



# **Analysis of Fatalities in Accidental Dwelling Fires between 1<sup>st</sup> April 2020 and 31<sup>st</sup> March 2021**

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

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**STRATEGY & PERFORMANCE  
PREVENTION**

***Date work received: 01/04/2021***  
***Date work completed: 16/04/2021***

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## **1. Agreement**

For the purpose of this report the following agreement was made between the client and the Strategy and 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 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 2020, 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 2021.

The final report, which will always be in PDF format, would be produced by May 2021,

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<sup>1</sup> Deb Appleton

subject to receiving comments.

## **2. Summary**

The purpose of this report is to provide an analysis regarding the circumstances of fatalities in accidental dwelling fires across Merseyside during 2020/21. In summary, the findings within this report are as follows:

- During 2020/21, there were 7 fatalities as a result of accidental dwelling fires, an increase of 2 on the previous year.
- When broken down by district, there were: 4 in Sefton, 2 in Knowsley and 1 in St Helens. The fatalities in Knowsley and St Helens are the first deaths to have taken place in those districts in over 5 years. There were 0 fatalities in Wirral, the first time this has occurred in over 10 years as well as 0 in Liverpool.
- The ages of the victims ranged between 37 and 81, with 2 victims being above the age of 65 and 5 above the age of 60.
- Concerning sex; 3 victims were female and 4 were male. In terms of racial profile, all 7 were White British.
- Based on the National Index of Multiple Deprivation, 5 victims resided in high deprivation neighbourhoods.
- Taking ignition source into account; 1 was linked to the careless use of a heating appliance, 5 were related to smoking material and 1 was the result of burning refuse in the garden.
- 6 of the 7 households had previously received a Home Fire Safety Check
- Within the 6 properties to have previously received a Home Fire Safety Check, the smoke alarm actuated on 4 occasions, it was unknown whether or not it had actuated in the remaining 2. The Smoke alarm failed to actuate in 1 incident due to the positioning of the alarm and lack of smoke in its vicinity.

## **3. Introduction**

This report analyses fire related fatalities across Merseyside during 2020/21. 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 where people died as a result of an accidental dwelling fire during 2020/21. 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: April 2020 Sefton**

The deceased was a 62-year-old female, who was the sole inhabitant of the flat where she lived; the victim was alone at the time of the incident. At 05:09 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not received a Home Fire Safety Check before the fire; the property did however have smoke alarms fitted, but they failed to actuate due to being positioned in the hallway where too little smoke was available to set off the detector<sup>2</sup>. The fire occurred in the living room with the victim being located in the same room. The suspected cause of the fire was due to a carelessly discarded cigarette igniting upholstery on a chair.

### **Case 2: April 2020 Sefton**

The deceased was a 63-year-old male, who cohabited in the bungalow where he lived; the victim was not alone in the property at the time of the incident. At 02:05 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, though it is unknown whether or not the smoke alarm actuated during the incident. The fire occurred in the living room with the victim being located in the same room. The victim survived the initial incident, though succumbed to his injuries at a later time. The suspected cause of the fire was due to the victim collapsing on to a lit gas fire.

### **Case 3: May 2020 Sefton**

The deceased was an 81-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 18:03 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 garden with the victim burning refuse, the victim accidentally set himself on fire, which then spread to a lean-to attached to the property, the victim was found in the garden.

### **Case 4: May 2020 St Helens**

The deceased was a 76-year-old male, who was the sole inhabitant of the sheltered housing flat where he lived; the victim was alone at the time of the incident. At 12:48 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

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<sup>2</sup> The Smoke Alarm actuated when Firefighters entered the room where the fire took place – though this was too late for the victim

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 same room. The suspected cause of the fire was due to a carelessly discarded cigarette igniting upholstery on a chair.

#### **Case 5: January 2021 Knowsley**

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 14:09 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 same room. The suspected cause of the fire was due to a carelessly discarded cigarette igniting upholstery on a chair.

