



Analysis of Fatalities in Accidental Dwelling Fires between 1st April 2014 and 31st March 2015

**AS PREVIOUSLY PRESENTED TO:
Authority
Strategic Management Group**

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**STRATEGY & PERFORMANCE
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Sign-Off List

Name	Position
Deb Appleton	Director of Strategy & Performance
GM Gary Oakford	Group Manager of Prevention and Protection
WM Tony Harland	Fire Investigation Officer (IIT)

Distribution List

Name	Position	I / R
Strategic Management Group		
Incident Investigation Team		
Fire Authority		

Related Documents

Reference No.	Title	Author	Version & Date
1	Analysis of Fatalities in Accidental Dwelling Fires between 1 st April 2013 and 31st March 2014	L Coles	V1.2 06/05/2014
2	Historical Analysis of Fatalities in Accidental Dwelling Fires between 2005/06 and 2014/15	L Coles	V1. ???

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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 Group Manager Gary Oakford and received on 01/04/2015.

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 2015, 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 2015.

The final report, which will always be in PDF format, would be produced by June 2015, 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 the fiscal year 2014/15.

In summary the findings within this report are as follows:

- During 2014/15 there were 10 fatalities in Accidental Dwelling Fires in Merseyside, 2 more than in 2013/14 and 5 more than during 2011/12.
- Concerning locations of Accidental Dwelling Fire Fatalities; there have been: 0 incidents in Knowsley, 4 in Liverpool, 2 in Sefton, 1 in St Helens and 3 in Wirral.
- Of the 10 fatalities; 3 were linked to smoking materials, 2 due to electrical fault, 2 were related to careless use of heating appliances, 2 fatalities were related to cooking practices, with the final fatality being related to candles.
- Concerning deprivation, 6 of the 10 fatalities took place within the 50% most deprived deciles of Merseyside – this suggests a possible link between deprivation and fire death. The use of Customer Insight Community Profiles backs this finding up with more deaths occurring in profiles associated with deprivation rather than affluence.
- During 2014/15, 5 of the fatalities occurred on a Friday.
- Of the 10 fatalities; 9 victims lived alone and were alone at the time of the incident.
- Of the 10 fire deaths; 7 occurred where the occupier was over 65 years of age.
- Regarding home smoke detection systems, 8 of the properties had received a Home Fire Safety Check, on 5 occasions the smoke alarm actuated, on 1 occasion the fitted smoke alarm had been disabled, on a further occasion a smoke alarm was fitted and did not operate and finally there was 1 occurrence where a HFSC was conducted though the victim had earlier refused to have a smoke alarm fitted.

3. Introduction

This report analyses fire related fatalities across Merseyside during the fiscal year 2014/15 (April 1st – March 31st). The primary focus of this report reviews fatalities that occurred as a result of an Accidental Dwelling Fire (ADF).

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

4. Case Studies

The following section outlines case studies where people have died as a result of an Accidental Dwelling Fire. 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: Inquest Complete - Liverpool - 07/04/2014

The deceased was a 48 year old female, who lived alone in a semi-detached property. At 14:31 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past four years and though there were smoke alarms fitted - they failed to actuate. Evidence was found that alcohol had been consumed preceding the incident. The fire occurred within the living room with the deceased found within the same room. The suspected cause of the fire was candles. The victim was alone at the time of the incident.

Case 2: Inquest Complete - Wirral - 05/08/2014

The deceased was a 62 year old male, who lived alone in a flat. At 11:43 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past two years with smoke alarms actuating within the property at the time of the incident. The fire occurred within the bedroom, with the deceased found in the living room. The suspected cause of the fire was an E-Cigarette on charge, where the appliance overheated - rupturing the Lithium battery inside. This caused deposits from the device to drop onto an oxygen tube that the deceased was using to assist breathing, this cut off the oxygen supply leading to hypoxia. The victim was alone at the time of the incident.

