




Manufactured Home Fires
Based on NFFPA's July 2011 Report

Presented by
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Manufactured Housing Consensus Committee
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Overview

- National estimates methodology
 - Data sources
 - Changes affecting analysis
- Report findings
 - Trends
 - Causes and circumstances of 2005-2009 fires
 - Comparisons with fires in other 1- or 2-family homes
 - Fires in pre-and post-standard homes in 1989-1998
 - Manufactured homes and their occupants
- Summary and questions

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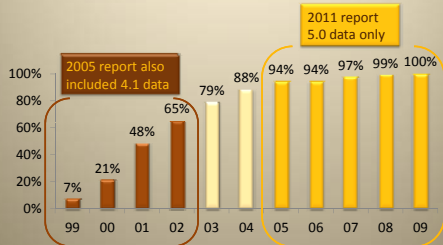


NATIONAL ESTIMATES METHODOLOGY

USFA's NFIRS provides the details

- Largest and most detailed fire incident database in the world
 - Participation varies by state
 - Earlier versions used coding system and definitions from 1976 edition of NFPA 901
- Major changes with Version 5.0 of NFIRS
 - Introduced in 1999
 - Gradually adopted
 - For certain minor structure fires with confined fire incident types, many data elements can be skipped

How much submitted data was originally collected in NFIRS 5.0?



- Due to small numbers, NFIRS 5.0 data for 1999-2001 are considered unreliable

Converted data was used in 2005 report

- Data collected by old system was converted to NFIRS 5.0
 - Definitions are not identical
 - Some code choices did not exist
- 2005 report
 - Converted data used with NFIRS 5.0 data for 1999-2002 averages
- 2011 report recalculates all statistics from 1999 on, using only NFIRS 5.0 data

What's a structure fire in NFIRS 5.0?

- Incident types
 - 110s Structure fires
 - 120s Fires in mobile property used as structures
- The 110 series includes
 - 111 Building fire
 - 112 Fire in or on a structure other than a building
 - 113-118 Confined structure fires

Confined structure fires in NFIRS 5.0

- Identified by incident types 113-118
 - 113. Cooking fires confined to the cooking vessel
 - 114. Confined chimney or flue fires
 - 115. Confined incinerator fires
 - 116. Confined fuel burner or boiler fires or delayed ignitions
 - 117. Confined commercial compactor fires and
 - 118. Contained or confined trash or rubbish fires in a structure with no flame damage to the structure or contents

Manufactured homes in NFIRS Past and present

- | 1980-1998 | 1999 and AFTER |
|---|---|
| <ul style="list-style-type: none"> • Situation found 11 <ul style="list-style-type: none"> – Identifies all structure fires • Mobile property type (MPT) 17 <ul style="list-style-type: none"> – Mobile homes or mobile buildings • Property use 410-419 <ul style="list-style-type: none"> – 1- or 2-family homes | <ul style="list-style-type: none"> • Incident type (IT) 121 <ul style="list-style-type: none"> – Identifies fires in mobile home used as fixed residence • Incident type 120 <ul style="list-style-type: none"> – Unclassified mobile property used as a fixed structure <i>when property use is</i> <ul style="list-style-type: none"> – 400 (unclassified residential property) – 419 (1- or 2-family home) or – 429 (apartment or multi-family dwelling) |

Which mobile property/fixed structure incident types were excluded?

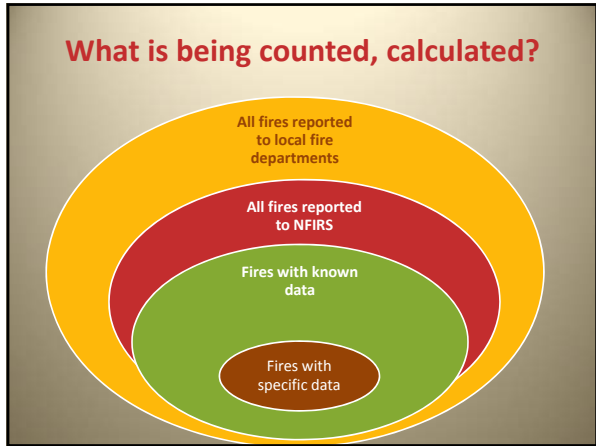
- 122. Fire in a motor home, camper, or RV when used as a structure
- 123. Fire in a portable building at a fixed location for non-residential purposes
- 120. Fire in unclassified mobile property used as a fixed structure
 - When property use is either unknown or not 400-429 (home or unclassified residential)

What else is missing?

