



An Analysis of Fire Incidents Involving Hoarding Households

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Abstract

In recent years, research about and awareness of residential hoarding has been increasing. Hoarding is the collection and failure to discard large quantities of objects to the point where the storage of all these items often causes impairment to basic living activities. It is a growing problem in countries with ageing populations such as the United States and Australia. This study, sponsored by the Metropolitan Fire Brigade, Melbourne, Australia, is the first attempt to examine hoarding from a fire safety perspective.

A major obstacle to this study was identifying fires in which hoarding was a substantial contributor to fire severity or fatalities. Novel data collection techniques, including the interview of Brigade, local government, and psychology clinic personnel, were used. Data were also collected via the nationwide Australasian Incident Reporting System. Spanning the past ten years, 48 hoarding fire incidents in Melbourne's Metropolitan Fire District were identified. They accounted for only 0.25% of all residential fires but 24% of preventable fire fatalities during the same timeframe.

Hoarding fires, which typically involved elderly males, required a much greater allocation of resources than average residential fires. To deal with the issue of hoarding, steps should be taken to improve communication among government agencies and community care services in order to provide the swift removal of risks and access to treatment programs for those affected by hoarding behavior. In addition, public education about hoarding could increase referrals to treatment programs and help reduce the risks posed by hoarding. One method of public education is through informational brochures, a medium currently employed often by MFB, for which we have created a draft brochure.

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Authorship

All aspects of this project, including research, authorship, and editing were pursued with equal contributions by Gregory Lucini, Ian Monk, and Christopher Szlatenyi.

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Executive Summary

Fires present a significant hazard in urban areas, where the close proximity of buildings and living units can greatly increase the possibility of a fire spreading beyond its origin. In urban environments, structure fires account for the majority of fire loss, both in terms of property and human life. Although hoarding households present an increased fire safety hazard and create a dangerous situation for the occupant, neighbors, and emergency personnel alike, this project is the first to examine hoarding households from a fire safety perspective. It was sponsored by the Metropolitan Fire Brigade (MFB) of Melbourne, Australia, which is in a unique position to gain a better understanding of the hoarding problem because many hoarding households are only discovered when emergency responders are alerted to a situation at a residence.

Compulsive hoarding involves the acquisition, and failure to discard, large quantities of possessions which culminates in the interference with daily living activities. It is a little-studied disorder, with only a few worldwide experts investigating its causes, treatments, and symptoms. It has been shown, however, that hoarding causes a number of health and safety concerns that can result in the loss of life. The accumulation of things such as rubbish, food, animals, and waste can lead to disease, infestations, and the violation of numerous health codes. Limited mobility and blocked egresses in hoarding households pose a fire hazard by making it difficult for a burning building to be quickly evacuated. The possessions most often accumulated by hoarding are cellulosic in nature, and greatly increase the fire load in a dwelling.

The cause of hoarding behavior is not known, but it is often considered a symptom of obsessive compulsive disorder (OCD), as over 25% of those suffering from OCD feel the compulsion to hoard. Hoarding is much more common among the elderly, and the majority of hoarders have never been married and usually live alone. The prevalence of this condition is largely unknown but estimates indicate that hoarding can affect anywhere from 0.25% to 3% of the worldwide adult population.

Hoarding poses a fire hazard in many ways. Hoarded possessions can greatly increase the fuel load of a house. The five most commonly hoarded items are clothes, letters, bills or statements, books, and magazines; all of these materials are highly combustible. These items

promote a fast-spreading hard to suppress fire. Hoarding can also impede egress as a person tries to evacuate a burning household. In the most common hoarding pattern, items begin to collect along the perimeter of a room. Over time, additional items are piled on each other and spread inward. In the most severe cases of hoarding, only small pathways between groups of hoarded possessions allow access to the most commonly used areas of the home. In addition to impeding an occupant's means of egress, hoarding often impedes the efforts of firefighters that try to rescue anyone that may be trapped inside. This is a danger not only for the occupant but also for the emergency personnel.

Previous studies have shown that hoarded items rarely caused the ignition of a fire, but evidence was found that hoarding households routinely used utilities in unorthodox ways. Old appliances or makeshift utilities can easily ignite a fire, especially among a large quantity of hoarded combustibles. According to other research, over half of elderly hoarders were found to not have a working stove or oven.

Efforts to provide intervention for people who hoard have been limited due to the lack of knowledge about hoarding. **The goals of this project were to obtain information about the victims of fire incidents in hoarding households and to quantify the characteristics common in these incidents.** This information can be used by MFB and many other organizations to increase awareness, identify key triggers, and create programs that can provide intervention to people affected by this disorder. These goals were fulfilled by pursuing the following objectives:

- **Develop a greater understanding of the nature of hoarding fires**
- **Find the prevalence of unorthodox use of utilities among hoarding fires**
- **Create a profile of victims involved in hoarding fires**
- **Draft an informational brochure to educate internal and external stakeholders about hoarding**

In order to achieve our goal of quantification, we studied a variety of different methods to measure the severity of hoarding in any particular household. The most common tool is the Clutter Image Rating Scale (CIR). The CIR consists of nine photographs of a given room where the level of clutter gradually increases. Each level on the CIR is given a value of one through nine, and the amount of clutter in any given room can be compared to these images and assigned

the number of the photograph that best represents it. The CIR is easy to use and contains no subjective measures, therefore giving it a high test-retest reliability.

We then sought to apply this tool to residential hoarding fires incidents over the previous ten years in the Metropolitan Fire District (MFD) around Melbourne. We began by trying to identify fires that were associated with hoarding. This proved to be a difficult task because hoarding is not recorded in any fire incident record. Hoarding fires were identified primarily by performing keyword searches of the incident descriptions in the Australian Incident Reporting System (AIRS) database. Keyword searches were also done on a collection of Media Alerts published by MFB and on the Firecom system, which provides a transcript of MFB radio communications during an incident. Anecdotal evidence from MFB personnel was also useful in helping to identify the hoarding fires that they could recall.

Once these fires were identified, data for analysis were obtained through AIRS, Fire Investigation Reports, consultations with officers-in-charge at the scene and other forms of documentation. These data included hoarding levels (assessed via the Clutter Image Rating Scale), demographic information about the victim, the cause of the fire, smoke alarm status, fire severity data, and degree of impeded egress. Not all of these pieces of information were available for every incident, but some data were available through more than one source.

A total of 48 hoarding fires were identified, but this is certainly a significant underestimate. More fires were found in recent years than in earlier ones, which most likely can be attributed to an increased awareness of the problem. The levels of hoarding for over half the incidents were ranked either through photographic comparison or through the input of the officer in charge at the incident. It was found that fires occurred in households with hoarding levels three through nine and presented no particular trend.

Hoarding fire incidents were found, on average, to be more severe than ordinary fire incidents. The number of pumpers used, which is often considered a good estimate of fire severity, was 1.8 times greater for hoarding fires. The number of responders was also much higher for hoarding incidents. Only 40% of hoarding fires were contained to the room of origin, compared to MFB's approximately 90% containment rate in average residential fires. This indicates that hoarded materials promote the spread of fires throughout a dwelling. As a result,

the value of the damages was eight times higher for hoarding fires. The cost for the MFB to respond was also estimated and was found to be about 16 times higher for hoarding fires. It is important to note that larger hoarding fires were more likely to be located and examined, but differences these large between hoarding fires and average residential fires cannot be attributed to this fact alone.

Only 26% of hoarding households had a working smoke alarm, compared to the household average of 66%. In 38% of hoarding incidents, impeded egress or access was specifically mentioned in incident reports, but no correlation could be made between blocked egress and hoarding level. Egress became impeded at CIR levels as low as three. In 10% of hoarding fires, the fire spread and caused damage to neighboring homes.

Seventy-three percent of hoarding fires occurred in households where the occupant was over 50 years old. The occupant was male in 77% of incidents and the officer reported the occupant to be uncooperative in 10% of incidents. About 30% of these fires occurred in apartments while 70% were in homes. Twenty-three percent of incidents occurred in public housing facilities.

The most common cause of hoarding fires was cooking, which accounted for 39% of incidents, and yet it caused none of the fatalities. A heater, open flame, or lamp and electrical faults were the other most common causes. Smoking only caused 12% of the fires but accounted for three fatalities. The source of ignition in hoarding fires is not much different than the average residential fire; however, 13% of these fires started from an unorthodox use of utilities.

Of the 48 hoarding fire incidents, 10 resulted in a fatality. These fatalities represent 24% of all preventable residential fire fatalities that occurred over the same time period. Hoarding fire fatalities appear to be greatly overrepresented among residential fire fatalities, especially considering that the 48 incidents account for only 0.25% of all residential fires in the past ten years. Persons who hoard appear to become a high fire risk younger than the average person. The youngest casualty was 53 years old.

After reviewing our findings analyzing the relevant data, we were able to draw a number of conclusions. First, locating the data necessary to analyze hoarding fire incidents was an

extremely difficult task. Due to the relative unawareness of hoarding, it was rarely mentioned in fire incident descriptions, leaving many hoarding fires undocumented. **One way to rectify this would be to include hoarding in incident reporting. Whether through AIRS or an internal MFB report, making note of hoarding fires would go a long way to greatly increasing the amount of data available and result in better assessments of how severe these fires are, as well as who is most likely to be harmed in them. Also, to increase awareness of hoarding, our informational brochure about hoarding will serve as the first draft of a brochure to be professionally designed by MFB.**

Even with the small data set available for analysis, it can be seen that hoarding fires are very severe in nature. The fires spread quickly due to the large fire load. Fire authorities have been proclaiming for years that smoke alarms save lives. In the case of hoarding fires, smoke alarms may save lives and property as well. **Early warning of a fire could go a long way towards reducing the amount of damage, and the mere 26% occurrence of working smoke alarms in hoarding households can be greatly improved. MFB is currently working on developing a program to install smoke alarms in hoarding households, as well as record the locations of these homes so additional response gear can be deployed immediately and extinguish the fire quickly.**

The complete and successful treatment of hoarding is rare. Several studies have shown that treatments based on the cognitive behavioural model have fared better than those using medication. Specialists advise that imposing controls and requiring a clean up without respecting the needs of the hoarder leads to a rapid relapse and ultimately results in a highly reinforced resumption of hoarding. Current state and local ordinances may be used to take action with regards to hoarding households, but the process is very complicated. In many cases, the hoarding occupant is uncooperative, and a local council seeking to address the issue must seek an order requiring the resident to comply with the local court. Furthermore, orders to comply and enforced cleanups of the premises often do not yield a positive outcome for anyone involved, and go against the actions recommended by professionals.

To address the issue of inadequate methods for dealing with hoarding, a more concerted effort must be made to work collaboratively among agencies to address the

hoarding problem. Local councils, emergency services, community care workers, and everyone else who often becomes involved with hoarding households must open the lines of communication and work together to deliver treatments and mitigate the risks posed by hoarding. Until a unified approach to addressing hoarding involving all departments of government and community care can be developed to both remove hazards and provide long-term treatment program, little progress can be made in alleviating this increasingly dangerous problem.

Chapter 1: Introduction

Fires present a significant hazard in metropolitan areas where the loss of human life and personal property can be very severe. In 2007 in the United States, there were 414,000 residential structure fires, 2,895 civilian deaths, and US\$7.5 million in damages (National Fire Protection Agency, 2008). In Australia, more than 50 people die every year due to fires, with many more injured (Metropolitan Fire Brigade, 2009). In urban environments, structure fires account for the majority of fire loss, both in terms of property and human life. In residential dwellings cooking, an incendiary initiation, heating, electrical distribution, and smoking are the leading causes of fires. The close proximity of buildings in urban areas increases the chance of a fire spreading quickly. Dwellings that are crowded with combustible materials, such as hoarding households, will often make a fire spread to the community very rapidly (United States Fire Administration, 1999).

Compulsive hoarding involves the acquisition and failure to discard large quantities of possessions. The storage of these items causes large amounts of clutter and impairs one's basic living activities. Hoarding is a little-studied disorder; however, it has been shown that hoarding causes a number of health and safety concerns that can result in loss of life. Accumulation of trash, food, and animal waste can lead to disease, infestation and violation of health codes. The dangers commonly associated with this disorder include structural problems, limited mobility, blocked egresses, and numerous fire hazards (Frost, 2004). Once initiated, a hoarding fire can spread very quickly because of the large fire load. Limited mobility and blocked egresses make escaping a fire nearly impossible in a short time frame. Thus, the combination of these hazards creates an increased risk for residents, neighbors, and emergency personnel.

The problems caused by hoarding behaviors are topics of increasing concern in many parts of the world. Examples of hoarding can be found in most communities and demonstrate the severity of this little known disorder. In Melbourne, Australia, hoarding households are frequently involved in residential fires. In 2007-2008, the loss of life caused by hoarding fires in homes where the occupant was 55 years of age or older accounted for one-third of all preventable residential fire fatalities. As the demographics of Melbourne shift towards an older

population, there is an increased concern that these events will become more prevalent. It is clear that there is a need to properly address and prevent these types of fires.

Currently there is no statewide intervention program in Victoria to address the issue of hoarding. The process of intervening in a hoarding household is complicated and many times ineffective. The current process of addressing a hoarding household can include the local laws and health divisions of Local Government Areas. This can be a very complicated process, and as a result, the efforts of many city councils are unsuccessful. Melbourne's Metropolitan Fire Brigade (MFB) has the authority to act in regards to hoarding households, but only in circumstances where there are no laws in the local jurisdiction to address the issue. There is a dire need for an integrated approach to address hoarding from a legislative and treatment intervention perspective.

Little research has been done relating hoarding to fire incidents, and that lack of knowledge is what this project addressed. By conducting a post-fire incident analysis of hoarding fires, we aimed to provide specialist agencies with information which they can use to fulfill their own agendas. These data could be used to identify key features of hoarding fires, in an effort to increase both the prevention of the fires and treatment of those exhibiting hoarding behavior. They could also provide the basis for a victim profile which could raise awareness with at-risk demographics. Additionally, providing tools for educating the community about the relationship between hoarding and residential fires was a major goal of our project.

Chapter 2: Background

Hoarding is a problematic behavior in which the individual actively acquires a large number of possessions and does not discard or dispose of the objects not used. These unnecessary items are kept or stored in such a way that they interfere with daily living. Severe hoarding may not only endanger the health and safety of the individual but also neighbors and emergency personnel. The accumulation of possessions poses a fire hazard if the means of egress are blocked or if flammable materials such as newspapers, trash, and books are stacked near sources of ignition. The volume of these possessions could also make the fire harder to control (Frost, Steketee, & Williams, 2000).

Accounts of house fires caused or made worse by hoarding behaviors are occasionally reported in the news. Hoarding fires are thus becoming of greater concern. In order to create a tool to relate levels of hoarding and fire incidents, we must first understand both of those concepts. In this section, we will examine the characteristics and causes of compulsive hoarding as well as the prevalence of this type of behavior. We will also examine the fire risk posed by hoarding households. Finally, we investigate the demographic characteristics of Melbourne, Australia. This information will be used in the later stages of our analysis to identify those individuals most likely to be harmed by a hoarding fire.

2.1 MFB's Role in the Compulsive Hoarding Problem

The Metropolitan Fire Brigade (MFB) is a statutory authority that provides important emergency and non-emergency services to the Melbourne community. MFB has eight internal divisions; each one is led by a director responsible for carrying out their mission statement of "Protecting Our Community." The division responsible for emergency response is Operations, while the Community Safety division handles nonemergency services. MFB is in a unique position to gain a better understanding of the hoarding problem and help identify who hoards, as they will be the respondents in a hoarding related emergency.

This project worked with the Community Safety Directorate in close collaboration with the Community Education department. MFB believes fire safety is best achieved through prevention. Over many years, there has been an increasing emphasis placed on educational

programs as a means to reduce and prevent fires. This includes engagement with government and community-based agencies promoting fire safety issues. Community education bases this work on identification of high risk groups, which are the recipients of targeted education programs. Two major groups often identified as being at a high fire risk are children aged six years and under and people aged 65 years and over. The MFB has already established several programs and new initiatives aimed at reducing the high fire risk of these groups.

MFB personnel have found that many fires occur in hoarding households where the occupant is 55 years of age or older. This project aims to provide more comprehensive information about the fire incidents experienced by people who hoard. It is hoped the project will deliver a detailed profile of this group, including risk indicators. The MFB aims to share this information with government and specialist agencies in the community aged care sector to raise the risk profile and aid in prevention and intervention strategies.

2.2 Compulsive Hoarding

Compulsive hoarding is a term that is used to describe extreme hoarding behavior in humans. It involves the collection and failure to discard large quantities of objects or animals. The storage of all these items often causes large amounts of clutter and causes impairment to basic living activities such as cooking, cleaning, and sleeping (Barksdale, Berry, Leon, & Madron, 2006). Research regarding hoarding is currently limited to a few individuals. The main expert on hoarding behavior is Randy Frost, a professor at Smith College in Northampton, Massachusetts, USA and is the source of much of this information.

There are three distinguishing traits defined by Frost and Hartl (1996) that identify a person who hoards:

- The acquisition of, and failure to discard, a large number of possessions that appear to be useless or of limited value.
- Living spaces sufficiently cluttered that using the room as intended is impossible.
- Significant distress or impairment in the ability to function.

Hoarding is manifested in three major ways: acquisition, saving, and disorganization (Frost, 2004). Acquisition can show itself in many ways. Compulsive buying can be a significant part of compulsive hoarding. Another feature is compulsive acquisition of free items, like newspapers and handouts, and items left on the sides of roads. There are also occasional cases where the acquisition extends to kleptomania, shoplifting, or other forms of stealing.

Research indicates that people who hoard save things for the exact same reasons as everyone else. The difference seems to be that people who hoard apply these reasons to a wider variety of things. There are three reasons for saving items: sentimental saving, instrumental saving, and intrinsic saving. Sentimental saving refers to the attachment to the emotional value of the object. It is a way of extending one's own identity to inanimate objects. Instrumental saving refers to saving items because they are needed or thought to be necessary. Intrinsic saving refers to the saving of objects based on their aesthetics. These objects are viewed as too beautiful to be discarded.

The real problem of hoarding comes with the third manifestation, disorganization. Compulsive hoarding appears to be associated with more than just the volume of possessions saved. It does not matter how many possessions one buys, owns, or keeps as long as they do not interfere with the ability to function. Clutter in the homes of subjects with hoarding problems is extremely disorganized. Valuable objects are commonly mixed in with trash. Even in cases where the volume of possessions is not large, dysfunction can result from the vast disorganization (Steketee & Frost, 2003). Another phenomenon associated with disorganization is the fear of placing things out of sight. For example, one individual piled her clothes on top of the dresser all the way up to the ceiling, but the dresser drawers were empty. As an explanation she remarked, "If I put my clothes in the drawer, I won't be able to see them, and if I can't see them I won't remember that I have them. They will be lost to me" (Frost, 2004).

Hoarding can range from mild with little or no interference with basic living activities, to life threatening, which jeopardizes not only the health and safety of the person who hoards but also those living nearby (Figure 1). Health department officials who have dealt with such cases reported that hoarding poses substantial health risks (Frost, Steketee, & Williams, 2000). Reports by health officers and elder services caseworkers indicated that fewer than 50% of people who

hoard recognized the severity of their problem. Many people who hoard appear to ignore or not recognize the clutter in their homes (Frost, Steketee, Tolin, & Renaud, 2008).



Figure 1: Example of Severe Hoarding Behavior

2.2.1 Causes of Hoarding

Although it is still not known what exactly causes hoarding, it may be an expression of various psychological conditions. Hoarding has been observed in people with anorexia nervosa, psychotic disorders, depression, social phobias, and organic mental disorders (Frost, Steketee, & Green, 2003). These disorders, when associated with hoarding, are called co-morbidities. Table 1 shows the prevalence of co-morbid problems associated with hoarding (Bratiliotis, 2007).

Table 1: Prevalence of Co-morbidities Associated with Hoarding

Major Depression	57%
Social Phobia	29%
Generalized Anxiety Disorder	28%
OCD	17%
Specific phobia	12%
Post Traumatic Stress Disorder	6%
Dysthemia	4%
Panic	2%
None	8%

Most often hoarding is considered a symptom of obsessive-compulsive disorder (OCD). About 25-30% of patients with OCD feel the compulsion to hoard (Brown & Meszaros, 2007). Several researchers suggest, however that hoarding may be a distinct subtype of OCD or a separate disorder altogether (Frost et al. 2003).

Frost (2003, p. 324) proposes that hoarding stems from four types of deficits: information processing deficits, problems with emotional attachments to possessions, erroneous beliefs about the importance of possessions, and behavioral avoidance.

Information processing deficits include difficulties with making decisions, organizing and with memory. Not only do people who hoard have problems with deciding on whether to keep possessions, but they also have trouble making any kind of decision. People who hoard that seek treatment have also expressed having difficulty organizing and categorizing information. The collection of things such as newspaper, magazines, books, cassettes and even emails may be caused by the need to have information sources to aid in information processing (Mogan, 2006). Nearly all persons who hoard compulsively complain they have poor memories. The lack of confidence in their memories and concern for any consequences of forgetting leads to a strong desire to keep possessions in sight so they will not be forgotten.

People who hoard show several forms of emotional attachment to possessions, including beliefs about the emotional comfort provided by objects and fears of losing something important. Discarding these belongings feels like losing part of oneself. Having things taken away feels like having one's identity ripped out. Possessions also become sources of safety or comfort, and their removal often leads to feelings of vulnerability.

Beliefs of people who hoard towards their belongings are linked to emotional features of hoarding. People who hoard often believe they must maintain absolute control over their possessions. Many strongly believe that ownership carries with it the responsibility of making sure the goods are not wasted. People who hoard by collecting junk off the sides of roads see themselves as rescuing these goods.

Hoarding allows for the avoidance of many difficult or unpleasant situations. These include decision-making, organizing, loss of emotional attachments, loss of opportunities, or

emotional upset. Leaving possessions in stacks allows for the avoidance of the difficult chore and the discomfort of making decisions about where to put them or if they are needed. This avoidance also makes it difficult to find people who hoard within the community and to treat patients with hoarding behaviors.

2.2.2 Characteristics of Hoarding

Many people have collections that can occupy a great deal of home space, but this differs from hoarding in specific and important ways. For example, collectors usually enjoy showing off the objects they collect. People who hoard, on the other hand, are often embarrassed about all the things they've accumulated and may go out of their way to prevent others from seeing their living spaces, such as meeting for coffee elsewhere rather than inviting someone into their home (*When keeping stuff*. 2006).

Signs of hoarding include the following (Barksdale et al., 2006):

- Extreme collection and storage of items in the home and in the yard
- Accumulation of combustible materials (newspapers, magazines and rubbish)
- Blocked exits (doors/windows)
- Narrow pathways in the home
- Rat and/or insect infestations
- Rotting food and/or used food containers
- Human and/or animal waste
- Long-term neglect of home maintenance
- Non-working utilities such as heat, running water, sewer, refrigeration.

