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“An Excellent Authority”

Analysis of Fatalities in Accidental Dwelling Fires between 1st April 2011 and 31st March 2012

**TO BE PRESENTED TO:
Fire Authority
Strategic Management Group
Incident Investigation Team**

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**STRATEGIC PLANNING DIRECTORATE
PREVENTION & PROTECTION**

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Document Control

Amendment History

Version / Issue No.	Date	Author	Remarks / Reason for Change
1.0	24/04/2012	Michelle Rasdale	First Draft
1.1	24/04/2012	Michelle Rasdale	Following comments as per JF
1.2	03/05/2012	Michelle Rasdale	As per D Appleton's comments

Sign-Off List

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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 2010 and 31st March 2011	J Fielding	V1.3 23/06/2011
2	Customer Insight Risk Profile – Knowledge Transfer Partnership-Risk assessment Machine Methodology	E Higgins	13/09/2010
3	Analysis of Fatalities in Accidental Dwelling Fires between 2007/08 and 2011/12	R Hanson	27/04/2012

Ownership

Has it been agreed with the client that this is a publicly owned document? Yes/No

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(once agreed by authority)

If No please state reason why:

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1. Agreement

For the purpose of this report the following agreement was made between the client and the Strategic Planning Directorate.

This work was requested by Prevention and Protection and received on 01/04/2012.

The Manager¹ has approved this report/ piece of work can be undertaken by the Strategic Planning 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 30/04/2011, and would be sent electronically to the Director of Strategic Planning Directorate and Client for comment.

The Manager / Client agreed that their comments would be received back by May 2012.

The final report, which will always be in PDF format, would be produced by May 2012, subject to receiving comments.

¹ Deb Appleton

2. Executive Summary

The purpose of this report is to provide an analysis into the circumstances of fatalities in Accidental Dwelling Fires across Merseyside during the fiscal year 2011/12.

In summary the findings within this report are as follows:

- During 2011/12 Merseyside witnessed the joint lowest number of deaths in Accidental Dwelling Fires in recent history with a total of 5 deaths, the same as in 2010/11.
- Concerning locations of Accidental Dwelling Fire Fatalities there has been: 0 incidents in Knowsley, 2 in Liverpool, 1 in Sefton, 0 in St Helens and 2 in Wirral.
- Of the 5 deaths; 3 were cooking related, 1 was related to smoking materials and the other linked to an electric heater.
- During 2011/12, 4 out of 5 of those who died in an Accidental Dwelling Fire were over the age of 75, which reflects the customer risk profile that, with age, the risk of serious fire related incidents increases.
- Regarding fire detection systems, all five properties had received Home Fire Safety Checks where smoke alarms had been fitted. However only 4 of the smoke alarms actuated during the incident.

3. Case Studies

The following section outlines cases where people have regrettably died in 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.

At the time of writing this report three of the fatalities from Accidental Dwelling Fires were confirmed by the coroner with the remaining three still pending confirmation.

Case 1: Inquest Complete - Wirral - April 2011

The deceased was a 77 year old male, who was the sole inhabitant of a semi-detached dwelling property. At 01:36hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check (HFSC), and during the incident the previously installed fire detection equipment did operate. There was no evidence of alcohol consumption involved preceding the incident. The suspected cause of fire was an electric heater being left too close to combustible articles. As the damage was so severe the unit could have caused a short circuit, though this is undetermined.

Case 2: Inquest Complete - Sefton - May 2011

The deceased was a 45 year old male, who cohabited a semi-detached dwelling property. At 08:49hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check (HFSC); however during the incident the previously installed fire detection equipment did not operate, though later testing showed the alarm to be defect free. Alcohol consumption was suspected to have had an influence in the incident. The suspected cause of the fire was a pan of food being left unattended.

Case 3: Inquest Pending - Liverpool - July 2011

The deceased was an 82 year old male, who inhabited a mid terraced property. At 07:53hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check (HFSC), and during the incident the previously installed fire detection equipment did operate. There was no evidence of alcohol consumption involved preceding the incident. The suspected cause of the fire was a pan of food being left unattended.

