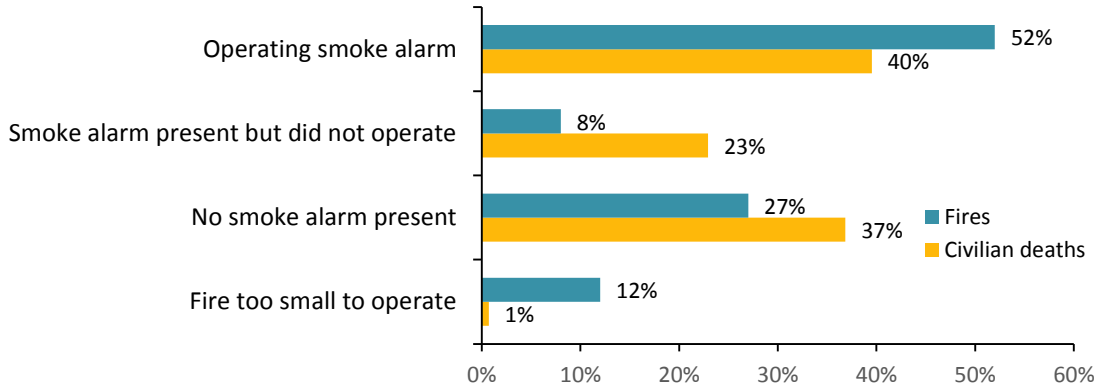




Smoke Alarms in U.S. Home Fires Fact Sheet

Ninety-six percent of all homes¹ have at least one smoke alarm, according to a 2010 telephone survey. *Based on these results, almost five million households still do not have any smoke alarms.* Overall, three-quarters of all U.S. homes have at least one *working* smoke alarm.

**Reported Home Structure Fires and Fire Deaths by Smoke Alarm Performance
2007-2011**



Smoke Alarm Presence and Performance in Reported Home Fires

In 2007-2011, smoke alarms sounded in half of the home fires reported to U.S. fire departments.

- Three of every five home fire deaths resulted from fires in homes with no smoke alarms or no working smoke alarms.

The death rate per 100 reported home fires was more than twice as high in homes that did not have any working smoke alarms (1.18 deaths per 100 fires), either because no smoke alarm was present or an alarm was present but did not operate), as it was in homes with working smoke alarms (0.53 per 100 fires).

- No smoke alarms were present in more than one-third (37%) of the home fire deaths.

The death rate from reported fires in homes during 2007-2011 that had at least one smoke alarm (0.61 deaths per 100 fires) was one-third (36%) lower than in homes that had no smoke alarms at all (0.95 deaths per 100 fires).

- In one-quarter (23%) of the home fire deaths, smoke alarms were present but did not sound.

The death rate was much higher in fires in which a smoke alarm was present but did not operate (1.94 deaths per 100 fires) than it was in home fires with no smoke alarms at all.

¹ Homes include one- and two-family dwellings, manufactured homes, apartments and other multi-family housing.

Source: *Smoke Alarm in U.S. Home Fires*, Marty Ahrens, March 2014

Reported Home Fires with Smoke Alarms

In reported home fires with smoke alarms:

- Half (48%) of the alarms were powered by battery only.
- Two-thirds (69%) of home fire deaths were caused by fires in homes with smoke alarms powered by battery only.

In fires considered large enough to activate the alarm,

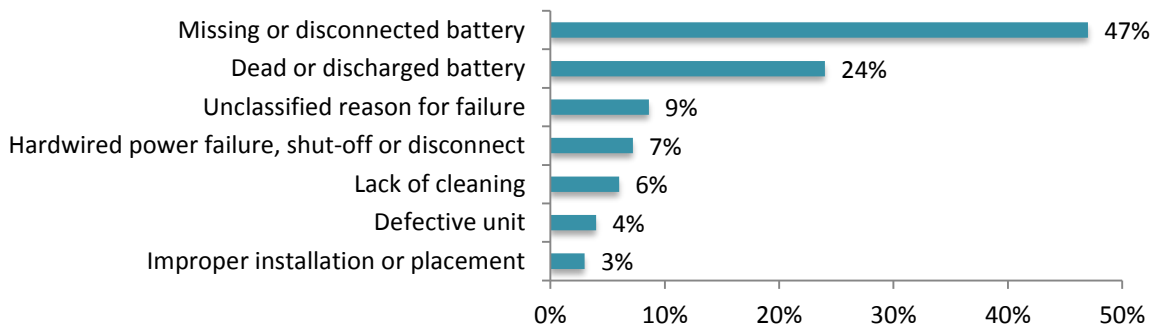
- Hardwired smoke alarms operated 93% of the time.
- Battery-powered smoke alarms operated in four out of five (79%) of the fires.

Reasons that Smoke Alarms Did Not Operate

In reported home fires¹ in which the smoke alarms were present but did not operate,

- Almost half (47%) of the smoke alarms had missing or disconnected batteries. Nuisance alarms were the leading reason for disconnected smoke alarms.
- One-quarter (24%) of the smoke alarm failures was due to dead batteries.
- Only 7% of the failures were due to hardwired power source problems, including disconnected smoke alarms, power outages, and power shut-offs.

**Reason Smoke Alarm Failed to Operate in Reported Home Structure Fires
2007-2011**



Interconnected smoke alarms increase safety

In a Consumer Product Safety Commission (CPSC) survey of households with any fires, including fires in which the fire department was not called, interconnected smoke alarms were more likely to operate and alert occupants to a fire.² People may know about a fire without hearing a smoke alarm.

- When smoke alarms (interconnected or not) were on all floors, they sounded in 37% of fires and alerted occupants in 15%.
- When smoke alarms were not on all floors, they sounded in only 4% of the fires and alerted occupants in only 2%.
- In homes that had interconnected smoke alarms, the alarms sounded in half (53%) of the fires and alerted people in one-quarter (26%) of the fires.

² Michael A. Greene and Craig Andres. [2004-2005 National Sample Survey of Unreported Residential Fires](#). U.S. Consumer Product Safety Commission, July 2009.

Source: *Smoke Alarm in U.S. Home Fires*, Marty Ahrens, March 2014