Case 3: Inquest Complete - Sefton - 08/08/2014

The deceased was a 43 year old male, who lived alone in a caravan. For the purposes of context the caravan was being stored within a commercial unit, as a caravan is a dwelling and the seat of fire; this incident is classified as an accidental dwelling fire. At 15:42 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. As the incident took place within a caravan stored within a commercial unit there would not have been a Home Fire Safety Check and therefore no smoke alarms. The fire occurred on the caravan's hob with the deceased found in the commercial unit. The suspected cause of the fire was as a result of food being left unattended. The victim was alone at the time of the incident

Case 4: Inquest Complete - Liverpool - 04/10/2014

The deceased was an 82 year old female, who lived alone in a flat. At 20:44 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past year with smoke alarms actuating within the property 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 smoking materials, where a match was dropped onto bedding. The victim was alone at the time of the incident.

Case 5: Inquest Complete - Liverpool - 31/10/2014

The deceased was an 87 year old male, who lived alone in a flat. At 15:40 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past year and a half; with smoke alarms actuating within the property at the time of the incident. The fire occurred within the living room with the deceased found in the kitchen of the property. The suspected cause of the fire was as a result of smoking materials igniting clothing which had been used to support a sofa which had partially collapsed through years of use. The victim was alone at the time of the incident.

Case 6: Inquest Complete - Wirral - 12/11/2014

The deceased was an 82 year old male, who cohabited within the semi-detached property where he lived. At 03:59 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past year with smoke alarms actuating within the property at the time of the incident. The fire occurred within the living room with the deceased found in the bedroom on the floor above. The suspected cause of the fire was radiated heat; where heat from a lamp's bulb ignited the lamp's shade. The victim was accompanied by his partner at the time of the incident.

Case 7: Inquest Complete - St Helens - 21/11/2014

The deceased was an 88 year old male, who lived alone in an end terraced dwelling. At 23:26 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property did not previously have a Home Fire Safety Check and there were no smoke alarms within the property. 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 radiated heat where bedding had been placed too close to a gas fire, which then ignited. The victim was alone at the time of the incident.

Case 8: Inquest Pending - Wirral - 13/02/2015

The deceased was a 78 year old male, who lived alone in a bungalow. At 10:18 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past year, however the occupier had refused to have smoke alarms installed. Evidence was found that alcohol had been consumed preceding the incident. The fire occurred within the living room with the deceased found in a wheelchair in situ. The suspected cause of the fire was smoking materials, where lighting fluid vapours ignited whilst the victim was filling his lighter. The victim was alone at the time of the incident.

Case 9: Inquest Complete - Liverpool - 25/02/2015

The deceased was an 87 year old male, who lived alone in a mid-terraced dwelling. At 00:21 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past five years and though there were smoke alarms fitted - they had been disabled. The fire occurred within the kitchen with the deceased found partially within the kitchen and outside. The suspected cause of the fire was cooking, where the victim's clothing caught fire whilst cooking. The victim was alone at the time of the incident.

Case 10: Inquest Pending - Sefton - 10/03/2015

The deceased was an 89 year old male, who lived alone in a semi-detached property. At 11:28 hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check within the past six years with smoke alarms actuating within the property at the time of the incident. The fire occurred within the living room with the deceased found in the same room. The suspected cause of the fire was as a result of bedding falling onto an electrical bar heater. The victim was alone at the time of the incident.

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).

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 level of performance as Key Performance Indicator 45. Qualification for this performance indicator is decided by members of Merseyside Fire and Rescue Authority Incident Investigation Team (IIT) and the coroner. Some data within this report is still awaiting coroner agreement and as such some figures are subject to change.

Population totals used in this report were obtained from the Office of National Statistics (ONS). The software used to complete the analysis, was Microsoft Office Excel 2013 and MapInfo Professional 11.0 for filtering and mapping the data.

Customer Insight Community Profile² (developed in conjunction with Liverpool John Moores University) data and IMD 2010 (CLG) were also used for Socio Demographic Analysis.

Population figures are based on Mid-2013 population estimates as provided by Office for National Statistics.

Microsoft Excel 2013 was used to interpret and graphically represent figures.

² The Customer Insight Community Profiles have been developed for the whole of the Merseyside area. The community profiles uses 130 local datasets aggregated to the 'Output Area' geography. These datasets are analysed and the results are a series of 10 profiles describing the characteristics and lifestyles of communities.

