



Analysis of Fatalities in Accidental Dwelling Fires between 1st April 2016 and 31st March 2017

**TO BE PRESENTED TO:
Authority
Strategic Management Group**

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**STRATEGY & PERFORMANCE
COMMUNITY RISK MANAGEMENT**

Document Control

Amendment History

Version / Issue No.	Date	Author	Remarks / Reason for Change
1.0	25/05/2017	J Fielding	
1.1	30/05/2017	J Fielding	Following comments from D Appleton and G Oakford

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Name	Position	I / R
Strategic Management Group		
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Related Documents

Reference No.	Title	Author	Version & Date
1	Analysis of Fatalities in Accidental Dwelling Fires between 1 st April 2015 and 31st March 2016	J Fielding	V1.4 02/06/2016
2	Historical Analysis of Fatalities in Accidental Dwelling Fires between 2007/08 and 2016/17	J Fielding	PENDING

Ownership

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If No please state reason why:

1. AGREEMENT	4
2. SUMMARY	5
3. INTRODUCTION	6
4. CASE STUDIES	6
5. METHODOLOGY	8
6. RESULTS	10
6.1 Fatal Victims of Accidental Dwelling Fires	10
6.1.1 Retrospective	10
6.1.2 Spatial Analysis of Accidental Dwelling Fire Fatalities	11
6.1.3 Victim Location Analysis	12
6.1.4 Demographic Analysis	13
6.2 Incident Related Analysis	14
6.2.1 Analysis of Fatalities by Deprivation	14
6.2.2 Incidents by Month	15
6.2.3 Ignition Source by Room of Origin	15
6.2.4 Fire Safety	16
6.3 Response	16
7. INFORMATION SHARING & IDENTIFICATION OF THOSE AT FIRE RISK	16

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 Guy Keen and received on 01/04/2017.

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 2017, 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 2017.

The final report, which will always be in PDF format, would be produced by May 2017, 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 2016/17.

In summary the findings within this report are as follows:

Victim Analysis

- During 2016/17, there were 7 fatalities as a result of accidental dwelling fires, 9 fewer than in 2015/16, when 16 took place. The 7 deaths occurred as a result of 6 actual incidents with 1 incident resulting in a double fatality.
- The 7 deaths that took place during 2016/17, is the lowest number since 2013/14, when 8 deaths took place.
- Concerning accidental dwelling fire fatalities, by district there were: 3 in Wirral and 2 in both Liverpool and Sefton. Knowsley and St Helens did not have any fire fatalities.
- When aggregated to fatalities per 100,000 population, Wirral had the highest rate of fire deaths at 0.93 deaths per 100,000 population. The rate for Merseyside as a whole was 0.5 deaths per 100,000 population.
- Of the 7 fatalities; 4 victims lived alone. Overall 5 victims were alone at the time of the incident.
- Concerning the ages of the victims, 5 were above the age of 75, with 2 between the ages of 45 - 49.
- Concerning gender; 2 victims were female, with 5 being male and in terms of racial profile, all 7 were reported as being White British

Incident Analysis

- Based on the National Indices of Multiple Deprivation, 5 of the 6 fatalities were located in areas that were within the 50% most deprived Super Output Areas in England.
- Of the 6 incidents where fatalities occurred; 3 were linked to smoking materials, 2 incidents were related to the careless use of heating appliances and 1 incident was related to an electrical fault.
- Merseyside Fire & Rescue Service had been in contact with occupants at 3 of the 6 dwellings affected, with 2 completed HFSC's and 1 refused entry.
- Concerning Smoke Alarms; within 4 dwellings a smoke alarm was in situ, however on 2 occasions it was unknown whether any smoke alarms had been fitted due to the level of damage in each incident. The status of smoke alarm actuation is as follows:
 - 3 had smoke alarms fitted which actuated,
 - 1 had a smoke alarm fitted, though it was unknown if it had actuated
 - 2 were unknown
- Concerning operational response, for the incidents where it is valid to measure the attendance time of the first attending fire appliance, the 10 minute attendance standard was achieved in each case.

3. Introduction

This report analyses fire related fatalities across Merseyside during 2016/17. The focus of this report reviews 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 Community Risk Management 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 2016/17. 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.

Please note: within the following case studies only incidents which were NOT regarded as being a Late Fire Call² have a valid Operational Response Time.