The most commonly saved items by people that hoard include newspapers, old clothing, bags, books, mail, notes, and lists. They are frequently collected in living rooms, kitchens, and bedrooms. Most collectors reported that their greatest problem concerned the accumulation of paper in similar locations (Frost, Steketee, & Williams, 2000). People who hoard actively acquire extra frequently used items such as soap and shampoo. They also carry more “just in case” items in order to not be without a possession when they need it. Appendix A shows the most frequently saved items by people who hoard. The information in Appendix A is from Dr. Christopher Mogan of the Anxiety Clinic in Melbourne, Victoria, an expert on hoarding in Australia.

2.2.3 Hoarding Demographics

According to existing case reports, hoarding appears to be a chronic and progressive disorder (Steketee et al. 2003). The age of onset typically occurs in childhood and early adolescence. Mild levels begin around age 18, but do not become moderate until sufferers reach their mid-20s. Extreme levels typically being at age 35. Treatment seeking is not evident until the individual reaches 40 or 50. Figure 2 shows the mean ages of onset of hoarding symptoms and of the patient's recognition of the problem (Steketee, 2007). Acquisition problems have a later onset than clutter or difficulty in discarding (Grisham, Frost, Steketee, Kim, & Hood, 2006). Hoarding symptoms usually go unnoticed until later in the individual's life because people who hoard avoid having people visit their house; often they are embarrassed. As people age, they may require support and assistance to remain in their homes. The fact that symptoms become more extreme with age, and that visits to the home increase with age, makes the elderly more common among the population of known people who hoard.

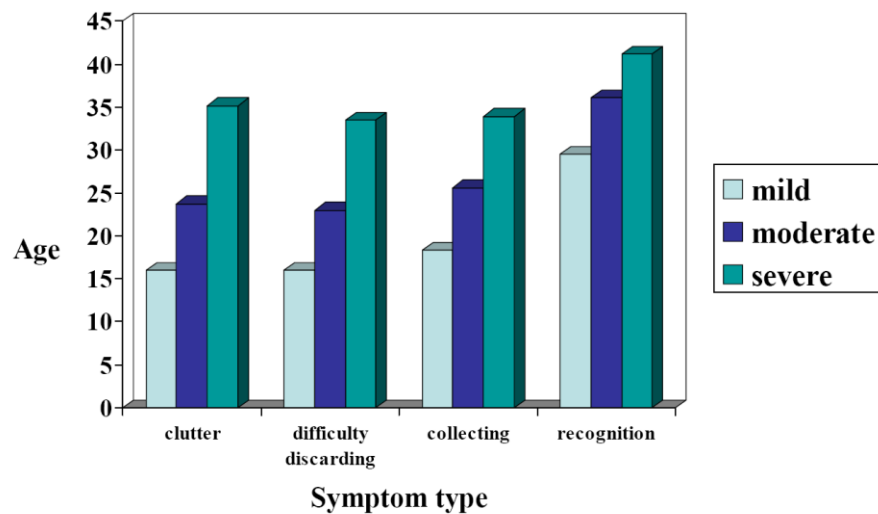


Figure 2: Mean Age of Onset of Hoarding Symptoms and Patient Recognition

Marriage rates among people who hoard are typically low (Frost, 2004). In a study done on 70 older adults who hoard, 55% were found to have never been married. The base rate for people never marrying by age 65 is only 5%. Those people who hoard that do marry tend not to stay married long, as divorce rates are typically high. There is also a higher frequency of hoarding within families, which may suggest a genetic link (Frost, 2004).

2.2.4 Prevalence of Hoarding

Although the prevalence of this condition is largely unknown, a survey performed in the United States of hoarding complaints to Massachusetts Health Departments found 26.3 people who hoard per 100,000. Researchers believe this is an underestimate because few people who hoard have ever been contacted by a health department. The majority of these cases were associated with serious threats to the health and safety of the sufferer and those living nearby. Hoarding complaints were most often lodged by neighbors and police or fire officials. Neighbors were more apt to complain if the clutter extended beyond the confines of the house. In most cases multiple agencies were involved, usually fire departments and departments of aging, due to the high rate of hoarding among the elderly. While no information was provided regarding the age of the targets of complaint, the fact that nearly half of the complaints involved departments of aging reiterates the claim that more focus should be on the elderly (Frost, Steketee, & Williams, 2000).

An elders-at-risk program in Boston reported that 15% of their elderly clients exhibited severe hoarding problems (Frost, 2004). In New York City, the Visiting Nurse Association estimates that 10 to 15% of their clients have hoarding problems. The Community Guardianship Programs place that number even higher, at about 30 to 35%.

Some researchers estimate that 1-2% of all adults suffer from hoarding behaviors (Steketee, 2007). From classifying hoarding as a subtype of OCD, it is estimated that there are 1.5 million people who hoard in the United States. This number is calculated from the fact that 1-2% of the population has OCD and 25% of OCD patients hoard. This number is also a large underestimation since most people who hoard do not have OCD. In Australia, it is believed that hoarding affects approximately 1 in 400 people in the general community but the real number cannot be ascertained (J. Harris, personal communication, March 26, 2009).

2.2.5 Measuring Hoarding

There are a number of instruments to assess hoarding behavior. One such tool is the Savings Inventory-Revised (SI-R) (Frost, Steketee, & Grisham, 2004). The SI-R is a self-report inventory that measures three components of hoarding - difficulty discarding, compulsive acquisitions, and clutter (Appendix B). It contains 23 items that are scored for three subscales

and a total. Several recent studies have indicated that the SI-R is reliable and can discriminate identified hoarding cases from non-hoarding controls and non-hoarding OCD cases. Limitations of the SI-R make additional measures beyond the current self-reporting inventories impossible. Victims' poor recognition of their problem can lead to underestimation of hoarding, thus there is a need for a different kind of tool.

That tool is Clutter Image Rating (CIR) (Frost et al., 2008). CIR was developed to overcome problems with the over and under reporting of hoarding symptoms. This pictorial scale contains nine photographs of rooms with escalating levels of clutter. Each photograph corresponds to a number from one (least amount of clutter) to nine (most severe clutter). There is one scale for each of the three main rooms of the average home: the living room, the kitchen, and the bedroom (Appendix C). Participants select the picture that best represents the clutter in the rooms of their own home. These pictorial representations require no descriptive language and avoid the problem of different perceptions of clutter. CIR has demonstrated good validity with other measures of clutter such as the Savings Inventory- Revised (SIR).

It is important for clinicians to understand the accuracy of patients' judgment of the clutter in their home, since they often cannot visit clients' homes. The CIR ratings have shown good reliability in correlating patient's ratings of clutter to clinician's ratings of the home during CIR validation testing (Frost et al., 2008). The brevity of CIR administration, which often takes less than five minutes, and its reliability, makes it a useful tool for detecting clinically significant hoarding symptoms. A cutoff score of four or higher can be used to indicate significant clutter requiring clinical attention. This measure may also be useful in assessing the outcomes for interventions that were intended to reduce hoarding behavior.

In certain cases, CIR can be misleading (Frost et al., 2008). For instance, occasionally people with hoarding problems live with or their homes are monitored by others such as spouses, family members, or friends. The intervention of these other persons can sometimes prevent the buildup of clutter. In such cases, CIR would not accurately reflect the hoarding problem of the sufferer. Severity of clutter, as measured by CIR, is only one dimension of hoarding. It may measure impairment of living spaces, but it cannot measure the emotional aspects of problems associated with difficulty in discarding or excessive acquisition of objects.

Unlike other tests for rating clutter, CIR requires no written language. The CIR helps eliminate different definitions of hoarding between data collectors and the under- or over-estimation of clutter. The observer simply matches the level of clutter in the room being examined to one of the pictures in the CIR. Different evaluators are able to use this tool to evaluate the level of hoarding in a household with very similar results, given CIR's high test-retest reliability.

2.2.6 Treatment

Complete and successful treatment of hoarding is rare, as compulsive hoarding is associated with several impediments to treatment. The first is a low motivation level to engage in the activities necessary to change the behavior. Many people who hoard view the organization of their possessions as a monumental task that they cannot accomplish. Another is the extent to which subjects recognize their problem. Some people who hoard simply believe that they do not have a problem, despite being told to clean, organize, or discard by local health departments. Others recognize their problem, but when faced with having to discard cherished items their motivation fails. This recognition problem has led to treatments that are focused on organization rather than discarding. When treating this behavioral problem it is important to operate from the patient's frame of reference. Many patients are very frightened by the thought of discarding these items (Frost et al., 2003).

Treatment based on the cognitive behavioral model has fared better than treatment using medication. This model, proposed by Frost, assumes that hoarding is a multifaceted problem that is made up of three types of deficits: information processing deficits, attachments to possession, and distress and avoidance (Frost, 2004). Progress in Frost's treatment was slow because the patient made all decisions about the displacement of his or her possessions. More emphasis was put on organizing and decision making rather than discarding, especially earlier in treatments. This model has seen success in the field (Steketee & Frost, 2003).

Imposing controls and requiring clean up without respecting the needs of a person who hoards has been shown to lead to a rapid relapse and ultimately results in a highly reinforced resumption of hoarding. "It is better to understand the personal context, build up a rapport with a patient, provide motivation, and target small areas of improvement" (Mogan, 2008).

2.3 Legislation in Victoria Regarding Hoarding Households

In the state of Victoria, there are currently no statewide intervention programs in place to address the issues of hoarding through specially developed legislation. Despite this, there are a range of local and state provisions that may be used to address hoarding from a legislative perspective (J. Harris, personal communication, April 7, 2009).

Under Sections 87-94 of the Metropolitan Fire Brigades Act of 1958, the MFB is authorized to serve a fire prevention notice through the local councils requesting a removal of perceived fire hazards. This power is only applicable when there is no local or state legislation in place to address a fire safety issue. It also would not apply to clutter confined to the interior of the home (Metropolitan Fire Brigades Act). Because sufficient local laws already exist in most Councils through which hoarding may be addressed, the MFB is not authorized to act.

According to Section 111 of the Local Government Act of 1989, local councils have the authority to make laws based on the needs of the local government areas. The following information focuses on the experiences of one local council and the laws it utilizes to address hoarding. It is expected that other local councils have similar laws that can be used to assist with the removal of unsightly, dangerous, or unhealthy clutter (Local Government Act).

The Bayside City Council has three divisions that are likely to interact with hoarding households: the Health Department; Aged and Disabilities Services; and Local Laws. While the Local Laws branch is the most effective and efficient method of hoarding intervention it is still essential that the three divisions work together to find a solution to the problem. A flowchart (Appendix D) of the Bayside City Council's methods for dealing with a hoarding household highlights the complexities of this process.

Consultation with the Bayside City Council has identified two ways in which a hoarding household may be referred to them:

1. *Complaints about a hoarding property*- most often received from a neighboring property as a result of hoarding causing unpleasant odors, pest infestation, unsightly stockpiled junk, or fears of a fire risk. In these cases, the complaint is usually filed with the Health Department and/or Local Laws.
2. *Concerns for the welfare of the occupant of the hoarding property*- most often received from neighbors because of odd or reclusive behavior. In these cases, the occupant is typically referred to Aged and Disabilities Services.

These complaints and referrals include both properties where hoarding is evident from the exterior and those where it is confined to the interior of the home (J. Harris, personal communication, April 15, 2009).

The Bayside City Council can currently use three specific pieces of local law in relation to hoarding households. While these are specific to Bayside, most other councils have similar legislation. These are Sections 33-35 of Bayside City Council's Local Law No. 2:

33. Fire Hazards

An owner or occupier of land must ensure that:

- (a) all necessary steps are taken to prevent fires on that land and minimise the possibility of the spread of fire from that land; and
- (b) the land is kept of undergrowth, scrub, bracken, ferns, weeds, stubble and grass (whether alive or dead exceeding 300mm in height and whether standing or not standing) and any other material or substance likely to assist in the spread of fire, whether of a similar kind to that mentioned or not.

34. Dangerous Land

An owner or occupier of land must not cause or allow the land to be kept in a manner which is dangerous or likely to cause danger to life or property, including land which is:

- (a) a haven for vermin, Noxious Weeds, or insects;
- (b) used without a Permit for the storage of any substance which is dangerous or is likely to cause danger to life or property;
- (c) occupied by an unsecured hole or excavation; or
- (d) in any other condition determined by the Council from time to time to be dangerous or likely to cause danger to life or property and notified by the Council to the owner or occupier.

35. Unsightly Land

- (1) An owner or occupier of land must not cause or allow the land to be kept in a manner which is unsightly or detrimental to the general amenity of the neighbourhood in which it is located, including land which:
 - (a) harbours unconstrained rubbish;
 - (b) contains disused excavation or waste material;
 - (c) has undergrowth exceeding 300mm in height; or
 - (d) for any reason is determined by the Council from time to time to be unsightly or detrimental to the general amenity of the neighbourhood in which it is located and notified by the Council to the owner or occupier.
- (2) An owner or occupier of land must not allow any graffiti to remain on any building, wall, fence, post or other structure of object erected on his or her land.
- (3) A person or legal entity who owns or has vested in it, or who has the control and management of any building, wall, fence, post or other structure or object, or any asset, located on Council Land must not allow any graffiti to remain on that building, wall, fence, post or other structure or object, or asset.

The utilization of these laws most commonly falls within the responsibilities of the Local Laws division. In the case where hoarding extends to the exterior of the home, the action taken can be easily linked to one of the aforementioned local laws. Proving one of these criteria becomes much more difficult for interior hoarding as the authorized official must possess a valid reason for entering the premises.

Once the dwelling is deemed to be in violation of Local Laws 33-35, an order to comply will be issued by the council. This provides a timeframe, usually 21 days, for the situation to be remedied. The Bayside City Council uses this order as a proactive measure to initiate contact with the resident. Once a dialogue is established and a timeline for remedying the infraction is in place, the Council will work with the occupant to ensure the successful abatement of the hazards. This usually results in an extension of the clean up time, assistance with the clean up, or financial assistance for industrial cleaning by a private company through a deferred payment system.

Due to Local Laws' knowledge of the complexities of hoarding behavior and the need to provide ongoing assistance, an internal referral can also be made, to seek treatment for those individuals who suffer from hoarding. Bayside City Council's Aged and Disability Services department provides a range of "in home" services through the Home and Community Care program. The acceptance of these services provides the optimal chance of assisting those who hoard to maintain a functional level within their homes (J Harris, personal communication, April 15, 2009). This is another possible outcome of addressing hoarding with a compliant resident.

The difficulty for local councils increases greatly when the occupant is evasive or unwilling to cooperate. Due to the behavioral avoidance often associated with hoarding, it may be challenging for Local Laws to make initial contact with the occupant. Avoidant occupants make it difficult to prove that the premises are dangerous or a fire hazard. This is particularly true if the clutter is located inside the dwelling and the referral is received as a welfare concern through Aged and Disability Services; there is no obligation on the part of the occupant to accept their services.

Without the cooperation of the hoarding occupant, the chance of a positive outcome is significantly reduced. In cases where occupants refuse assistance or fail to obey a notice to comply, are then in breach of the local laws. The city of Bayside then has two options. The first

would be to send in a contractor to clean out the dwelling, bill the occupant, and take them to court if necessary; Bayside City Council does not prefer this solution. The second option is to send a letter of demand to the occupant offering to settle the problem at the council. This alternative is appealing for those who are embarrassed by the state of their living conditions and are afraid to answer the door.

If the inhabitant is still non-compliant with the council, a Magistrate's order can be obtained summoning the homeowner to appear in court. In this hearing, the Council (or other plaintiff) must prove an occupant's instability and inability to care for himself. If proven, the magistrate may order a cleanup regardless of the resident's wishes. If not proven, the inhabitant is free to live as they desire. While proving an occupant's inability to care for themselves achieves the goal of cleaning the premises and removing hazards, it does nothing to assist in the long-term treatment and support required by people who live in hoarding households. In cases where the person who hoards assists in the cleanup and removal of debris, the outcome is generally more positive.

If the occupant fails to appear in court there is only one option left for the local council. They must obtain a Magistrate's order to clean out the dwelling if it is deemed to be in violation of the Environmental Health Act.

The tools currently used by the local councils are not optimal; however, they are the only ones present. Resorting to court orders for initiating a cleanup is far from the ideal solution. There is a pressing need for an integrated approach to the management of people with this behavior and a long-term treatment program to help these people. Cooperation between various internal local government departments, aged psychiatric assessment teams, and other specialist community-based services involved in the identification of hoarding households needs to be improved to ensure that hazards are removed and treatment is administered to those who need it.

2.4 Fire Risks Caused by Hoarding

Compulsive hoarding poses numerous health and safety hazards for the person who hoards, family members, and the community. A "hazard", as defined by the Society of Fire Protection Engineers, is "a condition or situation with potential for undesirable results" (Madden, 2005). Falling and unhygienic conditions are reported as common hazards associated with

compulsive hoarding. Thirty-five percent of people who hoard consider their clutter unhygienic. Thirty-eight percent of people who hoard consider falling a direct effect of clutter. It should also be noted that falling is the leading cause of injury in the elderly, which are the most likely age group to hoard (Mogan, 2008). The biggest safety problems caused by hoarding, however, are the fire hazards that hoarding creates. Forty-seven percent of people who hoard consider their hoarding to be a fire hazard (Mogan, 2008) and 67% of hoarding-related complaints mention it being a fire hazard (Frost, Steketee, & Williams, 2000). Fire hazards can be broken down into either initiating hazards or enabling hazards.

2.4.1 Initiating Hazards

Hoarding itself does not usually present an initiating hazard, as hoarded items are rarely the source of ignition. Examples of initiating hazards can include heating or cooking equipment or electrical distribution equipment. Even factors as uncontrollable as a vulnerability to wildfires or lightning strikes are considered initiating hazards. Although hoarding does not initiate a fire, there is anecdotal evidence from MFB that hoarding households have a higher than average rate of unorthodox use of utilities that may initiate a fire. This is supported by evidence that many people who hoard are often “too afraid to have someone fix the appliances that break over time” (Frost, 2004). This fear is reinforced by the fact that social phobia, the fear of being subject to outside criticisms, is co-morbid in 29% of people who hoard which is over four times the percentage of the general population diagnosed with this disorder (Steketee, 2007).

More concrete evidence of disabled appliances among elderly people who hoard was gathered during a study conducted in 2001. The results of this study are summarized in Figure 3 (Kim, Steketee, & Frost, 2001). It is worth noting that more than half of the elderly people who hoard interviewed did not have a working stove or oven. In the absence of a working appliance, it is likely that makeshift measures were used. In one example, a person who hoards was cooking over an open fire in his lounge which set the house ablaze. These ad hoc measures are not subject to the same regulations as appliances and can be high-risk initiating hazards, especially if they are used in a cluttered environment.

If initiating hazards could be eliminated, hoarding would likely pose much less of a fire hazard. Reducing the number of initiating hazards is the best way to prevent a fire incident, since eliminating them completely is nearly impossible.

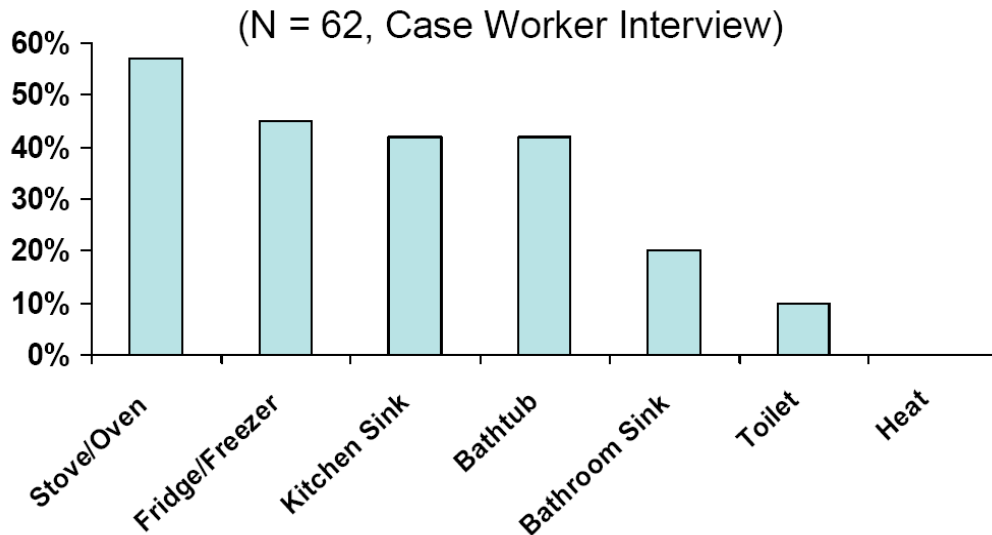


Figure 3: Percentage of Appliances Not Usable Among Elderly People Who Hoard

2.4.2 Enabling Hazards

The severity of an already initiated fire depends on the enabling hazards. Therefore, minimizing the number of such hazards in a room is important for reducing the damage caused by a fire incident. Enabling hazards are defined as those “with potential to increase the severity of consequences resulting from an already-initiated fire, by permitting or promoting the growth or spread of fire or otherwise increasing the harm associated with the environment produced by the fire” (Madden, 2005).

The degree to which a fire incident is a hazard is closely related to the time from established burning until Full Room Involvement (FRI). This time can range from as short as one minute to twenty minutes for normal sized rooms. The exact time depends on five factors: room size, interior finish, contents clutter, contents material, and kindling fuels (Fitzgerald, 2004). Therefore, more clutter generally means a shorter time to FRI. The four other factors must be taken into consideration as well. The wall finish or ceiling height of a room for example are usually more significant than clutter in determining the fire growth hazard potential of a room. In

addition, the distribution of the clutter, its location relative to barriers, and its combustibility will affect the time to FRI.

According to Mogan, the top five items saved by people who hoard are clothes, greeting cards and letters, bills and statements, books, and magazines (Appendix A). These are all highly combustible materials, and in large quantities they would indeed promote the growth of a fire by creating a fast spreading and very hot fire that would be hard to suppress.

2.4.3 Impeded Movement

In addition to adding to the severity of a fire, hoarded items can also pose a fire hazard by impeding egress as a person tries to escape from a burning household. Blocked hallways, doors, and exits are common in hoarding households. The extra time and effort it takes to evacuate the building can be a matter of life and death. Similarly, high levels of hoarding can impede the access of emergency personnel into the household, therefore making it harder for them to extinguish the fire or rescue anyone who might be trapped inside (Barksdale, Leon, & Madron, 2006). This increases the danger not only for the occupant but also for the emergency personnel.

2.4.4 Prevalence of Hoarding-Related Fires

According to the study conducted in 2000 by Frost, fire hazards were alleged in 67% of hoarding complaints to health officers in Massachusetts. In 6% of the cases described by officials, the hoarding contributed directly to the individuals' deaths in house fires (Frost, Steketee, & Williams, 2000). Assuming these complaints represent an accurate cross section of hoarding households in the Melbourne area, this translates to a conservative estimate of 25 thousand unrecognized hoarding-related fire hazards in Melbourne.

