to have mobility issues. At 17:34 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not received a prior Home Fire Safety Check; though there were smoke alarms fitted, which successfully actuated. The fire occurred in the living room, with the victim being found in the same room. The suspected cause of the fire was due to a dropped cigarette (smokers materials) igniting bedding.

Case 3: November 2022 Liverpool

The deceased was a 54-year-old male, who was the sole inhabitant of the flat where he lived; the victim was alone at the time of the incident. At 11:49 hrs, Merseyside Fire & Rescue Service received a call to attend the incident, this incident was a late call, meaning that operational crews attended the incident sometime after the fire had already extinguished itself. The property had not received a prior Home Fire Safety Check; though there were smoke alarms fitted, which successfully actuated. The fire occurred in the kitchen with the victim being located in the bathroom. The suspected cause of the fire was due to cooking - leaving food unattended on a hob.

Case 4: December 2022 Wirral

The deceased was a 66-year-old male, who was the sole inhabitant of the terraced house where he lived; the victim was alone at the time of the incident. At 9:30 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not received a prior Home Fire Safety Check; though there were smoke alarms fitted, which successfully actuated. The fire occurred in the kitchen with the victim being found in the same room. The suspected cause of the fire was due to the victim leaving combustible articles too close to the hob which then ignited.

Case 5: December 2022 St Helens

The deceased was a 70-year-old male, who was the sole inhabitant of the semi-detached house where he lived; the victim was alone at the time of the incident. At

14:14 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check; during the safety check smoke alarms were provided free of charge, which actuated during the incident. The fire occurred in the kitchen with the victim being located in the living room. The suspected cause of the fire was due to cooking - leaving a chip pan unattended on a hob.

Case 6: January 2023 Sefton

The deceased was a 65-year-old male, who was the sole inhabitant of the bungalow where he lived; the victim was alone at the time of the incident. At 18:45 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check; during the safety check smoke alarms were provided free of charge, however the smoke alarm was found to not have batteries installed, there had been multiple attempts in ensuing years to revisit the property but the occupier refused further visits. The fire occurred in the kitchen with the victim being located same room. The suspected cause of the fire was due to cooking - leaving food unattended on a hob.

Case 7: January 2023 Sefton

The deceased was a 60-year-old male, the victim lived with his family in the semi-detached house where he lived; the victim was not alone in the property at the time of the incident, the victim was known to have mobility issues. At 03:00 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check; during the safety check smoke alarms were provided free of charge, which actuated during the incident. The fire occurred in the living room with the victim being located in the upstairs bedroom with his son. The suspected cause of the fire was due to an electrical fault with an E-Bike Lithium Ion battery.

Case 8: January 2023 Sefton

The deceased was a 23-year-old male, the victim lived with his family in the semi-detached house where he lived; the victim was not alone in the property at the time of the incident. At 03:00 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check; during the safety check smoke alarms were provided free of charge, which actuated during the incident. The fire occurred in the living room with the victim being located in the bedroom with his father, the victim was rescued alive but passed away in hospital. The suspected cause of the fire was due to an electrical fault with an E-Bike Lithium Ion battery.

Case 9: January 2023 Knowsley

The deceased was a 56-year-old female, the victim lived with her family in the semi-detached house; the victim was not alone in the property at the time of the incident, the victim was known to have mobility issues. At 06:10 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not received a prior Home Fire Safety Check; though there were smoke alarms fitted, which successfully actuated. The fire occurred in the hallway with the victim being located in the upstairs bedroom. The suspected cause of the fire was due to an electrical fault originating within the property's electricity consumer unit.

Case 10: March 2023 Wirral

The deceased was a 75-year-old male, who was the sole inhabitant of the sheltered accommodation flat where he lived; the victim was alone at the time of the incident, the victim was known to have mobility issues. At 16:39 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check; the fitted smoke alarms actuated during the incident. The fire occurred in the hallway with the victim being in the same area. The suspected cause of the fire was due to a dropped cigarette (smokers materials) igniting clothing which had been impregnated by emollients.

5. Methodology

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).

Fatalities in accidental dwelling fires were originally reported under the Best Value Performance Indicator 143(ii). Since 2008, this performance indicator has become defunct at a national level; however Merseyside Fire and Rescue Authority still measure this as Key Performance Indicator DC12. Qualification for this performance indicator is decided by members of MFRA Incident Investigation Team (IIT) and the Coroner.

