

Fire Data & Fire Safe Cigarettes

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The Fire Retardant Dilemma

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The background of the slide is a solid blue color. In the lower right quadrant, there are several faint, concentric circles that resemble ripples in water, creating a decorative pattern.

Fire Incident Data Sources

➤ National Fire Incident Reporting System

- In 2001, 49 states contributed to NFIRS (all but California; participated after 2003)
- Only 38% of fire departments contribute
- Up to 40% of reported fires have no cause code.

➤ National Fire Protection Association survey

- All fire departments serving 100,000 population or more
- Random sample of smaller fire departments

NFIRS



National Fire Incident Reporting System 5.0

Complete Reference Guide

January 2006



FEMA

U.S. Fire Administration
National Fire Data Center

- 37 “heat source” codes, including
 - 61 Cigarette
 - 62 Pipe of cigar
 - 63 Heat from undetermined smoking material.
 - 64 Match
 - 65 Lighter
 - 60 Heat from open flame or smoking material, other.

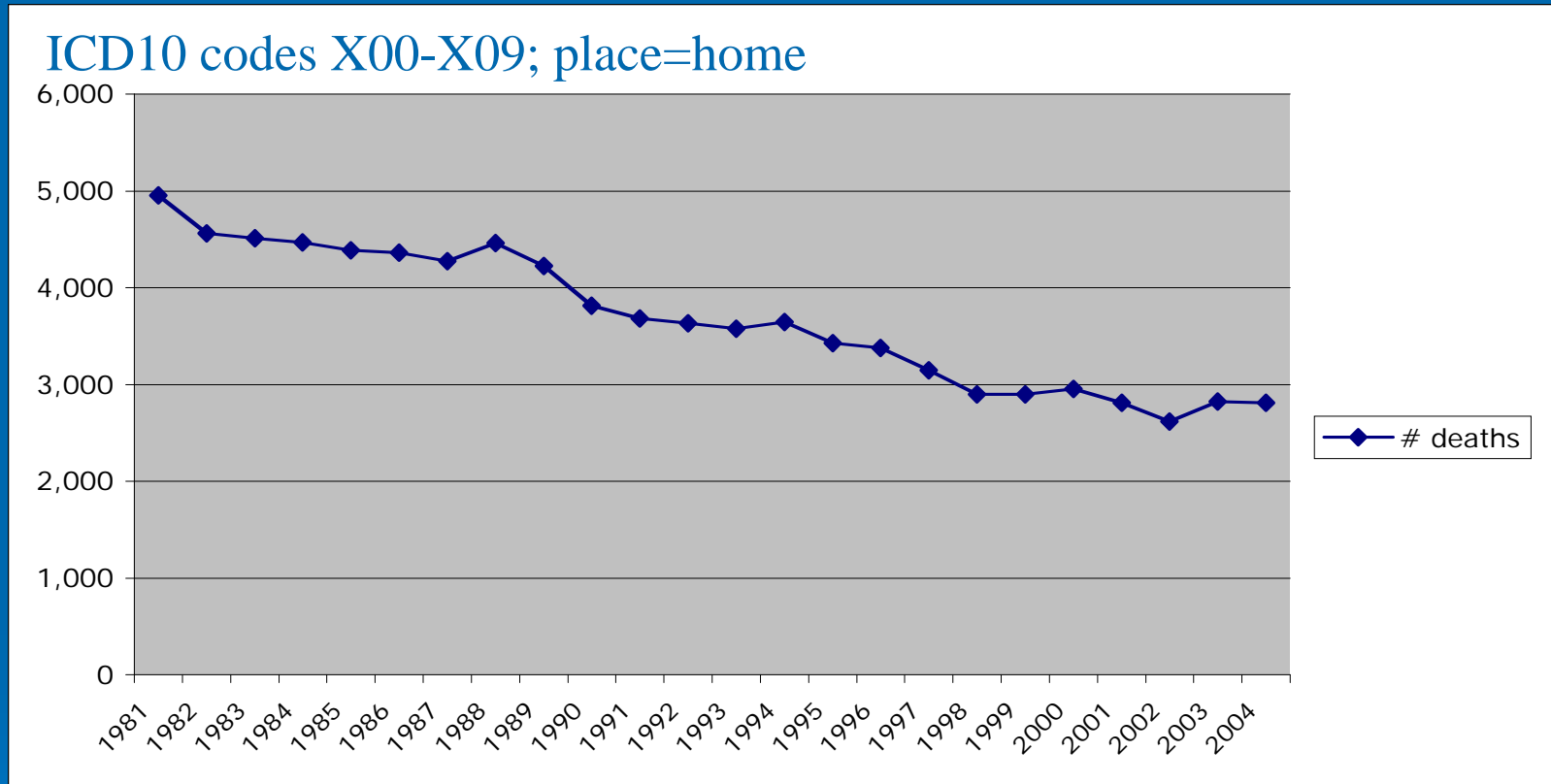
- 56 “first item ignited” codes, including:
 - 21 Upholstered sofa, chair
 - 22 Non-upholstered chair
 - 31 Mattress, pillow
 - 32 Bedding: blanket, sheet, comforter, heating pad

