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**Metropolitan Fire and  
Emergency Services Board**

## MFB Submission:

Senate Inquiry into the Use of Smoke Alarms to  
Prevent Smoke and Fire Related Deaths

4 August 2015

# Senate Inquiry into the Use of Smoke Alarms to Prevent Smoke and Fire Related Deaths

## ***Executive Summary***

There is no doubt that smoke alarms save lives.

Since August 1997, when it became mandatory for all homes in Victoria to have smoke alarms, the number of fatalities from smoke and fire related deaths each year has almost halved.<sup>1</sup>

In the view of the Metropolitan Fire & Emergency Services Board (**MFB**), installing, and maintaining working smoke alarms in the home is the best initial step community members can take to prevent fire related injury or death to their family members, or fire related damage to their homes and property. On that basis, the value of smoke alarm legislation to fire and emergency services management agencies, and to the community at large, cannot be overstated.

The MFB has played an important role in advocating for legislative change regarding smoke alarms in the past. In particular, has been actively involved in the introduction of the legislation which required smoke alarms to be installed in all Victorian homes in 1997, and in more recent times has developed several policies setting out its recommendations for best practice with respect to the type, placement and installation of smoke alarms.

However, notwithstanding the positive effect smoke alarms have had in the community, based upon the MFB's extensive experience in responding to alarms of fire, and regrettably, the MFB's involvement in tragic coronial investigations into the fire related deaths, the MFB has identified that those most at risk of injury or death from smoke and fire are also those who are less likely to be able to install and maintain a working smoke alarm. Such persons include elderly and disabled persons, international students and workers, and persons who are socially or financially disadvantaged – in other words, persons who are among the most vulnerable in our community.

In the MFB's view, consideration should be given to possible improvements to the current regulatory framework to ensure that working, appropriate smoke alarms are installed and maintained in all homes.

This submission sets out the MFB's recommendations to address the shortcomings and deficiencies of the current regulatory framework around smoke alarms.

## ***Who we are***

The MFB is the statutory authority that has the responsibility to provide fire safety, fire suppression and fire prevention services along with emergency response services in the metropolitan district of Melbourne.

It is constituted under the *Metropolitan Fire Brigades Act 1958* with a number of statutory duties under that Act, including responsibilities to provide fire and rescue services to over 4 million residents, workers and visitors in metropolitan Melbourne, and protect billions of dollars' worth of assets and key infrastructure.

In addition to its fire and rescue functions, the MFB undertakes a range of other activities, including:

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<sup>1</sup> Combined MFB and CFA incident reporting data.

- providing advice and fulfilling a statutory role pertaining to fire safety issues in the built environment;
- providing emergency medical response;
- providing emergency response coverage to the inland waters and the Port Waters of the Port of Melbourne within the Metropolitan District;
- developing fire safety and emergency plans for major events;
- participating in community safety activities; and
- providing emergency response in relation to a range of emergencies, including industrial accidents, hazardous material handling and storage incidents and chemical, biological and radiological emergencies.

The MFB is committed to advocating for the safety of members of the community to ensure the risk to life and property is reduced so far as is possible. It also works closely with community groups, facilitating education campaigns and programs to ensure that people are equipped with the skills, information and tools needed to prevent, prepare, respond and recover from emergencies. The MFB has a long history in advocating for improved fire safety, including leading debate on compulsory smoke alarms, sprinkler systems in homes for the disabled, fire systems in tunnels, fires arising from insulation during the Home Insulation Programme, fire risks arising from hoarding, addressing juvenile fire lighting behaviour and improving fire safety in boarding houses.

## **a. The incidence of smoke and fire related injuries and deaths and associated damage to property**

### ***Smoke and fire related injuries and deaths***

Smoke and fire related injuries and deaths have a devastating effect on Victorian communities.

Every year, many Victorians die or are injured as a result of fire related burns or smoke inhalation arising from residential fires.

Based on hospital presentation and admission data between 2004 and 2015, there were 103 fire related fatalities in the Melbourne Metropolitan District<sup>2</sup> alone. Of these:

- 53 deaths were deemed to arise from preventable residential fires; and
- 26 deaths occurred in homes in which there was either no smoke alarm, or where the smoke alarm was disarmed.

The Australasian Fire and Emergency Services Authorities Council (**AFAC**) (the peak body for all fire and emergency services management agencies in Australia and New Zealand) conducted research which indicates that the following groups are at the highest risk of dying as a result of being involved in a residential fire:

- people aged 65 years and over;
- children aged between 0-4 years; and
- persons experiencing social or financial disadvantage.<sup>3</sup>

Such persons are amongst the most vulnerable in our community.

The data with respect to fire related injuries in residential settings is also informative. A report by the Monash University Injury Research Institute indicates that:

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<sup>2</sup>As defined in the *Metropolitan Fire Brigades Act 1958*.

<sup>3</sup>AFAC – Basic Home Fire Safety Resource (**Attachment 1**), at p 3-1.

- the majority of fire related injuries treated by hospitals in the Melbourne Metropolitan District occur in domestic settings;
- between 2003 and 2008, 65% of hospital admissions for fire related burns recorded the 'place of occurrence' for the injury as the 'domestic setting'; whilst
- in contrast, during the same period, 56% of emergency department presentations in the Melbourne Metropolitan District stated that the relevant injury occurred in the 'domestic setting'.<sup>4</sup>

These figures demonstrate that the rate of fire-related injury in 'domestic settings' is higher than the underlying rate of general injury in domestic settings.