Case 1: Inquest Complete – Sefton – August 2016

The deceased was a 45 year old male, who was the sole inhabitant of the converted property in which he lived; the deceased was alone at the time of the incident. At 05:18 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not previously had a Home Fire Safety Check and given the severe level of damage to the property; it is unknown whether a smoke alarm had been fitted in the property. The fire occurred in the kitchen, with the deceased being found in the bedroom. The suspected cause of the fire was due to an electrical fault in the kitchen.

Concerning the operational response to the incident, the first fire appliance attended in 9 minutes 51 seconds – this is within the 10 minute attendance standard for Merseyside Fire & Rescue Service.

Case 2: Inquest Complete – Wirral – October 2016

The deceased was an 88 year old female, who cohabited within a terraced dwelling in which she lived. At 22:42 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check and smoke alarms actuated within the property at the time of the incident. The fire occurred within the living room, with the deceased being found in the same room. The suspected cause of the fire was a result of the victim playing with a cigarette lighter,

² A late fire call is where a fire is known to be extinguished when the call was made (or to which no call was made e.g. a fire comes to the attention of the FRS as a result of a press report or inquest). Source: IRS Guidance v2.4
A late fire call can also be alerted to the Fire and Rescue Service by a partner agency including: Police, Ambulance or other.

which accidentally ignited bedding from a single bed, which had been placed in the room.

Concerning the operational response to the incident, the first fire appliance attended in 2 minutes 53 seconds – this is within the 10 minute attendance standard for Merseyside Fire & Rescue Service.

Case 3: Inquest Complete – Liverpool – October 2016

The deceased was a 72 year old male, who cohabited within a semidetached house; the deceased perished along with his partner at the time of the incident. At 15:38 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not previously had a Home Fire Safety Check - as the occupiers had refused entry to the property on a previous visit. Given the severe level of damage to the property; it is unknown whether there were any fitted smoke alarms. The entire property was engulfed in the fire, with excess levels of hoarded materials contributing to the extreme levels of damage. Following the fire investigation, it was determined that the fire started in the living room, with the deceased being found in the same room. The suspected cause of the fire was due to an electrical heater being placed too close to combustible materials igniting them.

Concerning the operational response to the incident, the first fire appliance attended in 8 minutes 19 seconds – this is within the 10 minute attendance standard for Merseyside Fire & Rescue Service.

Case 4: Inquest Complete – Liverpool – October 2016

The deceased was a 75 year old female, who cohabited within a semidetached house; the deceased perished along with her partner at the time of the incident. At 15:38 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not previously had a Home Fire Safety Check - as the occupiers had refused entry to the property on a previous visit. Given the severe level of damage to the property; it is unknown whether there were any fitted smoke alarms. The entire property was engulfed in the fire, with excess levels of hoarded materials contributing to the extreme levels of damage. Following the fire investigation, it was determined that the fire started in the living room, with the deceased being found in the same room. The suspected cause of the fire was due to an electrical heater being placed too close to combustible materials igniting them.

Concerning the operational response to the incident, the first fire appliance attended in 8 minutes 19 seconds – this is within the 10 minute attendance standard for Merseyside Fire & Rescue Service.

Case 5: Inquest Pending – Sefton – October 2016

The deceased was a 45 year old male, who was the sole inhabitant of the flat in which he lived; the deceased was alone at the time of the incident. At 13:40 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not previously received a Home Fire Safety Check, although fire alarms were installed - which actuated at the time of the incident. The fire occurred within the bedroom, with the deceased being found in the same room. The suspected cause of the fire was as a result of a carelessly dropped cigarette, igniting bedding at the time of the incident.

Case 6: Inquest Complete – Wirral – November 2016

The deceased was a 76 year old male, who was the sole inhabitant of the flat in which he lived; the deceased was alone at the time of the incident. At 08:51 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had previously received a Home Fire Safety Check, with installed fire alarms - which actuated at the time of the incident. The fire occurred within the bedroom, with the deceased being found in the same room. The suspected cause of the fire was as a result of a carelessly dropped cigarette, igniting bedding and clothing at the time of the incident.

Concerning the operational response to the incident, the first fire appliance attended in 00:08:06 – this is within the 10 minute attendance standard for Merseyside Fire & Rescue Service.