2.5 Population Characteristics of Melbourne/Australia

The continent of Australia was first discovered by European explorers in 1606. The large island was then charted by various expeditions for the next 160 years and was finally claimed for the British Empire in 1770 by Captain James Cook. The newfound island was used as a British penal colony beginning in 1788 and continuing through 1868. Over the course of those 80 years, many non-convicts immigrated to the colony as well. This was particularly true during the multiple gold rushes that began in 1850; Immigration increased again due to the healthy state of

the wool industry over that same time period. Over time, the population diversified to include both penal and non-penal inhabitants, and eventually became completely free; the Commonwealth of Australia was founded in 1901. (Australian Department of Foreign Affairs and Trade)

2.5.1 Demographics

After the incorporation of the Commonwealth of Australia, the new Parliament passed the Immigration Restriction Act in 1901 which restricted immigration to those of primarily European descent. It was not until after World War II that these restrictions gradually began to be removed (Australian Department of Foreign Affairs and Trade). Due to Australia serving as a British colony for over one hundred years, as well as the effects of the subsequent Immigration Restriction Act, its current population consists primarily of Caucasians of European descent.

Australia produces a nation-wide census every five years; the most recent Census was conducted in 2006. These studies are carried out by the Australian Bureau of Statistics and the results are published in a variety of formats. It is from these data that Appendix E has been created. The data in this table outlines the demographic breakdown of Australia and the City of Melbourne. The data for both locations are provided in raw number and percentage of the total population formats.

The majority of Australians are English-speaking Christians and the percentage of English speakers is lower in the City of Melbourne than the national average. Taking this information into consideration can lead to the conclusion that there are an unusual number of non-English speakers in the city, quite possibly in the form of immigrants. The other possibility is that, if Melbourne is considered representative of other cities in Australia, then the rural areas are almost entirely English speaking. Also of note is the fact that the percentage of Christians is also lower in Melbourne than the rest of the country, and other religions are more prominent in the city. Taking these two facts into account, as well as the fact that Melbourne houses a higher percentage of people who have parents that were born outside the country, bolsters the conclusion that the city is home to a diverse population due to a high rate of immigration (*Australia basic community profile 2007; Melbourne Victoria major statistical region basic community profile 2007*).

2.6 Fire Fatalities in Victoria

In the most recent study from the Australasian Fire Authorities Council (AFAC) (Australasian Fire and Emergency Service Authorities Council, 2005), accidental fire fatalities in residential structures were analyzed from November 1997 through September 2003. It was found that in Victoria, there were 99 fire fatalities resulting from 95 residential fires during this period. These data, represented as a percentage of the population, correspond closely with those for all of Australia.

2.6.1 Demographics of the Victims

Of the 99 victims of residential fires, 66% were found to be male. The age breakdown of victims and a comparison to that of the general population of Victoria is summarized in Figure 4. Fire fatalities were most overrepresented in the elderly. Those over 70 accounted for 25% of the fatalities while this age group comprised only 9% of the Victorian population. Another high-risk group that can be seen is those aged four and under.

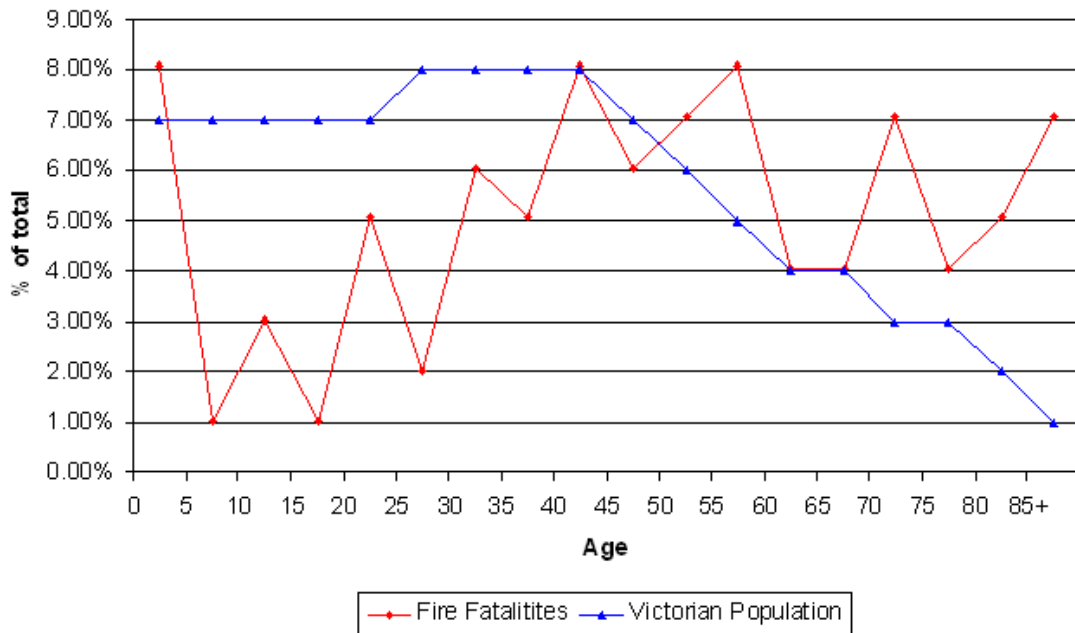


Figure 4: Age of Victorian Fire Fatality Victims

Ethnicities of the victims were not recorded in 96% of residential fire fatality cases. There is also no indication that ethnicity has any bearing on the likelihood of one being prone to hoarding, so it was not be considered in this study.

2.6.2 Property Type

It was found that 80% of fatal fires occurred in houses while only 10% were in apartments. The remainders were in other residential area such as sheds or garages. In 29% of the cases, the property type could not be determined. A distribution of property type is seen in Figure 5.

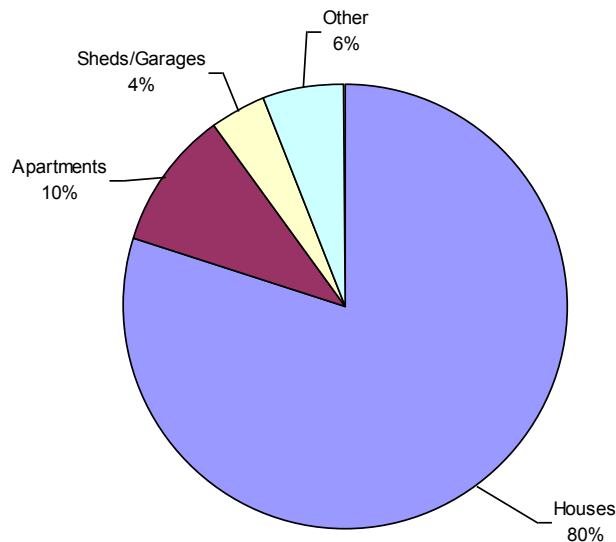


Figure 5: Property Type of Fatal Fires in Victoria

2.6.3 Smoke Alarms

The presence of a smoke alarm was not recorded for 27% of the fires. Of the data that were recorded, nearly half showed the households did not have a smoke alarm, and some of the households that did had alarms that were not functioning at the time of the incident. In total, 57% of households either did not have a functioning smoke alarm or there was no alarm present. The status of smoke alarms can be seen in Figure 6.

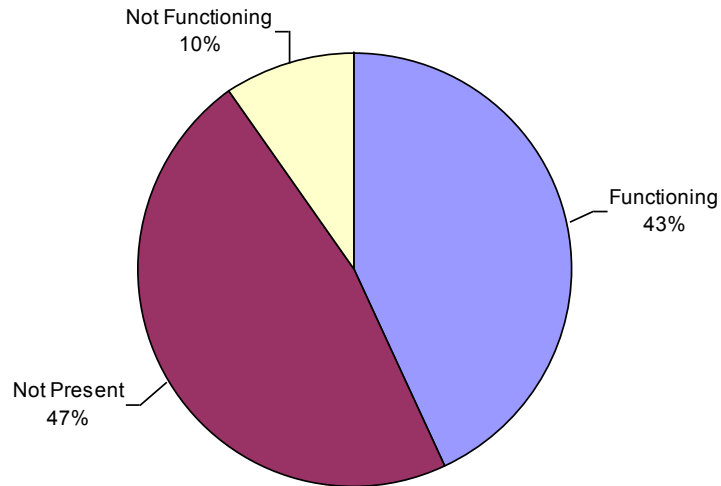


Figure 6: Status of Smoke Alarms at Fatal Fires in Victoria

2.6.4 Cause of Fire

The cause could not be determined for half of fatal fires. Of the other half, most (22%) were ignited by a heater, lamp, or open flame. Eighteen percent were caused by smoking materials or equipment, 12% were due to smoking in bed, 12% were electrical faults and 10% were accidents or explosions. Figure 7 shows a breakdown of the causes of fatal fires.

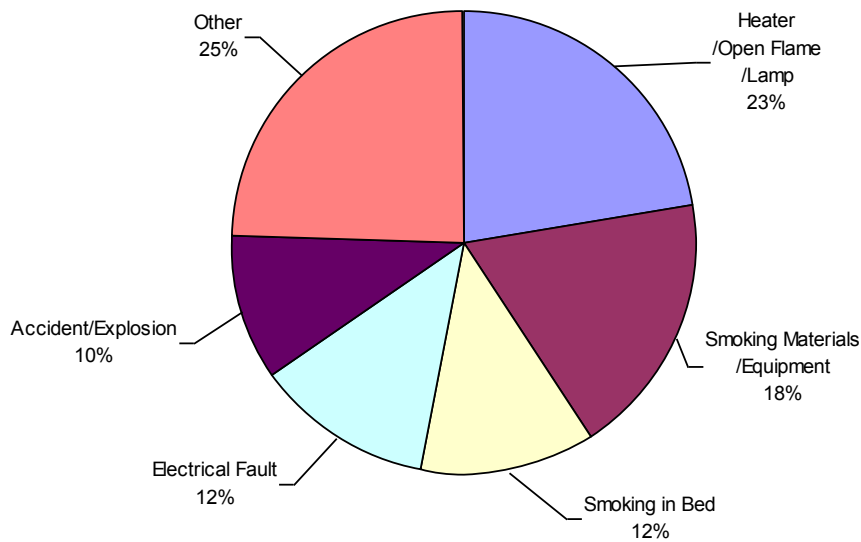


Figure 7: Cause of Fatal Fires in Victoria

2.7 Australian Incident Reporting System

The Australian Incident Reporting System (AIRS) was developed by AFAC in 1997. It was designed to provide uniform data recording measures across the various fire and emergency service authorities in Australia and to provide a repository of these data. AIRS was created as an evolution of a previous data collection system, Australian Assembly of Fire Authorities Incident Reporting System (Australasian Fire and Emergency Service Authorities Council, 2009a).

AIRS is comprised of sections known as blocks. Each block is designated alphabetically, ranging from Block A through Block J. Each block represents a different category of information to be recorded about a fire. The block titles are as follows (Australasian Fire and Emergency Service Authorities Council, 2009a):

- A - Complete for all incidents
- B - Automatic fire alarms
- C - Hazardous materials incidents
- D - Casualties, rescue and evacuation
- E - Ignition (all fires)
- F - Fire fighting
- G - Wildfires (grass, bush and forest)
- H - Dollar loss fires
- I - Mobile property details
- J - Structure fires

These blocks help firefighters to organize their reporting of fire incidents more effectively as well as allow readers to locate the data they are searching for more efficiently. Blocks are further divided into numerical sections, such as cell A4-Incident Number. The AIRS report is completed by the commanding officer at the scene.

Not every block is always completed. For all fires, it is required that A Block be submitted, which contains basic incident information such as date, time, location, etc. The other blocks are completed as necessary or if the information is available. For example, a standard residential house fire is not likely to involve any hazardous materials, and therefore Block C is not likely to be completed (Australasian Fire and Emergency Service Authorities Council, 2009a).

The organizations that contribute to the AIRS database are, as of August 2008, New South Wales (NSW) Fire Brigades, NSW Rural Fire Service, Northern Territory Fire and Rescue

Service, Queensland Fire and Rescue Service, Southern Australia Metropolitan Fire Service, Tasmania Fire Service, Victorian (VIC) Country Fire Authority, and VIC Metropolitan Fire Brigade, Western Australia Fire and Emergency Services Authority. (Australasian Fire and Emergency Service Authorities Council, 2008) These organizations represent every region of Australia, creating a database of information pertinent to all areas of the country (Australasian Fire and Emergency Service Authorities Council, 2008).

The data stored in AIRS serve many different purposes. They can be used for researching many different topics about emergency incidents including fires, motor vehicle accidents, or medical responses, just to name a few. These data are also used by government entities for collecting response statistics. The Australian Government publishes a yearly *Report on Government Services*, which includes a section about Emergency Services. This report evaluates the effectiveness of these services for review. (Australasian Fire and Emergency Service Authorities Council, 2009b)

Chapter 3: Methodology

The essential goals of this project were to obtain information about the victims of fire incidents involving hoarding households and to quantify the characteristics common in these incidents. This information can be used by MFB and many other organizations to increase awareness, identify key triggers, and create programs that can provide intervention to people affected by this disorder. These goals were fulfilled by completion of the following objectives:

- Develop a greater understanding of the nature of hoarding fires
- Find the prevalence of unorthodox use of utilities among hoarding fires
- Create a profile of victims involved in hoarding fires
- Draft an informational brochure to educate about hoarding

Figure 8 shows our data collection flowchart, which is explained in more detail in the next two sections.

3.1 Hoarding Fires Sources

To accomplish our objectives we first collected various types of relevant data from fire incidents that involved hoarding; these data were obtained from the MFB. Under consideration were fire incidents that occurred from the beginning of 1999 until the end of April 2009. The MFB is called to approximately 2,000 fire incidents each year in the greater Melbourne area. Since 2000, MFB has responded to 16,812 residential fires.

Our first task was to identify which fires out of those 16,812 involved hoarding and document them. Each fire incident is assigned a unique call identification number that was used to locate and further investigate possible hoarding fires. The first step of our methodology was to search for and record these call identification numbers. Currently there is no place where hoarding is specified in any fire incident records; this makes identifying hoarding fires difficult, and researching each incident individually would have taken much longer than our given timeframe. Due to the lack of requirement to record hoarding in the AIRS database, it was inevitable that we would not find every hoarding fire incident. This section will present our methods of locating incidents that involved hoarding.

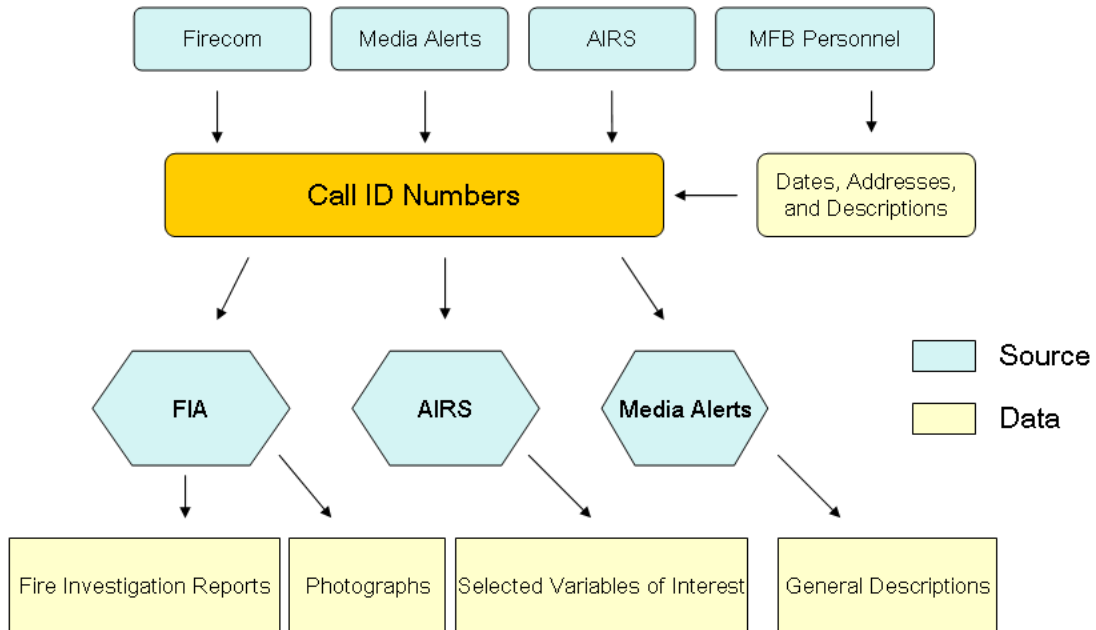


Figure 8: Methodology Flowchart

3.1.1 AIRS

Data from every incident the MFB responds to are stored on the AIRS database. These data include a short description of the incident. The descriptions and call numbers for all residential fire incidents since the beginning of 2000 were obtained from AIRS. The descriptions were then searched for keywords that may indicate hoarding; by reviewing the remainder of the description, a determination was made whether hoarding had been likely. The term “hoard” yielded the highest number of likely hoarding fires. Other successful search terms included “junk”, “bric-a-brac”, “clutter”, “council” (meaning local government council), and “pile”. Awareness of the term “hoarding” in reference to the disorder is widely regarded as a relatively new phenomenon. Misspellings of these terms were also considered and did lead to many potential hoarding fires.

AIRS was used again to identify possible hoarding fires by searching the different AIRS blocks for codes that could indicate the presence of hoarding. Field D11 was searched to identify incidents that had codes for “locked or blocked exits” or “lack of cooperation”. This returned a small number of incidents, so the descriptions were read through individually to determine if they indicated hoarding. The call numbers of those that did indicate hoarding were recorded.

3.1.2 Firecom

Firecom is a system employed by the MFB to archive radio communications that occur during an incident. A search of the Firecom transcripts was performed; keywords similar to those in the AIRS search were used. Along with the call number, the phrasing around the identified keyword was exported. By reviewing the keyword within that context, we were able to ascertain if the keyword referred to hoarding or something else. If it did indeed refer to hoarding, we added the corresponding call number to our list.

3.1.3 Media Alerts

For certain incidents of interest, MFB issues Media Alerts for distribution to the press. Media Alerts are written for various types of incidents at the discretion of the on-duty communications center supervisor. They include the call number, number of firefighters involved, attending appliances and a description that is much more detailed than those found in AIRS. This description usually includes any unique information about the incident that the media may find of interest. One of the goals of the Media Alerts is to educate the public about the importance of fire safety. If an incident could be used in this manner, it is more likely to be documented in a Media Alert. In the case of hoarding, the accumulation of large amounts of materials can be seen as a fire hazard, making these fires the likely subject of a Media Alert.

Personnel at the communications center maintained a record of all the Media Alerts issued since 2000. Using methods similar to the techniques employed with AIRS and Firecom, the Media Alerts were searched for hoarding keywords and the call numbers of hoarding-related incidents recorded.

3.1.4 MFB Personnel

One of the more useful sources of possible hoarding related fire incidents was MFB personnel. Because of the abnormal nature of hoarding, many firefighters remember hoarding fires to which they have responded, and many were more than happy to share their experiences with us. The indication of an approximate date, location, or unique quality was usually sufficient to determine the call number using an AIRS search.

Another MFB source was those members of the Community Education department already studying hoarding. In preparation for our project, MFB had collected email correspondence from social services, Media Alerts, news articles, and Coroner's reports addressing hoarding. These documents included the call number of the incident or provided other identifying information, which made the call number easy to obtain from AIRS.

3.2 Data Collection

Once we had collected a substantial number of hoarding-related call numbers, we began obtaining the information necessary for our analysis. This information came from a number of sources, many of which were the same records used to identify hoarding fires. Data were collected from the following sources:

1. AIRS (A full description of the AIRS fields can be found in Appendix F)
 - a. Block A: 4, 6, 14, 20, 21, 23, 29-34, 42, 69
 - b. Block D: 4, 11
 - c. Block E
 - d. Block H: 1-3, 6, 7
 - e. Block K: 14, 24
 - f. Descriptions
2. Photographs
3. Media Alerts
4. Fire Investigation Reports
5. Coroner's Reports
6. Email Correspondence
7. MFB Personnel

Not all sources were available for every fire we had wished to investigate. The Fire Investigation Department (FIA) only investigates fires when the cause is not obvious or a fatality occurred. An FIA investigation includes many photographs of the scene and a Fire Investigation Report. Coroner's reports are only available if there was a fatality and Media Alerts are only issued for select fires. In fact, the only data guaranteed for every fire are in Block A from AIRS. Many times, however, the sources provided redundant information, which further validated the reliability of our data.

3.3 Identifying Hoarding Levels

We began our analysis by assessing the level of hoarding present in households where fire incidents occurred. We utilized two methods to determine the level of clutter in the sample households. Each member of our team independently rated the hoarding level using CIR and the photographs from the FIA reports, if available. These individual ratings were then averaged to form a composite hoarding level that was recorded as the hoarding level for that household.

For the many incidents without photographs on record, a different approach was used to rate hoarding level. From the AIRS reports, we were able to identify the officer-in-charge at the scene. This officer was sent a copy of the CIR scale by Commander Frank Stockton, Manager of MFB's Community Education Department, and asked to rate the level of hoarding present at the fire. We believe that the ratings received from the officers-in-charge possess a high level of validity because of CIR's high test-retest reliability. These hoarding levels were grouped and analyzed together with our own assessments.

3.4 Nature of Hoarding Fires

Our original intent was to determine the hoarding level for all identified hoarding fires and then compare this assigned hoarding level to the "severity" of the fire. After researching the behavior of fires, it became clear that a fire could not be given a single "severity" rating. More important than comparing hoarding level with fire severity would be number of fatalities, cost of damage, or number of emergency personnel involved, among other factors. These data were collected primarily from AIRS reports and recorded in a Microsoft Excel spreadsheet. The following list outlines the variables examined and the corresponding AIRS fields, if applicable.

- Hoarding Levels
 - Described in Section 3.3
- “Severity” of Fire
 - Number of Personnel on the scene
 - AIRS: A29
 - Number of Pumpers on the Scene
 - AIRS: A30
 - Estimated Dollar Loss
 - AIRS: H1
 - Cost to the MFB for Attending
 - It cost the MFB AUD 1,720.68 for every pumper that attends an incident per hour. This number includes firefighter wages and all support mechanisms. By multiplying the number of pumpers that attended by this figure and the time at the scene we calculated how much each incident cost the MFB.
- Status of Smoke Alarms (not present, not functioning, functioning)
 - AIRS: K24
 - Documentation
- Impeded Egress/Access
 - AIRS: D11
 - Documentation
- Number of Fatalities
 - AIRS: D4
- Number of Exposures (Structures Involved)
 - AIRS: H6
 - Documentation

3.5 Unorthodox Use of Utilities

To investigate a possible connection between the unorthodox use of utilities and hoarding behavior, we analyzed the cause of fire listed in the AIRS reports. Data for this objective were taken from Block E (Ignition) and descriptions in AIRS. FIA reports, when available, contained even more detail regarding the point of origin of fires. The causes of these fires were then compared to those of all residential fire fatalities in the Metropolitan Fire District, with special attention paid to whether an unorthodox use of utilities caused the fire. Also examined was the presence of disconnected electricity, gas, or water services, and whether that was a factor in the cause of the fire.

3.6 Victim Profile

To gain a better understanding of who is involved in hoarding fire incidents a victim profile was constructed based on our data. The following characteristics were considered: age;

gender; degree of cooperation with MFB; property type; and property ownership. This profile was then compared to data presented in the Residential Fire Fatalities in Victoria Report (AFAC, 2005) discussed in Section 2.5 and the Melbourne and Australian population information discussed in Section 2.3. The list below outlines the variables examined and the source of the information corresponding to each.