In that respect, during the period July 2009 – July 2012, in Victoria, there were approximately 348 acute hospital admissions per year as a result of flame and radiant heat burns in residential premises.<sup>5</sup>

While the above figures are concerning, in the MFB's view, they likely to underestimate the number of smoke and fire related injuries in the Melbourne Metropolitan District. This is because the data is captured only through hospital presentation and admission statistics. Anecdotally, however, the MFB is aware that many people who suffer a smoke or fire injury in their home do not attend hospital for treatment, but rather, present directly to their GP, are treated by paramedics at the scene of the fire, or in some cases, self-treat or seek no treatment for their injuries at all.<sup>6</sup> On that basis, the incidence of smoke and fire related injuries is extremely difficult to quantify, and is likely to be much higher than that represented in reported data.

Further, injury from smoke and fire in the residential setting is not limited to burns or smoke inhalation. AFAC research indicates that the majority of fire injuries are burns and/or smoke inhalation, however, other (related) injuries include wounds and punctures, fractures, heart attacks, strains and sprains which occur during a fire.<sup>7</sup> Such related injuries also may not be captured in the data above, notwithstanding that the injuries have resulted in hospitalisation or injury to a person as a result of a residential fire.

### ***Smoke and fire related damage to Victorian property***

Smoke and fire in the residential setting cause serious damage to Victorian properties, generating both distress and expense within Victorian families.

Over the past 10 years in Victoria, there has been an average of 2,786 insurance claims per year related to residential fires. Further, the average cost of each property insurance claim during that period was \$32,000 (per building).

The MFB and CFA estimate that the total cost of damage caused to residential buildings by smoke and fire was over \$90 million in 2014 alone.<sup>8</sup> Given, however, that MFB and CFA figures:

- do not include the cost of fire damage that is the subject of an insurance claim, without the MFB / CFA having attended the fire; and
- are based on an initial estimate by the first responders (in the MFB / CFA Australian Incident Reporting System (**AIRS**)), rather than ICA data, which comes from the final value paid out by insurers,

a more accurate indication of the cost of property loss from fire and smoke damage comes from insurance industry data. In this respect, based on aggregated quarterly averages, the value of insurance claims made in relation to residential properties damaged by fire or smoke during 2014 was over \$135 million.<sup>9</sup> This figure is close to \$46 million (or 50%) higher than the MFB / CFA estimate of the cost of damage caused by fire for the same period.

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<sup>4</sup> *ibid.*

<sup>5</sup> ANZBA Bi-National Burns Registry Report to CFA – Burns Injuries in Victoria 2012.

<sup>6</sup> This is supported by the comments and data related to Annual Fire Hospitalisation rates in the AFAC submission to the Senate.

<sup>7</sup> Attachment 1 at p 2-1.

<sup>8</sup> MFB/CFA AIRS statistics.

<sup>9</sup> MFB correspondence with the Insurance Council of Australia (ICA), 2015.

## **b. The immediate and long term effects of such injuries and deaths?**

It is extremely difficult for the MFB to adequately describe the emotional cost and trauma that fire related injuries and deaths have on the Victorian community. To say the least, the immediate effects of smoke and fire related injuries and deaths include pain and suffering for the victims and their families and friends.

The long term effects of smoke and fire related injuries and deaths are also extremely severe. It is clear that the effects of smoke and fire related injuries and deaths extend far beyond the initial treatment period. The emotional cost to a household or family is incalculable, and is likely to affect a person's physical and mental health, wellbeing, relationships, employment and schooling in a profound way. While it is difficult to determine what the likely outcomes from smoke and fire related injuries may be, it is clear that such outcomes are significantly affected, amongst other things, by pre-existing conditions such as the age of the affected person, with the very young and very old being more vulnerable to the long term effects of such injuries.

Smoke and fire related damage resulting from a residential fire also has a significant impact on a person's circumstances. It can result in a loss of possessions, essential documents and valuables. It may also result in a person living in a partially damaged home or being required to relocate to other accommodation for an extended period, resulting in additional (and unplanned) financial burdens. For people without contents and/or home insurance, and/or in socially or financially disadvantaged position, the immediate and long term costs of residential fire may be severe and potentially life changing.

The financial impact of smoke and fire related injuries and deaths is of course, far less than the emotional cost. However, the financial impact of smoke and fire related injuries is nonetheless a substantial burden on those affected. In 2012 the average acute hospital treatment cost of an adult burns patient was \$71,056 and the cost of acute hospital treatment of a burns patient with 62% total body surface area burn was \$842,419.<sup>10</sup> This amount does not include follow-up procedures and post hospital out-patient care and therapy.

## **c. How the use, type and installation set-ups of smoke alarms could affect such injuries and deaths?**

In the MFB's view, the use, type and installation set-ups of smoke alarms perform a vital role in the prevention of residential fire related injuries and deaths.

This is because working smoke alarms alert the occupant/s of a residence to a fire, providing early warning of the fire and providing people with time to escape injury or harm. Given that the statistics show that:

- most fatal fires in residential homes occur between 8pm and 8am, and the peak time for fatal fires is between midnight and 4am;<sup>11</sup>
- a person's ability to detect odours (such as smoke) when asleep is substantially diminished;<sup>12</sup> and
- smoke inhalation / poisoning is the major cause of death in residential fires,

the MFB considers working smoke alarms to be a crucial life-saving mechanism.

MFB data indicates that if you don't have a smoke alarm in your home and a fire occurs:

- you are 57% more likely to suffer property loss and damage;
- you are 26% more likely to suffer serious injuries; and
- you are four times more likely to die,<sup>13</sup>

than if your home has a working smoke alarm.

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<sup>10</sup> Ahn. C. 2012. The True Cost of Burn. Bums 38.

<sup>11</sup> Attachment 1at p 2-3.

<sup>12</sup> Lynch. J.L. 1997. Nocturnal Olfactory Response to Smoke Odour.

<sup>13</sup> (<http://www.mfb.vic.gov.au/Community/Home-Safety/Smoke-Alarms.html> (accessed 24/7/2015)).