- Confined fire incident types 113-118
 - Would need mobile property type to identify manufactured housing
- Detailed information about 2005-2009 split between Pre- and Post-HUD standard home fires
 - Year of manufacture was only provided in 2% of 2005-2009 manufactured home fires

National Estimates

- Compensate for non-reporting with scaling ratios calculated from NFPA survey totals by divided by NFIRS totals
 - NFPA survey is based on a statistical sample
 - Method developed by analysts from the USFA, NFPA and CPSC
- Include proportional shares of unknown or missing data



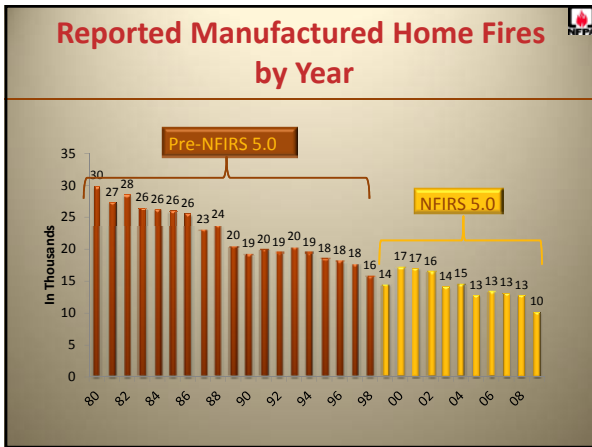
Statistics in this Presentation

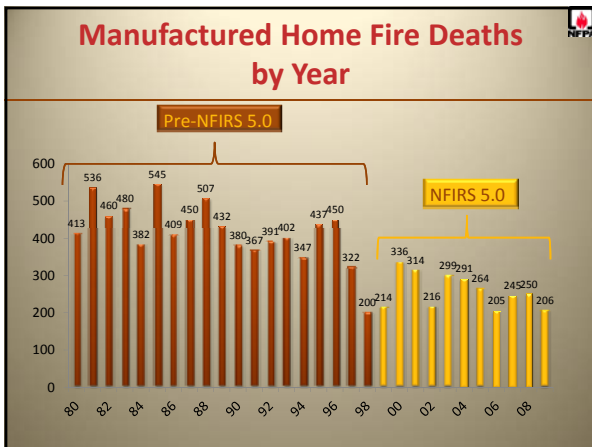
- Most analyses use 2005-2009 annual averages
 - Most comparisons with other 1- or 2-family homes exclude confined fire incident types because confined fires cannot be reliably split
- Detailed comparisons of fires in pre- and post-standard homes use 1989-1998

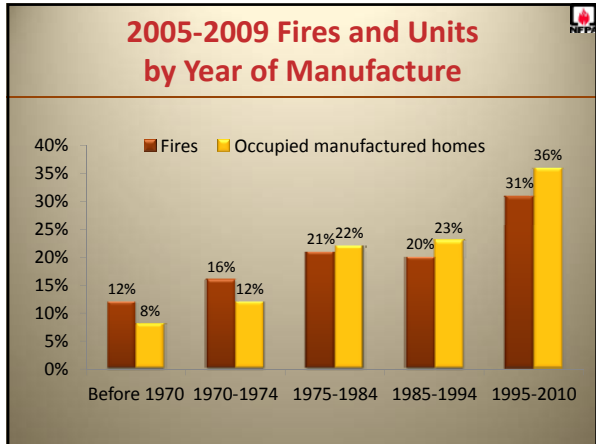
REPORT FINDINGS

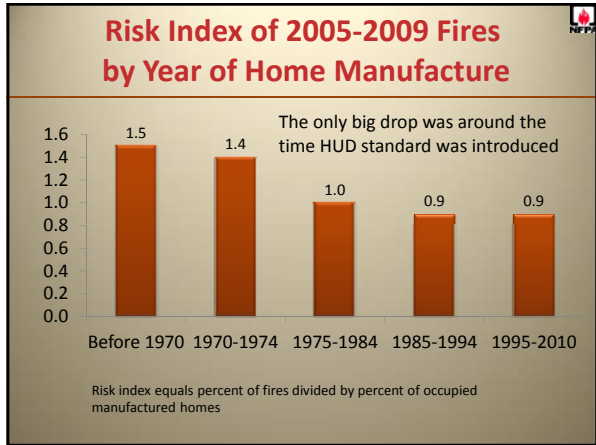
Fire department responses to fires in manufactured homes during 2005-2009