- Gender
 - AIRS: A14
 - Documentation
- Age
 - Documentation
- Household Profile
 - Documentation
- Lack of Cooperation
 - AIRS: A42
 - Documentation
- Property Type
 - AIRS: A20
 - Documentation
- Property Ownership
 - AIRS: A14 vs. H7, A21
 - Documentation

3.7 Informational Brochure

Since the public knows little about hoarding behaviors, MFB had asked us to draft an informational brochure to educate people about hoarding. The aim is to increase knowledge among firefighters, other emergency services, Local Government Areas, and community care providers. Included in the brochure is information regarding the causes of hoarding, its risks, and MFB recommendations for courses of action. A copy of the draft brochure is in Appendix G.

Chapter 4: Results and Analysis

Hoarding is not thought to be a new problem, but awareness of it among both the MFB and the public is relatively new. We believe the greater amount of hoarding fires discovered in recent years can be explained by this awareness. From March 16th to April 22nd, 2009, we identified a total of 48 fire incidents dating back to 1999 in the Metropolitan Fire District that are believed to have occurred in hoarding households. The 48 incidents represent approximately 0.25% of all residential fires over that same period. This fraction corresponds closely to the lowest estimate of the number of houses that hoard, but is still believed to be a gross underestimate. There is currently no place where hoarding is denoted in AIRS or any other records, making it extremely difficult to locate hoarding fires. The first instance of “hoard” being noted in an AIRS description was in 2003. The distribution by year of hoarding fires that we identified is presented in Figure 9.

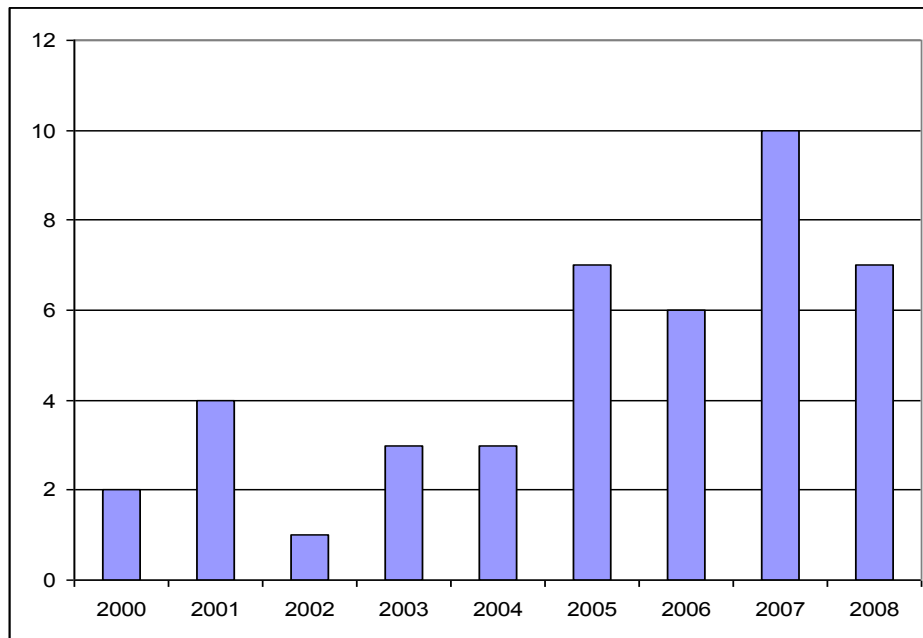


Figure 9: Number of Hoarding Fires by Year

In the following sections, various aspects of hoarding fires are analyzed and the results of our findings are presented.

4.1 Nature of Fire Incidents

This section presents the analysis and results of certain fire characteristics to provide a better understanding of the nature of hoarding fire incidents. The characteristics analyzed include the associated hoarding levels, the severity of the fire, the status of smoke alarms, the blockage of egresses, the number of fatalities, and the number of structures involved in the fire. This section assigns various dollar amounts (AUD) for the purpose of quantifying the damage or resource allocations. The data used to make these assignments are included in Appendix H.

4.1.1 Hoarding Levels

Of the 48 incidents identified, only fifteen were investigated by FIA and had photographs available. Analyzing the hoarding levels of the incidents from photographs proved challenging because of the difficulty of determining how much clutter was in the room after many of the possessions had been destroyed by the fire. In most cases there were photographs of undamaged or lightly damaged sections of the home; these were particularly helpful in assessing hoarding levels throughout the rest of the dwelling.

We obtained estimates of the hoarding levels for eleven more incidents from the recollections of the officers in charge at the scene. This yielded 26 incidents with hoarding level assessed using the CIR, or 54% of the total number of incidents that were identified. Overall, the ratings provided by the officers seemed to be consistently higher than our own rankings. Because the team and the officers rated different fire incidents, this discrepancy is not significant. Still, it is an interesting observation. The average level of hoarding ranked by the team was 5.6, while the average provided by the firefighters was 6.9. Our most reasonable explanation is the large impression these incidents may have made on the firefighters. A responder is more likely to recall the remarkable (high hoarding level), as opposed to the normal. In addition, our rankings were made based on post-incident analysis reports. While we attempted to make the most accurate ranking of these properties based on what was remaining, there remains the fact that an indeterminate amount of clutter burned up and was destroyed.

One deficiency we encountered while using CIR was the setup of the control rooms for the scale as compared to the actual manner in which people hoard. People who hoard tend to pile possessions against the walls of the room, piling them as high as possible and gradually moving

inward until there is only a pathway through the room remaining. In CIR illustrations above level seven, the pictures depict a room with clutter piled uniformly throughout. In actual cases, the amount of clutter may seem to be greater than CIR depicts because of the way it is situated. This discrepancy between the CIR depictions and popular hoarding practices led to difficulty in assessing hoarding levels accurately. Combining these difficulties with the fact that some officers wished to rank cases as being higher than level nine, there may be a need for a more accurate ranking scale.

Figure 10 shows the prevalence of hoarding levels from our data set. Fires occurred at levels three and higher, with no particular trend.

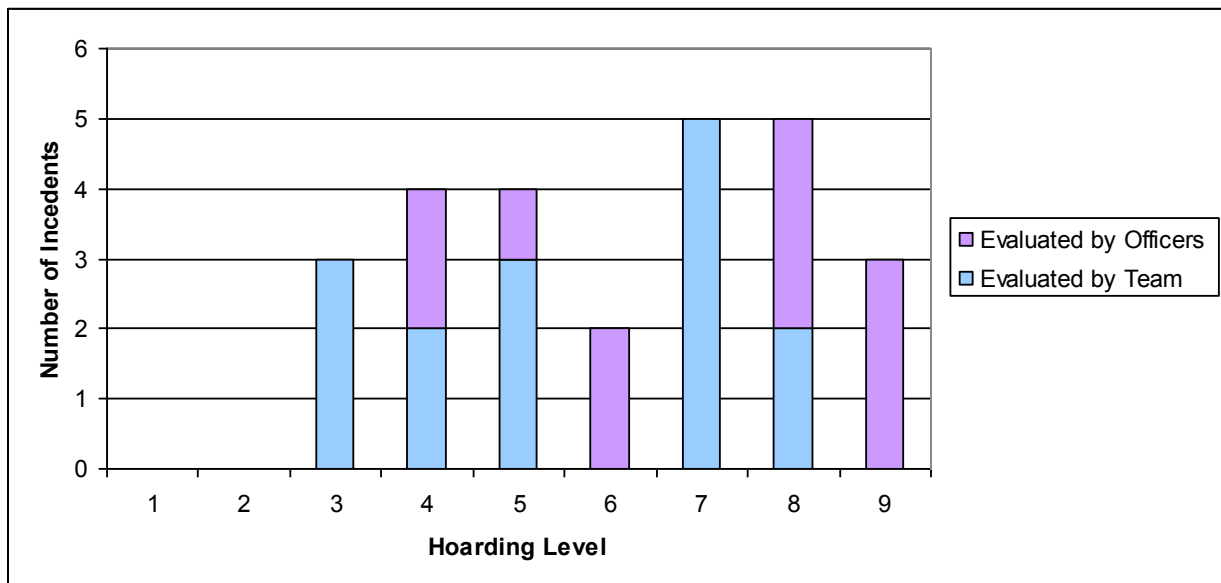


Figure 10: Prevalence of Hoarding Levels

4.1.2 Fire Severity

Four variables were analyzed to assess the severity of the fires: the number of personnel at the scene; the peak number of pumpers used; the estimated dollar loss; and the cost to MFB for attending the scene. MFB often uses these variables to quantify the severity of a fire.

4.1.2.1 Number of Personnel on the Scene

Figure 11 shows a histogram of the number of incidents compared to the number of personnel at the scene. Of the 48 incident reports we obtained, two reported no personnel in attendance. Assuming this was caused by a data entry error, these two incidents were omitted from the analysis of this variable. We found that 42 % of incidents involved fewer than ten personnel attending. The average over the entire data set was 17.3 responders with the maximum number being 65. Since 2000, the average number of MFB personnel to attend a residential fire has been 7.7. Thus the number of responders at a hoarding fire is 2.25 times the number of responders at an average home fire, which suggests a greater allocation of resources to hoarding fires. Figure 11 shows a trend indicating that as the number of personnel on the scene increased, the number of incidents involving that number of personnel decreased.

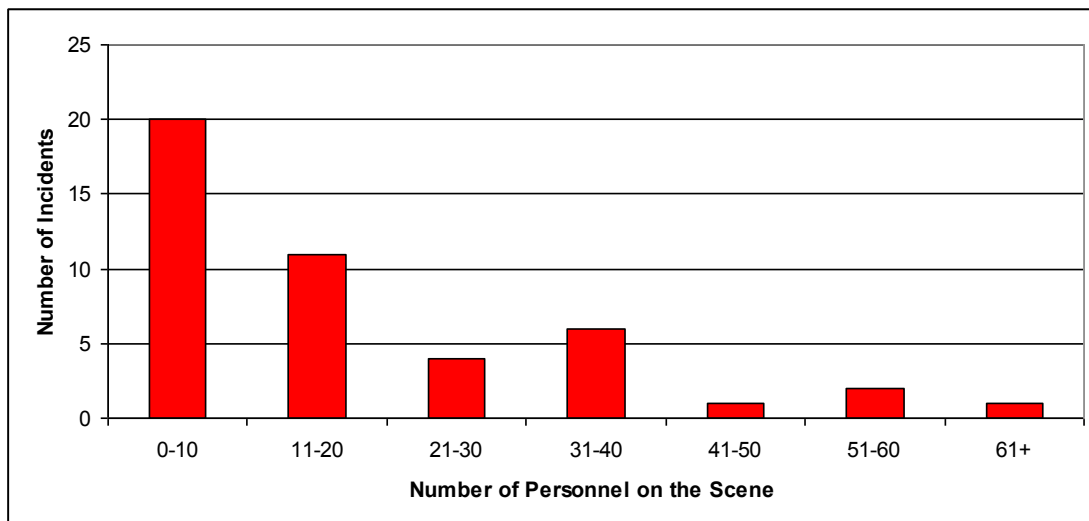


Figure 11: Number of Responding Personnel

Figure 12 shows the number of incidents where the fire was contained to the room of origin in relation to the number of personnel on the scene. It is clear that when the fire is confined to its source, the allocation of resources is much smaller. From Figure 12 we can see that there was a much higher allocation of resources for fires that spread throughout the structure, as would be expected. In 40% of hoarding fires the fire was contained to the room of origin. Compared to MFB's average of almost 90% room of origin containment for residential fires, hoarding fires appear much harder to contain because of the large fire load.

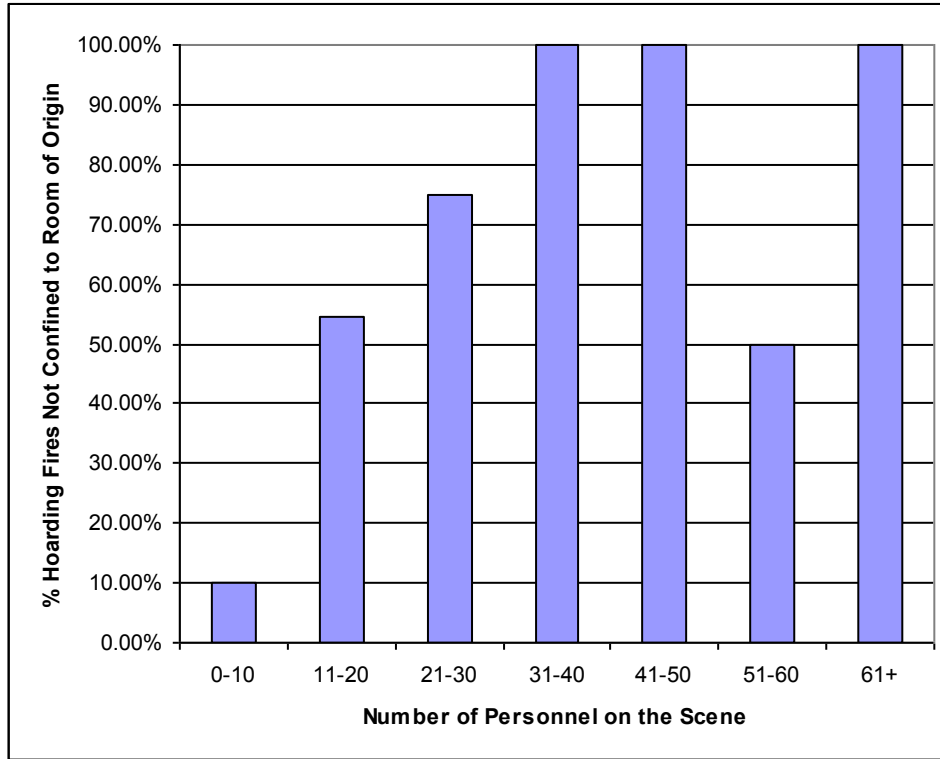


Figure 12: Room Containment and Responding Personnel

4.1.2.2 Peak Number of Pumpers Used

Of the 48 incidents only one did not report the number of pumpers involved, while another reported zero pumpers involved. It is assumed the latter may have been a mistake, and both were left out of the following analysis. Figure 13 shows a histogram for the peak number of pumpers used in relation to the number of incidents. Fifty-eight percent of the incidents involved one or two pumpers. The average was 2.6 pumpers were per incident, with the maximum being seven attending one incident. Comparing this to the MFB average allocation of 1.4 pumpers to residential fires since 2000, hoarding fires have a pumper allocation 1.8 times greater than the average residential fire. This provides further evidence that these fires require more resources than normal residential fires. The histogram shows that as the number of pumpers on the scene increased, the number of incidents involving that number of pumpers decreased.

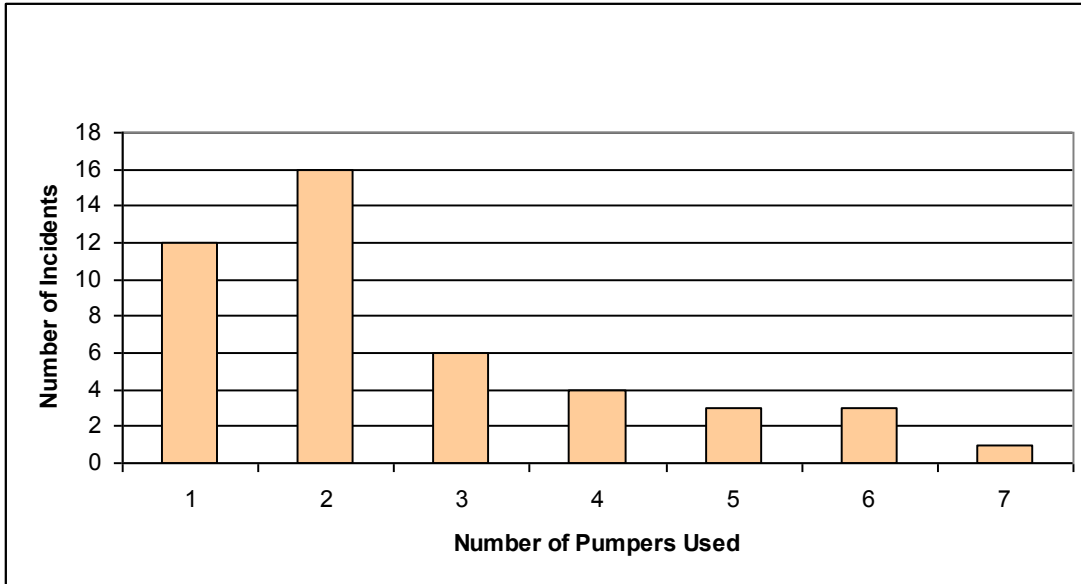


Figure 13: Number of Pumps at Scene

Figure 14 shows the peak number of pumps used in relation to the containment of the incident. As in the previous section, we can see that when the fire spreads from the room of origin throughout the structure, the allocation of resources becomes greater.

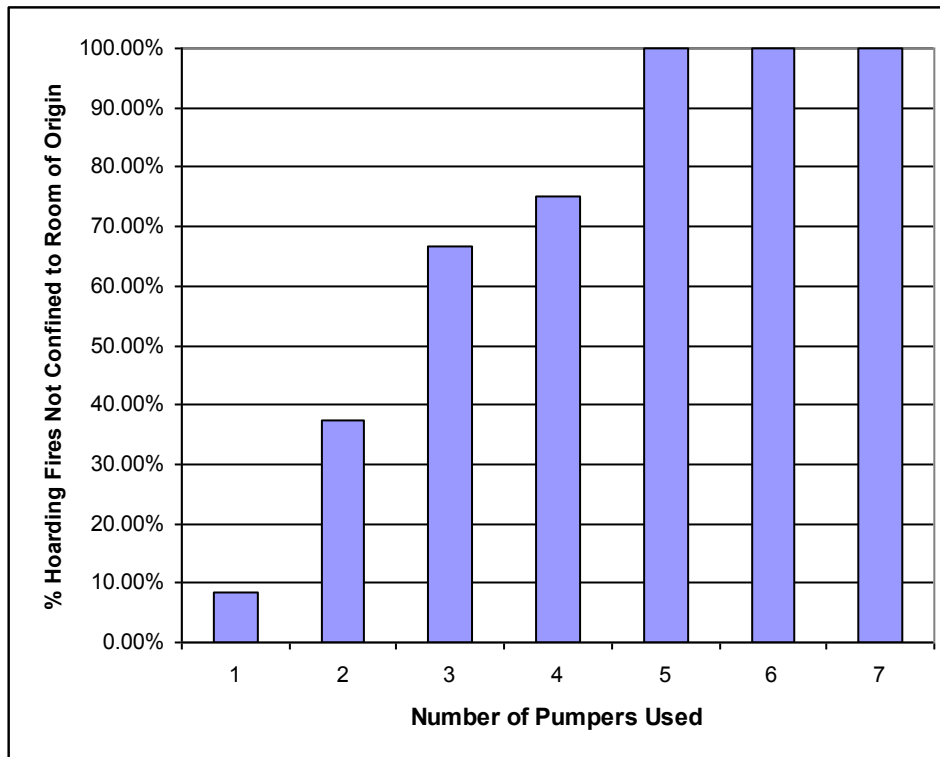


Figure 14: Pumps and Containment Status

4.1.2.3 Estimated Dollar Loss

The estimated dollar losses of seven of the 48 incidents were undetermined and were left out of the analysis. Figure 15 shows the estimated dollar loss for all the hoarding incidents analyzed.

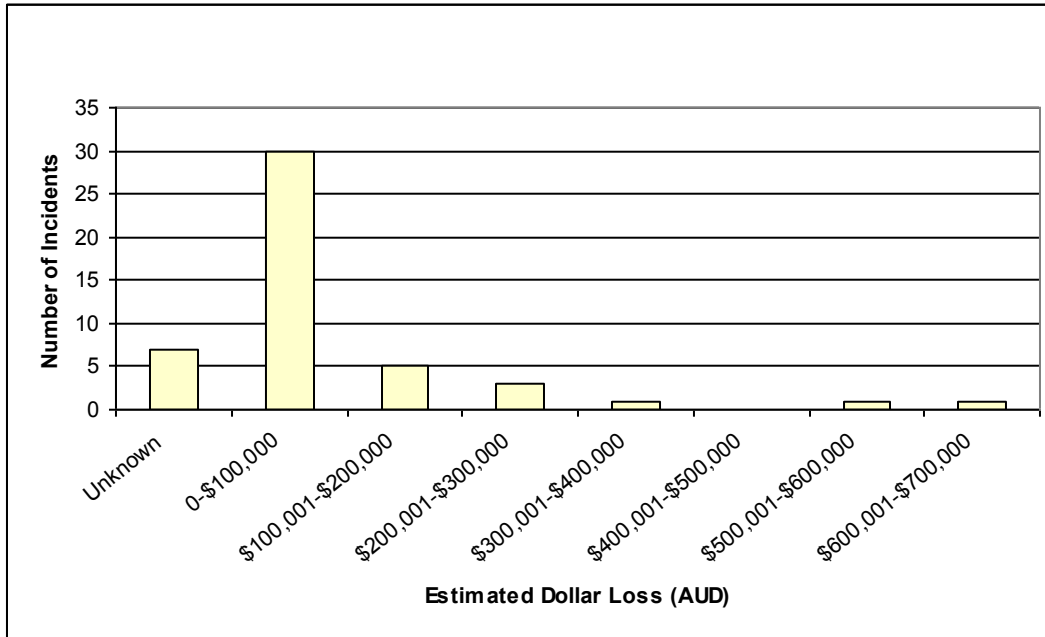


Figure 15: Estimated Dollar Loss Distribution

Figure 16 shows the estimated dollar loss for the incidents where the loss was less than \$100,000. Seventy-three percent of incidents involved a loss of \$100,000 or less, 66% of those under \$20,000. In total, 48% of incidents had an estimated dollar loss of less than \$20,000. The average across the entire data range was just over \$100,100 with the maximum being \$700,000. The average dollar loss for residential fires since 2000 is \$12,600, only 12.6% of the average damage in a hoarding fire.

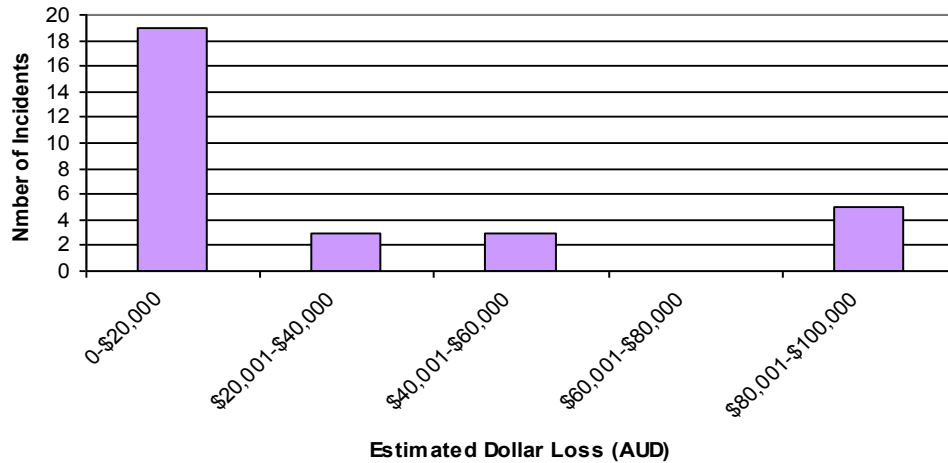


Figure 16: Estimated Dollar Loss Between \$0-100,000

4.1.2.4 Cost to MFB

For the 48 incidents analyzed, we were unable to obtain the cost absorbed by the MFB for four. In those instances, the time on the scene was not reported and another did not report sending pumpers to the scene. AIRS reports were unattainable for two more. Therefore, we could not obtain a value for these four incidents using the formula outlined in Section 3.4 and they were not included in the following analysis. Figure 17 shows a histogram of the cost to MFB for attending the remaining 44 hoarding fire incidents. Figure 18 shows a histogram of the number of incidents costing the MFB less than \$25,000.

