Public Health Association of Australia:
Policy-at-a-glance – Smoke Alarms in Residential Housing
Policy

Key message: 1. Smoke alarms save lives.
2. Each year in Australia an average of 58 people are killed in residential fires.
3. In the decade from 1990 – 2000, 88% of fire deaths occurred in dwellings with no smoke alarms or smoke alarms that had been disconnected.
4. There are two main types of smoke alarm technologies in common usage: ionisation and photoelectric. Photoelectric smoke alarms are significantly better at detecting fire in the earliest, smouldering stage.
5. The Australian Fire & Emergency Service Authorities Council (AFESAC) and the Fire Protection Association of Australia (FPAA) both recommend the use of photoelectric smoke alarms in all Australian homes.

Summary: PHAA will advocate for Commonwealth, State and Territory Governments to enact legislation or regulations (where not currently in place) to mandate the installation of photoelectric smoke alarms in all residential facilities. PHAA will also seek complementary education campaigns to raise awareness and address related maintenance and disposal issues.

Audience: Federal, State and Territory Governments, policy makers and program managers.

Responsibility: PHAA’s Injury Prevention Special Interest Group (SIG).

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Smoke Alarms in Residential Housing Policy Statement

The Public Health Association of Australia notes that:

1. The number of deaths from residential house fires has been declining and each year in Australia, on average, 58 people are killed in residential fires.¹

2. Most deaths in residential fires occur at night, when the occupants are asleep and almost half of the deaths are as a result of smoke inhalation, not burns. Those who die from burns are often first incapacitated by smoke. Fire Brigades’ figures show that in the decade to 1999-2000, 88% of fire deaths occurred in dwellings with no smoke alarms or smoke alarms that had been disconnected.¹ As in other areas of injury prevention, data on burns injuries and deaths provides limited information on the circumstances of the injury.

3. Smoke alarms are designed to give early warning in the event of a residential fire, allowing the occupants to safely exit the building. Published reports indicate that the risk of death in a house fire is reduced by 60% if a smoke alarm is installed and that programs to increase the installation of smoke alarms can reduce death and property loss (the latter because emergency services are called earlier).²

4. Since 2005 most States and Territories have required smoke alarms in all residential dwellings old and new.

5. The Building Code of Australia requires that hard wired³ smoke alarms be fitted in all new residential properties. Additionally, some insurance policies now make it compulsory to have smoke detectors fitted.

6. It is estimated that the percentage of homes with smoke alarms installed rose from 28% in the 1990s to approximately 73% in 2004 as a result of community education campaigns encouraging home owners and occupants to install smoke alarms, as well as legislation which increases rates to above 90%.⁴

7. There are two main types of smoke alarm technologies in common usage in Australia: ionisation and photoelectric. Ionisation alarms use a small amount of radioactive material to detect sub-micron (invisible) particles of combustion. Photoelectric alarms detect the change in light level caused by visible smoke.⁵,⁶ Less commonly used fire detection devices are also available that utilise carbon monoxide and heat sensing technologies.

8. Photoelectric smoke alarms are significantly better at detecting fire in the earliest, smouldering stage. Ionisation smoke alarms are marginally better at detecting fire in the flaming stage,⁷ however have a significantly high false alarm rate (from cooking for example). Research shows over 20% of ionisation alarms are deactivated in the first 12 months due to false alarms compared to 5% for photoelectric alarms.⁸,⁹
9. The AFESAC and the FPAA recommend the use of photoelectric smoke alarms in all Australian homes.\textsuperscript{10}

10. In dwellings where more than one alarm is installed, most authorities recommend a combination of photoelectric and ionisation alarms. In particular, photoelectric alarms are recommended in hallways and exit routes to enable earlier detection of fires spreading through households.

11. Since May 2004, the Australian Building Code required that all sleeping areas and exit paths in commercial buildings be equipped with photoelectric smoke detection technology in accordance with Australian Standard 1670.1.\textsuperscript{11}

12. Most smoke alarm units require replacing every 10 years.

\textbf{The Public Health Association of Australia affirms the following principles:}

13. All homes should be fitted with photoelectric smoke alarms to allow occupants sufficient time to safely escape.

14. Dwellings should exclusively use photoelectric smoke alarms in all sleeping areas, in exit paths, and near kitchens and bathrooms with at least one alarm on each level of the home as per the Australian Building Code.

15. 10 year battery operated and hardwired alarms are preferred over 9V battery operated alarms that can be easily inactivated or the battery can discharge.

16. Smoke alarms in new dwellings should be hard-wired to 240 volt electrical circuits and fitted with battery back-up. Existing dwellings with battery-operated smoke alarms should be encouraged to have their smoke alarms hardwired where feasible. Existing dwellings without smoke alarms should be encouraged to install hardwired smoke alarms where feasible and otherwise to install battery-operated smoke alarms.

17. All smoke alarms installed in residential accommodation must meet the Australian Standard 3786 or 12239.

18. Governments have an obligation to protect the occupants of public housing through installation of smoke alarms in publicly owned residential housing. Landlords also have an obligation and in some states are required by law to ensure that smoke alarms are installed in their properties.
The Public Health Association of Australia resolves to undertake the following actions:

19. PHAA will advocate that State and Territory governments work with AFAC and FPAA to initiate public education campaigns to:

   a. Make smoke alarms compulsory in all dwellings across all States and Territories, with a preference for photoelectric alarms;
   
   b. Encourage families to practice fire drills and to test escape routes;
   
   c. Test smoke alarms to ensure the battery and the alarm sounder are operating;
   
   d. Encourage households to clean smoke alarms with vacuum cleaners annually to remove particles that may affect their performance;
   
   e. Replace removable batteries annually, including those in alarms as recommended in the manufacturer’s warranty.

20. The PHAA will alert Commonwealth, State and Territory governments of the need to:

   a. Enact legislation or regulations (where not currently in place) to mandate the installation of photoelectric smoke alarms in all residential and rental facilities;
   
   b. Install or continue to install smoke alarms in public housing;
   
   c. Consider alternative options to disposing of ionisation smoke alarms in landfill.

21. The PHAA will advocate for public education campaigns on the installation and maintenance of photoelectric smoke alarm units, and the use of fire reduction measures, particularly in low-cost rental housing, and monitoring of issues regarding safe disposal and storage of old ionisation smoke alarms. PHAA will encourage State Radiation Safety Offices to facilitate methods of safe disposal of old ionisation alarms and encourage use of alternative non-ionising alarms.


First adopted at the 1992 Annual General Meeting of the Public Health Association of Australia. The latest revision has been undertaken as part of the 2017 policy review process.
References