## **Requirements for installation of smoke alarms in Victoria**

All Victorian homes must have smoke alarms installed.

Since August 1997<sup>14</sup> new Victorian homes and any homes that undergo major renovations (requiring a building permit) are required to have 'hard wired' smoke alarms installed. 'Hard-wired smoke alarms' are connected to the 240 volt mains power supply. This means that they must be installed and replaced by a qualified electrician. Hard-wired smoke alarms must also have a backup battery in case of mains power failure. The MFB played an important part in advocating for this legislation.

Battery operated smoke alarms must be installed in all other Victorian homes.

In accordance with the Victorian Building Authority Practice Note 2006-7, smoke alarms must be located between each area containing bedrooms and the remainder of a dwelling. In a dwelling with separate sleeping areas smoke alarms, must be located within 1.5 metres of bedroom doorways. In multi storey dwellings, a smoke alarm is required on every storey, located in the path of travel people will most likely take to evacuate the building (for example, in the hallway of an apartment building).

Smoke alarms are required to be installed on or near the ceiling, taking special care to avoid dead air spaces (such as apex ceilings).

In compliance with the National Construction Code, from 2014, in new homes where more than one smoke alarm is installed, the smoke alarms must be 'interconnected'. This means that when one smoke alarm activates, all the smoke alarms installed at the residence are activated, which ensures all residents in a home are alerted to a fire.

## **Types of smoke alarms currently in use in Victoria**

There are two main types of smoke alarms.

- **Ionisation smoke alarms** – which use a small amount of radioactive material positioned between two electrically charged plates. This ionises the air and allows a current to pass through the air between the plates. When smoke enters the detection chamber it reduces the current by disrupting the flow of ions between the plates. The smoke alarm detects the drop in current and activates the alarm. Ionisation smoke alarms detect flaming fires marginally earlier than photo-electric smoke alarms.<sup>15</sup>
- **Photo-electric smoke alarms** – which use a light beam aimed through the detection chamber but away from a light sensor. When smoke enters the detection chamber it scatters the light beam allowing some light to reflect onto the sensor which activates the alarm. Photo-electric smoke alarms detect smouldering fires and fires starting in areas remote from the smoke alarm significantly earlier than ionisation smoke alarms.<sup>16</sup>

The current legislative framework in Victoria permits the use of either photoelectric or ionisation type smoke alarms in all classes of buildings.

## **MFB Policy**

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<sup>14</sup> When Regulation 5.14 was introduced into the *Building Regulations 1994*. This requirement is currently referred to in Regulation 707 of the *Building Regulations 2006*.

<sup>15</sup> AFAC – 2006 Position on Smoke alarms in Residential Accommodation.

<sup>16</sup> *ibid.*

As set out below in response to term of reference (d), the MFB has developed a *Smoke Alarm in Residential Properties Policy and Practice* document which underpins all its home fire safety advice for the broader community.<sup>17</sup>

In that document, the MFB recommends that the following smoke alarms be installed in residential properties:

- photo-electric smoke alarms connected to 240 volt mains power with a 10 year lithium battery in a tamper proof chamber; or
- stand-alone photo-electric smoke alarms with a 10 year lithium battery in a tamper proof chamber.

### ***Protection for vulnerable persons***

Having regard to the above installation requirements for smoke alarms, research and analysis conducted by MFB and others has identified that those most at risk of injury or death from smoke and fire are also those who are less likely to be able to install and maintain a working smoke alarm. Those most at risk are:

- Older people aged 65+. These persons are the highest fatality risk group nationally, and represented 50% of all preventable residential fire fatalities in the Melbourne Metropolitan District between 2000 and 2010;<sup>18</sup>
- People who are socially and financially disadvantaged. Social and financial disadvantage can significantly contribute to a person's fire risk. Limited access to social and financial resources can reduce individual capacity to access information and establish even a minimal level of home fire safety;<sup>19</sup>
- People with disabilities. People with disabilities are 4.2 times more likely to be fire fatality victims than the general population within the Melbourne Metropolitan District. A study conducted by the MFB identified that people with disabilities represented 16% of fire fatalities in the Melbourne Metropolitan District between 2000 and 2010;<sup>20</sup> and
- International students, international workers and newly arrived residents. These persons, in particular, are more likely to live in types of housing that are over represented in MFB fire statistics, including shared housing and rooming houses. Issues often discovered by fire services inspections and local council inspections in such properties include: overcrowding, a lack of smoke alarms, an insufficient number of smoke alarms, unsafe cooking practises, reduced egress/no egress and overuse of electricity due to increased occupancy. These issues are further compounded by (among other things) the following issues faced by this cohort:
  - language challenges;
  - an unawareness of home fire safety practices;
  - limited/no knowledge about the use of or requirement for smoke alarms;
  - a lack of awareness regarding the safe use of utilities, fixed appliances and portable appliances; and
  - a lack of support and knowledge regarding their rights as a tenant under the *Residential Tenancies Act 1997 (RTA)*.

Many of the above issues faced by international students, international workers and newly arrived residents were identified in the Coroner's reports into the deaths Mr, Sunil Ramanlal Patel, Mr Jignesh Kumar Ghanshyamdass Sadhu and Mr Deepak Kumar Prajapati.<sup>21</sup>

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<sup>17</sup> MFB Residential Smoke Alarm Policy and Recommended Practice (**Attachment 2**).

<sup>18</sup> Analysis of Preventable Fire Fatalities Involving Older People and People with Disabilities 2011 (**Attachment 3**).

<sup>19</sup> Attachment 1 at p. 3-2).

<sup>20</sup> Attachment 3.