#### **Case 6: January 2021 Sefton**

The deceased was a 37-year-old female, who was the sole inhabitant of the flat where she lived; the victim was alone at the time of the incident. At 04:33 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, it is unknown whether or not the smoke alarm actuated. The fire occurred in the bedroom with the victim being located in the adjoining hallway. The suspected cause of the fire was due to a carelessly discarded cigarette igniting bedding.

#### **Case 7: February 2021 Knowsley**

The deceased was a 62-year-old female, who was the sole inhabitant of the terraced house where she lived; the victim was alone at the time of the incident. At 07:34 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 bedroom, with the victim being located in the same room - this bedroom was a converted living room. The suspected cause of the fire was due to a carelessly discarded cigarette igniting bedding on the cot that victim slept in.

## **5. Methodology**

This research was undertaken initially by analysing the data held and managed by the Merseyside Fire and Rescue Authority (MFRA) Incident Investigation Team (IIT).

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 place<sup>3</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 is merged with fatality incident data and analysed.

The Index of Deprivation 2019 was obtained from the Ministry for Housing, Communities and Local Government.

The software used to complete the analysis, was Microsoft Office Excel 2016 and MapInfo Professional 11.0 for filtering and mapping the data.

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<sup>3</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

## 6. Results

### 6.1 Retrospective

#### Long Time Series Analysis

Chart 1: Long Time Series of fatalities in Accidental Dwelling Fires between 1991/92 and 2020/21

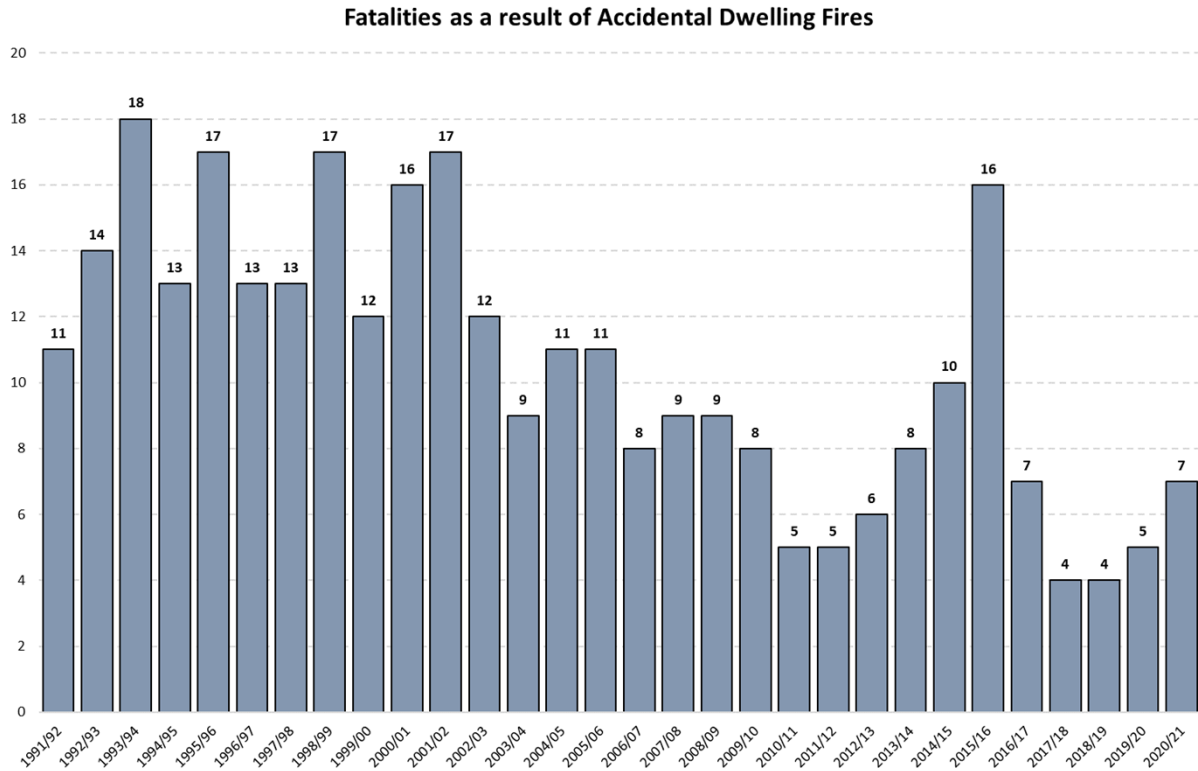


Chart 1 provides a count of accidental dwelling fire fatalities between 1991/92 and 2020/21. What is evident is that over this period, fatalities on the whole have reduced.