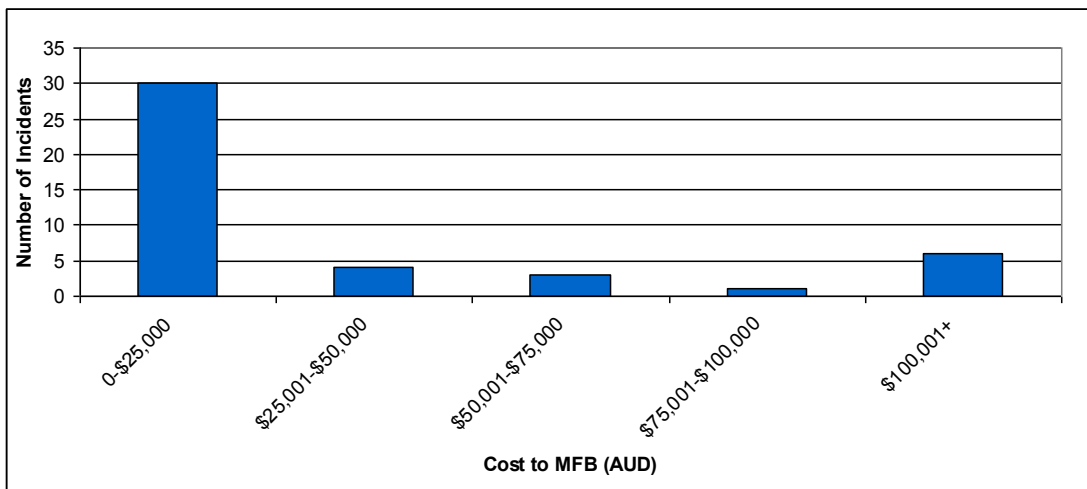


Figure 17: Cost to MFB of Hoarding Fires

Of the 44 incidents where the cost to MFB could be determined, 68% percent cost less than \$25,000. Of these incidents, 63% cost under \$5,000. On the other hand, 14% of the total incidents cost over \$100,000. The average cost per hoarding incident was \$34,100 with the maximum at \$230,900. By multiplying the average time on scene for every residential fire since 2000 (53 minutes) by the average number of pumpers used (1.4) and \$1720.68 (cost for sending one pumper per hour), we found the average cost to the MFB per incident. That came to \$2,120 per incident; thus non-hoarding residential fires are only 6.2% as expensive, on average, as hoarding fires. The 44 hoarding incidents have consumed a combined total of \$1,504,407.

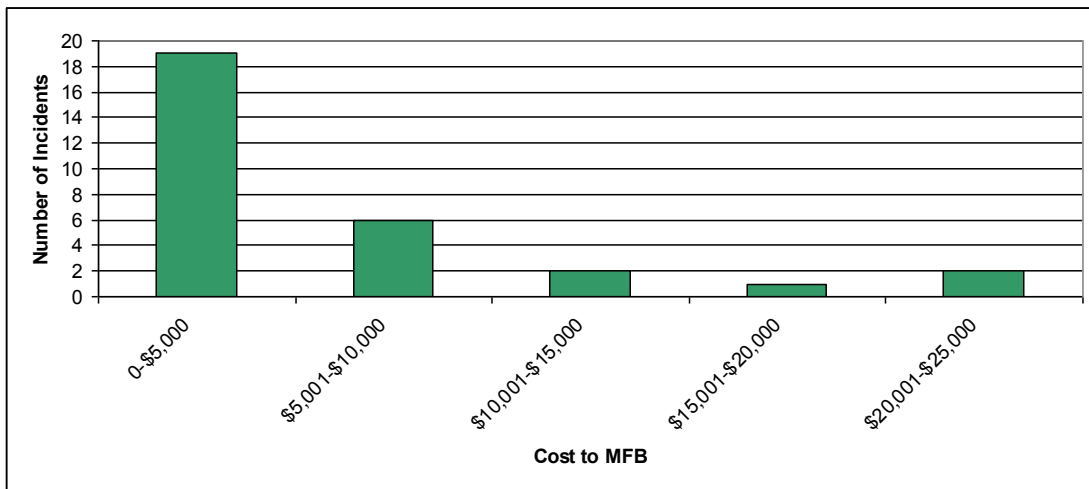


Figure 18: Cost to MFB of Hoarding Fires Between \$0-25,000

4.1.3 Presence of Smoke Alarms

Figure 19 contains a pie chart illustrating the status of smoke alarms in hoarding households. The status of these devices was undetermined for only 9% of the incidents. For the remaining incidents, 60% of the households did not have any installed, 12% had malfunctioning devices, and only 26% had fully operational smoke alarms.

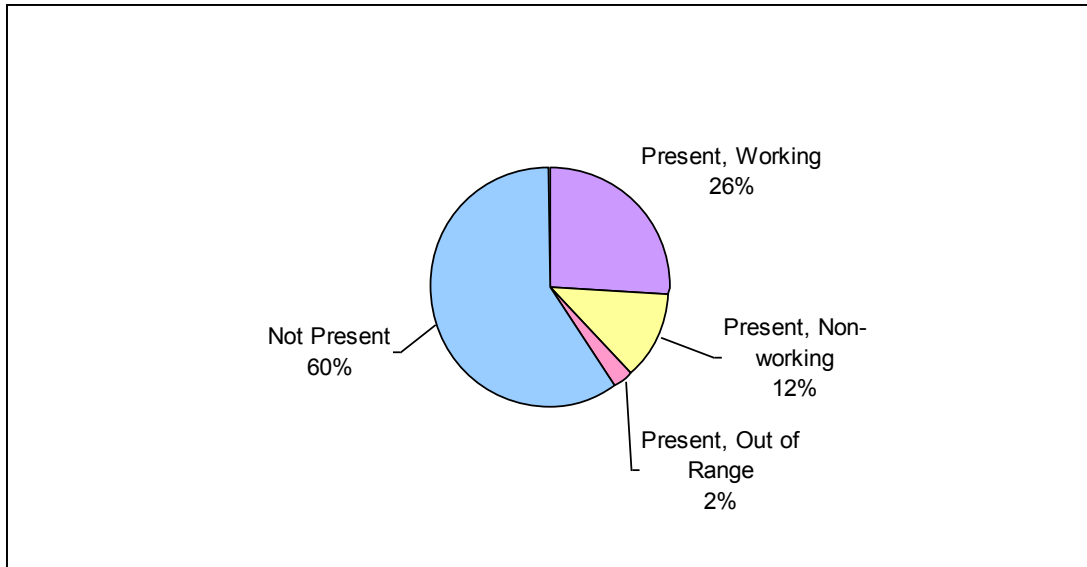


Figure 19: Smoke Alarm Status of Hoarding Fire Incidents

4.1.4 Impeded or Blocked Egress

In 38% of incidents, the hoarding was extensive enough to cause an impediment for evacuation or hindered firefighters' access to the home. These data represent the cases where the responding officers made a comment about the egress status.

Figure 20 shows the hoarding level associated with the reporting of impeded or blocked egress. It is interesting to note that even when the level of clutter in households was the same, the perception of mobility being hampered was different between the officers. Some firefighters rated a hoarding level of three as limiting mobility while others did not. This shows the need to raise awareness among firefighters to the level of hoarding at which mobility starts to become a problem, in addition to the need for a standard in reporting impeded egress.

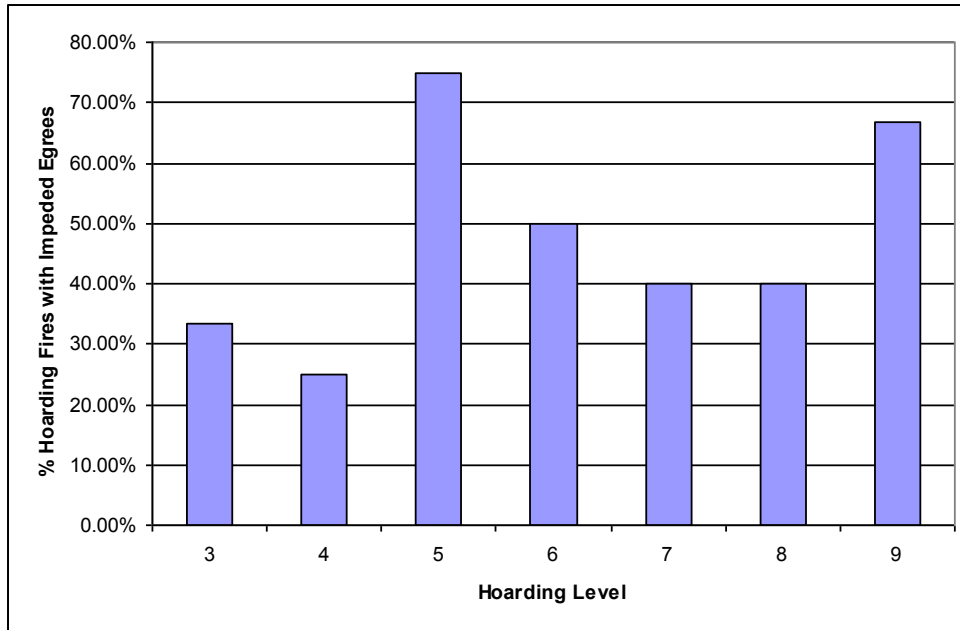


Figure 20: Hoarding Level and Impeded Egress

4.1.5 Fatalities

Figure 21 shows a histogram of the hoarding levels in the ten incidents where a fatality occurred; the hoarding level for one fatality was undeterminable. No incident involved multiple human fatalities, which may be because people who hoard tend to live alone. No relationship between the hoarding level and the likelihood of a fatality occurring could be identified. Fatalities occurred in homes where the hoarding level ranged from three to eight. This wide range of hoarding levels shows that people who hoard at levels as low as a three are still at risk of losing their lives in a fire. Getting out of the house in a hoarding fire is often a game of chance, depending on where the fire breaks out, the location of escape routes, and an individual's movement capabilities.

The ten fatalities from fires in hoarding households represent ten of the 41 total preventable residential fire fatalities in the Metropolitan Fire District since 2000. That is, 24% of all preventable fire fatalities occurred in hoarding households. Estimates for the presence of hoarding in the general population range from 0.25-3%, indicating a gross overrepresentation of hoarding fire fatalities in the MFD.

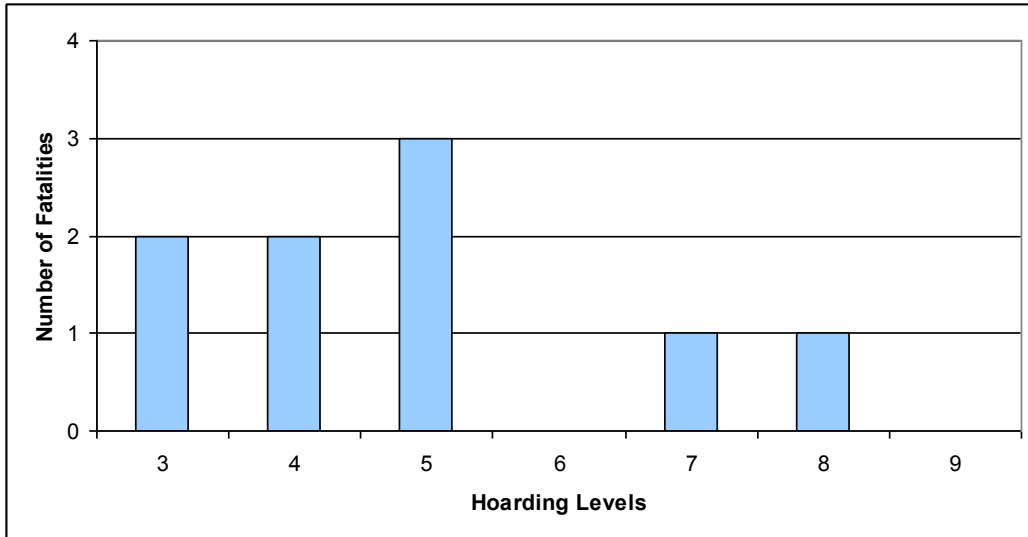


Figure 21: Hoarding Level in Fatalities

All of these hoarding fatalities were persons aged 50 and over. Half of them were between 50 and 60 years old. The MFB typically considers people over 65 to be high fire risks. These data indicate that for people that hoard, this high-risk group is extended an extra 15 years to include those as young as 50.

Figure 22 shows the extent of containment of the fires for the incidents in which a fatality occurred. Seventy percent of the fires spread throughout the structure, and 20% spread to neighboring homes. The 70% rate of full structure involvement is much greater than the 42% rate of all our hoarding fire incidents. This difference indicates that if the fire spreads beyond the room of origin the chance of an occupant becoming a fatality increases.

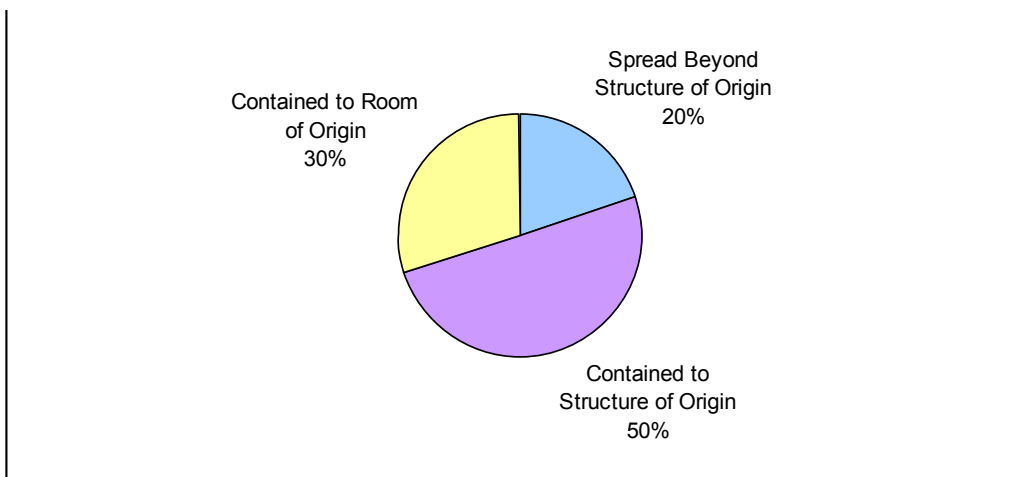


Figure 22: Containment of Fatal Hoarding Fires

There was a wide range of estimated dollar losses for the incidents in which a fatality occurred. These ranged from \$4,000-\$700,000 showing the value of the property damage was not related to the presence of a fatality.

Of the ten incidents where a fatality occurred, six reported impeded or blocked exits and four reported no such impediments. Table 2 shows the hoarding level compared with reports of blocked egress. It is likely that the limited mobility caused by the hoarding behavior played a role in the six fatalities, indicating that pathways of egress can be blocked at hoarding levels as low as three.

Table 2: Hoarding Level and Egress Status of Fatalities

Impeded/blocked egress	Non-impeded/blocked egress
Level 3	Level 3
Level 5	Level 4
Level 5	Level 4
Level 7	Level 5
Level 8	
Unknown Level	

In the ten incidents where there was a fatality, three of the structures had working smoke alarms. Another had a non-working smoke alarm, while the remaining six did not have any. Only 30% of the households where a fatality occurred had a working smoke alarm.

Figure 23 compares our smoke alarm data from fatal hoarding fires to those reported in a study done by AFAC between 1997 and 2003 for accidental fire fatalities in Victoria. We can see that the presence of working smoke alarms in hoarding households is much lower, while the absence of smoke alarms, working or not, is higher.

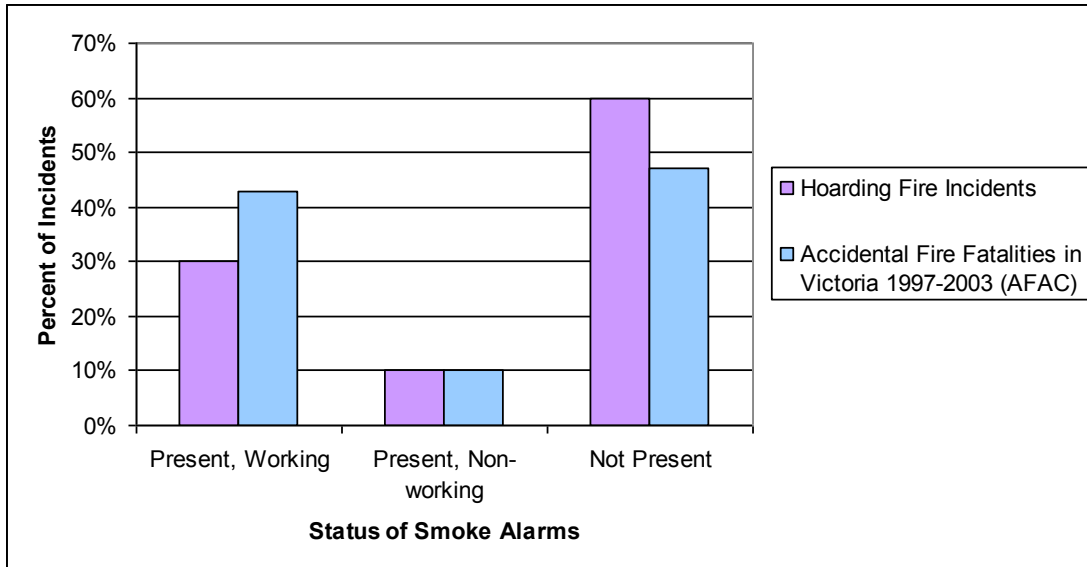


Figure 23: Smoke Alarm Status of Fatalities

4.1.6 Total Number of Structures Involved

Of the 48 analyzed incidents, eight of them did not report the exposure, the spread of fire to other structures. Although many of the incidents we found could be considered smaller fires, there were some that got out of control. Of the 42 incidents that reported exposures, 10% caused damage to neighboring homes. The monetary damage to neighbors' homes was not specified; however, it was noted that the damage was usually minor, mainly caused by smoke from the fire. Table 3 shows the hoarding level and the associated estimated dollar loss, number of responding personnel, and the number of pumpers used for these incidents. It is interesting to note that as the level of hoarding increased, so did the estimated dollar loss.

Table 3: Fire Severity and Hoarding Levels of Uncontained Hoarding Fires

Hoarding Level	Estimated Dollar Loss (AUD)	Number of Personnel	Number of Pumpers Used
5	\$100,000	20	3
7	\$180,000	41	7
8	\$200,000	8	4
9	\$400,000	56	6

4.2 Unorthodox Use of Utilities

Of the 48 hoarding fire incidents found, the cause could not be determined for seven (15%). The causes for the other 41 incidents are displayed in Figure 24. Cooking-related fires

were the most common, responsible for 39% of all hoarding fire incidents. Other means of fire initiation were a heater, open flame, or lamp (22%), electrical fires (22%), and smoking-related fires (12%). The data used in this section can be found in Appendix I.

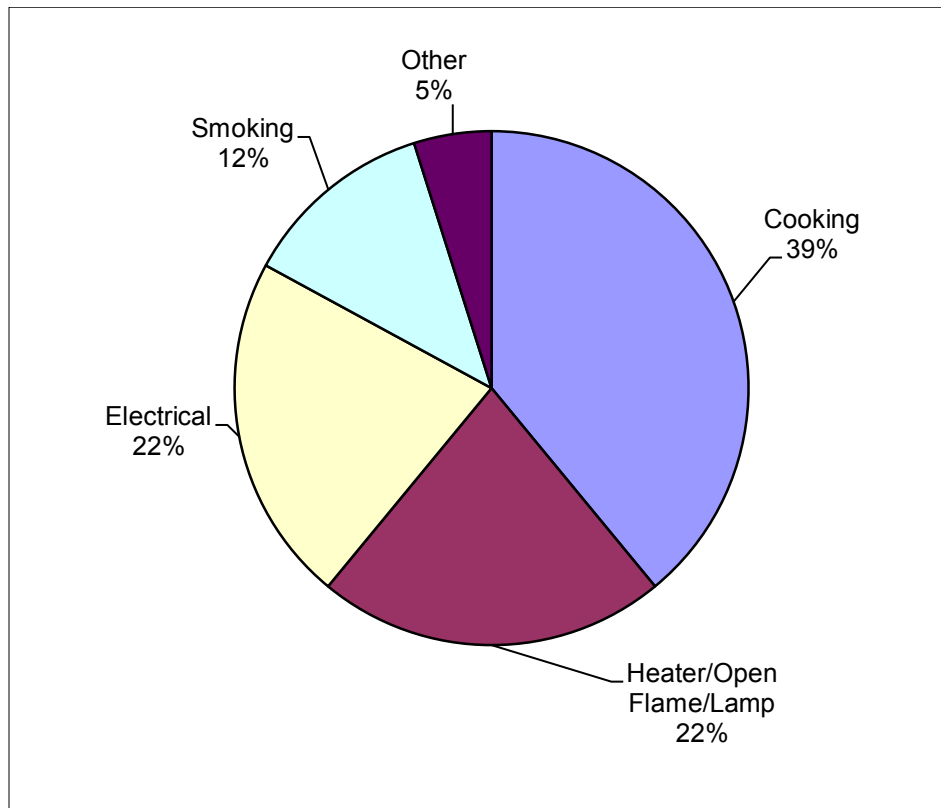


Figure 24: Cause of Hoarding Fires

Cooking caused approximately 39% of hoarding fires, yet it was not a significant cause of residential fatal fires in Victoria (less than 10%). This likely does not indicate that people who hoard are more prone to have cooking fires, rather that cooking fires are less likely to result in a fatality. Additional evidence of this conclusion can be seen in the fact that none of the eight hoarding fatalities with known causes were cooking-related.

It is difficult to compare hoarding fires and overall fatal fires in the MFD because there are two variables in question: the presence of hoarding and the occurrence of a fatality. Fatal hoarding fires are suitable for comparison to both, however, and this comparison is presented in Figure 25. The cause of two fatal hoarding fires could not be determined. The number of fatal hoarding fires where the cause is known is too small to be analyzed with any high level of confidence.