<sup>21</sup> Coroner's Report – 216 Ballarat Road Jignesh (**Attachment 4**); Coroner's Report – 216 Ballarat Road Sunil (**Attachment 5**); Coroner's Report – 216 Ballarat Road Deepak (**Attachment 6**).

In this submission, the MFB makes several recommendations aimed at reducing the risk of death or injury from smoke or fire to, in particular, aged and disabled persons who receive community care support. The MFB's submissions and recommendations regarding the use of smoke alarms to reduce risk to this cohort are set out below.

However, the MFB's recommendations regarding reform in the use of smoke alarms in owner-occupied and rented dwellings (in response to term of reference (d) and (e) below) will also be effective to reduce risk to international students and workers, and persons who are socially and financially disadvantaged. Please see the MFB's response to part (d) and (e) of the terms of reference below.

### ***Protection for aged and disabled persons receiving community care services***

The federal Department of Health and Ageing predicts that by 2025 one in four Australians will be aged 65 years and over, and that in 2026 there will be, for the first time in our history, 1 million Australians aged 85 years or more.<sup>22</sup>

For fire services, this brings unique challenges. Older people are already at the highest fire fatality risk in the community. Older people (among other things):

- may experience impaired hearing, diminished vision and a poorer sense of smell, which affects their ability to identify a fire;
- may be affected by mobility issues, which reduce their capacity to escape safely and quickly if a fire occurs in their home;
- are more likely to live in older homes, which may not include features such as an electrical safety switch or may be unable to carry out or be unaware of the need for home maintenance; and
- may have difficulty installing and maintaining working smoke alarms.<sup>23</sup>

The impact of an aging population will be that, among other things, the cohort of people with highest fire fatality risk will live in the community for longer than ever before.

It also means that the demand for community services such as home and community care services, and aged care services, will increase dramatically in the coming years.

Having regard to this, it is of particular concern to the MFB that many of the fire fatality victims in the aged and disability cohort who did not have working smoke alarms or adequate smoke alarm coverage, were also community care clients. This trend is clearly demonstrated in the following cases which have come before the Coroners Court of Victoria:

#### **Case 1**

*Mrs S was 73 years of age, a smoker and lived alone in her two storey home. Mrs S had reduced mobility, was deaf, mute and confined to her bed on the first floor. Mrs S received "in home" support via a Commonwealth Community Aged Care Package, delivered by a not-for-profit agency. The cause of the fire which started in the bedroom was determined to be smoking materials. There was no smoke alarm of any type in the home. Due to her level of disability Mrs S was unable to escape the bedroom and died in the fire.<sup>24</sup>*

#### **Case 2**

*Mrs R was 90 years old and lived alone in her unit. Mrs R experienced reduced mobility and hearing, necessitating the use of a hearing aid. A not-for-profit agency delivered services via a Community Aged Care Package. The cause of the fire could not be determined due to fire damage, but the most likely cause was deemed to be the overheating of a toaster or an electrical fault with the toaster which was found in the laundry in the rear of the unit. One smoke alarm was identified outside the bedroom at the*

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<sup>22</sup> Attachment 1 at p iii.

<sup>23</sup> Attachment 1 at p 3-2.

<sup>24</sup> <http://www.coronerscourt.vic.gov.au/home/coroners+written+findings/findings+-+finding+without+inquest+into+the+death+of+audrey+joyce+svikers>



front of the unit. Responding crews were able to rescue Mrs R, but she passed away as a result of her injuries a week later.<sup>25</sup>

### Case 3

Mrs H lived alone in her apartment, was 90 years of age and was affected by mobility problems and cognitive impairment. Mrs H received support via a Commonwealth funded Community Aged Care Package delivered by a not-for-profit agency. Mrs H was also a smoker with no smoke alarm. Mrs H's clothing caught fire from smoking materials and she died in her home.

In each of Cases 1 and 2 above, the MFB advocated for the following changes before the Coroners Court:

- improved fire safety measures for community aged care clients in relation to smoke alarm practice in the community and aged care sector; and
- home fire safety training (inclusive of smoke alarms) for community and aged care sector workers.

Case 3 is yet to be heard by the Court.

The recommendations of the Coroners Court of Victoria in relation to Cases 1 and 2 above were released in late 2012 and were sent to the Commonwealth. The recommendations of the Coroner were that:

Recommendation 1:

*That during initial needs assessment, community care providers advise community care clients that it is mandatory for all homes in Victoria to have a working smoke alarm.*

Recommendation 2:

*In homes where community care is to be provided and there is no smoke alarm, the installation of a smoke alarm is organised in line with service provision. In homes where smoke alarms are installed, these are checked by the community care provider to ensure they are in working order.*

Recommendation 3:

*That community care providers promote regular testing and maintaining of smoke alarms to the client, their family and/or friends or provide assistance for their clients to test and maintain smoke alarms if required.*

Recommendation 4:

*In homes where the client smokes, community care providers promote the use of high-sided ashtrays or sealed containers to allow for properly discarded smoking materials.*

The response of the Commonwealth, provided in 2013, included the following:

*"The Department notes that the Coroners recommendations are consistent with the Community Care Common Standards (the Standards) as set out in the Aged Care Act 1997 (the Act) in particular Expected Outcome 1.6: Risk Management and Expected Outcome 1.8: Physical Resources. The Standards provide a framework to ensure community aged care providers meet their requirements under the Act and continue to look for ways to improve their policies and practices."<sup>26</sup>*

The Commonwealth then issued an 'alert' to providers in all states and territories as follows:<sup>27</sup>

*"We consider the Victorian coronial findings pertinent to all jurisdictions. While the findings are recommendations and not legislated requirements we suggest that you:*

- *make your key personnel aware of the information in this alert*

<sup>25</sup> <http://www.coronerscourt.vic.gov.au/home/coroners+written+findings/findings+-+inguest+into+the+death+of+pearl+recht>

<sup>26</sup> Commonwealth Department of Health & Ageing Response to the Coroners Court of Victoria's Recommendations – COR2009 002158 (**Attachment 7**).