- Annual average of
 - 12,400 fires
 - 234 civilian deaths
 - 453 civilian injuries
 - \$186 million in direct property damage
- 2009 had fewest fires and injuries
 - 3rd lowest number of deaths





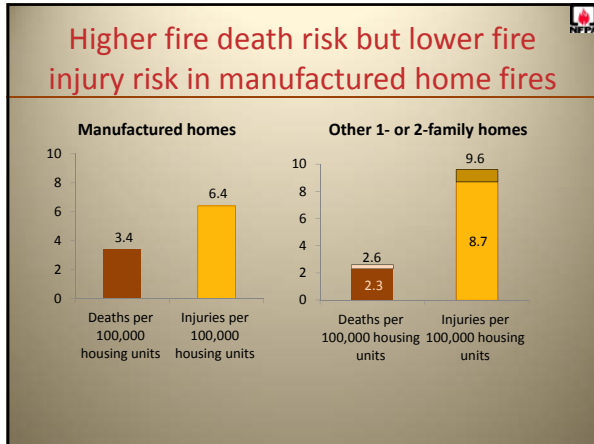


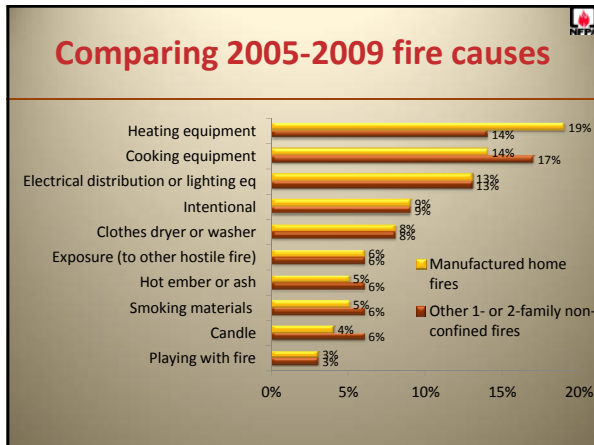


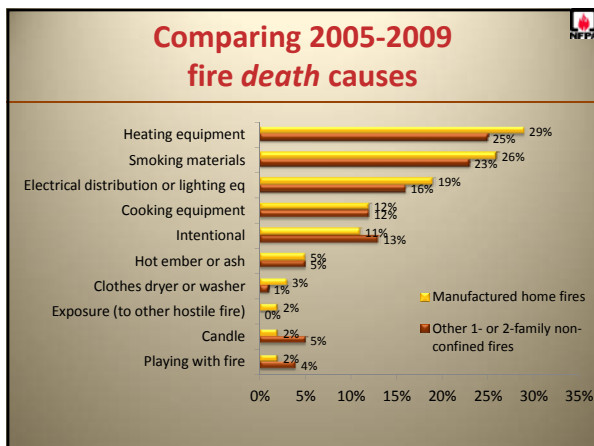
Comparing 2005-2009 fires with other 1- or 2-family homes