In recent years, 2015/16 resulted in 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 – and again during 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.

During 2020/21, there were 7 victims.

## 10 Year Retrospective

Chart 2: Fatalities in Accidental Dwelling Fires between 2011/12 and 2020/21 by district

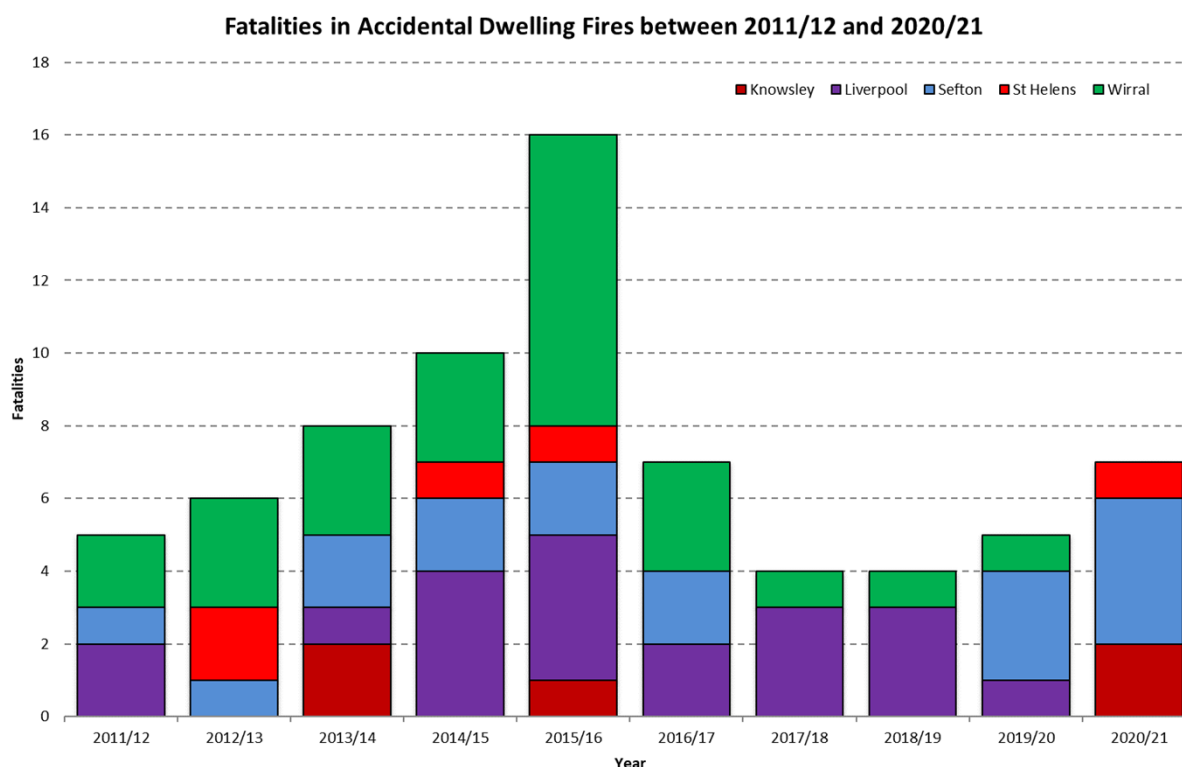


Chart 2 identifies that since 2015/16, when 16 fatalities occurred, there have been sizeable reductions. There were record lows of 4 fatalities, during both 2017/18 and 2018/19. Since 2018/19, there have been increases, with 5 during 2019/20 and 7 during 2020/21.