Some data within this report is still awaiting Coroner agreement and as such some figures may be subject to change.

The Long Time Series Analysis counts have been obtained from the following:

- Between 1991/92 – 1999/2000: Freedom of Information Request from Department for Communities and Local Government
- Between 2000/01 – present: MFRA Incident Investigation Team archives

The ratio of incidents to fatalities is: count of total accidental dwelling fires / count of fatalities

Index of Deprivation 2019 (IOD 2019) has been used to measure the levels of deprivation where fire fatalities took place².

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 is merged with fatality incident data and analysed.

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

The software used to complete the analysis, was Microsoft Office Excel 2016 and MapInfo Professional 17.0 for filtering and mapping the data.

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

6. Results

6.1 Retrospective

Long Time Series Analysis

Chart 1: Long Time Series of fatalities in Accidental Dwelling Fires between 1991/92 and 2022/23

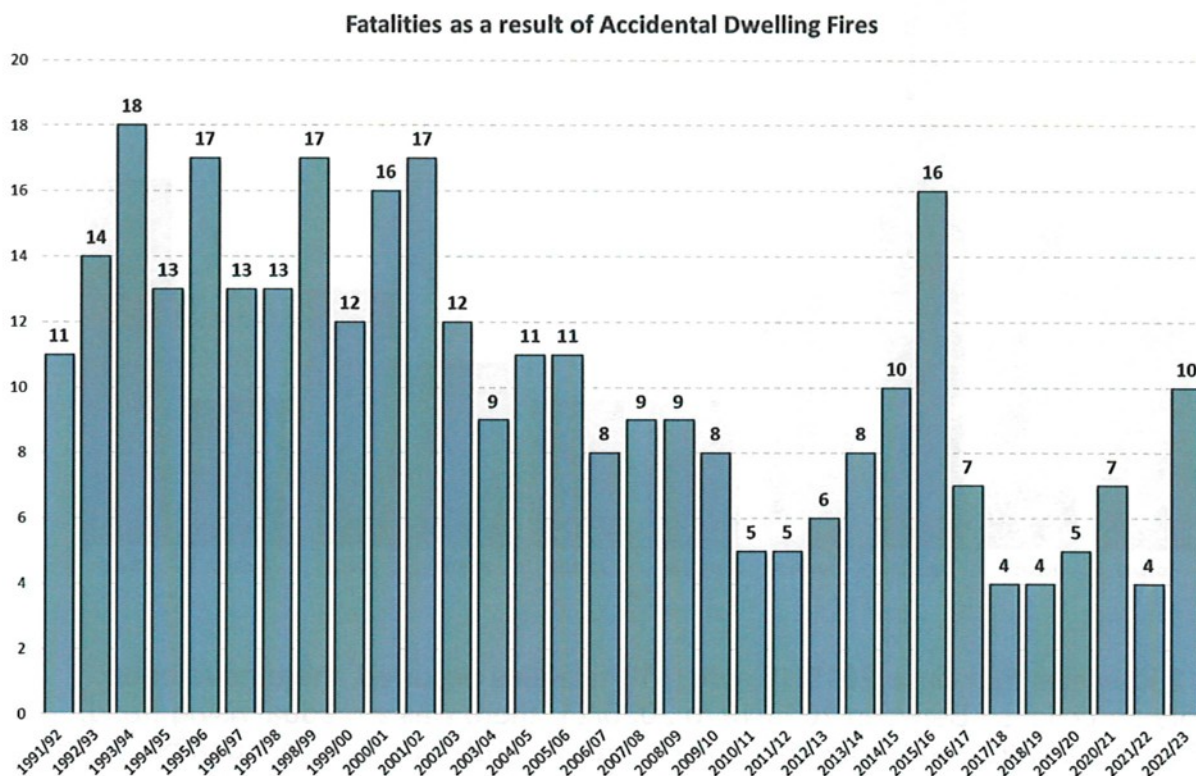


Chart 1 provides a count of accidental dwelling fire fatalities between 1991/92 and 2022/23. What is evident is that over this period, fatalities on the whole have reduced.