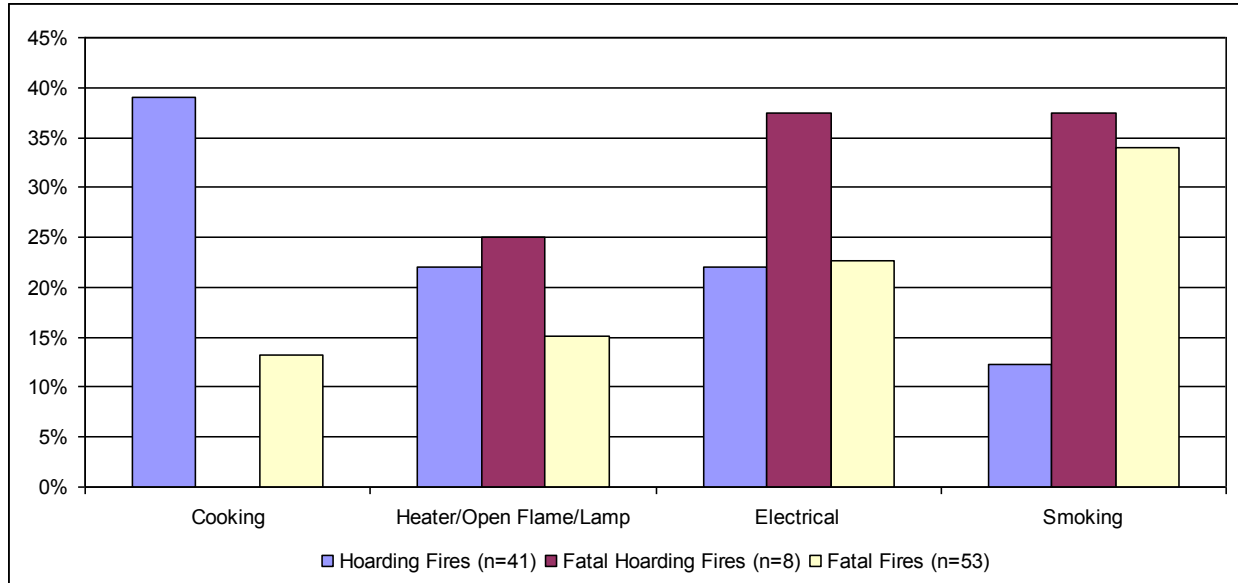


Figure 25: Cause of Hoarding Fires, Fatal Fires, and Fatal Hoarding Fires

The percentages of fires initiating from heaters, open flames, or lamps are similar among hoarding fires, fatal hoarding fires, and general fatal fires. Electrical faults and smoking are the most prevalent causes of fatal hoarding fires. Smoking appears to cause relatively few fires in hoarding households, but three of the eight hoarding fatalities where the cause was known were started by smoking, which exceeds the percentage of general smoking fire fatalities in the MFD. These data suggest that within hoarding households, fires started from smoking are over three times more likely to result in death. Again, the small sample size should be considered when interpreting these results.

Whether or not the unorthodox use of utilities was a factor in causing the fire was also examined. It could not be determined for eight (17%) of the cases. For the remaining 40 incidents, 13% were deemed to have started because of the unorthodox use of utilities. The causes of these fires were:

- a candle used for lighting
- cooking over a homemade fireplace
- cooking on a poorly constructed barbeque
- an oversized and multi-strand fuse wires in fuses
- a knocked over kerosene lamp that was being used in place of electric lights

In the last case, all utility services had been disconnected from the home. In one other hoarding incident, there was no power to the house. In total, 4% of the homes where a hoarding fire occurred were disconnected from the grid.

4.3 Victim Profile

This section will present our findings in relation to the victim profile in the following categories: age; gender; degree of cooperation with MFB; property type; and property ownership. This information was collected from the sources and with the methods described in Section 3.6. Upon completion of our data collection, various factors were considered to identify those likely to be harmed in hoarding fire incidents. This profile can then be compared to data found in the residential fire fatalities in the AFAC 2005 Victoria Report (see Section 2.6) as well as the information discussed in Section 2.5 for the Melbourne and Australian population (see Appendix E for full details). Providing these comparisons will allow generalizations to be made about the relative dangers of hoarding in these areas. The data used to create this Victim Profile can be found in Appendix J.

4.3.1 Age

Age was an extremely important, and yet difficult to locate piece of information during the research process. Hoarding is much more prevalent in older persons, and supplying exact age data in this report would allow for an accurate comparison to other published reports. Age information was available in 33 of the identified hoarding fire incidents. Occasionally, there were discrepancies between different sources regarding the age of a victim. In those cases, the ages were taken in the following order of reliability: F.I.A. Reports; AIRS Reports; and Media Alerts. Fire Investigation Reports were deemed the most reliable resource because of the large amount of detective work involved in producing the Reports. For the other 15 hoarding fires, the exact age could not be determined. The occupant was described as “elderly” (over 65) in six of these incidents and as between 50 and 65 in one incident. These descriptions were found either in the general description area of AIRS or in the Media Alerts. The remaining eight incidents had no indication of the occupant’s age.

For the data we were able to collect about age, some interesting trends can be observed (Figure 26). The minimum age was 36 and the second-youngest occupant was 41; these were the

only incidents to occur with an occupant known to be under the age of 45. Only five of our incidents involved occupants known to be under the age of 50. The twenty-eight other occupants with known ages were over 50, representing 58% of all victims. In Australia, the colloquial definition of “elderly” is a person over 65 years of age. Combining the six “elderly” occupants, and the one described as between 50 and 65, with the twenty-eight in the at least 50 years old group, yields 73% of hoarding fire incident victims over the age of 50. Keeping in mind that 17% of the incidents did not have any indication of age, this number could be even higher. A graphical display of these results can be seen in Figure 27.

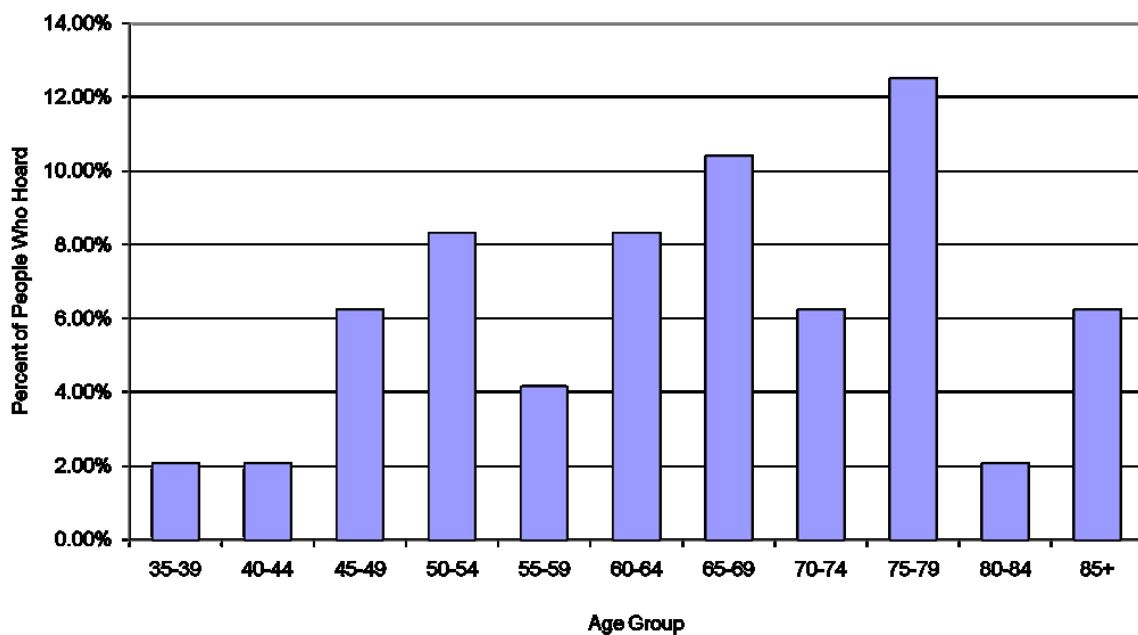


Figure 26: Distribution of Hoarding Fires by Age Group

The two oldest occupants were found to be 92 years old, one of whom lived with his 90-year-old wife. Only the 92-year-old male was counted towards these statistics, as he was identified as the primary person who hoards through our various data sources. The average age of the occupants whose age is known is 65.2 ± 14 years. The large standard deviation of 14 years comes from the large range of ages (minimum 36, maximum 92).

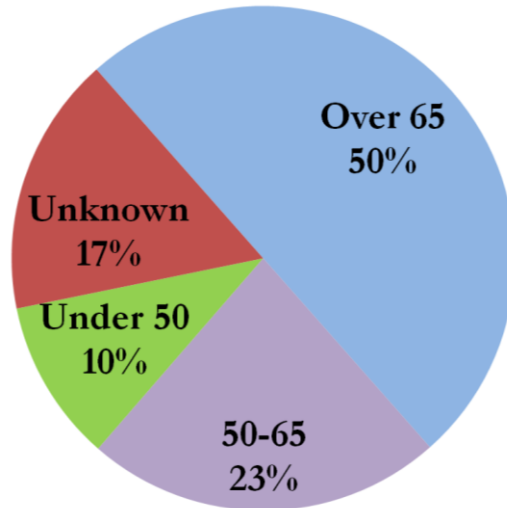


Figure 27: Age Breakdown of Hoarding Fire Victims

A comparison of the age of our hoarding fire incident victims with the ages of fire fatalities in Victoria and the population of Melbourne can be seen in Figure 28. Those persons labeled “elderly” are not included in this graph. From these data, a few observations can be made. First, older age groups are less prevalent among the population. Second, the age of fire fatality victims in Victoria appears to be uniform, remaining near the 6% mark for all the presented age groups. Finally, the elderly appear to be overrepresented in both the hoarding fires and fire fatality data sets (AFAC, 2005; *Melbourne Victoria major statistical region basic community profile, 2007*).

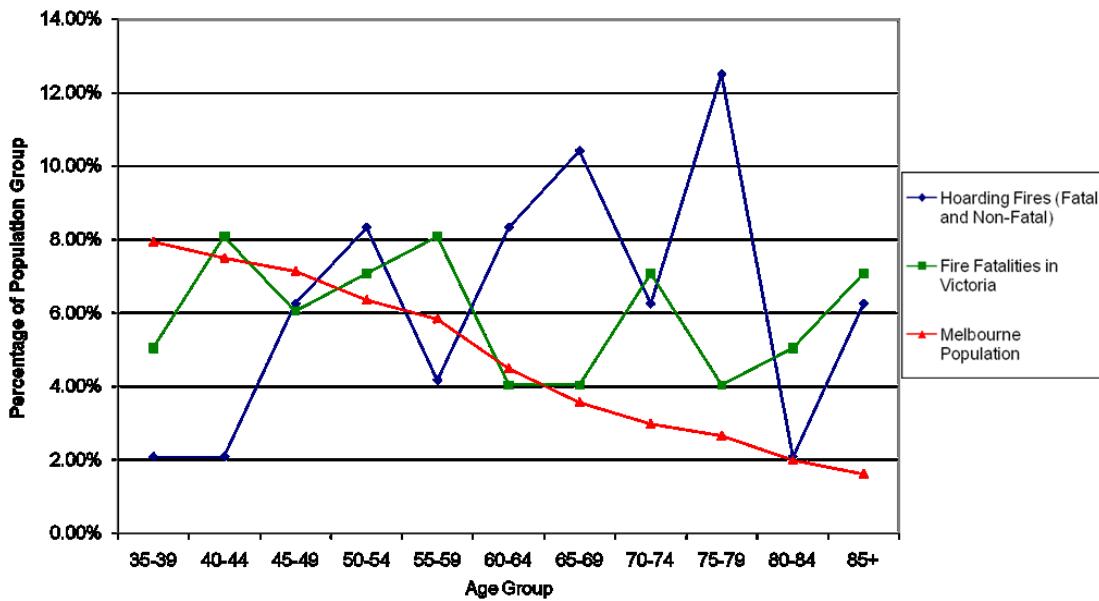


Figure 28: Age Group Comparisons of Melbourne Population, Hoarding Fires, Victoria Fire Fatalities

4.3.2 Gender

Gender was indicated in all but two of our identified hoarding fires. One unknown is from an incident that occurred at the home of a married couple; there was no indication of who was primarily responsible for the hoarding. The other fire had no personal data contained in the AIRS report. The remaining 46 fires contained indications of gender. A representation of the gender distribution can be seen in Figure 29. More than three-fourths of the victims were male, and 19% were female. With an unknown sample of 4%, there is some room for change in these proportions.

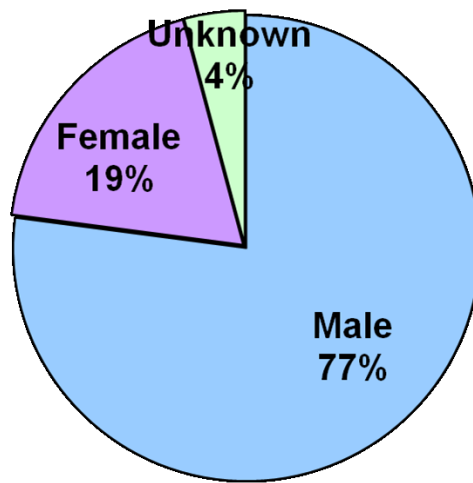


Figure 29: Gender of Hoarding Fire Occupants

The gender distribution of our hoarding fires compares closely with information contained in the 2005 AFAC Victoria Report. In that report, 66% of fire fatalities were male. While the hoarding data encompass both living and deceased subjects, it does sustain the notion of an increased fire risk existing among males. The preponderance of male victims seems to be at odds with other hoarding statistics, which show hoarding to be more common among females (Frost, 2004).

4.3.3 Cooperation with MFB Personnel

After reviewing the data available for the identified hoarding fires, it was found that about 8% of the occupants resisted attempts by the MFB to extinguish the fire or provide other services (such as smoke alarm installation). In the majority of incidents, officers on the scene made no indication of uncooperativeness. In 21%, the occupant was deceased. Cooperation

should be recorded by MFB in AIRS Block A field 42, but it is rarely completed. Because of this practice, there is little data with which to compare these results.

4.3.4 Property Type

The greatest delineation made in AIRS about property type is for those homes described as “single private dwelling, one or two family” or an apartment identified as being part of a larger structure. Most hoarding fires (69%) occurred in private homes, slightly lower than in all Victorian fatal residential fires which occurred in homes 80% of the time (AFAC, 2005). The AFAC 2005 Victoria Report lists fatal residential fires occurring in apartments only 10% of the time, while our 29% finding is nearly three times that. There was one hoarding fire identified which was classified as a boarding house. It was not indicated whether the homeowner or the boarders were responsible for the hoarding, and we did not feel comfortable assigning it to any category besides “other”.

4.3.5 Property Ownership

Property ownership statistics were readily available in most AIRS reports for our incidents. Only four percent were of unknown ownership. The primary owner of hoarding households was the occupant, with a 63% rate of occupant ownership. Following that is the Public Housing category, which encompassed 23% of our incidents. Finally, 10% of the incidents occurred in private rental properties, owned by an entity other than the Office of Housing or the occupant. These results are seen in Figure 30.

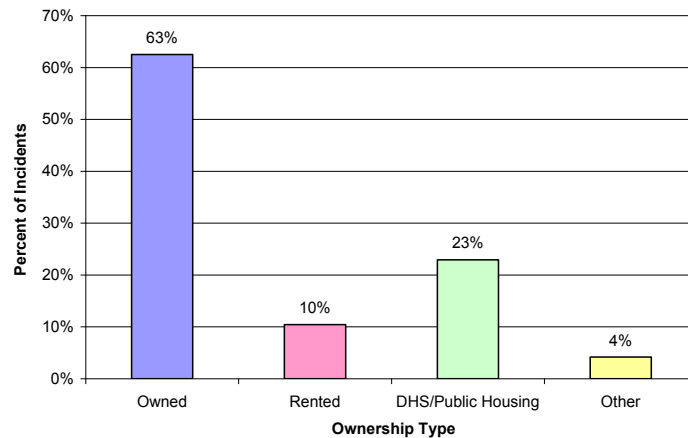


Figure 30: Property Ownership

Chapter 5: Conclusions

As evidenced by the increasing amount of professional studies and media attention being aimed at hoarding, this condition appears to be a growing concern and growing problem in developed countries like Australia and the United States. The nature of hoarding brings increased risks to many; the occupant, neighbors, and community personnel such as firefighters are all put at risk by this behavior. With this background in mind, as well as the results of our own research, we formulated the conclusions and recommendations presented below.

Locating hoarding fires for our analysis was a difficult process. Because hoarding data are not recorded by the MFB, novel methods were devised to locate these fires. The development of a system to record the presence of hoarding at an incident, either through AIRS or an in-house MFB report, could greatly improve the quality of data available about hoarding households.

Based on the data collected, it appears that hoarding fires require a greater allocation of MFB resources than normal residential fires. The average hoarding fire required more personnel, more pumpers, and ultimately cost the MFB more money for attending the scene than the average residential fire. Fires fuelled by hoarded materials tend to spread faster and further than the average residential fire, as evidenced by the percentage of hoarding incidents where the fire spread beyond the room of origin. This ultimately creates a more dangerous situation for firefighters.

During the course of our research, a disparity in the reporting of impeded or blocked escape routes among incidents was discovered. There are locations in AIRS to note evacuation difficulties, but these data are rarely gathered. We recommend that officers fully complete all documentation to the best of their ability to ensure that future studies have complete data sets to work with. In addition, MFB already performs many community outreach activities about fire safety, including the establishment and maintenance of escape routes. We also recommend that this information be delivered to all members of the community.

From analyzing the characteristics of the incidents in which a fatality occurred, we can see that a high percentage did not have working smoke alarms. Every fire agency is aware that smoke alarms help save lives, and tries diligently to spread this message to the community. We

recommend that additional efforts be made to emphasize the importance of smoke alarms, especially within hoarding households. A program to aid in the installation of smoke alarms in hoarding households may go a long way in reducing the number of preventable fire fatalities in Melbourne. In fact, the MFB has already developed a proposed pilot program in conjunction with DHS and other specialist agencies to deliver this to hoarding households, which should be evaluated and implemented.

The sources of initiation for hoarding fires were not shown to be significantly different from those of general fires in the MFD. Even if differences between causes could be seen and addressed, that would likely result in little difference in the severity of hoarding fires. The primary fire hazards associated with hoarding are the increased fuel load and impeded egresses. Previous studies performed in the United States have shown people who hoard are often aware of the fire risk they pose. Despite an understanding of this risk, many continue to hoard items in a dangerous manner. The presence of co-morbid psychiatric conditions does not mean people who hoard are incapable of making an informed decision regarding the risks they are exposed to. The most important actions to take are to ensure that people who hoard are educated about the risks their hoarding poses, have a working smoke alarm installed, and maintain clear evacuation routes.

The occupants of hoarding households identified in this study share many characteristics. Hoarding is more prevalent among older persons, and our data corroborates that belief. Almost three-quarters of our hoarding fire victims were over the age of fifty, while fifty percent were over the age of 65. Because Australia already has a large and growing community aged care sector, it is in a unique position to assist these people. In our experience, most services that discover a hoarding household do not know what the next step is. We recommend the creation of a unified approach to the hoarding problem, to ensure treatment reaches those who need it most.

Over three-quarters of the fatalities in our study were male, mimicking other fire statistics showing males to be more susceptible to becoming fire fatalities. This finding is in contrast to hoarding statistics showing a higher occurrence among women, indicating that males are at a higher risk to experience a hoarding fire.

Despite many fears that a lack of cooperation with MFB personnel would be a common theme among hoarding fires, responders encountered resistance in only 8% of cases. These data show that most people who hoard are able to recognize fire dangers when they are present and accept professional assistance in dealing with these dangers. The social phobias often associated with hoarding have not prevented firefighters from carrying out their protective functions. However, it remains to be seen whether the same would be true if firefighters attempted to enter the home under non-life threatening circumstances. The allowance of MFB personnel into hoarding households during an emergency fire situation may be attributed to the emotional attachment often made to possessions.

Almost one-third of hoarding fire incidents occurred in apartment-style dwellings, in close proximity to the residences of others. Additionally, 23% of incidents occurred in public housing. Public housing is very well regulated by building codes and environmental infrastructure designed to reduce the spread of fires, including advanced alarm systems. Public housing is supposed to be inspected regularly for damage or sanitary conditions. Due to personnel or resource constraints, these inspections in Office of Housing buildings are usually not performed unless there is a change of occupancy. Landlords typically inspect a dwelling on an annual basis. The fact that people are able to amass such large collections of items in such restrictive environments is remarkable, demonstrating the speed with which those inclined to hoard can increase their hoarding level. Actions should be taken and treatment sought immediately when someone is identified as being affected by hoarding, to mitigate the risks.

To help increase awareness of the hoarding condition among the public, we recommend MFB develop educational or informational materials for distribution throughout the community. As a starting point, we have constructed a draft brochure to be used as a sample for the design of an officially endorsed MFB brochure (Appendix G).

In the past few years, hoarding has moved closer to becoming a mainstream issue. Studies into the causes, characteristics, and treatments of hoarding have been increasing. However, our research appears to be the first to investigate hoarding from a fire safety perspective. The large costs accrued by MFB over the past ten years, as well as the elevated damage costs of these fires and loss of life indicate the dangerous nature of this disorder.

Treating the issue through enforced cleanups and removal of debris has been shown to be ineffective and are discouraged by psychiatric personnel. The degree of hoarding can return to the same level within months of an involuntary cleanup. Better methods of clinical treatment are necessary for this disorder, to both remove current hazards and prevent future dangers from occurring.

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Appendix A: Most Frequently Hoarded Items (Mogan, 2008)

Description	Rank	% Endorsing
Clothes	1	89%
Greeting Cards/ Letters	2	79%
Bills, Statements	2	79%
Books	3	77%
Magazines	4	68%
Knick-knacks	5	66%
Mementoes/souvenirs	5	66%
Records/Tapes	6	64%
Pictures	7	62%
Sentimental objects	8	60%
Recipes	8	60%
Wrapping paper, materials	9	58%
Papers, pens, gifts	9	58%
Stationary old things	10	56%

Appendix B: Savings Inventory-Revised (Frost, Steketee, & Grisham, 2004)

© Frost

Saving Inventory Revised

(Please circle the response that is most appropriate.)

1. To what extent do you have difficulty throwing things away?

- 0 = Not at all
- 1 = To a mild extent.
- 2 = To a moderate extent.
- 3 = To a considerable extent.
- 4 = Very much so.

2. How distressing do you find the task of throwing things away?

- 0 = No distress
- 1 = Mild distress
- 2 = Moderate distress
- 3 = Severe distress
- 4 = Extreme distress

3. To what extent do you have so many things that your room(s) are cluttered?

- 0 = Not at all
- 1 = To a mild extent.
- 2 = To a moderate extent.
- 3 = To a considerable extent.
- 4 = Very much so.

4. How often do you avoid trying to discard possessions because it is too stressful or time-consuming?

- 0 = Never avoid, easily able to discard items
- 1 = Rarely avoid, can discard with a little difficulty
- 2 = Sometimes avoid
- 3 = Frequently avoid, can discard items occasionally
- 4 = Almost always avoid, rarely able to discard items

5. How distressed or uncomfortable would you feel if you could not acquire something you wanted?

- 0 = Not at all
- 1 = Mild, only slightly anxious
- 2 = Moderate, distress would mount but remain manageable
- 3 = Severe, prominent and very disturbing increase in distress
- 4 = Extreme, incapacitating discomfort from any such effort

6. How much of the living area in your home is cluttered with possessions? (Consider the amount of clutter in your kitchen, living room, dining room, hallways, bedrooms, bathrooms or other rooms.)