Case 4: Inquest Pending - Wirral - November 2011

The deceased was an 83 year old female, who inhabited a mid terraced dwelling property. At 15:38hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check (HFSC), and during the incident the previously installed fire detection equipment did operate. There was no evidence of alcohol consumption involved preceding the incident. The suspected cause of the fire was smoker's materials.

Case 5: Inquest Complete - Liverpool - January 2012

The deceased was a 76 year old male, who cohabited a mid terraced dwelling property. At 18:03hrs, Merseyside Fire and Rescue Service received the call to attend the incident. The property had previously received a Home Fire Safety Check (HFSC), and during the incident the previously installed fire detection equipment did operate. There was no evidence of alcohol consumption involved preceding the incident. The suspected cause of the fire was an accidental ignition of clothing on a gas hob in the kitchen.

4. Introduction

This report analyses fire related fatalities across Merseyside during the fiscal year 2011/12 (April 1st – March 31st). The primary focus of this report reviews fatalities that occurred in Accidental Dwelling Fires (ADF).

This report which contains information relating to lifestyles of people that have regrettably died in a fire, as well as other information, will support the ongoing and proactive actions of the staff involved in Community Safety and their actions to reduce the risk of fire.

5. Methodology

This research was undertaken initially by analysing the data derived from the databases held and managed by the MFRS 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 still measure this level of performance as Local Performance Indicator 45. Qualification for this performance indicator is decided by members of Merseyside Fire and Rescue Service Incident Investigation Team (IIT) and coroner. Data within this report is still awaiting coroner agreement and as such 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 2007 and MapInfo Professional 11.0 for filtering and mapping the data.

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

² Please note: at the time of writing this report the Customer Insight Risk Profile is at Pilot Stage, with a successful pilot taking place in the Wirral. The Profile is yet to go live across Merseyside. The Customer Insight Risk Profile uses 130 sourced datasets (both local and national) aggregated to Output Area geography. The system analyses these sources and collates the information into ten risk based profiles.

6. Results

6.1 Accidental Dwelling Fires

6.1.1 Retrospective

Chart 1: Fatalities in Accidental Dwelling Fires over the past 5 fiscal years.