In recent years, 2015/16 saw the greatest number of fire fatalities with 16. 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 then a low of 4 during 2017/18 – which has since been repeated during 2018/19 and 2021/22. During 2022/23 there were 10 fatalities as a result of accidental dwelling fires.

Over the period, 1993/94 had the highest number of fatalities with 18, followed by 1995/96, 1998/99 and 2001/02 with 17 each.

10 Year Retrospective

Chart 2: Fatalities in Accidental Dwelling Fires between 2013/14 and 2022/23 by district

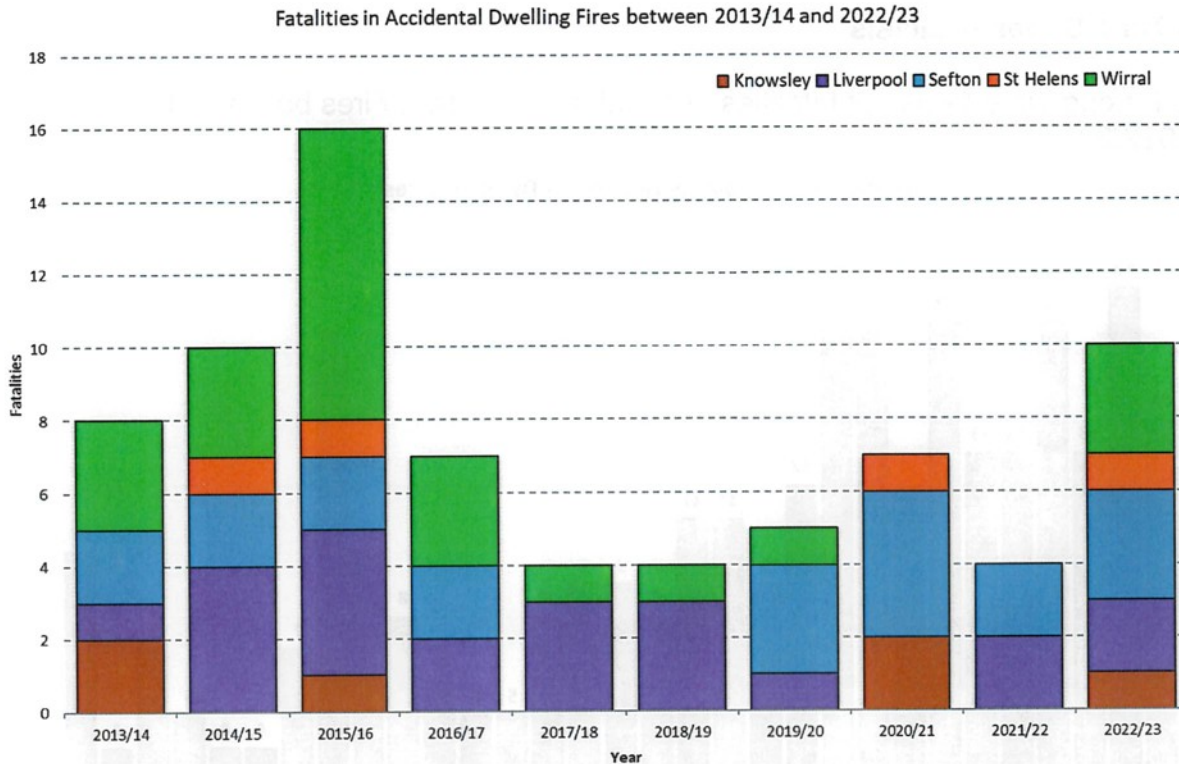


Chart 2 identifies that since 2015/16, when 16 fatalities occurred, there have been sizeable reductions. Between 2018/19 to 2020/21, there was a gradual rising trend, with 5 during 2019/20 and 7 during 2020/21. For 2021/22, there were 4 deaths, which is the joint lowest number of deaths along with 2017/18 and 2018/19. The low counts of incident ended during 2022/23 where 10 fatalities took place.

When analysed by district, the counts vary. Prior to 2020/21, Wirral consistently saw fire deaths, until the years 2020/21 to 2021/22, during 2022/23 there were 3 deaths in the district. Knowsley and St Helens have had the fewest fatalities over the 10 year period.

During 2022/23, there were fatalities in all districts. Knowsley and St Helens saw a single death each, Liverpool saw 2 and both Sefton and Wirral saw 3 deaths each. It should be noted that one of the incidents in Sefton resulted in 2 deaths.