Case 7: Inquest Pending – Wirral – March 2017

The deceased was a 71 year old male, who was the sole inhabitant of the flat in which he lived; the deceased was alone at the time of the incident. At 12:31 hrs, Merseyside Fire & Rescue Service received a call to attend the incident. The property had not previously received a Home Fire Safety Check, but there were smoke alarms fitted, though it is unknown whether they actuated. The fire occurred within the living room with the deceased being found in the same room. The suspected cause of the fire was as a result of an electrical heater being knocked over; igniting the curtains.

In summary there were 7 fatalities in accidental dwelling fires, as a result of 6 incidents.

5. Methodology

This research was undertaken initially by analysing the data derived from the databases held and managed by the MFRA Incident Investigation Team (IIT).

Fire fatalities include any fatal casualty which is 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.

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 Authority still measure this as Key Performance Indicator DC12. Qualification for this performance indicator is decided by members of Merseyside Fire and Rescue Authority Incident Investigation Team (IIT) and the coroner.

Population figures are based on Mid-2015 population estimates as provided by Office for National Statistics.

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

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

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

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

Indices of Multiple Deprivation 2015 (IMD 2015) has been used to measure the levels of deprivation where fire fatalities took place³.

The IMD2015 data was then analysed in two ways:

- At a local level the IMD 2015 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 IMD 2015 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 Indices of Multiple Deprivation 2015 were obtained from the Department for Communities and Local Government.

The software used to complete the analysis, was Microsoft Office Excel 2013 and MapInfo Professional 11.0 for filtering and mapping the data.

³ IMD 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 Fatal Victims of 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 during 2016/17 there were 7 victims and as such the following tables and charts all equate to this figure.

6.1.1 Retrospective

Long Time Series Analysis

Chart 1: Long Time Series of fatalities in Accidental Dwelling Fires between 1991/92 and 2016/17