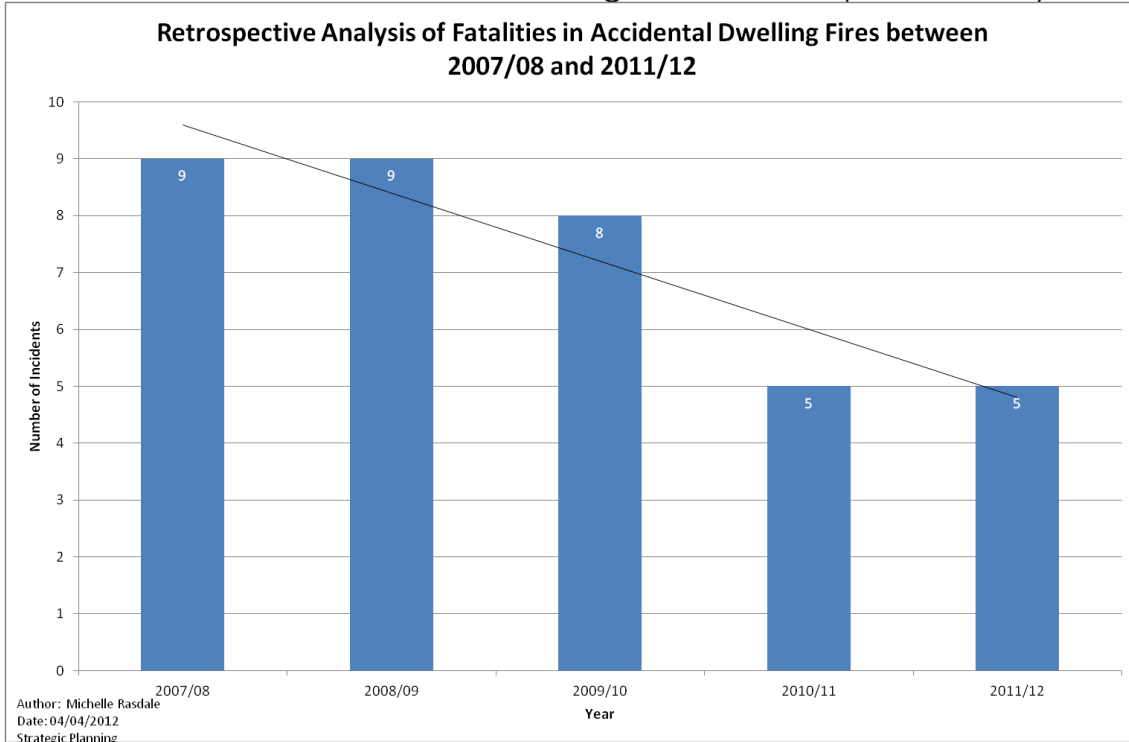


Chart 1 identifies an overall reduction in Accidental Dwelling Fire Fatalities over the last 5 years. Between 2007/08 and 2011/12 there has been a reduction of 4 fatalities (44.4%) Merseyside Wide.

2011/12 has reported 5 ADF Fatalities, consistent with that of the previous year. Therefore the last two years have in all likelihood shown the lowest level of fire deaths in Merseyside Fire and Rescue Service's history.

Table 1: Fatalities in Accidental Dwelling Fires since 2007/08, by District and Year.

District	2007/08	2008/09	2009/10	2010/11	2011/12
Knowsley	0	0	2	1	0
Liverpool	4	5	1	1	2
Sefton	2	2	1	0	1
St Helens	1	0	1	2	0
Wirral	2	2	3	1	2
Grand Total	9	9	8	5	5

Table 1 provides a breakdown of fire deaths in Accidental Dwelling Fires by district. Given the small numbers of fire deaths; analysis is limited,

however there has been a particularly noteworthy reduction in deaths in Liverpool. Between 2007/08 and 2008/09 Liverpool witnessed 4 or more deaths on a consistent basis. This trend was broken in 2009/10 when Liverpool witnessed 1 incident, a pattern repeated during 2010/11, though 2 occurrences did occur during 2011/12.

Also of note is St Helens which saw a reduction from 2 incidents during 2010/11 to zero (0) during 2011/12.

Chart 2: Fatalities in Accidental Dwelling Fires during 2011/12, by Metropolitan Fire and Rescue Service³