6.2 Spatial Analysis

Table 1: Ratio of Accidental Dwelling Fire Incidents to Fatal Incidents during 2022/23

Counts	Knowsley	Liverpool	Sefton	St Helens	Wirral	Total
Overall Fatal Incidents	1	2	2	1	3	9
Accidental Dwelling Fires	76	309	152	77	165	779
Ratio	1:76	1:155	1:76	1:77	1:55	1:78

Table 1 provides the ratio of accidental dwelling fire incidents against related fire deaths across Merseyside. The table identifies that Wirral had the highest ratio of incidents to fatalities with 1 fatal fire per 55 incidents, Knowsley, Sefton and St Helens all had very similar ratios with 1 fatal incident per 76 to 77 accidental dwelling fire incidents and Liverpool had the lowest ratio of 1 fatal incident per 155 accidental dwelling fires. Merseyside wide the ratio was 1 death per 78 incidents, which is very similar to the ratios for Knowsley, Sefton and St Helens.

Deprivation Analysis

Chart 3: Accidental Dwelling Fires Fatal incidents during 2022/23 in relation to Indices of Deprivation (IOD) 2019

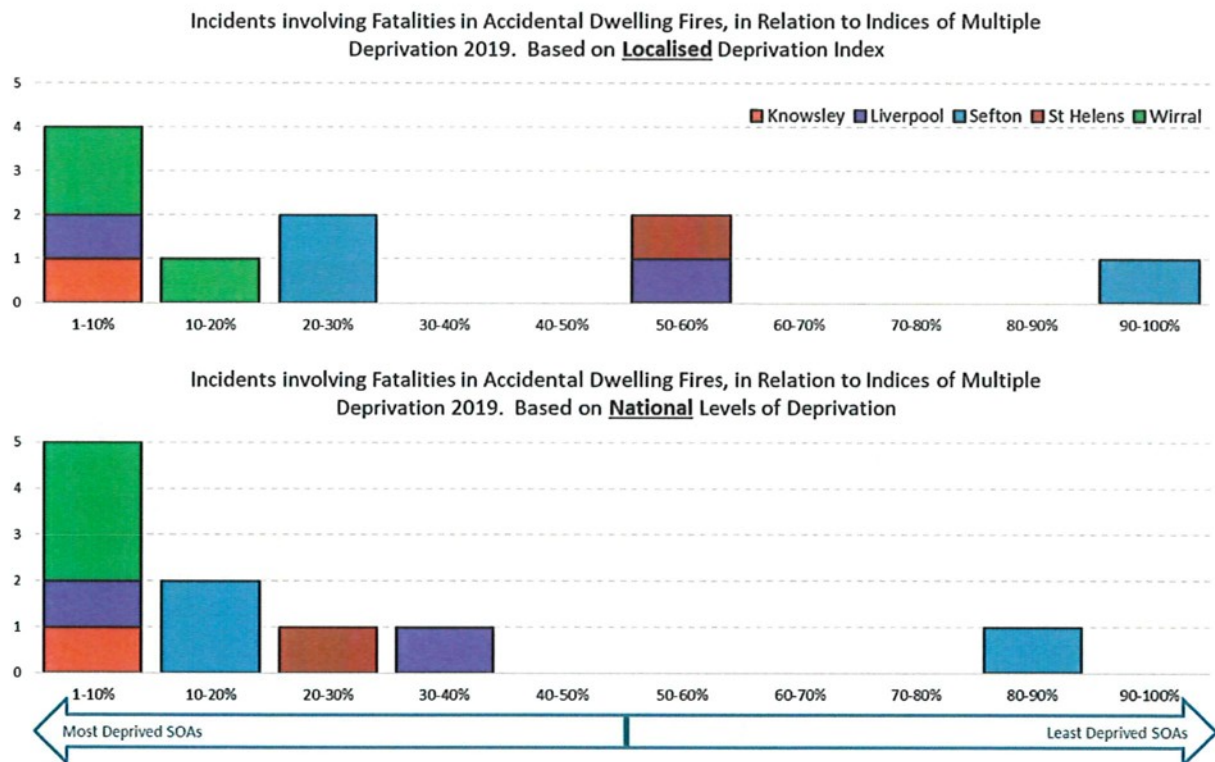


Chart 3 analyses the levels of deprivation where an incident involving a fatality took place, based on:

- A localised – Merseyside based index of deprivation
- Against national levels of deprivation

Regardless of whether the data is analysed from a national or local deprivation perspective, the majority of fire deaths occur in areas of greater deprivation.

