



## Smoke Alarms in Reported U.S. Home Fires



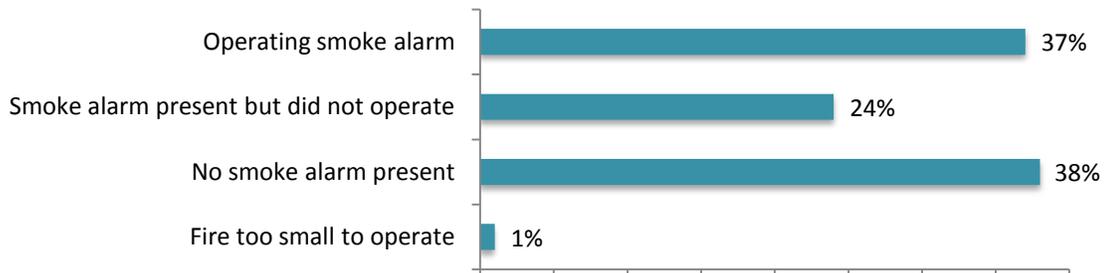
Ninety-six percent of all homes have at least one smoke alarm, according to a 2010 telephone survey. Overall, three-quarters of all U.S. homes have at least one *working* smoke alarm.

### Smoke Alarm Presence and Performance

In 2005-2009, smoke alarms sounded in half of the home fires reported to U.S. fire departments.

- Almost two-thirds of home fire deaths resulted from fires in homes with no smoke alarms or no working smoke alarms.
  - No smoke alarms were present in more than one-third (38%) of the home fire deaths.
  - In one-quarter (24%) of the home fire deaths, smoke alarms were present but did not sound.

#### Home Structure Fire Deaths by Smoke Alarm Performance 2005-2009



### 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.<sup>1</sup> People may learn about or be alerted to 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.



Homes include one- and two-family dwellings, manufactured homes, apartments, townhouses, roughhouses, and condominiums.

## Home Fires with Smoke Alarms

In reported home fires with smoke alarms:

- Half the alarms were powered by battery only.
- Two-thirds of the fatal fire injuries were caused by fires in homes with smoke alarms powered by battery only.

In fires considered large enough to activate the alarm,

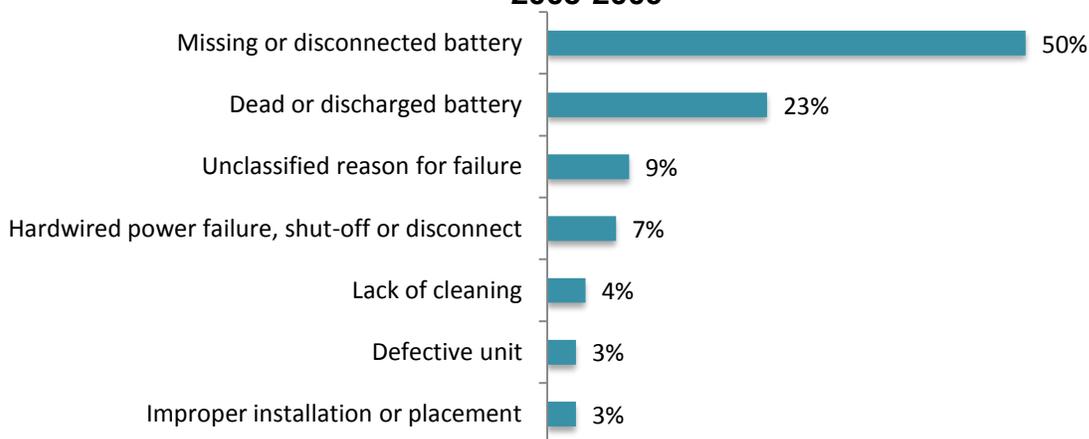
- Hardwired smoke alarms operated 92% of the time.
- Battery-powered smoke alarms operated in three-quarters (77%) of the fires.

## Reasons that Smoke Alarms Did Not Operate

In reported home fires<sup>1</sup> in which the smoke alarms were present but did not operate,

- Half of the smoke alarms had missing or disconnected batteries. Nuisance alarms were the leading reason for disconnected smoke alarms.
- Almost one-quarter (23%) 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 Home Structure Fires 2005-2009



*Little causal detail is required about certain categories of minor fires, identified by incident type and collectively called confined fires by the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS). Confined fires were omitted from calculations of the reasons for smoke alarm failure.*