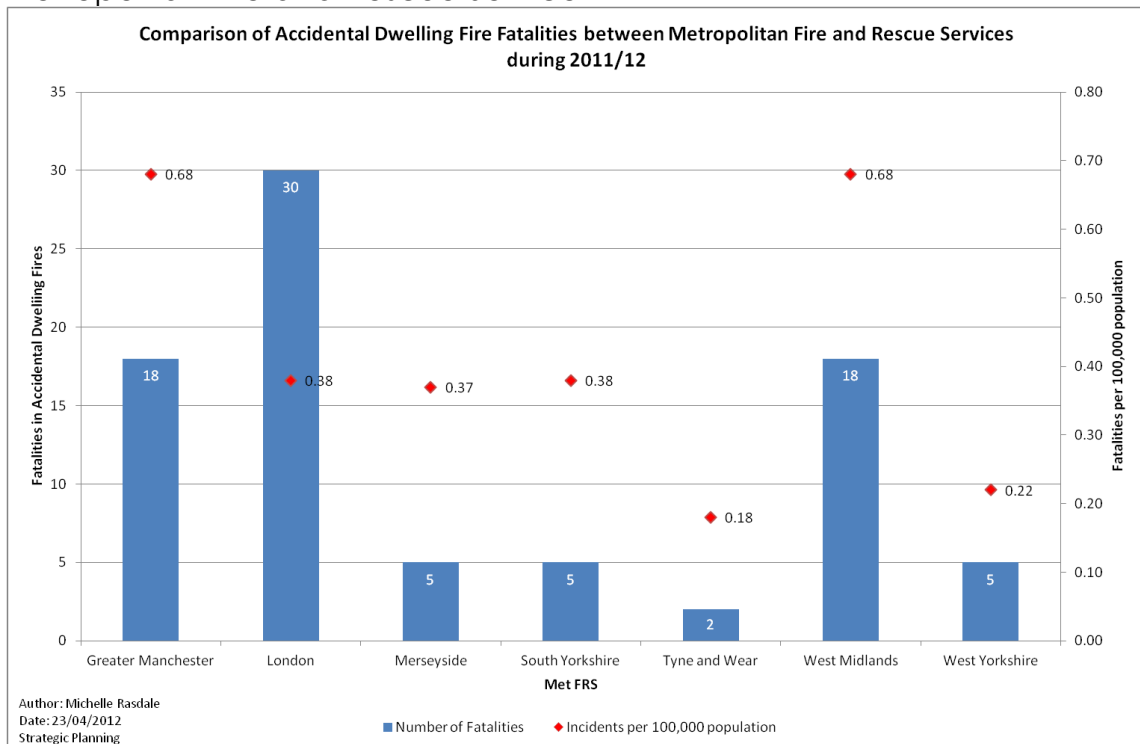


Chart 2 illustrates the range of fatalities across all seven Metropolitan areas, from 2 fatalities in Tyne and Wear to 30 in London. Merseyside accounted for the second joint lowest number of fatalities with 5; along with South Yorkshire and West Yorkshire. On an aggregated level, Merseyside saw the third lowest rate per 100,000 population with 0.37.

Furthermore, although London witnessed 30 Accidental Dwelling Fire Fatalities during 2011/12, the most of any other Met, it did also witness the joint fourth lowest rate per 100,000 population, the same as South Yorkshire who only saw 5 ADF Fatalities.

³ Based on ONS Mid-2010 Population Estimates

6.1.2 Spatial Analysis of Accidental Dwelling Fire Fatalities

Table 3: Accidental Dwelling Fire Fatalities in 2011/12, by District, Ward & Population

District	Ward	Number of Fatalities	District Population	Incidents per 100,000 Population
Knowsley	-	0	149,100	0.00
Liverpool	Anfield	1	445,200	0.45
	Old Swan	1		
Sefton	Linacre	1	272,900	0.37
St Helens	-	0	177,400	0.00
Wirral	New Brighton	1	308,800	0.65
	Wallasey	1		
Merseyside		5	1,353,400	0.37

Table 3 provides a breakdown of fatalities by district and ward. Liverpool and Wirral both witnessed the joint greatest number of fire deaths with 2 incidents each. However Wirral witnessed the greater number of incidents per 100,000 population, with 0.65, whereas Liverpool saw 0.45 incidents per 100,000 population.

Concerning ward breakdown there are no repeat wards for incidents and little pattern geographically, though the wards of “Wallasey” and “New Brighton” in Wirral do neighbour each other.

Chart 3: Fatalities from Accidental Dwelling Fires in 2011/12 in relation to Indices of Multiple Deprivation (IMD) 2010