6. Results

6.1 Accidental Dwelling Fires

6.1.1 Retrospective

Chart 1: Fatalities in Accidental Dwelling Fires between 2010/11 and 2014/15

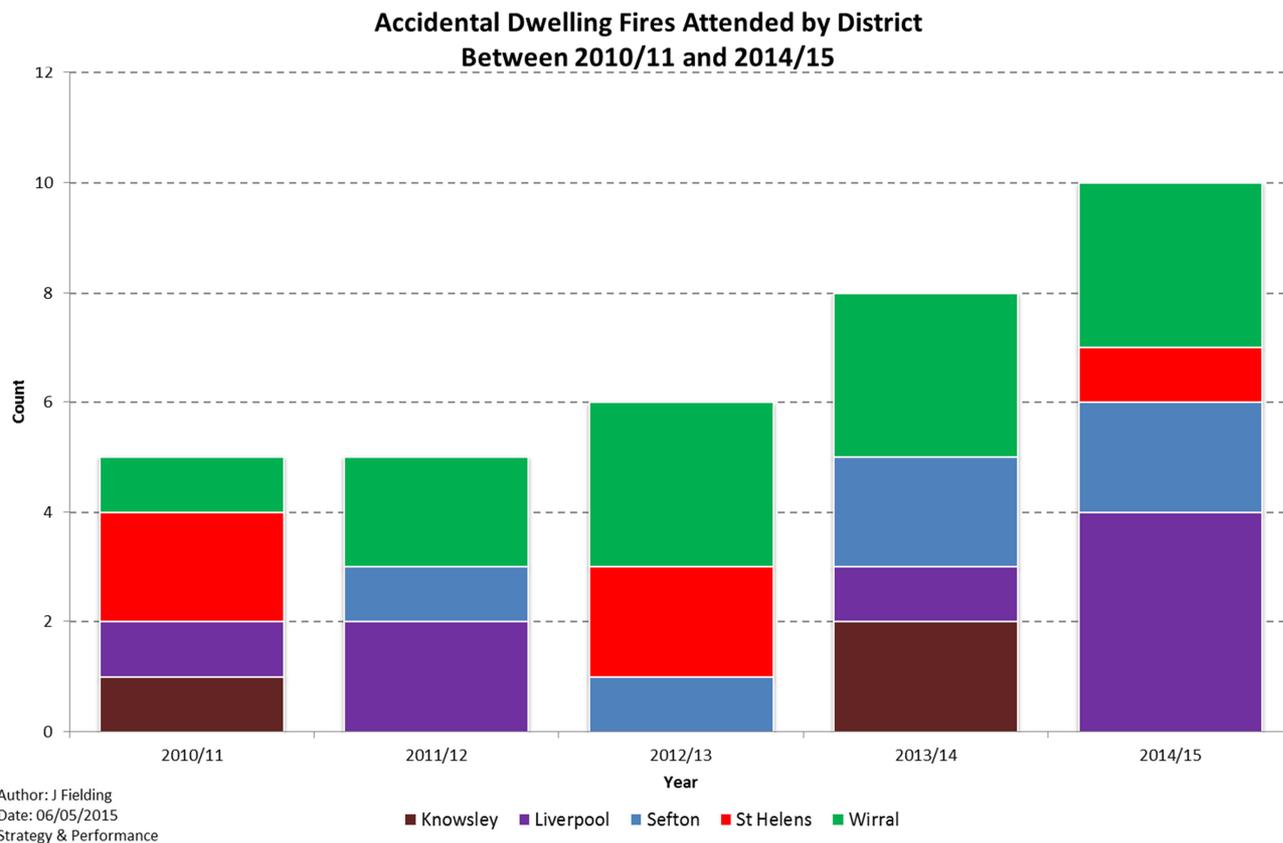


Chart 1 identifies fatalities in accidental dwelling fires have been increasing year on year since 2011/12. The chart identifies that during 2014/15 there was a total of 10 fatalities, double that of the years of 2010/11 and 2011/12.