<sup>27</sup> Commonwealth Department of Health & Ageing Industry Feedback Alert (**Attachment 8**).

- *include fire safety training materials in training for all personnel*
- *take appropriate action to promote fire safety in the home such as*
  - *ensuring your assessment process includes consideration of fire-related risks to the care recipients safety*
  - *advising your care recipients of smoke alarm legislation relevant to your state or territory*
  - *promoting regular testing and maintenance of smoke alarms to care recipients and their family/friends or providing assistance to care recipients to test and maintain smoke alarms*
  - *promoting the use of high-sided ashtrays or sealed containers to care recipients who smoke to allow for properly discarded smoking materials.”*

Many community and aged care providers in Victoria have taken a proactive response to the Coroner's findings and the Commonwealth alert resulting from Cases 1 and 2 above. In addition, AFAC has developed an *Essential Knowledge Basic Home Fire Safety Learning Resource*<sup>28</sup> to assist community care workers to:

- *"promote basic home fire safety with clients*
- *inform clients about the risk of fire in their homes*
- *influence and promote safe evacuation if there is a fire in a client's home*
- *influence any misunderstanding or underestimated perception of risk that clients may have about fire in their homes*
- *assist clients to comply with relevant state/territory smoke alarm legislation*
- *reduce the risk of fire in your workplace if you work in a client's home*
- *reduce the risk of fire injuries and/or fatalities in the home."*

Separately, the MFB has also developed smoke alarm recommendations to address the higher fire safety needs of older people and people with disabilities in relation to smoke alarms.<sup>29</sup>

In that document, among other things, the MFB recommends that the homes of older people or people with disabilities have:

- *more than one smoke alarm;*
- *interconnected smoke alarms;*
- *specialised smoke alarms for the deaf and hard of hearing (or smoke alarms linked to personal alarms) (discussed below); and*
- *regularly tested smoke alarms.*

However, the Coroner's findings and the Commonwealth alert are recommendations only, and are not legislated requirements in relation to smoke alarms in the homes of persons receiving community care.<sup>30</sup>

### ***Use of specialised smoke alarms for aged and disabled persons***

In addition, to educate and train community carers regarding fire safety, the homes of persons in high fire risk groups such as aged persons or persons with disabilities may require the installation of specialised smoke alarms to ensure effective early warning of a fire.

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<sup>28</sup> Attachment 1 at p.iii.

<sup>29</sup> Fire safety for older people and people with disability (**Attachment 9**).

<sup>30</sup> Consideration needs to also be given to the occupational health and safety of community and aged care sector workers for whom these homes become a workplace.

### ***Persons who are deaf or hard of hearing***

Specialised smoke alarms are available for people who are deaf and hard of hearing. This type of specialised smoke alarm utilises an inbuilt wireless transmitter. When the smoke alarm activates, in addition to omitting the standard “beep, beep, beep”, a signal is sent to a strobe unit and a bed shaker pad designed to wake the resident by means other than sound.

In Victoria two subsidised schemes are currently available for people who are deaf and hard of hearing to obtain this type of smoke alarm. These are:

- the State-wide Smoke Alarm Subsidy for deaf and hard of hearing which is administered by Vic Deaf and funded by the Department of Health and Human Services. To be eligible a person must have a profound hearing loss in both ears of 90dBA or have a cochlear implant. The recipient contribution is \$50; and
- provision of specialised smoke alarms for Department of Veterans Affairs Gold Card (and in some cases White Card) holders. Gold Card holders are eligible with any degree of hearing loss. White Card holders are eligible if hearing loss is listed on their card. There is no cost to the recipient.

However, for a growing number of older people and people with disabilities, the additional cost, or ineligibility of the person for a subsidised program, may mean that specialised smoke alarms such as those described above are out of reach. This is because, for example people who:

- are not veterans, including their widows or widowers;
- may be profoundly deaf in only one ear; or
- have hearing loss that falls below the eligibility criteria but above the sounding level of an alerting alarm,<sup>31</sup>

are currently unable to access this smoke alarm through the subsidy.

### ***Other vulnerable persons with memory, cognition or mobility issues***

In addition, an increasing number of private providers of 'personal alarms' are able to supply smoke alarms with increased functionality to reduce the risk of related injury or death to persons who have memory, cognition or mobility issues. For example:

- Some types of personal alarms operate as a medical care alert system, which allow a vulnerable person to call for help, at the push of a portable panic button, should they fall or become unwell. These types of alarms would be effective for use in the homes of persons with mobility issues.
- Other types of personal alarms link to a range of sensors which detect smoke, gas leaks and falls. These innovations include the capacity for various sensors to activate an alarm at the monitoring service without the need for an individual to activate the personal alarm.<sup>32</sup> These types of alarms would be effective for use in the homes of persons with memory or cognition issues.

However, these additional life safety features are not currently offered by the majority of government funded personal alarms programs in Victoria.

### ***MFB recommendations 1, 2 and 3***

Having regard to the above matters, the MFB recommends that:

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<sup>31</sup> Australian Standard – AS 1670.1 for smoke alarms states that the minimum standard for hearing the alarm should be 75 dBA 'at the pillow'.

<sup>32</sup> Other types of 'personal alarms' are described at Attachment 1 at p 4-11.