- 0 = None of the living area is cluttered
- 1 = Some of the living area is cluttered
- 2 = Much of the living area is cluttered
- 3 = Most of the living area is cluttered
- 4 = All or almost all of the living area is cluttered

7. How much does the clutter in your home interfere with your social, work or everyday functioning?

Think about things that you don't do because of clutter.

- 0 = Not at all
- 1 = Mild, slight interference, but overall functioning not impaired
- 2 = Moderate, definite interference, but still manageable
- 3 = Severe, causes substantial interference
- 4 = Extreme, incapacitating

8. How often do you feel compelled to acquire something you see (e.g., when shopping or offered free things)?

- 0 = Never feel compelled.
- 1 = Rarely feel compelled.
- 2 = Sometimes feel compelled.
- 3 = Frequently feel compelled.
- 4 = Almost always feel compelled.

9. How strong is your urge to buy or acquire free things for which you have no immediate use?

- 0 = Urge is not at all strong
- 1 = Mild urge
- 2 = Moderate urge
- 3 = Strong urge
- 4 = Very strong urge

10. How much control do you have over your urges to acquire possessions?

- 0 = Complete control
- 1 = Much control, usually able to control urges to acquire.
- 2 = Some control, can control urges to acquire only with difficulty
- 3 = Little control, can only delay urges to acquire only with great difficulty
- 4 = No control, unable to stop urges to acquire possessions.

11. How often do you decide to keep things you do not need and have little space for?

- 0 = Never keep such things.
- 1 = Rarely
- 2 = Occasionally
- 3 = Frequently
- 4 = Almost always keep such possessions.

12. To what extent does clutter prevent you from using parts of your home?

- 0 = All parts of the home are usable
- 1 = A few parts of the home are not usable
- 2 = Some parts of the home are not usable
- 3 = Many parts of the home are not usable
- 4 = Nearly all parts of the home are not usable

13. To what extent does the clutter in your home cause you distress?

- 0 = No feelings of distress or discomfort.
- 1 = Mild feelings of distress or discomfort.
- 2 = Moderate feelings of distress or discomfort.
- 3 = Severe feelings of distress or discomfort.
- 4 = Extreme feelings of distress or discomfort.

14. How frequently does the clutter in your home prevent you from inviting people to visit?

- 0 = Not at all
- 1 = Rarely
- 2 = Sometimes.
- 3 = Often
- 4 = Very often or nearly always.

15. How often do you actually buy (or acquire for free) things for which you have no immediate use or need?

- 0 = Never.
- 1 = Rarely.
- 2 = Sometimes.
- 3 = Frequently.
- 4 = Almost always.

16. How strong is your urge to save something you know you may never use?

- 0 = Not at all strong
- 1 = Mild urge
- 2 = Moderate urge
- 3 = Strong Urge
- 4 = Very strong urge

17. How much control do you have over your urges to save possessions?

- 0 = Complete control
- 1 = Much control, usually able to control urges to save.
- 2 = Some control, can control urges to save only with difficulty
- 3 = Little control, can only stop urges with great difficulty
- 4 = No control, unable to stop urges to save possessions.

18. How much of your home is difficult to walk through because of clutter?

- 0 = None of it is difficult to walk through
- 1 = Some of it is difficult to walk through
- 2 = Much of it is difficult to walk through
- 3 = Most of it is difficult to walk through
- 4 = All or nearly all of it is difficult to walk through

19. How upset or distressed do you feel about your acquiring habits?

- 0 = Not at all upset
- 1 = Mildly upset
- 2 = Moderately upset
- 3 = Severely upset
- 4 = Extreme embarrassment

20. To what extent does the clutter in your home prevent you from using parts of your home for their intended purpose? For example, cooking, using furniture, washing dishes, cleaning, etc.?)

- 0 = Never.
- 1 = Rarely.
- 2 = Sometimes.
- 3 = Frequently .
- 4 = Very frequently or almost all the time

21. To what extent do you feel unable to control the clutter in your home?

- 0 = Not at all
- 1 = To a mild extent.
- 2 = To a moderate extent.
- 3 = To a considerable extent.
- 4 = Very much so.

22. To what extent has your saving or compulsive buying resulted in financial difficulties for you?

- 0 = Not at all
- 1 = A little financial difficulty
- 2 = Some financial difficulty
- 3 = Quite a lot of financial difficulty
- 4 = An extreme amount of financial difficulty

23. How often are you unable to discard a possession you would like to get rid of?

- 0 = Never have a problem discarding possessions.
- 1 = Rarely
- 2 = Occasionally
- 3 = Frequently
- 4 = Almost always unable to discard possessions.

24. How often has the amount of clutter in your home been the subject of disagreements or arguments with other people (for example, family members, friends, landlord, neighbors, etc.)?

- 0 = Never
- 1 = Rarely
- 2 = Sometimes
- 3 = Frequently
- 4 = Almost all the time

25. Have you been avoiding activities that might tempt you to acquire more things?

- 0 = No avoidance
- 1 = Mild, minimal avoidance
- 2 = Moderate, some avoidance
- 3 = Severe, much avoidance
- 4 = Extreme, very extensive avoidance; I do almost everything I can to avoid these types of situations

26. On average, how much time do you waste because of your saving (for example, re-buying or looking for lost items)?

- 0 = None
- 1 = Less than 1 hour per day
- 2 = 1 to 3 hours per day
- 3 = More than 3 hours and up to 8 hours per day
- 4 = More than 8 hours per day

Appendix C: Clutter Image Rating Scale (Frost et al., 2008)

Clutter Image Rating: Bedroom

Please select the photo that most accurately reflects the amount of clutter in your room.



1



2



3



4



5



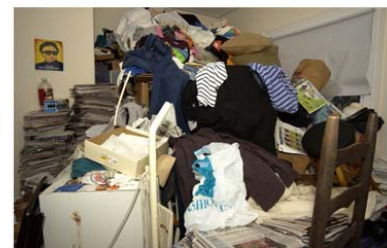
6



7



8



9

Clutter Image Rating Scale: Kitchen

Please select the photo below that most accurately reflects the amount of clutter in your room.



1



2



3



4



5



6



7



8



9

Clutter Image Rating: Living Room

Please select the photo below that most accurately reflects the amount of clutter in your room.



1



2



3



4



5



6



7

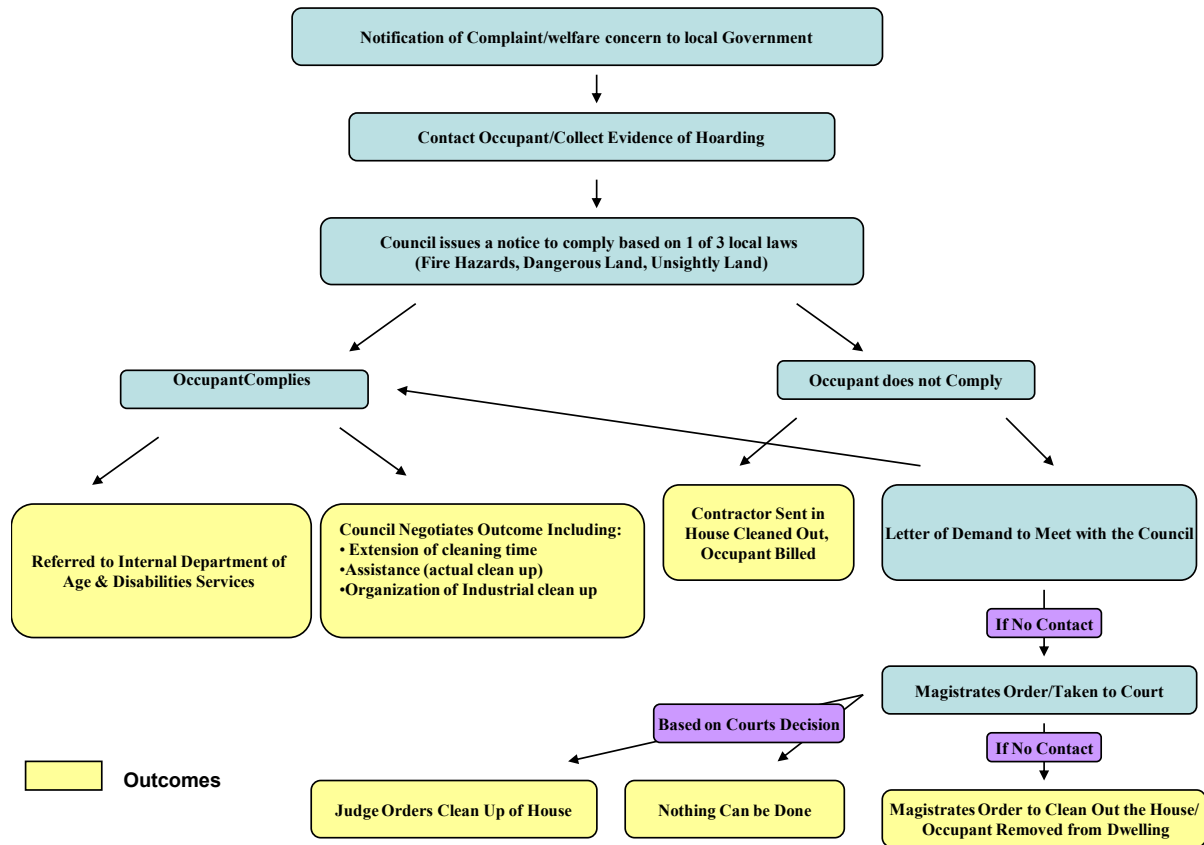


8



9

Appendix D: Flowchart of Legal Approaches to the Hoarding Problem by Local Councils



Appendix E: Demographic Breakdown of Australia and the City of Melbourne.

Category	Australia		Melbourne, VIC	
	Total	Percent	Total	Percent
Population	19,855,288		3,592,590	
Males	9,799,250	49.35%	1,760,907	49.01%
Females	10,056,038	50.65%	1,831,683	50.99%
Number of persons with at least one parent born overseas	8,048,204	40.53%	1,848,657	51.46%
Language spoken at home				
English only	15,581,332	78.47%	2,447,489	68.13%
Other	3,146,196	15.85%	945,173	26.31%
Not Indicated	1,127,760	5.68%	199,929	5.57%
Religion				
Buddhism	418,749	2.11%	126,081	3.51%
Christianity	12,685,829	63.89%	2,117,337	58.94%
Hinduism	148,130	0.75%	40,639	1.13%
Islam	340,394	1.71%	103,188	2.87%
Judaism	88,832	0.45%	40,546	1.13%
Australian Aboriginal	5,380	0.03%	155	0.00%
None	3,706,550	18.67%	717,717	19.98%
Not Stated	2,223,957	11.20%	397,038	11.05%
Age				
0-4	1,260,403	6.35%	224,706	6.25%
5-9	1,308,863	6.59%	223,215	6.21%
10-14	1,367,940	6.89%	229,267	6.38%
15-19	1,356,910	6.83%	240,684	6.70%
20-24	1,347,362	6.79%	266,173	7.41%
25-29	1,276,929	6.43%	257,968	7.18%
30-34	1,399,459	7.05%	276,202	7.69%
35-39	1,466,184	7.38%	285,638	7.95%
40-44	1,471,658	7.41%	269,937	7.51%
45-49	1,446,725	7.29%	257,047	7.15%
50-54	1,315,787	6.63%	228,604	6.36%
55-59	1,234,602	6.22%	210,297	5.85%
60-64	958,077	4.83%	161,338	4.49%
65-69	757,386	3.81%	128,264	3.57%
70-74	616,051	3.10%	107,209	2.98%
75-79	543,611	2.74%	95,776	2.67%
80-84	404,484	2.04%	72,231	2.01%
85+	322,857	1.63%	58,034	1.62%

(Data adapted from *Australia basic community profile 2007*; *Melbourne Victoria major statistical region basic community profile 2007*)

Appendix F: AIRS Fields of Interest

<u>Block A</u>	<u>Complete for All Fire Incidents</u>
4	Incident No.
6	Alarm Date
14	Occupant's Name
20	Type of Property Use
21	Type of Owner
23	Type of Incident
29	Peak No. of Fire Personnel at Scene
30	Peak No. of Pumpers Used
31	Peak No. of Aerials Used
32	Peak No. of Specialized Vehicles Used
33	Peak No. of Aircraft Used
34	No. of Other Vehicles Dispatched
42	Problems Encountered
69	Fire Name
<u>Block D</u>	<u>Casualties, Rescue and Evacuation</u>
4	No. of Other Personnel Fatalities
11	Evacuation Problems
<u>Block E</u>	<u>Ignition (All Fires)</u>
1	Area of Fire Origin
2	Occupant of Ignition Area
3	Activity in Ignition Area
4	Form of Heat Ignition
5	Ignition Factor
6	Type of Material Ignited First
7	Form of Material Ignited First
8	Equipment Involved in Ignition
9	Year of Manufacture
10	Make
11	Model
12	Serial Number
13	Voltage
<u>Block H</u>	<u>Dollar Loss Fires</u>
1	Estimated Dollar Loss
2	Estimated Value of Property
3	Estimated Value of Contents
6	Total No. of Structures Involved in Fire
7	Property Owner's Name
<u>Block K</u>	<u>Structure Fires</u>
14	Type of Material Contributing Most if Fire Intensity
24	Detector Performance

Appendix G: Draft Informational Brochure on Hoarding

Do You or Someone You Know Hoard?

You may have a hoarding problem if you answer yes to 4 of the following questions:

- Do you have so much clutter you can't use rooms properly?
- Do you have difficulty discarding ordinary things that other people would get rid of?
- Do you collect free things or buy more things than you need?
- Are you so deeply attached to things you cannot throw anything away?
- Does clutter interfere with your life (friends, family, neighbours)?
- Does your collecting make your house unsafe for yourself or others?
- Are you able to move freely down your corridor?



Fire Safety and Hoarding

Due to the complexity of addressing hoarding MFB is aware that achieving improved outcomes may take considerable time.

- MFB recommends 4 actions be taken for a hoarding household.
- Install smoke alarms in the home and test them regularly.
 - Have at least ways of getting in and out of the house in an emergency.
 - Notify emergency services of the location of a hoarding household.
 - Seek help to resolve the problem of hoarding.

For Further Information:

Contact: Community Education Department
Metropolitan Fire Brigade Melbourne
Tel: 9665-4464
Email: commned@mfb.vic.gov.au
Web: www.mfb.vic.gov.au



Household Hoarding Hazards

Hoarding is defined as the extreme collection and failure to discard large amounts of possessions. This collection impairs basic living activities (cooking, cleaning, and sleeping) and makes using rooms as intended impossible.

Risks Associated With Hoarding

People who hoard commonly experience a high level of social isolation, reduced self care and an increase risk of falls, fires and other hazards.

The MFB is very aware fires in hoarding households represent an increased risk to the occupant/s, their neighbours and responding firefighters. The high volume of possessions stored in the home result in

- Faster, stronger burning fires
- Reduced capacity of occupant to get out safely
- Reduced access for responding firefighters.
- Increased risk of damage to neighbouring properties.

Commonly hoarded items include:

- Clothes
- Greeting Cards/Letters
- Bills/Statements / Receipts
- Books/Magazines/Newspapers
- Collectables
- Animals
- Records/Tapes
- Pictures
- Sentimental Objects
- Electrical appliances, equipment
- Hard rubbish

The combination of these elements make it very difficult for people who hoard to act decisively in organizing their environment. Imposed clean ups reinforce self isolating behaviour and the return of the property to its previous state.

Hoarding can be confined to inside the home, outside the home or a combination of both.

Fire

Research conducted into fire incidents and fatalities involving hoarding households reveals

- Fire incidents and fatalities in hoarding homes occur in all local government areas across the metropolitan fire district
- Gender involved: 77% Males
- 73% aged 50 +
- Owner occupied 63%, Public Housing 23%, Private rental 10%
- 25% of people who hoard do not believe their hoarding is a problem.

Long-term Solutions

Despite their isolation people who live in hoarding households are regularly identified due to welfare concerns, complaints or through acute health or emergency services.

There is currently no specifically designed program available for people who hoard on a state wide basis. More often than not they refuse these services or require significant input to establish a relationship.

Specialist advice strongly warns against a forced clean up. Sustainable solutions are only achieved through long-term assistance and support. This may require an integrated multi agency approach to effectively address health, safety, and welfare issues for people affected by hoarding.

Appendix H: Nature of Hoarding Fires Datasheet

Nature of Hoarding Fires Page 1

Call #	Month	Year	Date	Peak number of personnel	Peak number of pumpers	Time on Scene	Time on Scene (hr)	Cost to MFB (AUD)
3336	1	1999	1/18/1999	39	5	13965	3.879166667	\$ 33,374.02
862	8	2000	8/5/2000	7	1	1804	0.501111111	\$ 862.25
1274	8	2000	8/7/2000	7	1	2496	0.693333333	\$ 1,193.00
3156	11	2001	11/16/2001	6	1	841	0.233611111	\$ 401.97
4163	11	2001	11/21/2001	7	1	585	0.1625	\$ 279.61
2705	9	2001	9/16/2001	7	1	3918	1.088333333	\$ 1,872.67
2168	12	2001	12/11/2001	31	3	#	#	#
4370	5	2002	5/23/2002	7	1	2187	0.6075	\$ 1,045.31
2173	8	2003	8/14/2003	4	1	4181	1.161388889	\$ 1,998.38
5651	1	2003	1/25/2003	14	3	3995	1.109722222	\$ 5,728.43
1917	9	2003	9/13/2003	3	1	4022	1.117222222	\$ 1,922.38
4820	3	2004	3/23/2004	0	2	6618	1.838333333	\$ 6,326.37
5944	12	2004	12/26/2004	20	3	28940	8.038888889	\$ 41,497.07
890	3	2004	3/4/2004	3	1	9380	2.605555556	\$ 4,483.33
3966	12	2005	12/16/2005	56	6	46194	12.831666667	\$ 132,475.15
4966	3	2005	3/25/2005	6	1	1361	0.378055556	\$ 650.51
6980	11	2005	11/30/2005	8	2	3087	0.8575	\$ 2,950.97
961	3	2005	3/5/2005	17	2	5580	1.55	\$ 5,334.11
3362	11	2005	11/15/2005	8	4	55869	15.519166667	\$ 106,814.08
923	11	2005	11/4/2005	31	2	8999	2.499722222	\$ 8,602.44
2700	10	2005	10/14/2005	13	3	58253	16.181388889	\$ 83,528.98
2995	4	2006	4/14/2006	7	1	1021	0.283611111	\$ 488.00
3816	10	2006	10/14/2006	7	2	1046	0.290555556	\$ 999.91
3959	8	2006	8/19/2006	0	2	3719	1.033055556	\$ 3,555.12
3552	4	2006	4/17/2006	20	3	26906	7.473888889	\$ 38,580.51
567	4	2006	4/3/2006	14	2	19223	5.339722222	\$ 18,375.91
386	8	2006	8/2/2006	25	2	23776	6.604444444	\$ 22,728.27
1605	9	2007	9/6/2007	6	2	5210	1.447222222	\$ 4,980.41
1967	1	2007	1/9/2007	3	1	4918	1.366111111	\$ 2,350.64
9791	10	2007	10/28/2007	13	2	15543	4.3175	\$ 14,858.07
1492	10	2007	10/6/2007	19	2	4516	1.254444444	\$ 4,316.99
8438	12	2007	12/27/2007	18	4	86399	23.999722222	\$ 165,183.37
5162	9	2007	9/19/2007	30	2	23308	6.474444444	\$ 22,280.89
5085	11	2007	11/14/2007	65	3	48610	13.502777778	\$ 69,701.88
9352	12	2007	12/30/2007	31	4	29937	8.315833333	\$ 57,235.55
1762	12	2007	12/6/2007	41	7	69011	19.169722222	\$ 230,894.70
2657	5	2007	5/12/2007	19	5	31306	8.696111111	\$ 74,816.12
9583	11	2008	11/28/2008	7	2	#	#	#
303	3	2008	3/1/2008	4	0	1349	0.374722222	\$ -
2278	10	2008	10/7/2008	7	2	1122	0.311666667	\$ 1,072.56
6470	3	2008	3/21/2008	6	2	1136	0.315555556	\$ 1,085.94
7758	12	2008	12/29/2008	36	6	41257	11.460277778	\$ 118,316.82
225	1	2008	1/1/2009	32	5	16529	4.591388889	\$ 39,501.56
3590	12	2008	12/13/2008	23	3	7454	2.070555556	\$ 10,688.29
4315	8	2008	8/18/2008	55	6	50082	13.911666667	\$ 143,625.16
12884	2	2009	2/27/2009	21	4	4229	1.174722222	\$ 8,085.28
1162	4	2009	4/3/2009	11	2	9775	2.715277778	\$ 9,344.25
7535	3	2009	#	#	#	#	#	#

Nature of Hoarding Fires Page 2

Call #2	Month2	Year 2	Number of fatalities	Estimated dollar loss	Total number of structures involved	Containment
3336	1	1999	#	\$50,000.00	1	Structure
862	8	2000	#	\$1,000.00	1	room
1274	8	2000	0	\$1,000.00	1	room
3156	11	2001	#	#	1	#
4163	11	2001	#	\$50.00	1	room
2705	9	2001	#	\$10,000.00	1	room
2168	12	2001	1	\$100,000.00		Structure
4370	5	2002	#	\$50.00	1	#
2173	8	2003	#	\$300.00	1	room
5651	1	2003	#	\$10,000.00	1	room
1917	9	2003	#	\$3,000.00	1	structure
4820	3	2004	#	\$5,000.00	1	structure
5944	12	2004	1	\$100,000.00	Spread to neighbors house	Beyond structure
890	3	2004	1	\$4,000.00	1	room
3966	12	2005	#	\$400,000.00	smoke damage extnded to other structures	beyond structure
4966	3	2005	#	\$40.00	1	room
6980	11	2005	#	\$10,000.00	1	room
961	3	2005	#	\$20,000.00	1	room
3362	11	2005	1	\$200,000.00	Extended beyond house	beyond structure
923	11	2005	0	\$100,000.00	1	structure
2700	10	2005	0	\$300,000.00	1	Structure
2995	4	2006	#	#	#	outside
3816	10	2006	#	\$30.00	1	room
3959	8	2006	#	\$500.00	1	room
3552	4	2006	1	\$50,000.00	1	room
567	4	2006	1	\$50,000.00	1	room
386	8	2006	1	\$150,000.00	1	structure
1605	9	2007	#	\$1,000.00	1	room
1967	1	2007	#	#	1	room
9791	10	2007	#	\$5,000.00	1	structure
1492	10	2007	#	\$30,000.00	1	structure
8438	12	2007	#	\$300,000.00	1	Structure
5162	9	2007	1	\$40,000.00	1	structure
5085	11	2007	1	\$100,000.00	1	Structure
9352	12	2007	1	\$700,000.00	1	structure
1762	12	2007	0	\$180,000.00	Extended beyond structure	Extended beyond the structure
2657	5	2007	0	\$300,000.00	1	structure
9583	11	2008	#	\$1,000.00		#
303	3	2008	#	#		room
2278	10	2008	0	#		#
6470	3	2008	0	\$1,000.00	1	room
7758	12	2008	0	\$83,000.00	Spread to Neighbors	Spread to neighbors
225	1	2008	0	\$110,000.00	1	structure
3590	12	2008	0	\$140,000.00	1	Structure
4315	8	2008	0	\$520,000.00	1	structure
12884	2	2009	0	#	#	#
1162	4	2009	#	\$30,000.00	1	#
7535	3	2009	#	#	#	#