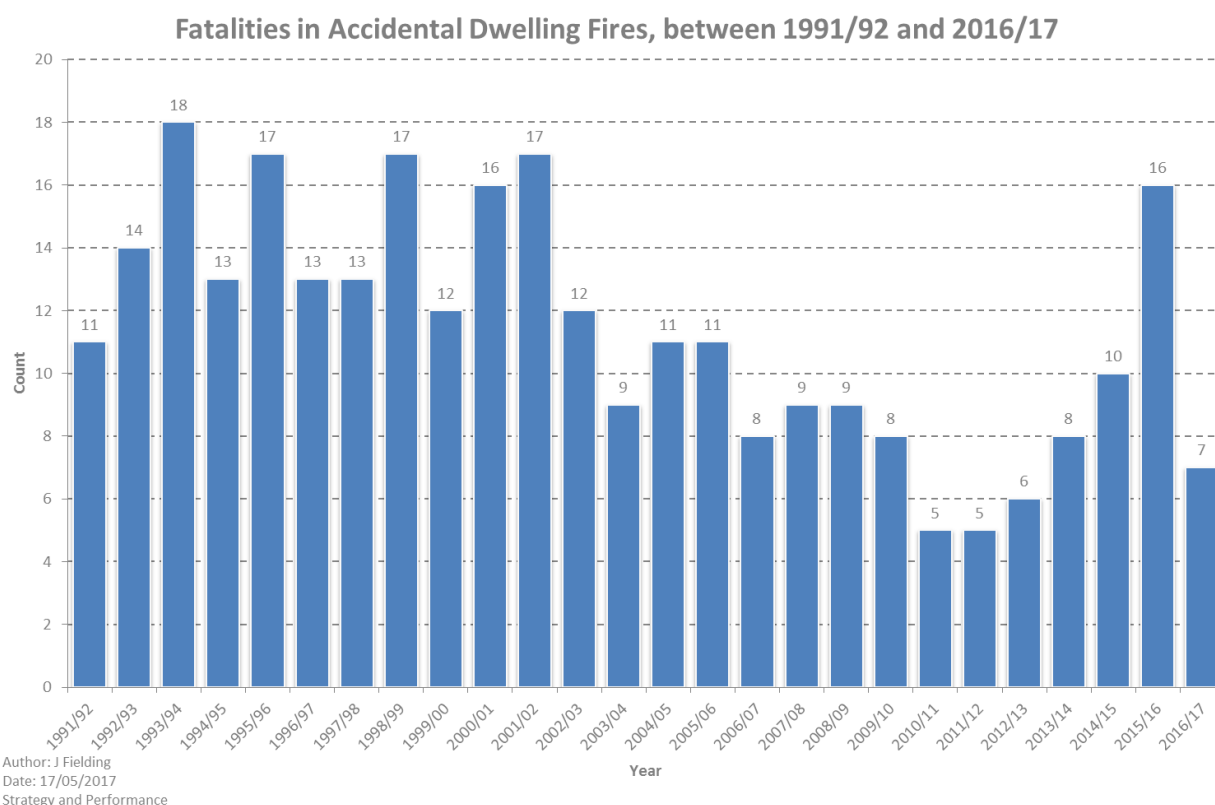


Chart 1 provides a count of accidental dwelling fire fatalities between 1991/92 and 2016/17. The chart identifies that 2015/16 resulted in the greatest number of fire fatalities within recent years - though there were higher figures in the past. Over the 26 year period, 1993/94 had the highest count of fatalities with 18, followed by 1995/96, 1998/99 and 2001/02 with 17 each. During 2016/17, there has been a reduction in incidents when compared to the 3 years prior, with 7 deaths, therefore breaking the upward trend.

Chart 2: Fatalities in Accidental Dwelling Fires between 2012/13 and 2016/17 by district

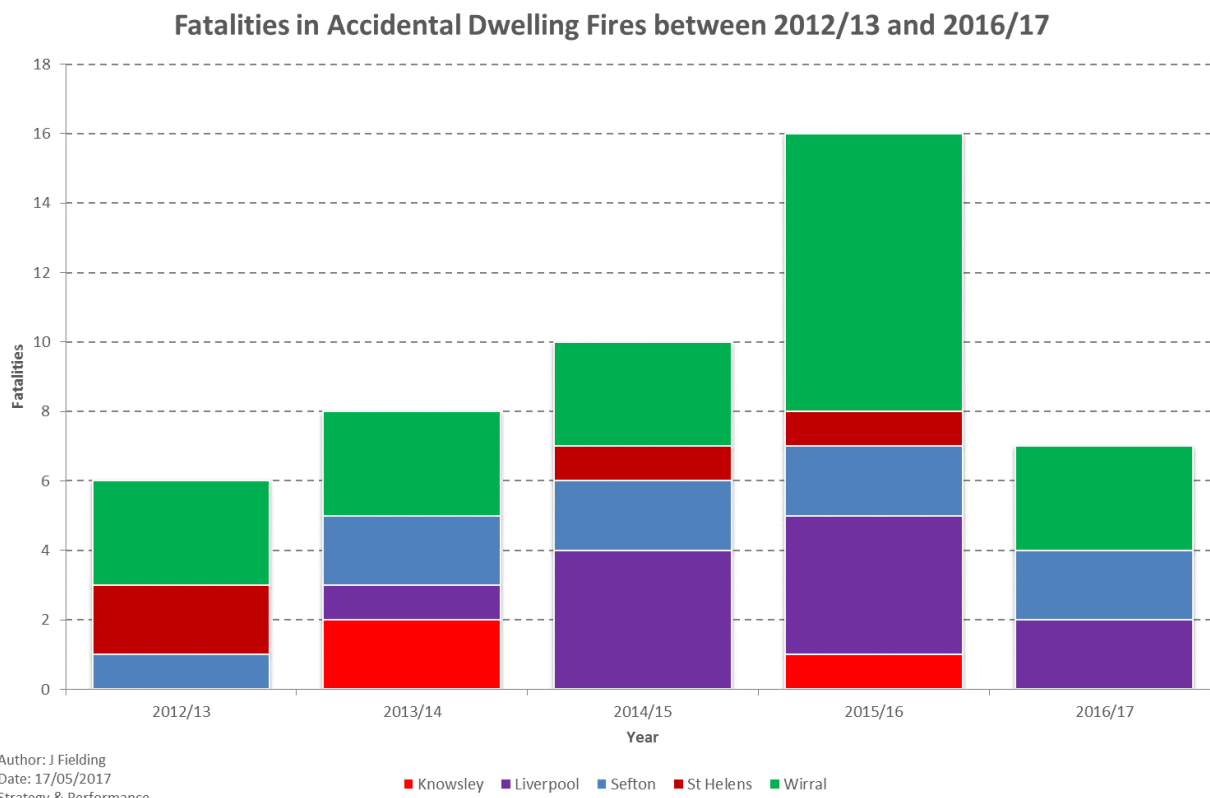


Chart 2 identifies, accidental dwelling fire fatalities were increasing year on year since 2012/13, reaching a high of 16 during 2015/16. The year 2016/17 saw 7 fatalities which is 9 less than the year before

When analysed over five years, the counts for each district varies, though Wirral is consistent in having high counts of fire death. Sefton consistently has between 1 and 2 dwelling fire fatalities, with Liverpool fluctuating between the years. During 2016/17, the districts of Knowsley and St Helens did not have any fatalities.