When analysed by District; Liverpool saw 4 deaths during 2014/15, the greatest amongst the districts of Merseyside, this was then followed by Wirral with 3, Sefton with 2 and St Helens with 1. When analysed over five years, the counts for each district varies, though Wirral does have relatively consistent counts of fire deaths since 2012/13, with 3 in each year.

Between 2010/11 and 2014/15 there have been cumulatively:

- 3 deaths in Knowsley
- 8 deaths in Liverpool
- 6 deaths in Sefton
- 5 deaths in St Helens
- 12 deaths in Wirral

6.1.2 Spatial Analysis of Accidental Dwelling Fire Fatalities

Table 1: Accidental Dwelling Fire Fatalities in 2014/15, by District, Ward & Population

District	Ward	Fatalities	District Population	Deaths per 100,000 population
Knowsley	(None)	0	146,086	0.00
Liverpool	Anfield	1	470,780	0.85
	Kirkdale	1		
	Picton	1		
	Princes Park	1		
Sefton	Dukes	1	273,207	1.10
	Norwood	1		
St Helens	Thatto Heath	1	176,221	0.57
Wirral	Eastham	1	320,295	0.94
	New Brighton	1		
	West Kirby & Thurstaston	1		
Grand Total		10	1,386,589	0.72

Table 1 provides a breakdown of fatalities by district and ward. Liverpool had the greatest quantity of deaths with 4 (equating to 0.85 deaths per 100,000 population), followed by Wirral which had 3 deaths (though with a slightly higher ratio of 0.94 deaths per 100,000 population). Solely taking “Deaths per 100,000 population” into account, Sefton (which had 2 fatalities) has proportionally the highest number of fire deaths in Accidental Dwelling Fires with a ratio of 1.10. St Helens saw 1 fire death equating to 0.57 deaths per 100,000 population and Knowsley - due to not having any fire deaths was lowest with 0.

There were no repeat wards for fire death injuries.

6.1.3 Analysis of fatalities by Deprivation

Chart 2: Fatalities from Accidental Dwelling Fires in 2014/15 in relation to Indices of Multiple Deprivation (IMD) 2010