6.3 Incident Analysis

The following section summarises the status and circumstances of victims:

Circumstances

Table 2: Fire room of origin and victim location

Room of Ignition	Room where victim was located					Total
	Bedroom	Living Room	Bathroom	Hallway	Kitchen	
Kitchen	1	1	1		1	4
Living Room	2	1				3
Hallway	1			1		2
Bedroom	1					1
Total	5	2	1	1	1	10

Concerning the fire room of origin; 4 incidents started in the kitchen, 3 in the living room, 2 in the hallway and 1 in the bedroom. In 4 incidents the victims were located by MFRA operational crews in the room of origin.

Table 3: Fire room of origin and ignition source³

Room of Ignition	Cause			Total
	Electrical Fault	Cooking	Smokers Materials	
Kitchen		4		4
Living Room	1		1	2
Hallway	1		1	2
Bedroom			1	1
Total	2	4	3	9

Table 3 provides a breakdown of the ignition sources in relation to the room where the incident took place. The most common cause of fatal incident was cooking in the kitchen (especially leaving cooking unattended (3) or combustible items left close to a naked flame). Smokers materials also accounted for 3 fatal incidents, though there is no commonality in the room where the fire took place. Finally electrical faults accounted for 2 fatal incidents, though resulted in 3 deaths, 1 incident was related to an e-bike on charge which ruptured and the ensuing fire claimed the lives of 2 people, a further incident related to an issue with a consumer board.

The Victims

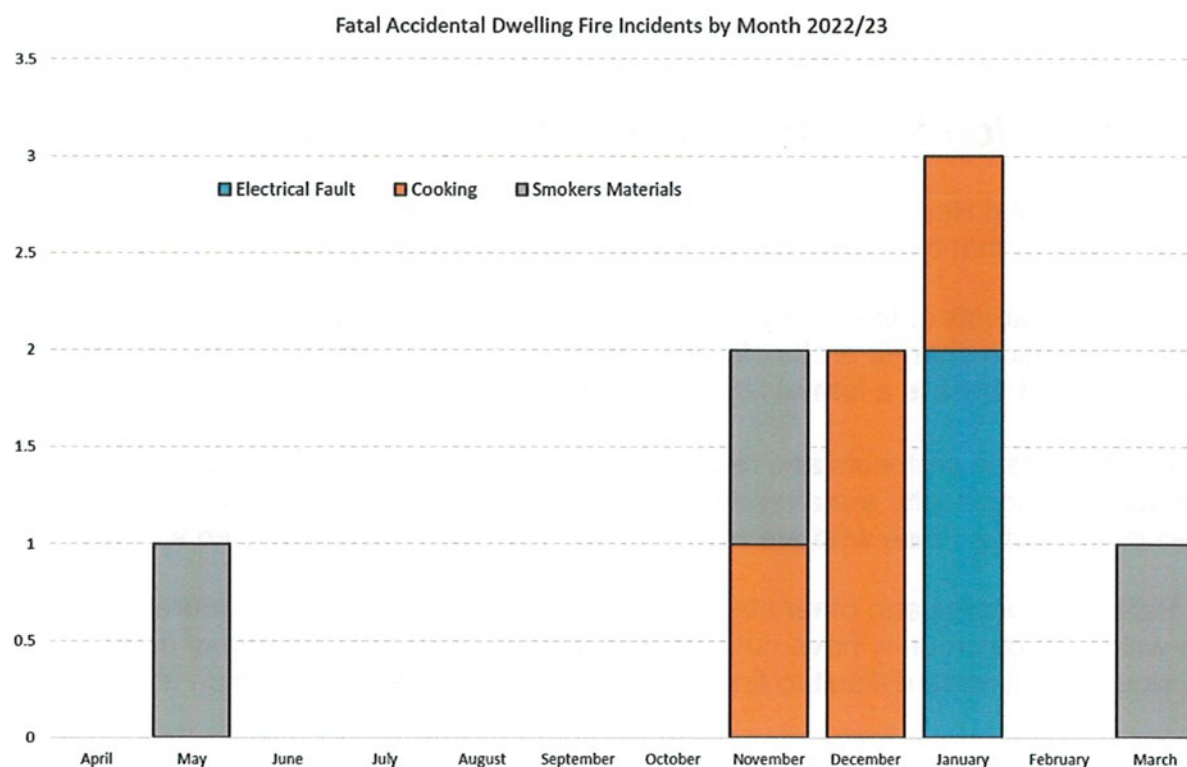
- There were 9 male and 1 female victims.
- The age range of male victims was between 23 and 78. The female victim was 56. 3 victims were above the age of 70, 4 were between 60 to 69, 2 were between 50 to 59 and 1 was aged between 20 to 29
- All 10 victims were White British in ethnic origin.
- It was known that 5 of the victims had serious mobility issues
- In 7 of the incidents, the victim lived alone, and was alone at the time of the fire.