Nature of Hoarding Fires Page 3

Call #3	Month3	Year 3	Impeded Egress/Access?	Smoke Alarms Present?	Smoke Alarms Working?
3336	1	1999	Yes	no	#
862	8	2000	Yes	yes	yes
1274	8	2000	No	yes	no
3156	11	2001	No	#	#
4163	11	2001	No	yes	Yes
2705	9	2001	Yes	no	#
2168	12	2001	yes	no	#
4370	5	2002	No	no	#
2173	8	2003	no	yes	no
5651	1	2003	yes	no	#
1917	9	2003	no	no	#
4820	3	2004	no	no	#
5944	12	2004	yes	yes	No
890	3	2004	no	Yes	yes
3966	12	2005	no	no	#
4966	3	2005	Yes	yes	Yes
6980	11	2005	no	yes	yes
961	3	2005	no	no	#
3362	11	2005	yes	no	#
923	11	2005	no	yes	no
2700	10	2005	#	no	#
2995	4	2006	no	#	#
3816	10	2006	yes	yes	yes
3959	8	2006	no	no	#
3552	4	2006	no	yes	yes
567	4	2006	no	yes	yes
386	8	2006	no	no	#
1605	9	2007	no	No	#
1967	1	2007	no	yes	out of range
9791	10	2007	yes	no	#
1492	10	2007	no	no	#
8438	12	2007	no	yes	yes
5162	9	2007	yes	no	#
5085	11	2007	yes	no	#
9352	12	2007	yes	no	#
1762	12	2007	no	yes	yes
2657	5	2007	no	no	#
9583	11	2008	no	no	#
303	3	2008	yes	no	#
2278	10	2008	No	yes	yes
6470	3	2008	no	yes	no
7758	12	2008	yes	no	#
225	1	2008	yes	no	#
3590	12	2008	yes	no	#
4315	8	2008	yes	no	#
12884	2	2009	#	#	#
1162	4	2009	#	#	#
7535	3	2009	yes	yes	yes**

Nature of Hoarding Fires Page 4

Call #4	Month4	Year 4	Hoarding Level- Greg	Hoarding Level- Ian	Hoarding Level- Chris	Hoarding Level- Reporting Officer	Average Hoarding Level
3336	1	1999	#	#	#	#	#
862	8	2000	#	#	#	#	#
1274	8	2000	#	#	#	#	#
3156	11	2001	#	#	#	#	#
4163	11	2001	#	#	#	#	#
2705	9	2001	#	#	#	#	#
2168	12	2001	#	#	#	#	#
4370	5	2002	#	#	#	#	#
2173	8	2003	#	#	#	8	8
5651	1	2003	#	#	#	6	6
1917	9	2003	#	#	#	N/A	#
4820	3	2004	#	#	#	#	#
5944	12	2004	6	4	5	#	5
890	3	2004	3	2	3	#	3
3966	12	2005	#	#	#	9	9
4966	3	2005	#	#	#	4	4
6980	11	2005	#	#	#	#	#
961	3	2005	#	#	#	#	#
3362	11	2005	8	9	6	#	8
923	11	2005	#	#	#	#	#
2700	10	2005	7	7	7	#	7
2995	4	2006	#	#	#	#	#
3816	10	2006	#	#	#	9	9
3959	8	2006	#	#	#	#	#
3552	4	2006	4	4	4	#	4
567	4	2006	5	5	6	#	5
386	8	2006	4	3	5	#	4
1605	9	2007	#	#	#	#	#
1967	1	2007	#	#	#	N/A	#
9791	10	2007	#	#	#	#	#
1492	10	2007	#	#	#	8	8
8438	12	2007	6	6	8	#	7
5162	9	2007	3	3	4	#	3
5085	11	2007	7	6	7	#	7
9352	12	2007	6	5	5	#	5
1762	12	2007	7	8	7	#	7
2657	5	2007	3	2	5	#	3
9583	11	2008	#	#	#	6	6
303	3	2008	#	#	#	5	5
2278	10	2008				8	8
6470	3	2008	#	#	#	4	4
7758	12	2008	9	7	8	#	8
225	1	2008	#	#	#	#	#
3590	12	2008	#	#	#	9	9
4315	8	2008	7	7	7	#	7
12884	2	2009	#	#	#	#	#
1162	4	2009	#	#	#	#	#
7535	3	2009	#	#	#	#	#

Appendix I: Unorthodox Use of Utilities Datasheet

Unorthodox Use of Utilities Page 1

Call #	Month	Year	Date	Area of Fire Origin (E1)	Form of Energy Ignition (E4)
3336	1	1999	1/18/1999	Sleeping room	candle, taper
862	8	2000	8/5/2000	Kitchen cooking area	heat from hot objects or friction
1274	8	2000	8/7/2000	Kitchen cooking area	Heat from properly operating electrical equipment
2705	9	2001	9/16/2001	Sleeping room	match
3156	11	2001	11/16/2001	storage areas	#
4163	11	2001	11/21/2001	Kitchen cooking area	Heat from properly operating electrical equipment
2168	12	2001	#	#	#
4370	5	2002	5/23/2002	Kitchen cooking area	Heat from properly operating electrical equipment
5651	1	2003	1/25/2003	#	#
2173	8	2003	8/14/2003	Sleeping room	conducted heat
1917	9	2003	9/13/2003	exterior wall surface	#
890	3	2004	3/4/2004	Kitchen cooking area	heat from properly operating electrical equipment
4820	3	2004	3/23/2004	sleeping room	unspecified short circuit arc
5944	12	2004	12/26/2004	Sleeping room	cigarette
961	3	2005	3/5/2005	Kitchen cooking area	heat from electrical equipment arcing
4966	3	2005	3/25/2005	Sleeping room	lighter
923	11	2005	11/4/2005	Sleeping room	candle, taper
3362	11	2005	11/15/2005	garage, carport	#
6980	11	2005	11/30/2005	#	#
3966	12	2005	12/16/2005	suspicious!	#
2700	10	2005	#	#	#
567	4	2006	4/3/2006	Kitchen cooking area	Heat from properly operating electrical equipment
2995	4	2006	4/14/2006	insufficient info	match
3552	4	2006	4/17/2006	Kitchen cooking area	heat from gas fueled equipment
386	8	2006	8/2/2006	Structural areas	#
3959	8	2006	8/19/2006	Dining area	Heat from properly operating electrical equipment
3816	10	2006	10/14/2006	Lounge area	Cigarette
1967	1	2007	1/9/2007	sothermic reaction of pidgin droppings!	#
2657	5	2007	5/12/2007	exterior balcony	heat from overloaded equipment
1605	9	2007	9/6/2007	closet and small storage area	unspecified short circuit arc
5162	9	2007	9/19/2007	Structural areas	#
1492	10	2007	10/6/2007	Lounge area	#
9791	10	2007	10/28/2007	Lobby, entrance way	re-ignite, re-ignition
5085	11	2007	11/14/2007	Kitchen cooking area	#
1762	12	2007	12/6/2007	Kitchen cooking area	Short-circuit arc from defective insulation
8438	12	2007	12/27/2007	Sleeping room	Cigarette
9352	12	2007	12/30/2007	garage, carport	#
303	3	2008	3/1/2008	Kitchen cooking area	Heat from objects or friction
6470	3	2008	3/21/2008	Lawn, field, open area.	match
4315	8	2008	8/18/2008	Lounge area	open fires
2278	10	2008	10/7/2008	Lounge area	Cigarette
9583	11	2008	11/28/2008	Kitchen cooking area	Heat from properly operating electrical equipment
3590	12	2008	12/13/2008	Kitchen cooking area	#
7758	12	2008	12/29/2008	Kitchen cooking area	#
225	1	2009	1/1/2009	Laundry room, area	Heat from electrical equipment arcing
12884	2	2009	#	#	#
7535	3	2009	#	#	#
1162	4	2009	#	#	#

Unorthodox Use of Utilities Page 2

Call #2	Month2	Year 2	Ignition Factor (E5)	Type of Material of Ignition (E6)	Form of Material of Ignition (E7)
3336	1	1999	misuse of heat of ignition not classified	wood, paper, insuff	rubbish, trash, waste
862	8	2000	unattended	plastics	kitchen household utensils, tableware
1274	8	2000	falling asleep	Food Starch	Cooking Materials
2705	9	2001	suspicious	paper	magazine, newspaper
3156	11	2001	#	multiple type of material ignited fir	rubbish, trash, waste
4163	11	2001	unattended	Food Starch	Cooking Materials
2168	12	2001	#	#	#
4370	5	2002	falling asleep	Food Starch	Cooking Materials
5651	1	2003	#	#	#
2173	8	2003	combustable too close to heat	cotton, rayon, fibre fabric	bedding
1917	9	2003	suspicious	#	#
890	3	2004	physical impairment	food, starch	Cooking Materials
4820	3	2004	overloaded	plastics	electrical wire
5944	12	2004	misuse of material	fabric, textile	furniture
961	3	2005	falling asleep	wood, paper, insuff	books, paper, trash
4966	3	2005	suspicious	paper, untreated, uncoated	mattress, pillow
923	11	2005	collision, overturn, knock over	insufficient	books, paper, recreational material
3362	11	2005	#	#	#
6980	11	2005	#	#	#
3966	12	2005	#	#	#
2700	10	2005	#	#	#
567	4	2006	combustible too close to heat	insufficient	books, paper, recreational material
2995	4	2006	#	insufficient	rubbish, trash, waste
3552	4	2006	unattended	#	Cooking Materials
386	8	2006	#	#	#
3959	8	2006	unconscious	wool, fabric	floor covering, surface
3816	10	2006	#	fabric, textile	furniture
1967	1	2007	#	#	#
2657	5	2007	misuse of heat of ignition	plastics	power transfer equipment
1605	9	2007	short circuit	plastics	electrical wire
5162	9	2007	#	#	#
1492	10	2007	suspicious	cotton, fabric	upholstered sofa
9791	10	2007	abandoned, discarded material	grass, leaves, straw	grass, brush
5085	11	2007	#	#	#
1762	12	2007	lack of maintenance	polyurethane	electrical wire
8438	12	2007	abandoned, discarded	fabric, textile	Bedding
9352	12	2007	short circuit	plastics	electrical wire
303	3	2008	falling a sleep	Food, starch	Cooking Materials
6470	3	2008	poorly constructed BBQ	Wood, paper, recreational material	books, papers, recreational material
4315	8	2008	Design, construction, installation deficiency	Multiple	rubbish, trash, waste
2278	10	2008	abandoned	paper	books, papers, recreational material
9583	11	2008	Unattended	Food starch	Cooking materials
3590	12	2008	#	#	#
7758	12	2008	old stove	#	#
225	1	2009	Operational Deficiency	Food Starch	Cooking Materials
12884	2	2009	#	#	#
7535	3	2009	#	#	#

Unorthodox Use of Utilities Page 3

Call #3	Month3	Year 3	Equipment Involved in Ignition (E8)	Description	Cause
3536	1	1999	none	High content of rubbish inside dwelling	heater/open flame/lam
862	8	2000	none	Lady was living in extremely poor conditions	cooking
1274	8	2000	none	Food left on stove	cooking
2705	9	2001	none	#	heater/open flame/lam
3156	11	2001	none	rubbish caught fire due to poor housekeeping	#
4163	11	2001	fixed stationary surface unit	food left on stove	cooking
2168	12	2001	#	#	electrical
4370	5	2002	none	#	cooking
5651	1	2003	#	#	electrical
2173	8	2003	none	lamped was knocked over by cat, caused mattress to burn	heater/open flame/lam
1917	9	2003	none	#	#
890	3	2004	Portable cooking appliances	unattended foodstuffs left in fry pan	cooking
4820	3	2004	#	extension lead under clothing, newspaper, magazines	electrical
5944	12	2004	none	smoking in bed	smoking
961	3	2005	fixed stationary surface unit	Junk left on stovetop caught fire	cooking
4966	3	2005	none	#	heater/open flame/lam
923	11	2005	none	candle fell over onto hoarded newspapers	heater/open flame/lam
3362	11	2005	#	#	#
6980	11	2005	#	#	electrical
3966	12	2005	#	#	#
2700	10	2005	#	#	smoking
567	4	2006	fixed, stationary oven	#	cooking
2995	4	2006	none	trying to burn foam boxes in the rear	heater/open flame/lam
3552	4	2006	fixed, stationary oven	#	cooking
386	8	2006	#	#	heater/open flame/lam
3959	8	2006	Portable local heating unit	#	electrical
3816	10	2006	none	#	smoking
1967	1	2007	#	#	other
2657	5	2007	power transfer equipment	#	other
1605	9	2007	fixed wiring	#	electrical
5162	9	2007	#	Two Kerosene Lamps	heater/open flame/lam
1492	10	2007	none	#	#
9791	10	2007	none	#	heater/open flame/lam
5085	11	2007	#	#	#
1762	12	2007	old frig	#	electrical
8438	12	2007	none	#	smoking
9352	12	2007	none	#	electrical
303	3	2008	fixed stationary surface unit	#	cooking
6470	3	2008	none	#	cooking
4315	8	2008	open fire, grills	cooking on home-made fireplace	cooking
2278	10	2008	none	#	smoking
9583	11	2008	Fixed, stationary food warming appliance (stove)	#	cooking
3590	12	2008	#	#	cooking
7758	12	2008	#	#	cooking
225	1	2009	Portable cooking appliances	#	cooking
12884	2	2009	#	#	#
7535	3	2009	#	#	cooking
1162	4	2009	#	#	electrical

Unorthodox Use of Utilities Page 4

Call #4	Month4	Year4	Unorthodox	Utilities	Notes
3336	1	1999	candle for lighting	#	#
862	8	2000	no	#	#
1274	8	2000	no	#	#
2705	9	2001	#	#	#
3156	11	2001	#	#	#
4163	11	2001	no	#	#
2168	12	2001	no	#	#
4370	5	2002	no	#	#
5651	1	2003	no	#	#
2173	8	2003	no	#	?bedside lamp knocked over by cat
1917	9	2003	#	#	#
890	3	2004	no	#	#
4820	3	2004	no	#	?extension lead under old newspaper
5944	12	2004	no	#	#
961	3	2005	no	#	#
4966	3	2005	no	#	#
923	11	2005	no	#	?candle
3362	11	2005	#	#	#
6980	11	2005	no	#	#
3966	12	2005	no	disconnected from power (has water)	#
2700	10	2005	no	#	#
567	4	2006	no	#	#
2995	4	2006	no	#	#
3552	4	2006	no	#	#
386	8	2006	no	#	?fan heater in contact with books
3959	8	2006	no	#	?space heater
3816	10	2006	no	#	#
1967	1	2007	no	#	#
2657	5	2007	#	#	#
1605	9	2007	no	#	#
5162	9	2007	kerosene lamp	all services disconnected	#
1492	10	2007	#	#	#
9791	10	2007	no	#	#
5085	11	2007	#	#	#
1762	12	2007	no	#	#
8438	12	2007	no	#	#
9352	12	2007	over size and mult strand fuse wire found in fuses	#	#
303	3	2008	no	#	#
6470	3	2008	poorly constructed BBQ	#	#
4315	8	2008	home-made fireplace	#	#
2278	10	2008	no	#	#
9583	11	2008	no	#	#
3590	12	2008	no	#	#
7758	12	2008	no	#	?old stove
225	1	2009	no	#	#
12884	2	2009	#	#	#
7535	3	2009	no	#	#
1162	4	2009	no	#	#

Appendix J: Victim Profile Datasheet

Victim Index Page 1

Call Number	Month	Year	Date	Fatalities	Gender	Age	Household Composition
3336	1	1999	1/18/1999	0	M	65+	#
862	8	2000	8/5/2000	0	F	75	sole occupant
1274	8	2000	8/7/2000	0	M	#	#
2168	12	2001	11/12/2001	1	M	54	#
2705	9	2001	9/16/2001	0	M	50-65	#
3156	11	2001	11/16/2001	0	M	65+	#
4163	11	2001	11/21/2001	0	M	71	sole occupant
4370	5	2002	5/23/2002	0	M	68	#
1917	9	2003	9/13/2003	0	F	#	#
2173	8	2003	8/14/2003	0	M	63	sole occupant + 12+ cats
5651	1	2003	1/25/2003	0	M	76	#
890	3	2004	3/4/2004	0	M	62	#
4820	3	2004	3/23/2004	1	F	73	#
5944	12	2004	12/26/2004	1	M	66	sole occupant
923	11	2005	11/4/2005	0	M	74	#
961	3	2005	3/5/2005	0	#	#	#
2700	10	2005	10/14/2005	0	M	45	#
3362	11	2005	11/15/2005	0	M	#	#
3966	12	2005	12/16/2005	1	F	77	married couple
4966	3	2005	3/25/2005	0	M	46	#
6980	11	2005	11/30/2005	0	M	66	#
386	8	2006	8/2/2006	1	M	54	occupant + others + dog
567	4	2006	4/3/2006	0	F	#	#
2995	4	2006	4/14/2006	0	M	76	sole occupant
3552	4	2006	4/17/2006	0	M	65+	sole occupant
3816	10	2006	10/14/2006	1	M	56	sole occupant
3959	8	2006	8/19/2006	1	M	92	#
1492	10	2007	6/10/2007	0	F	36	3-8 boarders
1605	9	2007	9/6/2007	0	#	65	#
1762	12	2007	6/12/2007	0	M	92	2 elderly occupants
1967	1	2007	1/9/2007	0	M	#	#
2657	5	2007	5/12/2007	0	M	77	#
5085	11	2007	14/11/2007	1	M	59	sole occupant + dog
5162	9	2007	19/09/2007	1	M	81	#
8438	12	2007	27/12/2007	1	M	53	sole occupant + dog
9352	12	2007	30/12/2007	0	F	47	widowed, 5 children under 12
9791	10	2007	28/10/2007	0	M	53	sole occupant + dog
303	3	2008	1/03/2008	0	M	#	#
2278	10	2008	7/10/2008	0	M	#	#
3590	12	2008	13/12/2008	0	F	65+	#
4315	8	2008	18/08/2008	0	M	62	#
6470	3	2008	21/03/2008	0	M	78	sole occupant
7758	12	2008	29/12/2008	0	M	#	#
9583	11	2008	28/11/2008	0	M	65+	#
225	1	2009	1/01/2009	0	F	65+	#
1162	4	2009	3/04/2009	0	M	65+	#
7535	3	2009	25/3/2009	0	M	65+	#
12884	2	2009	27/2/2009	0	#	#	#

Victim Index Page 2

Call Number2	Month2	Year2	Property Type	Property Ownership	Lack of Cooperation with MFB
3336	1	1999	house	rented	no
862	8	2000	house	owned	no
1274	8	2000	apartment	rented	no
2168	12	2001	house	owned	dead
2705	9	2001	house	owned	no
3156	11	2001	house	owned	no
4163	11	2001	house	owned	yes
4370	5	2002	apartment	DHS	no
1917	9	2003	apartment	rented	no
2173	8	2003	apartment	rented	no
5651	1	2003	house	owned	no
890	3	2004	apartment	rented	no
4820	3	2004	house	owned	dead
5944	12	2004	apartment	DHS	no
923	11	2005	apartment	DHS	no
961	3	2005	apartment	DHS	no
2700	10	2005	house	owned	no
3362	11	2005	house	owned	no
3966	12	2005	house	owned	dead
4966	3	2005	house	owned	no
6980	11	2005	apartment	DHS	no
386	8	2006	house	#	dead
567	4	2006	house	owned	no
2995	4	2006	house	owned	yes
3552	4	2006	apartment	DHS	no
3816	10	2006	house	DHS	dead
3959	8	2006	house	owned	dead
1492	10	2007	boarding house	DHS	no
1605	9	2007	house	owned	no
1762	12	2007	house	owned	no
1967	1	2007	house	owned	yes
2657	5	2007	house	#	no
5085	11	2007	house	owned	dead
5162	9	2007	house	owned	dead
8438	12	2007	house	owned	dead
9352	12	2007	house	owned	no
9791	10	2007	house	owned	no
303	3	2008	apartment	owned	yes
2278	10	2008	apartment	DHS	no
3590	12	2008	house	owned	no
4315	8	2008	house	owned	no
6470	3	2008	house	owned	dead
7758	12	2008	house	owned	no
9583	11	2008	apartment	DHS	no
225	1	2009	house	owned	no
1162	4	2009	house	owned	no
7535	3	2009	apartment	DHS	no
12884	2	2009	house	owned	no

Victim Index Page 3

Call Number3	Month3	Year3	Local Council Area
3336	1	1999	Port Phillip City Council
862	8	2000	Port Phillip City Council
1274	8	2000	Stonnington City Council
2168	12	2001	Moreland City Council
2705	9	2001	Bayside City Council
3156	11	2001	Yarra City Council
4163	11	2001	Moreland City Council
4370	5	2002	Darebin City Council
1917	9	2003	Melbourne City Council
2173	8	2003	Melbourne City Council
5651	1	2003	Glen Eira City Council
890	3	2004	Moreland City Council
4820	3	2004	Monash City Council
5944	12	2004	Maribymong City Council
923	11	2005	Boroondara City Council
961	3	2005	Melbourne City Council
2700	10	2005	Yarra Ranges City Council
3362	11	2005	Hobsons Bay City Council
3966	12	2005	Moreland City Council
4966	3	2005	Whitehorse City Council
6980	11	2005	Glen Eira City Council
386	8	2006	Melbourne City Council
567	4	2006	Banyule City Council
2995	4	2006	Moreland City Council
3552	4	2006	Darebin City Council
3816	10	2006	Banyule City Council
3959	8	2006	Boroondara City Council
1492	10	2007	Darebin City Council
1605	9	2007	Moonee Valley City Council
1762	12	2007	Glen Eira City Council
1967	1	2007	Darebin City Council
2657	5	2007	Glen Eira City Council
5085	11	2007	Boroondara City Council
5162	9	2007	Darebin City Council
8438	12	2007	Moreland City Council
9352	12	2007	Whittlesea City Council
9791	10	2007	Moreland City Council
303	3	2008	Glen Eira City Council
2278	10	2008	Melbourne City Council
3590	12	2008	Banyule City Council
4315	8	2008	Glen Eira City Council
6470	3	2008	Moreland City Council
7758	12	2008	Moreland City Council
9583	11	2008	Port Phillip City Council
225	1	2009	Manningham City Council
1162	4	2009	Kingston City Council
7535	3	2009	Port Phillip City Council
12884	2	2009	Moreland City Council