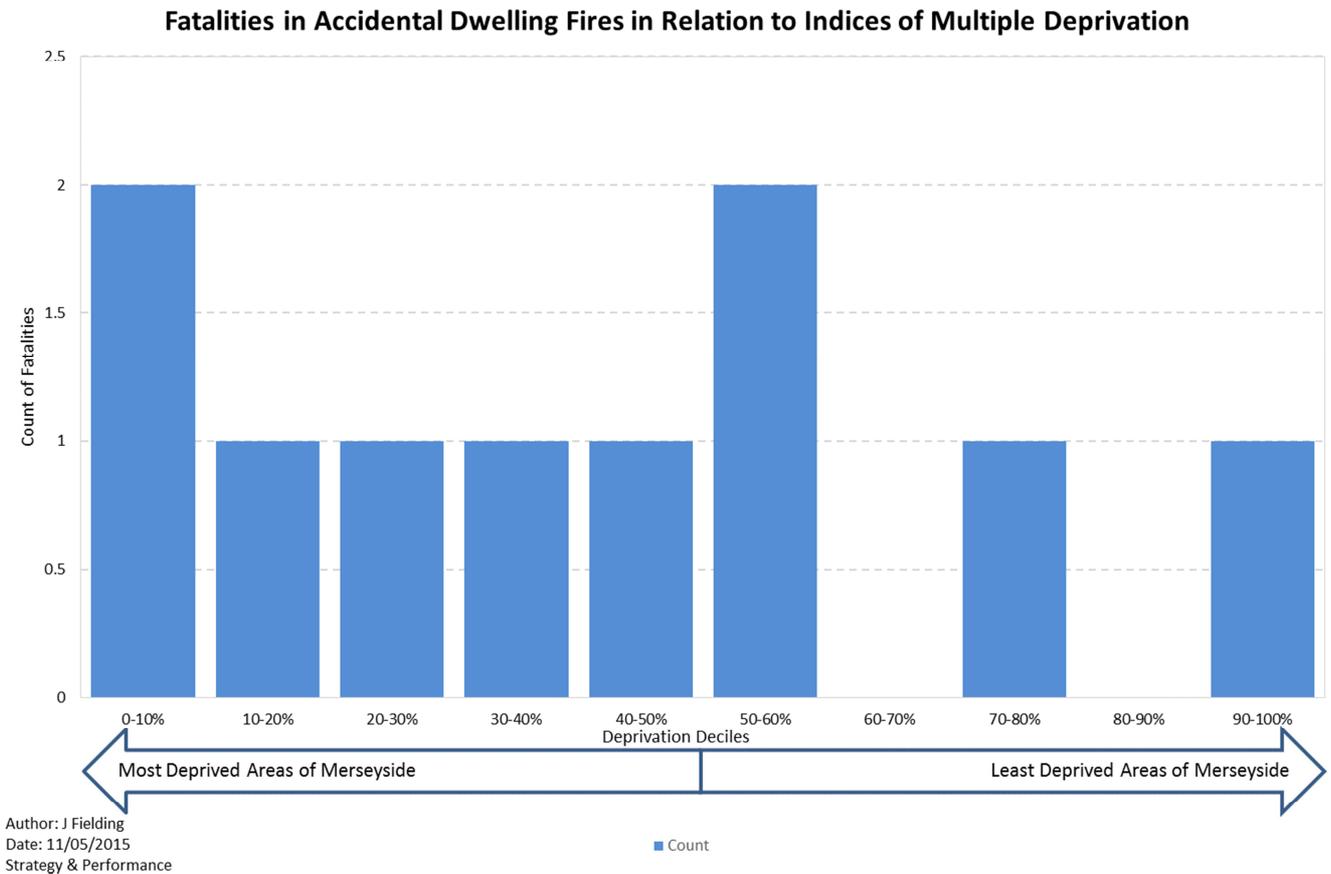


Chart 2 compares the locations of where fatalities took place in accordance with Deprivation. The chart identifies that there is a general trend where the majority of fire deaths have occurred within areas of deprivation, with 6 of the 10 fatalities occurring in the 50% most deprived areas of Merseyside.

6.1.4 Analysis using Customer Insight Community Profiles

Table 2: Customer Insight Community Profiles of Accidental Dwelling Fire Fatalities³ (with age bands)

Customer Insight Profile	Total	IMD 2010 Deprivation Decile	Age Group	Property Type
1 - Wealthy over 50 population living in semi-rural locations	2	50-60%	85+	Semi Detached
		90-100%	75-79	Bungalow
3 - Middle income residents living in privately owned properties	1	30-40%	60-64	Flat
6 - Young families living in privately owned semi-detached homes	1	70-80%	85+	Semi Detached
7 - Young families with high benefit need	1	50-60%	85+	Terraced
10 - Younger, urban population living in high levels of deprivation	5	20-30%	45-49	Semi Detached
		40-50%	40-44	Commercial Property (Caravan)
		10-20%	80-84	Flat
		0-10%	85+	Flat
		0-10%	85+	Terraced
Grand Total	10			

Table 2 provides an indication as to what type of: lifestyle; environment, background and local community the deceased represent. Using the Customer Insight Community Profiles the above table approximately matches the findings from the deprivation analysis identified within the previous section, with the majority of fatalities occurring within deprived profiles (profiles 7 and 10).

The breakdown is as follows:

- 2 Fatalities within profile “1 - Wealthy over 50 population living in semi-rural locations”.
- 1 Fatality within profile “3 - Middle income residents living in privately owned properties”
- 1 Fatality within profile “6 - Young families living in privately owned semi-detached homes”
- 1 Fatality within profile “7 - Young families with high benefit need”
- 5 Fatalities within profile “10 - Younger, urban population living in high levels of deprivation”

When comparing the Customer Insight Community Profiles to the Indices of Multiple Deprivation there are some inconsistencies. For example within the Customer Insight Community Profile “1 - Wealthy over 50 population living in semi-rural locations” there is one incident to have occurred within the very affluent 90-100% decile and one within the middle of the road 50-60% decile. Reasons for as to why include:

- IMD is based on a geography known as “*Lower Layer Super Output Area*” which is an area made up of 400 dwellings or 1,600 head of population.