6.1.2 Spatial Analysis of Accidental Dwelling Fire Fatalities

Table 1: Accidental Dwelling Fire Fatalities in 2016/17, by District, Ward & Population

District	Total Fatalities	District Population	Deaths Per 100,000 Population	Ward	Fatalities by ward
Knowsley	0	147231	0.00	-	0
Liverpool	2	478580	0.42	Cressington	2
Sefton	2	273707	0.73	Harington	1
				Dukes	1
St Helens	0	177612	0.00	-	0
Wirral	3	320900	0.93	Liscard	1
				Birkenhead & Tranmere	1
				Claughton	1
Total	7	1398030	0.50		7

Table 1 provides a breakdown of fatalities by district and ward. Wirral had the greatest quantity of deaths with 3, equating to 0.93 deaths per 100,000 population – approximately double the average for Merseyside (0.5 deaths per 100,000 population). Liverpool and Sefton follow with 2 deaths each, equal to 0.42 deaths per 100,000 population in Liverpool and 0.73 deaths per 100,000 in Sefton. Knowsley and St Helens did not have any accidental dwelling fire deaths during 2016/17

Table 2: Ratio of Accidental Dwelling Fire Incidents to Fatalities during 2016/17

Counts	Knowsley	Liverpool	Sefton	St Helens	Wirral	Total
Overall Fatalities	0	2	2	0	3	7
Accidental Dwelling Fires	92	355	212	122	212	993
Ratio	0	1:178	1:106	0	1:71	1:142

Table 2 provides the ratio of the number of accidental dwelling fire incidents to fire deaths across Merseyside. The table identifies that Wirral had the highest ratio of incidents to fatalities with 1 death per 71 incidents, Liverpool by comparison saw 1 death per 178 incidents.

6.1.3 Victim Location Analysis

Table 3: Fatalities by Fire Room of Origin against Victim Location

Location of Fire	Location of Victim		Total Fatalities
	Living Room	Bedroom	
Living Room	4		4
Bedroom		2	2
Kitchen		1	1
Total Fatalities	4	3	7

Table 3 compares the room of fire origin against where the victim was located by emergency services⁴. The table identifies that the majority of the victims; 6 from 7, were found in the fire's room of origin (highlighted by the light blue cells). On 1 occasion the victim was located beyond the fire room of origin.

⁴ Please note: "Emergency Services" refers to Fire & Rescue Service, North West Ambulance and Police personnel. In the case of incidents of this nature the Fire & Rescue Service may not always be the first to attend and could be contacted later by another branch of the emergency services, this would be considered to be a late call.

6.1.4 Demographic Analysis

Table 4: Age, Gender of Fatalities and Sole Occupancy in Accidental Dwelling Fires during 2016/17

Age Group	Female	Male	Total Fatalities	Sole Occupant	Deaths Per 100,000 Population
45-49		2	2	2	2.11
70-74		2	2	1	3.39
75-79	1	1	2	1	3.98
85+	1		1		1.69
Total Fatalities	2	5	7	4	0.50

Table 4 provides the counts of accidental dwelling fire victims against: age, gender and whether they lived alone. Historic analysis has identified that individuals above the age of 65 have a greater chance of being involved in a dwelling fire which could prove to be fatal. This trend is reflected during 2016/17 with 5 of the 7 victims being above the age of 65.

When taking fatalities per 100,000 population into account, the 75-79 age group had the greatest number of fire deaths with 3.98 per 100,000 population ratio. Further analysis was conducted into whether there were concentrations of fatalities in areas where there were disproportionately more over 65's, but data does support this hypothesis.

Concerning whether the victim was the sole occupant of the property where they died, the table identifies that there were 4 occurrences where the victim lived alone. Also of note is that the youngest victims to live alone were within the 45-49 age group and that all the Sole Occupants were male.