³ For analysis purposes the causes have been summarised; for more detail, please refer to the Section 4 Case Studies for additional details

- Concerning home ownership, 8 of the properties were rented and 1 was owner occupied.

Temporal Analysis

Chart 4: Fatal accidental dwelling fire incidents by month



- Chart 4 shows a clear clustering during the winter months for. Concerning the incidents that took place between December and January, all 5 incidents (resulting in 6 deaths) took place over a 6 week period, with 2 incidents taking place just prior to Christmas and the other 3 throughout January. Historical analysis of fatal fire incidents has shown that there tend to be more fire deaths during winter months with relatively few taking place towards the end of spring, summer and early autumn.⁴
- Incidents took place throughout the day during the following hours: 03:00 – 03:59, 06:00 – 06:59, 09:00 – 09:59, 11:00 – 11:59, 14:00 – 14:59, 16:00 – 16:59, 17:00 – 17:59, 18:00 – 18:59 and 20:00 – 20:59.

Fire Safety

Table 4: Fire Safety – Home Fire Safety Check & Smoke Alarm status

Smoke Alarm Status	HFSC Received		Total
	Yes	No	
Fitted & Actuated	4	4	8

⁴ Though not featured in this report, an analysis into injuries resulted from Accidental Secondary Fires was performed, and identified that there was no significant increase in injuries during the winter months of 2022/23. Looking at overall counts of Accidental Dwelling Fire, during December there were marginally elevated counts of incidents however by January overall counts were below expected levels.

Fitted & Battery Flat	1 ⁵		1
Total	5	4	9

Table 4 identifies that in the majority of cases there operational smoke alarms fitted in the properties, with only 1 property not having a functional smoke alarm. Overall 5 of the 9 properties were visited by fire & rescue personnel prior to the fatal incidents.

7. *Information Sharing & Identification of those at fire risk*

Merseyside Fire and Rescue Authority (MFRA) continues to work closely with key partners to ensure that the risk of fire is reduced within the community.

To identify those at risk of fire, a key area of work has been through establishing and agreeing information sharing protocols with a number of key partners. These protocols have ensured that there is a formal legal framework to share information securely.

By establishing these protocols and receiving this data, staff within MFRA can engage with vulnerable people who are already known by other professionals. This has greatly assisted in identifying those who are most vulnerable to the risks associated with fire.

Home Safety Advocates and other staff who deal directly with the most vulnerable people within the community have outlined that without the secure sharing of data, MFRA would find it more difficult to find out about and **engage** with a person at high risk of fire.

MFRA Home Safety Strategy primarily focuses on individuals aged over 65 years old and through the use of NHS GPs over-65s data and the Authority targets people from that age range that also have either needs that place them at higher risk of fire, or have not been visited by MFRA in the last 24 months. More recently, the strategy has been adjusted to also include those who also live in the most deprived areas of Merseyside.

Moving forward; MFRA is working to incorporate CIPHA⁶ data available from the NHS into future targeting of home visits. The ambition is to use data to identify people at greatest risk so that interventions can be introduced before a fire takes place.