³ Customer Profiles within this table are based on the Customer Insight Community Profile. Refer to the report in related documents for further information.

- The Customer Insight Community Profile uses a smaller geography called “Output Area” which is 125 properties or 300 head of population. Therefore the Customer Insight Community Profiles are able to identify pockets of this segmentation type in and amongst areas of deprivation and affluence as identified using Indices of Multiple Deprivation.

6.2 Further Analysis

Table 3: Accidental Dwelling Fire Fatalities by month, day, whether the occupant was alone and suspected alcohol influence

Month	Day	Grand Total	Alcohol?	Lived Alone
April	Monday	1	1	1
May				
June				
July				
August	Tuesday	1		1
	Friday	1		1
September				
October	Friday	2		2
November	Wednesday	1		
	Friday	1		1
December				
January				
February	Wednesday	1		1
	Friday	1	1	1
March	Tuesday	1		1
Total		10	2	9

Table 3 provides a temporal analysis of when fatalities took place and whether alcohol or living alone was a factor. The table identifies that the months of: August, October, November and February each had 2 fatalities, of note there were no fatalities during January which historically is the month when the greatest number of fire deaths occur.

Concerning the day of week where fire deaths have taken place, 5 took place on a Friday, with 2 occurring on a Tuesday and a Wednesday and 1 occurring on a Monday. Though 5 fatalities took place on a Friday, there is little evidence to point to any meaningful pattern, only 1 incident involved alcohol, and analysis of the time of call⁴ to the Fire Control does not suggest any pattern with calls occurring throughout the day.

Concerning the influence of alcohol; 2 fatalities occurred where the victim was suspected of consuming alcohol prior to the fire. Additionally 9 of the 10 victims lived alone and were alone at the time of the incident.

⁴ Please note this report and other Fire Death related reports produced by MFRA do not include analysis by hour of call to Fire Control. This is due to that in many cases the call is received well after the incident has taken place, this is known as a late fire call and therefore it is not possible to analyse the time the fire actually took place. As there can be several late fire calls each reporting period, to analyse incidents by hour is not a realistic gauge with which to measure anything meaningful.

Table 4: Room of Fire Origin by Property Type and Ignition Source for Fatalities in Accidental Dwelling Fires 2014/15

Property Type	Room of Fire Origin	Smokers Materials	Careless Use Of Heating Appliance	Cooking	Electrical Fault	Candles	Total
Semi Detached	Living Room		1		1	1	3
Flat	Bedroom	1			1		2
	Living Room	1					1
Terraced	Kitchen			1			1
	Bedroom		1				1
Bungalow	Living Room	1					1
Commercial Unit (Caravan)	Caravan			1			1
Total		3	2	2	2	1	10

Table 4 provides a breakdown of the property type and room where fire fatalities took place as well as the cause. The table identifies that the most common ignition source was in relation to Smoking Materials with 3 deaths, followed by: Careless Use of Heating Appliance, Cooking and Electrical Faults with 2 each. There was a single fatality related to candles.

The property types to have the greatest count of fire deaths were semi-detached and flats with 3 deaths each. The room to have the highest number of fire deaths was the living room with 5 deaths, followed by the bedroom with 3 deaths.

Table 5: Fatalities by Room of Fire Origin against Location of Where Victim was Found

Room of Fire	Location of Victim				Grand Total
	Living Room	Bedroom	Kitchen	Garage Floor	
Living Room	3	1	1		5
Bedroom	1	2			3
Kitchen			1		1
Caravan				1	1
Grand Total	4	3	2	1	10

Table 5 compares the room of fire origin against where the victim was located by emergency services⁵. The table identifies that in the majority of cases the victim was found in the fire's room of origin (highlighted by the light blue cells), on 3 occasions victims were located beyond the room of origin.

⁵ 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 (i.e. a late fire call) by another branch of the emergency services.