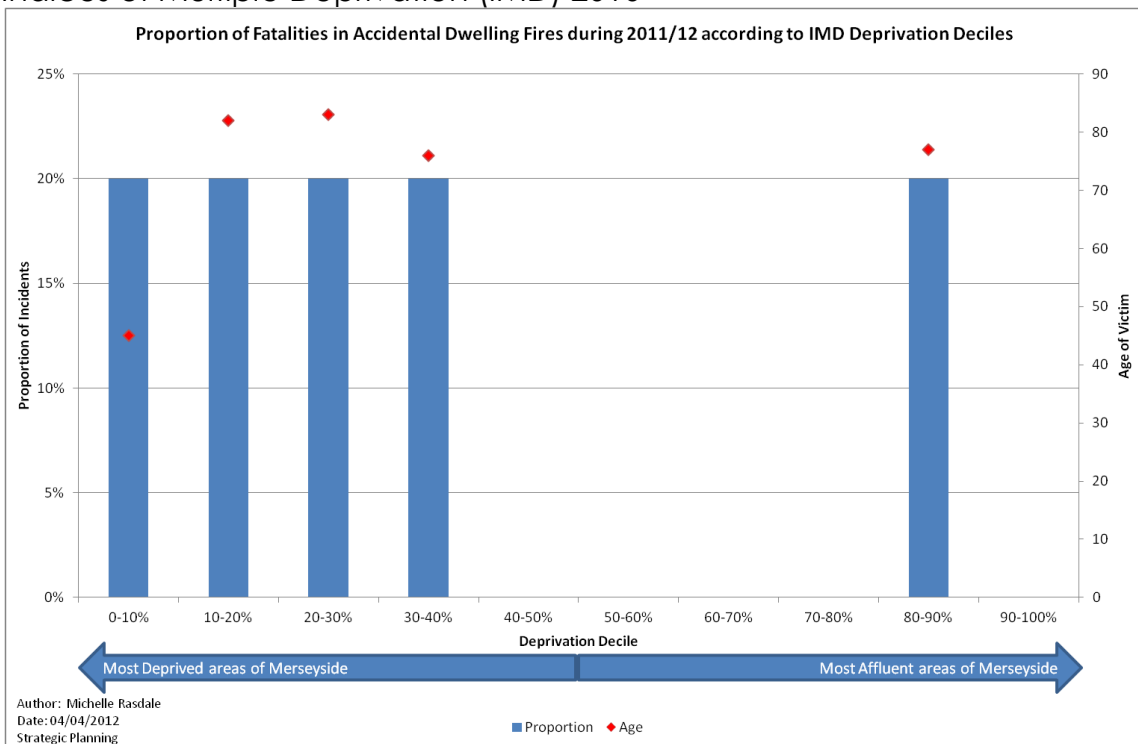


Chart 3 indicates that the majority of ADF Fatalities occurred in areas with high deprivation levels. Deprivation is based on 10% deciles and it is

apparent that 20% of ADF Fatalities occurred within each 10% decile between 0% and 40%. Overall that is, 80% of fatalities occurred within the top 40% most deprived areas whereas 20% occurred in top 40% most affluent areas (between 80-90%).

The majority of ADF Fatalities occurred between the ages of 75 to 84 years; however the fatality which occurred in the most deprived area of Merseyside (0-10%) was within the 45-49 age group; considerably younger than the other fatalities which occurred during 2011/12.

It should be taken into account is that the dataset for fire fatalities is very limited; therefore it is difficult to draw any conclusions from the dataset.⁴

Table 4: Customer Insight Risk Profiles (CIRP) of Accidental Dwelling Fire Fatalities⁵ (with age bands)

Customer Insight Profile Description	Age Band	Deprivation Deciles
1 - Wealthy over 50 population living in semi-rural locations		/
2 - Wealthy retirees		/
3 - Middle income residents living in privately owned properties	80-84	20-30%
	75-79	80-90%
4 - Average income older residents		/
5 - Students living in city centre locations		/
6 - Young families living in privately owned semi-detached homes		/
7 - Young families with high benefit need	80-84	10-20%
8 - Residents living in social housing with high need for benefits		/
9 - Transient population living in poor quality housing		/
10 - Younger, urban population living in high levels of deprivation	45-49	0-10%
	75-79	30-40%

Table 4 provides an indication as to what type of: lifestyle; environment, background and local community the deceased represent. Based on the Customer Insight Risk Profiles the above table approximately matches the findings from the deprivation analysis within Chart 2; with 2 fatalities in the banding "10 - Younger, urban population living in high levels of deprivation" and 1 fatality within the banding "7 – Young families with high benefit need" which further verifies that 3 of these fatalities occurred in areas of high deprivation.