1. the Community Care Common Standards (the **Standards**) as set out in the *Aged Care Act 1997* include legislated requirements in relation to smoke alarms for community aged care clients through:
  - a. initial needs assessment processes that are inclusive of the assessment for a smoke alarm (including a specialised smoke alarm); and
  - b. the provision of an appropriate smoke alarm to address the client's level of risk.
2. the Inquiry examine the feasibility of using new technology to link personal alarms to smoke alarms via funded personal alarm services.
3. the Inquiry review:
  - c. the current funding arrangements for smoke alarms for people who are deaf and hard of hearing;
  - a. the future funding arrangements with respect to the roll out of the National Disability Insurance Scheme; and
  - b. eligibility for funding under both future and current arrangements to ensure it is accessible by all people who are unable to hear a standard smoke alarm.

#### **d. What smoke alarms are in use in owner-occupied and rented dwellings and the installation set-ups?**

##### ***Current requirements in Victoria***

As described above, smoke alarm requirements in Victoria can be divided into two periods:

- Residential buildings constructed before 1 August 1997-  
  
Owners of Classes 1, 2, 3 and 4 buildings are required to install self-contained smoke alarms with battery back-up. Introduced at the same time, another regulation required owners of classes 1b and 3 buildings to retrospectively install mains powered smoke alarms; and
- Residential buildings constructed after 1 August 1997-  
  
In accordance with the Building Code of Australia, Classes 1, 2, 3 and 4 buildings were required be fitted with self-contained smoke alarms complying with Australian Standard 3786 that are hard-wired to the buildings 240 volt mains power supply. From 1 May 2014, all smoke alarms in new buildings are required to be 'interconnected'. In Classes 1a and 2 the smoke alarms are required to be located outside the bedrooms. In classes 1b and 3 they are required to be located inside and outside the bedrooms.

As set out above, the current legislative framework permits the use of either photoelectric or ionisation type smoke alarms in all classes of buildings.

##### ***Standards in other jurisdictions in Australia***

Fire services in all jurisdictions actively seek opportunities to address gaps in current smoke alarm legislation, policy and practice. Over the last five years the following jurisdictions have established new minimum standards to improve smoke alarm practice, as follows:

- In 2009 **Western Australia** introduced legislation in relation to mains powered smoke alarms in all existing residential buildings being tenanted (and offered for sale).<sup>33</sup> This legislation requires that all properties subject to a new tenancy agreement have smoke alarms connected to mains power. In rented properties in which there were no tenancy changes, owners were given until October 2011 to install mains powered smoke alarms. Included in the legislation are exemptions which provide for the installation of stand-alone smoke alarms with a built in 10 year long life battery in a tamper proof chamber.

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<sup>33</sup> MFB's 'Be fire safe in your rental property' (**Attachment 10**).

- New smoke alarm legislation came into effect in the **Northern Territory** in November 2011.<sup>34</sup> This requires that all residential premises or movable dwellings should have photo-electric smoke alarms that are either connected to 240 volt mains power with a ten year long life lithium battery back-up in a tamper proof chamber, or a stand-alone smoke alarm with a ten year long life lithium battery in a tamper proof chamber. This law is in effect when:
  - the ionisation smoke alarm ceases to function – the day of cessation;
  - the owner enters a contract to sell the premises or dwelling – the day before contract settlement;
  - the owner agrees to enter into a tenancy agreement, or renew or extend a tenancy agreement in relation to the premises – the day before the tenancy agreement or renewal or external takes effect; or
  - the owner agrees to enter into a hire agreement, or renew or extend a hire agreement, in relation to the dwelling – the day before the hire agreement of renew or extension takes effect.
- In 2012 **Tasmania** introduced similar legislation with a transitional time frame from 1st May 2012 until 30<sup>th</sup> April 2016. During this period smoke alarms can be battery powered or mains powered so long as the smoke alarm complies with Australian Standard 3786. From 2016 smoke alarms in all tenanted properties are required to be connected to mains power or have a built in 10 year battery with similar exemptions as identified in Western Australia.<sup>35</sup>

These changes to smoke alarm legislation have occurred at an individual state or territory level. However, notwithstanding that the issue has been considered independently in each of Tasmania, Western Australia and the Northern Territory, in each instance the smoke alarm requirements and related legislative reform has consistently identified that that residents should install:

- a photo-electric smoke alarm connected to 240 volt mains power with a 10 year lithium battery in a tamper proof chamber; or
- a stand-alone photo-electric smoke alarm with a 10 year lithium battery in a tamper proof chamber.

### **MFB Policy**

The MFB has developed several policies with respect to the use and installation of smoke alarms in owner occupied and rented dwellings.

In May 2012, the MFB also developed smoke alarm recommendations to address the higher fire safety needs of older people and people with disabilities in relation to smoke alarms.<sup>36</sup>

In that document, among other things, the MFB recommends that the homes of older people or people with disabilities have:

- more than one smoke alarm;
- interconnected smoke alarms;
- specialised smoke alarms for the deaf and hard of hearing (or smoke alarms linked to personal alarms); and
- regularly tested smoke alarms.<sup>37</sup>

In June 2014, the MFB developed a *Smoke Alarms in Residential Properties Policy and Practice* document which underpins all its home fire safety advice for the broader community.<sup>38</sup> The advice outlined in the document complies with the current legal requirements in Victoria and provides the MFB's additional advice in relation to smoke alarms.

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<sup>34</sup> Smoke Alarm Legislation Fact Sheet NT (**Attachment 11**).

<sup>35</sup> Consumer Affairs – *Residential Tenancy (Smoke Alarms) Act 2012 and Residential Tenancy (Smoke Alarms) Regulations 2012* (**Attachment 12**).

<sup>36</sup> Attachment 9.

<sup>37</sup> For further discussion related to the smoke alarm requirements for older people and people with disabilities, please see the MFB's comments in relation to term of reference (c) above.

<sup>38</sup> Attachment 2.