⁵ In this case the initial visit occurred in 2017. Follow up visits were rejected in subsequent years by the occupier

⁶ <https://www.cipha.nhs.uk/>

Appendix A: Comparison against Injuries in Accidental Dwelling Fires

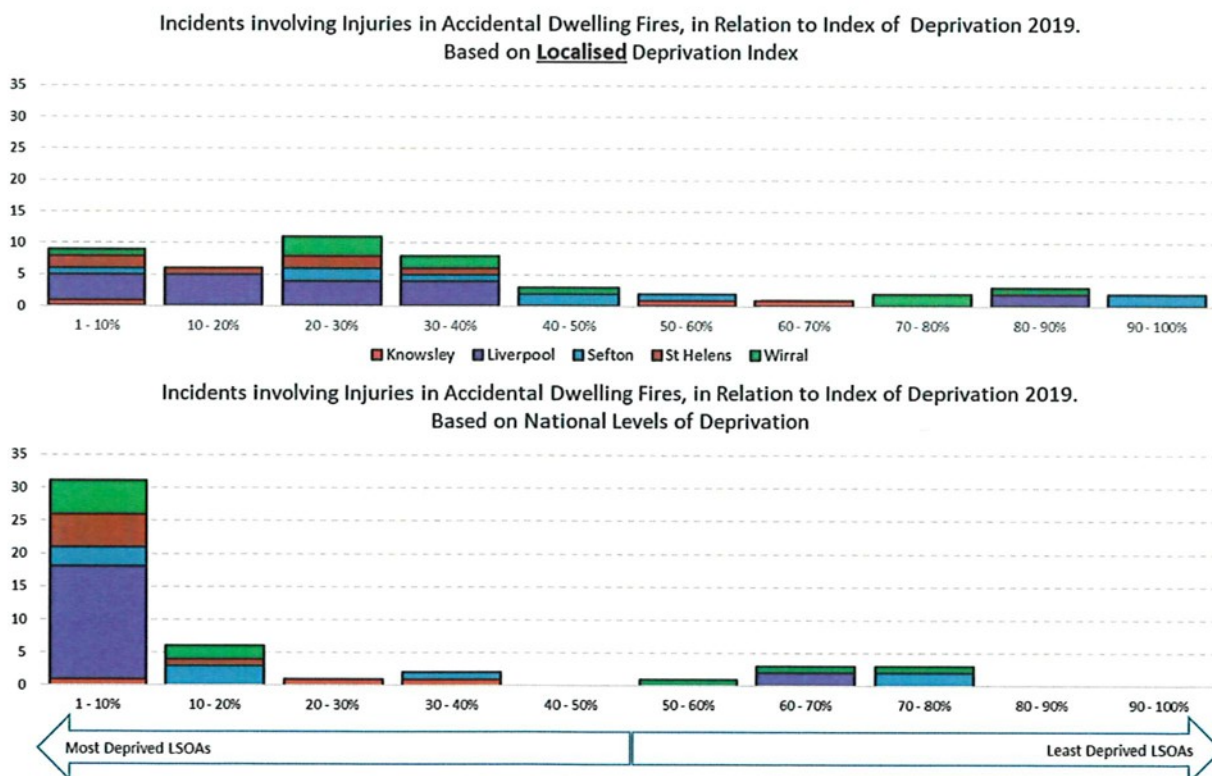
Though every death is a tragedy, the learning from such an occurrence is incorporated into our future planning where we aim to avoid any further deaths by implementing initiatives and activities to target individuals at greatest risk. Though the fatality data is key in identifying risk trends, it is not the only piece of data that is considered. Injury data from accidental dwelling 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.

Table 5: Ratio of Accidental Dwelling Fire Incidents to Injury Incidents during 2022/23

Counts	Knowsley	Liverpool	Sefton	St Helens	Wirral	Total
ADF involving injury	3	19	9	6	10	47
Accidental Dwelling Fires	76	309	152	77	165	779
Ratio	1:25	1:16	1:17	1:13	1:17	1:17
Overall Injuries	3	27	10	10	19	69

Table 5 provides the ratios of incidents where injuries have occurred. The table shows that fire injuries occurred less frequently in Knowsley, with a ratio of 1 injury for every 25 incidents. Sefton and Wirral had the next lowest ratio of 1 injury per 17 incidents, this was then followed by Liverpool and St Helens.

Chart 5: Accidental Dwelling Fires Injury incidents during 2022/23 in relation to Indices of Deprivation (IOD) 2019



Like Chart 3 earlier in this report, Chart 5 identifies that scrutiny of national IOD data indicates 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.