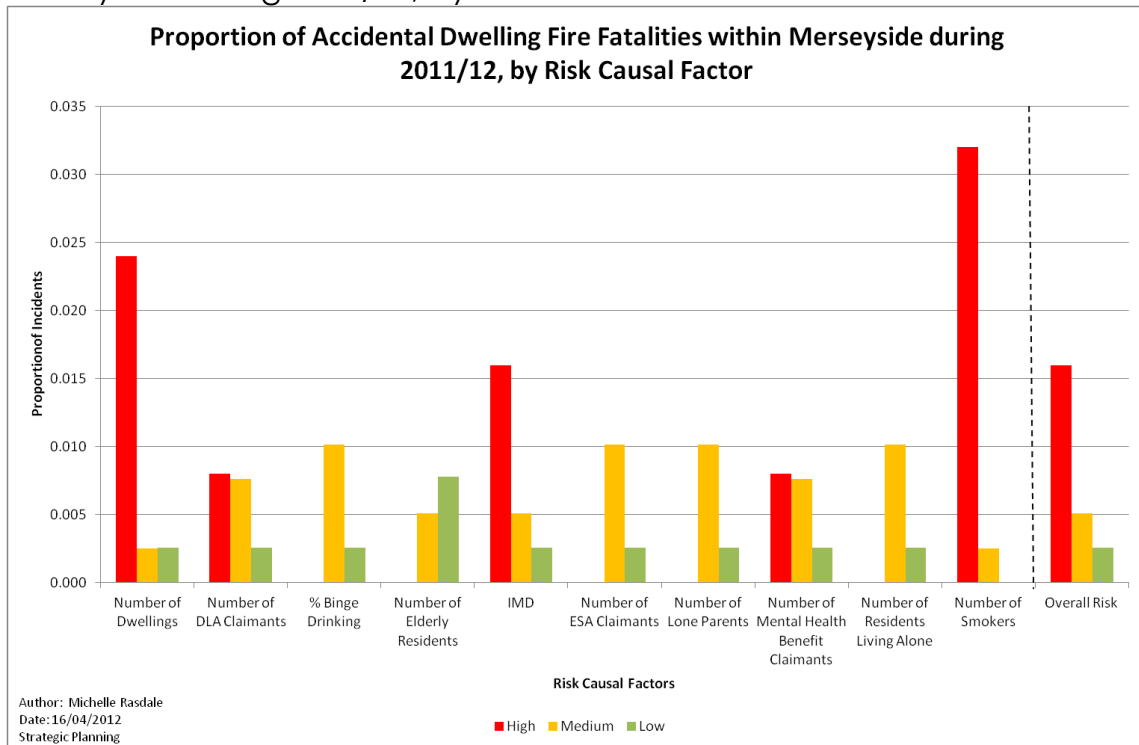
When analysing Customer Insight against age; table 4 identifies that the general trend for fatalities is that older persons in areas are being affected in areas where the makeup of the local population is generally younger; this is particularly stipulated by groups "7" and "10".

⁴ Please refer to the 5 year analysis report as referred to in Related Documents for a more contextualised analysis.

⁵ Customer Profiles within this table are based on the Customer Insight Risk Profile. Refer to the report in related documents for further information.

The profile “3 – Middle income residents living in privately owned properties” accounts for two fatalities; one occurring within the affluent 80-90% decile, with a second occurring in the more deprived 20-30% decile. When analysed further the fatality occurring within the deprived 20-30% decile area borders more affluent areas, hence its classification.

Chart 4: Proportion of Accidental Dwelling Fires Fatalities within Merseyside during 2011/12, by Risk Causal Factor⁶



Overall risk suggests that proportionally there were more fatalities in Accidental Dwelling Fires in ‘High’ risk areas, followed by ‘Medium’ risk and then ‘Low’ risk. However when looking at individual causal factors which make up overall risk there are a few exceptions to this pattern.