In that document, the MFB recommends that the following smoke alarms be installed in residential properties:

- photo-electric smoke alarms connected to 240 volt mains power with a 10 year lithium battery in a tamper proof chamber; or
- stand-alone photoelectric smoke alarms with a 10 year lithium battery in a tamper proof chamber.

This recommendation is consistent with the legislative requirements for smoke alarms in Tasmania, Western Australia and the Northern Territory, and is considered by the MFB to be best practice in the context of reducing the risk of fire and smoke related death and injury to Victorian residents.

In August 2015, the MFB will be providing a submission to the Victorian State Government's 'Residential Tenancies Act Review' calling for the introduction of similar legislation to that in Western Australia, Northern Territory and Tasmania (described above) in relation to smoke alarms in residential properties subject to a Residential Tenancy Agreement.

The MFB's position is consistent with the findings and recommendations of the Coroners Court of Victoria in relation to deaths of Mr Sunil Ramanlal Patel, Mr Jignesh Kumar Ghanshyamdas Sadhu and Mr Deepak Kumar Prajapati which were released in August of 2014.<sup>39</sup>

On 3 January 2008 Mr Patel, Mr Sadhu, and Mr Prajapati, all Indian nationals studying in Australia, died in an electrical house fire at 216 Ballarat Road, Footscray. The three men were three of 10 people living in the rental property at the time of the fire.

The coroner, Peter White, could not determine, on the evidence, if there was a smoke detector in the house at the time of the fire. However, the surviving occupants told the Court that they did not know what a smoke alarm looked like.

Having regard to the tragic circumstances of the deaths of Mr Patel, Mr Sadhu, and Mr Prajapati, the MFB has recommended that the following recommendation of Coroner White be implemented as part of the review of the RTA:

*Recommendation 1: That the RTA be amended to ensure all properties regardless of whether they are new residential buildings, constructed on or after 1 August 1997, subject to a Residential Tenancy Agreement be fitted with a hard-wired smoke alarm with ten year long-life tamper proof battery chamber back up, on every floor of every residence.*

This recommendation is consistent with the "MFB Residential Smoke Alarm Policy and Recommended Practice document".<sup>40</sup>

**e. How the provisions of the Australian Building Code relating to smoke alarm type, installation and use can be improved**

***MFB recommendation 4 – 10***

Except for the requirement introduced in 2014 to interlink new smoke alarm installations, the requirements under the Building Code of Australia (**BCA**) have remained essentially unchanged since 1997. In the MFB's view, this Inquiry provides an opportunity to review the current BCA to ensure it effectively meets the fire safety needs of the community in a consistent and sustainable way.

In that respect, the MFB recommends the provisions of the Australian Building Code relating to smoke alarm type, installation and use are reviewed to:

4. establish a regulated position on the most effective smoke alarm (photo-electric or ionisation) and the location of smoke alarms;
5. develop advice for industry to ensure installers are appropriately selecting the correct type of smoke alarm for the relevant property / resident (rather than solely selecting smoke alarms on the basis of cost and optimal placement).

<sup>39</sup> Attachments 4, 5 and 6.

<sup>40</sup> MFB Residential Smoke Alarm Policy and Recommended Practice (**Attachment 13**).

6. identify if the regulations regarding the use of smoke alarms are reflective of the risks in the average home owing to the increased use of technology and appliances.  
*For example, the BCA does not require smoke alarms inside bedrooms in sole occupancy units yet the average bedroom may have a television, DVD player, mobile phone charger, cordless home phone charger, iPad charger, computer, lamps, clock radio and an electric blanket. These devices provide increased potential sources of ignition of a fire and if the bedroom door is closed, the room is likely to be fully involved in fire before a smoke alarm installed in a passage or hallway is activated.*
7. examine:
  - a. additional requirements for the number of smoke alarms in sole occupancy units;
  - b. the feasibility and availability of interlinked smoke alarms and/or the development of advice for consumers in relation to retrospective installation; and
  - c. smoke alarm tampering, with a view to the adoption of regulation or an Australian Standard to address this issue through the type of smoke alarm installed. It is suggested that such smoke alarms (either connected to mains power or standalone) be required to have a 10 year lithium battery in a tamperproof sealed chamber to meet Australian Standards or other regulatory requirements.
8. specifically address requirements for aged people or people with disability to ensure the regulations are inclusive of the whole community and reflective of risk.
9. implement maintenance requirements for smoke alarms in Class 1a, 1b (in sole-occupancy units) 2 (in sole-occupancy units) and 4 (dwellings) as regulations are currently silent on the replacement of expired smoke alarms.
10. consider requirements for manufacturers to date mark the face of smoke alarms with an expiry date. The MFB has already trialled this with a major distributor as part of its State-wide Smoke Alarm Buyers Group which assists community aged care providers to purchase stand-alone photo-electric smoke alarms with 10 year lithium batteries (in order to address coronial recommendations and their responsibilities under the *Aged Care Act 1997*).<sup>41</sup>

**f. Whether there are any other legislative or regulatory measures which would minimise such injuries and deaths**

***MFB recommendation 1 – 3***

As set out in response to term of reference (c) above, to provide for the reduction of risk to disabled and elderly persons receiving community care services, the MFB recommends that:

1. the Standards as set out in the *Aged Care Act 1997* include legislated requirements in relation to smoke alarms for community aged care clients through:
  - a. initial needs assessment processes that are inclusive of the assessment for a smoke alarm (including a specialised smoke alarm); and
  - b. the provision of an appropriate smoke alarm to address the client's level of risk.
2. the Inquiry examine the feasibility of using new technology to link personal alarms to smoke alarms via funded personal alarm services.
3. the Inquiry review:
  - a. the current funding arrangements for smoke alarms for people who are deaf and hard of hearing;
  - b. the future funding arrangements with respect to the roll out of the National Disability Insurance Scheme; and
  - c. eligibility for funding under both future and current arrangements to ensure it is accessible by all people who are unable to hear a standard smoke alarm.