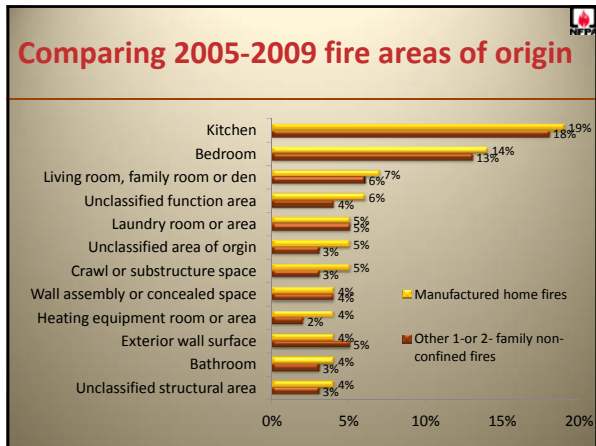
Measure	Manufactured Homes	Other 1-or 2-Family Homes
Fires	10,500	141,600
Civilian deaths	231	1,999
Civilian injuries	444	7,478
Housing units in millions	6.9	77.6 - 86.1
Fires per 1,000 housing units	1.5	1.6 - 1.8
Deaths per 100,000 housing units	3.4	2.3 - 2.6
Injuries per 100,000 housing units	6.4	8.7 - 9.6

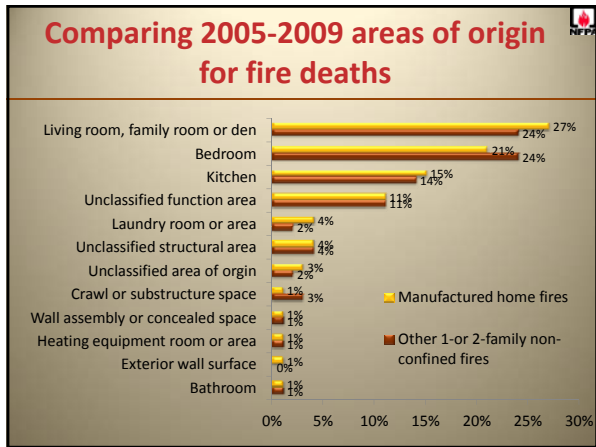
Rates exclude confined fires and fires in properties reported as vacant, under construction or demolition. NFIRS groups 1- and 2-family homes together but American Housing Survey collects data separately for 1-family homes and buildings with 2 to 4 units.