There were no fatalities related to ‘High’ risk areas for: ‘% Binge Drinking’, ‘Number of Elderly Residents’, ‘Number of ESA Claimants’, ‘Number of Lone Parents’ or ‘Number of Residents Living Alone’. Whereas ‘Number of Dwellings’ and ‘Number of Smokers’ causal factors saw high proportions of fatalities in ADF’s in areas related to ‘High’ risk.

Finally when looking at the causal factor ‘Number of Elderly Residents’, there was a higher proportion of fatalities in ADF’s in ‘Low’ risk areas.

⁶ This chart was produced using causal factors within the Customer Insight Risk Profile.

It must be further reinforced that the numbers of fatalities in Accidental Dwelling Fires are very small and therefore the differences in proportions between 'High', 'Medium' and 'Low' risk areas are also diminutive.

6.1.3 Temporal Analysis

Table 5: Number of Accidental Dwelling Fire Fatalities during 2011/12, by Month and suspected influence from alcohol.

Month	Day	Fatalities	Alcohol Involved
April	Saturday	1	0
May	Sunday	1	1
July	Friday	1	0
November	Wednesday	1	0
January	Monday	1	0
Grand Total		5	1

Table 5 provides the breakdown of when Accidental Dwelling Fire Fatalities occurred throughout the year. As the number of fire deaths are so low it is difficult to ascertain any meaningful pattern.

3 fatalities occurred within spring/summer months (April, May and July) and two within winter months (November and January). Of the 3 deaths which occurred during the spring/summer months, all took place at the end of the week (between Friday and Sunday) and all occurred during the early hours of the morning, between 01:00hrs and 08:59hrs. By contrast fatalities which occurred during the winter months took place on weekdays (Monday and Wednesday) and all during the late afternoon to early evening hours (between 15:00hrs and 18:59hrs).

In only 1 of the 5 deaths was there evidence of alcohol consumption which could be a contributory factor towards this fatality.

6.1.4 Further Analysis

Table 6: Property Type & Ignition Source for Fatalities in Accidental Dwelling Fires 2011/12

Property Type	Location	Cooking related	Smoking Materials	Heater	Grand Total
Mid-Terraced	Kitchen	2	0	0	2
	Rear Lounge	0	1	0	1
Semi-Detached	Bedroom	0	0	1	1
	Kitchen	1	0	0	1
Grand Total		3	1	1	5

Table 6 gives a breakdown of fatalities by: property type, location of fire and ignition source. 3 fatalities occurred in 'Mid-Terraced' properties and 2 in 'Semi-Detached' properties. Furthermore, 3 of the fires which

caused the Fatalities originated in the 'Kitchen', of which all were cooking related. One fire originated in the 'Rear Lounge' resulting from 'Smoking Materials' and the final fire occurred in the 'Bedroom' and was caused by a 'Heater'.

Table 7: Fire Safety (HFSC & Smoke Alarm) in Accidental Dwelling Fire Fatalities

HFSC	Fitted and Operated	Fitted, did not operate	Grand Total
Yes	4	1	5
No	0	0	0
Grand Total	4	1	5

Table 7 identifies that all 5 of the properties involved in an Accidental Dwelling Fire Fatality did previously receive a Home Fire Safety Check and in 4 of those cases an alarm was fitted and did operate. However, in one case an alarm was fitted but did not operate.

Table 8: Age and Gender of Fatalities in Accidental Dwelling Fires in 2011/12 (Based on ONS age bands)

Age Group	Female	Male	Grand Total
45-49	0	1	1
75-79	0	2	2
80-84	1	1	2
Grand Total	1	4	5

Table 8 identifies that there were 0 (zero) fatalities below the age of 45. In essence the table identifies that with age the likelihood of becoming a victim in an Accidental Dwelling Fire increases. The majority of fatalities during 2011/12 occurred in those who were over the age of 75; however there was one exception of an Accidental Dwelling Fire Fatality in the 45-49 age group in which alcohol was involved and could have been the contributory factor rather than age.