When analysed by district, the counts vary, though Wirral is consistent in having fire deaths in the majority of years. Over the 10-year period, 2020/21 is the first year to see no fire deaths in Wirral. Liverpool has fluctuated between the years under review, but saw no fire deaths during 2020/21, the first time since 2012/13. Sefton saw no fatalities during the years 2017/18 and 2018/19, however this trend has seen an upturn since 2019/20 with 3 fatalities taking place in that year, followed by 4 during 2020/21. The Local Authority districts of Knowsley (2) and St Helens (1) saw their first fire deaths since 2015/16.

## 6.2 Spatial Analysis

Table 1: Ratio of Accidental Dwelling Fire Incidents to Fatal Incidents during 2020/21

Counts	Knowsley	Liverpool	Sefton	St Helens	Wirral	Total
Overall Fatalities	2	0	4	1	0	7
Accidental Dwelling Fires	98	309	154	83	154	798
Ratio	1:49	0:309	1:39	1:83	0:154	1:114

Table 1 provides the ratio of accidental dwelling fire incidents against related fire deaths across Merseyside. The table identifies that Sefton had the highest ratio of incidents to



fatalities with 1 fatal fire per 39 incidents, Knowsley had 1 fatal fire per 49 incidents and St Helens had 1 fatality per 83 incidents. As previously mentioned there have been no accidental dwelling fire fatalities in Liverpool or Wirral during 2020/21.

## Deprivation Analysis

Chart 2: Accidental Dwelling Fires Fatal incidents during 2020/21 in relation to Indices of Deprivation (IOD) 2019