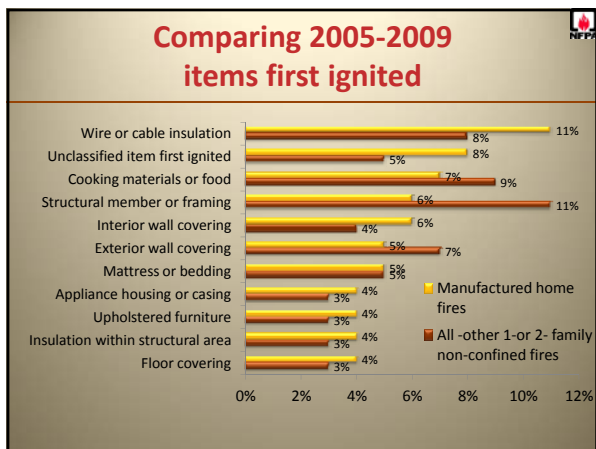


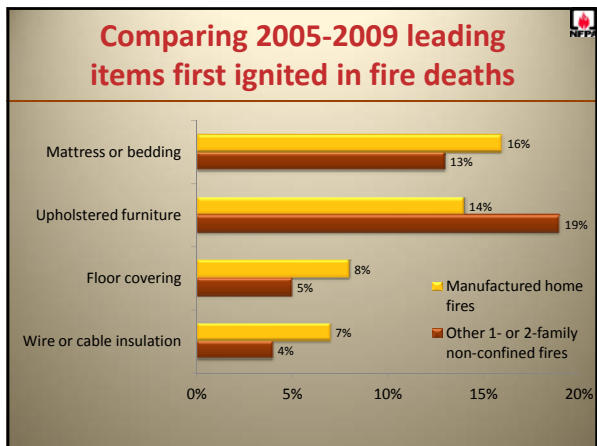


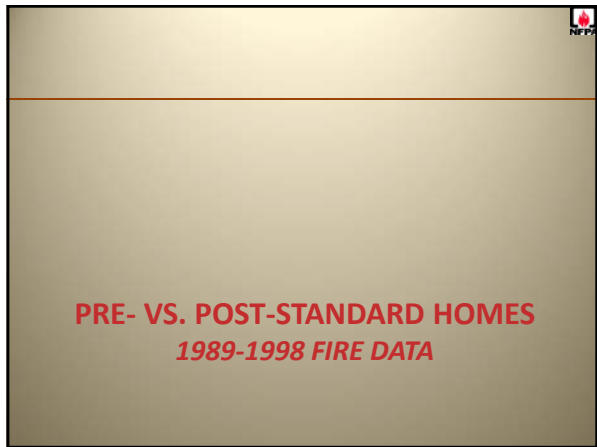


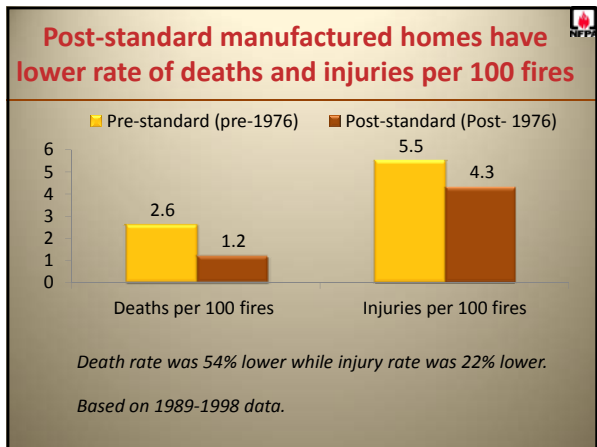


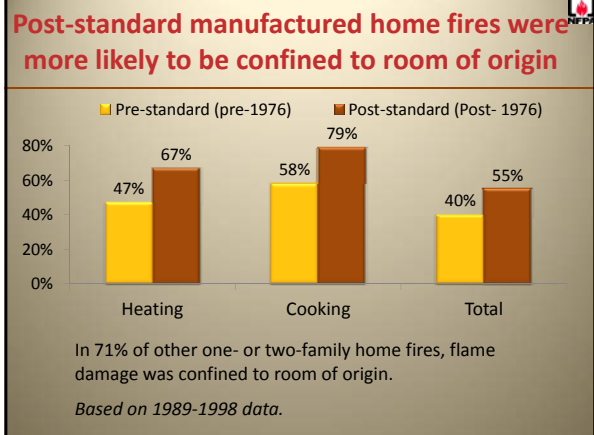












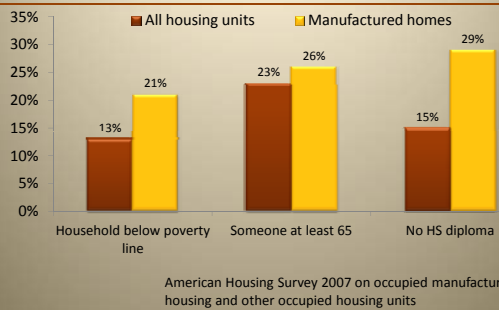
MANUFACTURED HOMES AND THEIR OCCUPANTS

- ### Manufactured homes were slightly less likely to have smoke alarms
- 2009 American Housing Survey found smoke alarms in
 - 93.3% of all occupied housing units, including multi-family
 - 91.6% of occupied manufactured housing
 - CPSC's 2004-2005 survey found smoke alarms in
 - 91% of manufactured homes
 - 97-98% of other homes
 - Smoke alarms were present in only half of reported manufactured home fires

Manufactured homes are usually smaller

- American Housing Survey: 2007 median square footage
 - Occupied manufactured housing: 1,162 square feet
 - All occupied housing units: 1,807 square feet
- Manufactured homes had almost 2/3 the space but 90% average number of rooms
- Smaller rooms can lead to quicker flashover

Manufactured home occupants often have other risk factors



Summary

- Frequency of manufactured home fires and fire deaths has fallen
 - Changes to NFIRS make it difficult to compare **fire** trends
- Risk remains higher than for other one- or two-family homes
- Post-standard homes have a lower risk of fire and fire death than do pre-standard homes
 - Fire spread was less common in post-standard homes, particularly for cooking and heating fires
 - Fire death risk for post-standard homes is comparable to other one- or two-family homes
 - Major change in fire death risk seen after standard, but little change seen since

Summary Continues

- Cause profile resembles other one- and two-family homes
- Manufactured homes are less likely to have smoke alarms despite requirements

QUESTIONS?

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