Regarding gender, the majority of ADF Fatalities were male (4) and 1 female death. All fatalities were from a 'White British' background.

6.2 "Other" Fatalities

Apart from Accidental Dwelling Fire Fatalities, there were 3 "other" fire related deaths across Merseyside in 2011/12; however these deaths did not qualify under the performance indicator LPI 45.

7. Information Sharing & Identification of those at fire risk

Merseyside Fire and Rescue Service 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 the adult social service departments, as well as other key partners. These protocols have ensured that there is a formal legal framework to share information securely.

In establishing these protocols, staff within MFRS 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, MFRS would more than likely not have known about that person at high risk of fire.

Protocols have been put in place with: Adult Social Services Departments in each district; Revenues and Benefits Departments of: Liverpool, Sefton, St Helens and Wirral. Over 65 PCT data (Exeter data) has been received from St Helens PCT, Wirral Council Landlord Accreditation Scheme and seven Registered Social Landlord (RSL) Associations across Merseyside. Secure technology (AVCO) enables MFRS to securely electronically receive newly recorded known people that Social Services have had contact with.

Customer Insight Project:

Ongoing research in partnership with Liverpool John Moores University has identified a number of causal factors that are significant for determining risk of Accidental Dwelling Fires. This research identified that elderly residents, residents who lived alone, residents that smoked and residents with a disability were particularly at risk of 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. A key aim of this project is to improve sharing of information about vulnerable individuals and more efficient use of this data. This should enable improved identification of individuals who are high risk but living in low risk areas.

8. Conclusion

The purpose of this report was to provide an overview as to the number of deaths to occur in Accidental Dwelling Fires during the fiscal year of 2011/12. In conclusion the report presents the following findings:

- During 2011/12 Merseyside witnessed the joint lowest number of deaths in Accidental Dwelling Fires in recent history with a total of 5 deaths, the same as in 2010/11.
- Concerning locations of Accidental Dwelling Fire Fatalities there has been: 0 incidents in Knowsley, 2 in Liverpool, 1 in Sefton, 0 in St Helens and 2 in Wirral.
- Of the 5 deaths; 3 were 'Cooking related', 1 was related to 'Smoking Materials' and the other linked to an electric heater.
- During 2011/12, 4 out of 5 of those who died in an Accidental Dwelling Fire were over the age of 75, which reflects the customer risk profile that, with age, the risk of serious fire related incidents increases.
- Regarding fire detection systems, all five properties had received Home Fire Safety Checks where smoke alarms were fitted. However only 4 of the smoke alarms actuated during the incident.
- It should be noted that given the small numbers of Accidental Dwelling Fire Fatalities involved, the findings contained within this report should not be used to make generalisations. Findings in this report only reflect the events that happened during 2011/12.

9. Action Plan

ACTION PLAN								
	Link to IRMP / Service Plan							
	Title of Initiative / Activity (where applicable)	Brief description of Initiative/Activity (where applicable)	IRMP Task ref: / Performance Indicator:	How does this task support the IRMP / Service Plan	What information/data will be used to measure this activity	Anticipated target for Performance	Task Owner	Date of Review
1	Local Measurement and review of Performance		LPI 45: Fatalities from accidental dwelling fires per 100,000 population	Safer Stronger Communities	Data obtained from the Incident Investigation Team	6 Fatalities during 2012/13	Prevention & Protection, Ops Performance, Strategic Planning	Quarterly in Service Plan. Annual Fatality report
2	Home Fire Safety Risk Reduction	From 2012/13 each station will take ownership of delivering performance against target locally targeted issues. MF&RS will also assist people with home and business security as part of our overall community safety approach.	NI49c: Fatalities from Primary Fires (Merseyside Wide)	Safer Stronger In line with views expressed during our pre-IRMP consultation forums.	Data obtained from the Incident Investigation Team		Community Safety	Monthly by performance monitoring and Strategic Management Group.