Table 6: Fire Safety (HFSC & Smoke Alarm status) in Accidental Dwelling Fire Fatalities

HFSC Received	Fitted & Operated	Fitted - Disabled	Fitted - Did Not Operate	None Fitted	Total
Yes	5	1	1	1	8
No				2	2
Total	5	1	1	3	10

Table 6 identifies that the majority of properties (8 out of 10) did have a Home Fire Safety Check (HFSC). Concerning the properties that received a HFSC; in 5 cases the fitted smoke alarm did actuate, on a single occasion a smoke alarm was fitted and was disabled by the owner / occupier, on a further occasion a smoke alarm was fitted and did not operate – possibly due to a lack of smoke given the circumstances of the incident and finally there was an incident where there was no smoke alarm fitted due to it being refused at the time of the HFSC.

Though there were 2 fatalities where a HFSC was not conducted one of the fatalities took place within a caravan which in turn was stored within a commercial unit. As such neither the caravan nor the commercial unit had a smoke alarm fitted.

Table 7: Age and Gender of Fatalities in Accidental Dwelling Fires in 2014/15

Age Group	Male	Female	Total	Deaths per 100,000 population
Less than 40				0.00
40-44	1		1	1.09
45-49		1	1	1.01
60-64	1		1	1.25
75-79	1		1	2.00
80-84		1	1	2.70
85+	5		5	16.03
Grand Total	8	2	10	0.72

Table 7 provides the counts of accidental dwelling fire victims against age and gender. The table identifies that the majority of deaths took place in the 85+ age group with 5 overall - all of which were Male. Generally the majority of fire deaths affected people above the age of 65 with 7 overall. There were no (zero) fire deaths affecting people below the age of 40.

When taking the fatalities per 100,000 population into account, there is a disproportionately large increase in the number of fire deaths as age increases, particularly within the 85+ age group where there is a 16.03 fire deaths per 100,000 population ratio. As mentioned earlier in this document; 9 of the 10 deaths occurred where the victim lived alone and were alone at the time of the incident, a likelihood that increases with age.

Concerning racial origin of the deceased; 8 were reported as being White British with 2 being BME. Regarding gender; 8 were male with 2 being female.

6.3 “Other” Fatalities in Dwellings

Apart from Accidental Dwelling Fire Fatalities, there were 2 “other” fire related deaths that occurred in a dwelling during 2014/15. These deaths occurred in a single incident during May 2014. The incident involved a 40 year old mother who committed suicide using a flammable liquid, this act led to the unlawful killing of her 4 year son.

<http://www.liverpoolecho.co.uk/news/jai-joshi-unlawfully-killed-tuebrook-7800686>

<http://www.bbc.co.uk/news/uk-england-33002980>

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

Merseyside Fire and Rescue Authority continue 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. These have been 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 make contact 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.

Advocates and other staff that deal directly with the most vulnerable groups within the community have outlined that without the secure sharing of social services data, MFRA would more than likely not have known about that person at high risk of fire.

Protocols have been put in place with the following organisations and data is shared with MFRS on a regular basis: Liverpool, Sefton, St Helens and Wirral Adult Social Services, Wirral Revenues and Benefits, NHS England Exeter data (age 65 plus), three Registered Social Landlords and Cheshire and Wirral Partnership NHS Foundation Trust. Secure technology (AVCO) enables MFRA to securely electronically receive newly recorded known people that partner organisations have had contact with.

Customer Insight Project:

Research previously conducted in partnership with Liverpool John Moore’s University identified a number of causal factors that are significant for determining risk of vulnerable persons. This research identified that: elderly residents, residents who lived alone, residents that smoked and residents with a disability were particularly at risks for Accidental Dwelling Fires, especially in cases where more than one of these causal factors were present.

It was also identified that there was a need to associate risk with a person rather than an area. The customer insight project was started to address this. The key aim of this project was to improve the sharing of information about vulnerable individuals and a more efficient use of this data. This should enable improved identification of individuals who are high risk but living in low risk areas; this allowed MFRA to create a vulnerable persons index for each station area.