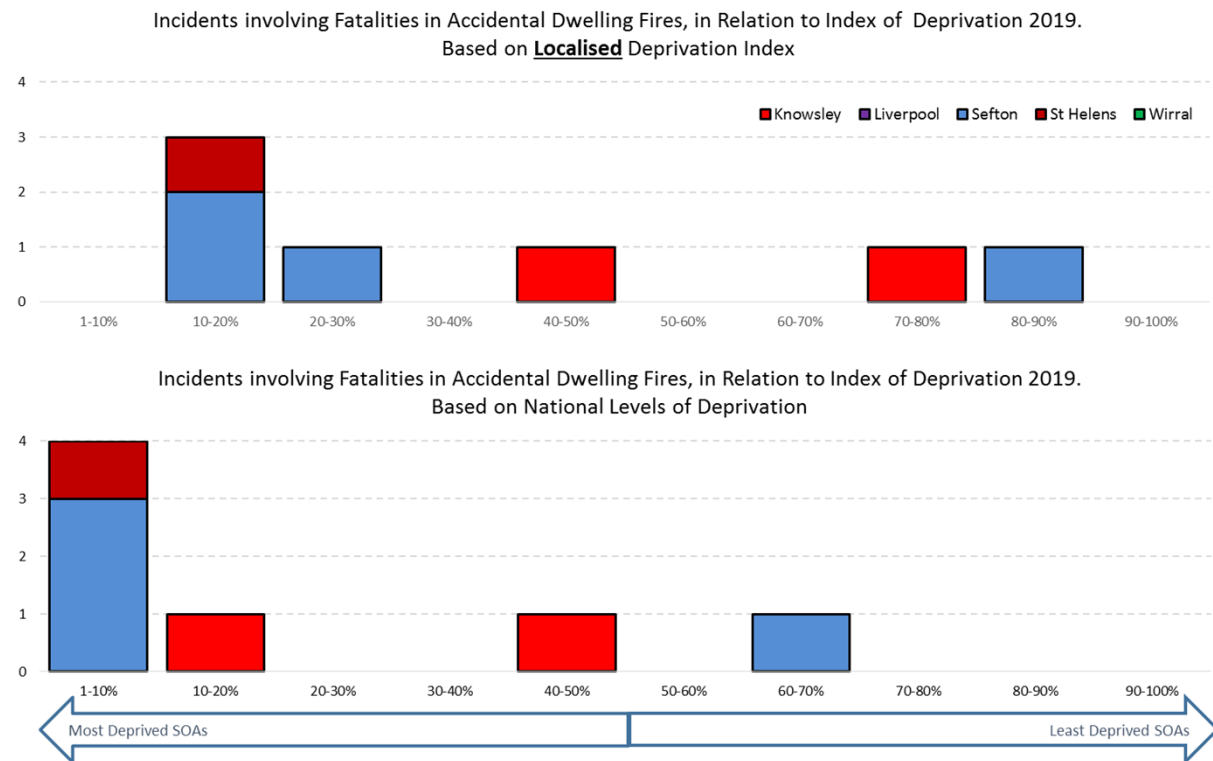


Chart 2 analyses the levels of deprivation where an incident involving a fatality took place, based on:

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

When levels of deprivation are applied locally (upper stacked bar chart), the data shows that the majority of fatal fire incidents occur within the 50% most deprived deciles locally, with 2 occurring in the 50% least deprived deciles.

When levels of deprivation are applied at a national level (lower stacked bar chart), it clearly identifies that the majority of fatal incidents occur within the most deprived areas. Please note there is skewing due to Merseyside, as a whole being one of the most deprived counties in England.

## 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
	Living Room	Bedroom	Hallway	Garden	
Living Room	4				4
Bedroom		1	1		2
Garden				1	1
<b>Total</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>7</b>

Concerning the fire room of origin, 4 incidents started in the living room, 2 in the bedroom, and 1 in the garden. In 6 incidents the victim was located by MFRA operational crews in the room of origin.

Table 3: Fire room of origin and ignition source<sup>4</sup>

Room of Ignition	Cause			Total
	Smoker's Materials	Careless Use Of Heating Appliance	Burning Refuse	
Living Room	3	1		4
Bedroom	2			2
Garden			1	1
<b>Total</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>7</b>

Table 3 provides a breakdown of the ignition sources in relation to the room where the incident took place. The table identifies, that within the living room, 3 victims perished as a result of smoker's materials, with further 1 victim dying as the result of the careless use of a heating appliance. 2 victims within the bedroom perished as a result of smoker's materials and the final victim dying in the garden whilst burning refuse.

### The Victims

- There were 4 male and 3 female victims.
- The male victims were: 56, 63, 74 and 81 years of age. The 63-year-old cohabited. The female victims were: 62, 62 and 63.
- All 7 victims were White British.

### Temporal Analysis

- Fatalities took place during the months of: April \* 2, May \*2, January \* 2 and February. No fatalities took place during Summer and Autumn months.
- Incidents took place during the following hours: 02:00 - 02:59, 04:00 - 04:59, 05:00 - 05:59, 07:00 - 07:59, 12:00 - 12:59, 14:00 - 14:59 and 18:00 - 18:59.

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

## 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
Fitted Unknown if Actuated	2		2
Fitted & Did Not Actuated		1	1
Total	6	1	7

Table 2 identifies that 6 of the properties received a Home Fire Safety Check (HFSC), with 1 had not. Concerning properties where a HFSC took place; in 4 cases a smoke alarm was fitted and actuated, and in 2 cases it was unknown if it had actuated. Concerning the property that did not have a HFSC, there was a smoke alarm fitted but failed to operate due to the placement of the smoke alarm.

## 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.

Community 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 Exeter Data the Authority has targeted individuals from that age range that also have either associated adult social needs or have not been visited by MFRA in the last 24 months. More recently, the strategy has been developed to include those who also live in the most deprived areas of Merseyside. MFRA regularly review the information sharing protocols in place and the use of secure technology (AVCO) ensures that MFRA securely receives electronic data from partner agencies.