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<sup>41</sup> Flyer for Buyer's Group and Picture of Smoke Alarm (**Attachment 13**).

**g. Any related matter**

The MFB believes that there is a clear need for regulatory reform in the area of smoke alarms which links directly to improving public safety.

While this Inquiry is limited to examining the use of smoke alarms, they are not the only intervention that should be considered when considering the measures that might reduce the risk of death or injury from smoke and fire in domestic settings. Other measures that should be considered include the use of domestic sprinklers. Among other examples, such sprinklers were vital in assisting the MFB to suppress the apartment fire at the Lacrosse Building on La Trobe Street, Docklands on 25 November 2014.

Having regard to the above comments, and in addition to the MFB's above recommendations, it is suggested that this regulatory reform follows a three step process:

1. review and update current legislation and other regulatory instruments to ensure there are consistent requirements across Australia in relation to the compulsory fitment of smoke alarms in all premises;
2. a common national position be adopted which mandates the compulsory fitment of sprinklers in vulnerable communities; and
3. consultation is initiated in all jurisdictions across fire services, government and industry in relation to domestic sprinklers. The MFB believes that the use of domestic sprinklers along with smoke alarms is likely to further reduce smoke and fire-related deaths.



## **Attachments**

### **Attachment Name:**

**Attachment 1** – AFAC – Basic Home Fire Safety Resource

**Attachment 2** – MFB Residential Smoke Alarm Policy and Recommended Practice

**Attachment 3** – Analysis of Preventable Fire Fatalities Involving Older People and People with Disabilities 2011

**Attachment 4** – Coroner's Report – 216 Ballarat Rd Jignesh

**Attachment 5** – Coroner's Report – 216 Ballarat Rd Sunil

**Attachment 6** – Coroner's Report – 216 Ballarat Rd Deepak

**Attachment 7** – Commonwealth Department of Health & Ageing response to Coroners Court of Victoria Recommendations – COR2009 002158

**Attachment 8** – Commonwealth Department of Health & Ageing Industry Feedback Alert

**Attachment 9** – Fire safety for older people and people with disability

**Attachment 10** – MFB's 'Be fire safe in your rental property'

**Attachment 11** – Smoke Alarm Legislation Fact Sheet NT

**Attachment 12** – Consumer Affairs – *Residential Tenancy (Smoke Alarms) Act 2012* and *Residential Tenancy (Smoke Alarms) Regulations 2012*

**Attachment 13** – Flyer for Buyers Group and Picture of Smoke Alarm

## List of recommendations by the MFB:

As set out in response to **term of reference (c) and (f)** above, to provide for the reduction of risk to disabled and elderly persons receiving community care services, the MFB recommends that:

1. the Community Care Common Standards (**the Standards**) as set out in the *Aged Care Act 1997* include legislated requirements in relation to smoke alarms for community aged care clients through:
  - a. initial needs assessment processes that are inclusive of the assessment for a smoke alarm (including a specialised smoke alarm); and
  - b. the provision of an appropriate smoke alarm to address the client's level of risk.
2. the Inquiry examine the feasibility of using new technology to link personal alarms to smoke alarms via funded personal alarm services.
3. the Inquiry review:
  - a. the current funding arrangements for smoke alarms for people who are deaf and hard of hearing;
  - b. the future funding arrangements with respect to the roll out of the National Disability Insurance Scheme; and
  - c. eligibility for funding under both future and current arrangements to ensure it is accessible by all people who are unable to hear a standard smoke alarm.

As set out in response to **term of reference (e)** above, the MFB recommends the provisions of the Australian Building Code related to smoke alarm type, installation and use are reviewed to:

4. establish a regulated position on the most effective smoke alarm (photoelectric or ionisation) and the location of smoke alarms.
5. develop advice for industry to ensure installers are appropriately selecting the correct type of smoke alarm for the relevant property / resident (rather than solely selecting smoke alarms on the basis of cost and optimal placement).
6. identify if the regulations regarding the use of smoke alarms are reflective of the risks in the average home owing to the increased use of technology and appliances.

*For example, the BCA does not require smoke alarms inside bedrooms in sole occupancy units yet the average bedroom may have a television, DVD player, mobile phone charger, cordless home phone charger, iPad charger, computer, lamps, clock radio and an electric blanket. These devices provide increased potential sources of ignition of a fire and if the bedroom door is closed, the room is likely to be fully involved in fire before a smoke alarm installed in a passage or hallway is activated.*

7. examine the:
  - a. Additional requirements for the number of smoke alarms in sole occupancy units;
  - b. The feasibility and availability of interlinked smoke alarms and/or the development of advice for consumers in relation to retrospective installation; and
  - c. Smoke alarm tampering, with a view to the adoption of regulation or an Australian Standard to address this issue through the type of smoke alarm installed. It is suggested that such smoke alarms (either connected to mains power or stand-alone) be required to have a 10 year lithium battery in a tamperproof sealed chamber to meet Australian Standards or other regulatory requirements.
8. specifically address the requirements for aged people or people with disability to ensure the regulations are inclusive of the whole community and reflective of risk.

9. implement maintenance requirements for smoke alarms in Class 1a, 1b (in sole-occupancy units) 2 (in sole-occupancy units) and 4 dwellings as regulations are currently silent on the replacement of expired smoke alarms.
10. consider requirements for manufacturers to date mark the face of smoke alarms with an expiry date. The MFB has already trialled this with a major distributor as part of its State-wide Smoke Alarm Buyers Group which assists community aged care providers to purchase stand-alone photoelectric smoke alarms with 10 year lithium battery to meet coronial recommendations and their responsibilities under the *Aged Care Act 1997*.