Concerning racial origin of the deceased; all 7 were reported as being White British. Regarding gender; 5 were male, with 2 being female.

6.2 Incident Related Analysis

The following analysis is based on the count of incidents, not the count of victims – as in the previous sections. Therefore the following series of tables add up to 6 as this is the count of actual incidents.

6.2.1 Analysis of Incidents Involving Fatalities by Deprivation

Chart 3: Fatalities from Accidental Dwelling Fires in 2016/17 in relation to Indices of Multiple Deprivation (IMD) 2015



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

When levels of deprivation are applied locally (upper stacked bar chart), the data shows an unusual pattern with a fatal incident at each extreme of the deprivation scale, and the majority occurring within the moderate deciles between 31%-40% to 61%-70% (with a single fatal incident in each decile). 2016/17 differs from previous years; as normally the majority of fire deaths overwhelmingly occur within the 1-10% and 10-20% levels of deprivation, this year there are more deaths in areas with moderate levels of deprivation.

When levels of deprivation are applied at a national level (lower stacked bar chart), it is clear that the majority of fatal incidents occur within the 50% most deprived areas (5), though this skewing is due to Merseyside as a whole being one of the most deprived areas in England.

6.2.2 Incidents by Month

Table 5: Accidental Dwelling Fire Fatalities by Month

Quarter	Month	Total Incidents	Total Fatalities
Quarter 1	April		
	May		
	June		
Quarter 2	July		
	August	1	1
	September		
Quarter 3	October	3	4
	November	1	1
	December		
Quarter 4	January		
	February		
	March	1	1
Grand Total		6	7

Table 5 provides a temporal analysis of when incidents took place. The table identifies that based on incident counts, the month of October had the greatest number of incidents with 3. The months of: August, November and March each had 1 fatal fire incident. When analysed quarterly, Quarter 3 saw the greatest number of incidents with 4 and Quarter 2 and 4 having 1 fire incident each. Quarter 1 did not have any fatal fire incidents.

6.2.3 Ignition Source by Room of Origin

Table 6: Ignition Source by Room of Origin – based on incident counts

Fire - Room of Origin	Careless Use Of Heating Appliance	Electrical Fault	Smoking Materials	Total Incidents
Living Room	2		1	3
Bedroom			2	2
Kitchen		1		1
Total Incidents	2	1	3	6

Table 6 provides a breakdown of the fire room of origin as the general cause. The table identifies that the most common ignition source was in relation to Smoking Materials accounting for 3 incidents. Careless Use of Heating Appliance accounted for 2 incidents and 3 resultant deaths. An electrical fault was responsible for 1 fatal incident.

Taking the room of origin into account, the living room had the greatest number of ignitions accounting for 3 of the 6 incidents. This was then followed by the bedroom

with 2 ignitions and the kitchen with 1. Within the bedroom, Smoking Materials was responsible for both fatal incidents.

6.2.4 Fire Safety

Table 7: Fire Safety - HFSC & Smoke Alarm status

Smoke Alarm Status	HFSC Received			Total Incidents
	Yes	No	No - Refused	
Fitted & Operated	2	1		3
Fitted Unknown if operated		1		1
Unknown		1	1	2
Total Incidents	2	3	1	6

Table 7 identifies that 2 of the 6 properties affected had received a Home Fire Safety Check. Of the 2 properties to have had a HFSC; in both cases the fitted smoke alarms actuated.

Concerning smoke alarm ownership, 4 properties had a smoke alarm installed, though in 1 case it was unknown whether the alarm operated. On 2 occasions it was unknown as to whether there was a smoke alarm installed in either property, this is due in part to the high levels of fire damage at each property.

6.3 Response

Merseyside Fire & Rescue Service has a 10 minute response standard for attendance at life risk incidents. Life risk incidents include: dwelling fires, RTC's and other incidents where there is a possible risk to human life. This performance is managed through "TR08 Attendance Standard - First attendance of an appliance to a life risk incident within 10 minutes. As a % of all life risk incidents on 90% of occasions". With the exception of late fire calls (where the Fire & Rescue Service is contacted after the incident has taken place), in every case, MF&RS appliances were on scene within the attendance standard, (please see section 4 Case Studies for exact times where applicable).

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

Merseyside Fire and Rescue Authority 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 to fire.

Community Safety Advocates and other staff that 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 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 have 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. 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.