## Appendix A: Comparison against Injuries in Accidental Dwelling Fires

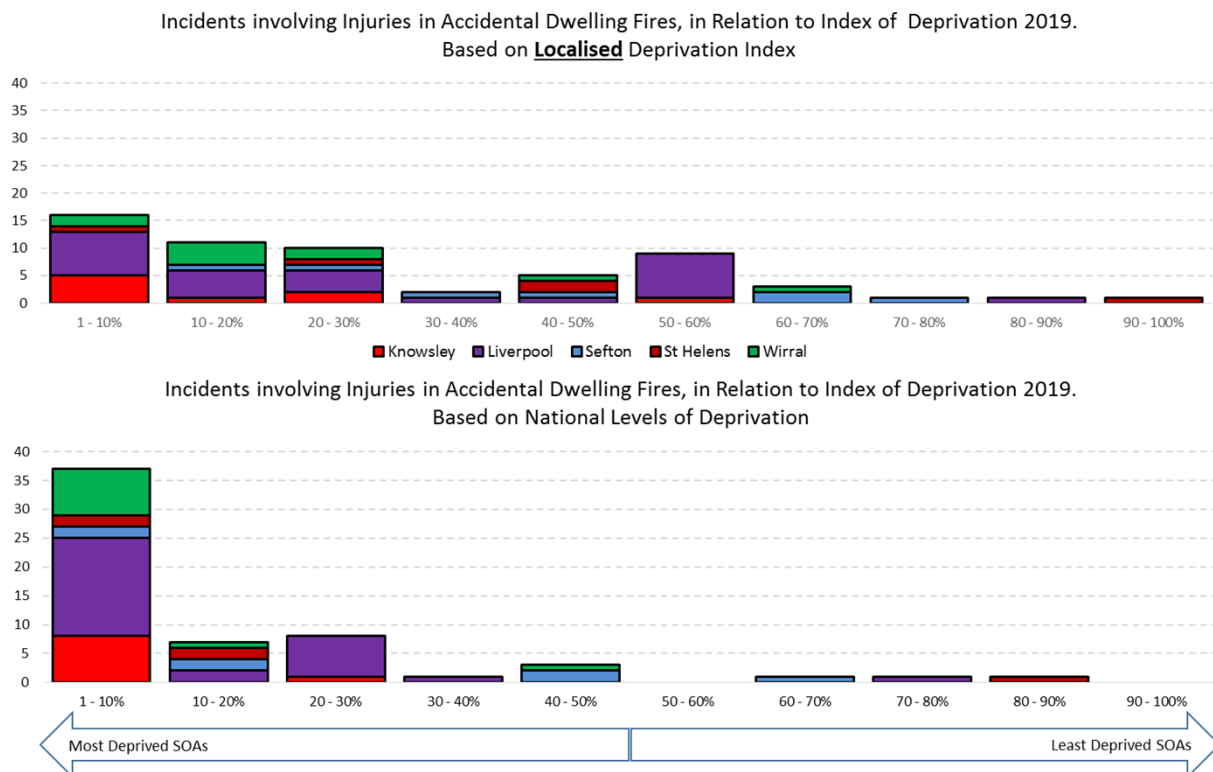
Though every death is a tragedy, the learning from such an occurrence is incorporated into our future planning where we aim to avoid any further deaths by implementing initiatives and activities to target individuals at greatest risk. Though the fatality data is key in identifying risk trends, it is 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 2020/21

Counts	Knowsley	Liverpool	Sefton	St Helens	Wirral	Total
ADF involving injury	8	21	7	5	7	48
Accidental Dwelling Fires	98	310	154	83	154	799
Ratio	1:12	1:15	1:22	1:17	1:22	1:17
Overall Injuries	9	28	7	5	10	59

Table 5 provides the ratios of incidents where injuries have taken place. The table shows that Sefton had the joint lowest proportion of injuries, while having the greatest number of deaths. Knowsley saw the highest ratio of injuries to incidents, but saw the second highest count of deaths.

Chart 3: Accidental Dwelling Fires Injury incidents during 2020/21 in relation to Indices of Deprivation (IOD) 2019



Like Chart 2 earlier in this report, Chart 3 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.