Causes of Residential Fires & Fire Losses, 2001

| Cause | Fires | Deaths | Injuries | \$ Loss (mil) |
|-----------------------|----------------|--------------|---------------|----------------|
| Incendiary/suspicious | 41,000 | 750 | 2,000 | 1,100 |
| Children playing | 8,000 | 100 | 1,000 | 200 |
| Smoking | 21,000 | 800 | 1,750 | 350 |
| Heating | 61,000 | 250 | 1,150 | 550 |
| Cooking | 125,000 | 350 | 4,200 | 400 |
| Electrical | 27,000 | 250 | 900 | 700 |
| Appliances | 26,000 | 150 | 1,000 | 550 |
| Open flame | 35,000 | 300 | 2,250 | 650 |
| Other heat | 16,000 | 100 | 800 | 250 |
| Other equipment | 5,000 | 100 | 250 | 150 |
| Natural | 11,000 | (6) | 150 | 350 |
| Exposure | 19,000 | (23) | 200 | 350 |
| Total | 396,500 | 3,140 | 15,575 | \$5,643 |

Source: *Fire in the US, 13th Edition, USFA, 2005; NFIRS, NFPA*

Home Fire Deaths, USA, 1981-2004

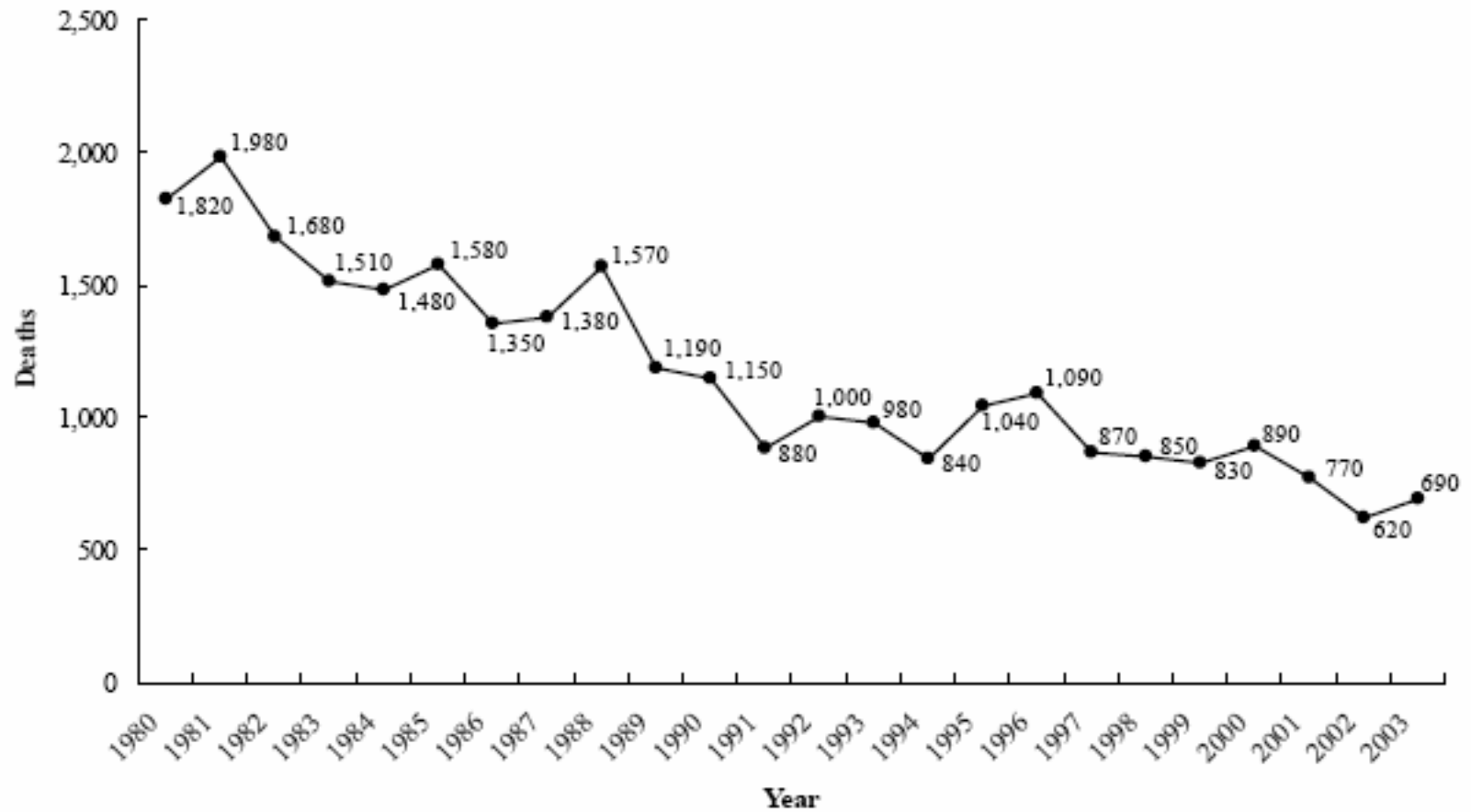


1981 4,956 deaths

2004: 2,810 deaths

Source: National Center for Health Statistics

**Figure 2. Trend in Civilian Deaths in
U.S. Smoking-Material Home Fires
(Including Fires Reported as Contained to Rubbish)**



Source: NFIRS and NFPA survey

Role of Cigarettes

1980 2003

| | | |
|------------------------------------|------------|------------|
| Cigarette-ignited home fires | 70,800 | 17,700 |
| Cigarette-ignited home fire deaths | 1,820 | 690 |
| Billion cigarettes smoked | 619 | 400 |
| Fires per million cigarettes | 114 | 44 |
| Deaths per million cigarettes | 2.9 | 1.7 |

Source: The Smoking Material Fire Problem

Trends in “Materials First Ignited” Cigarette-ignited fire fatalities: 1980-2003

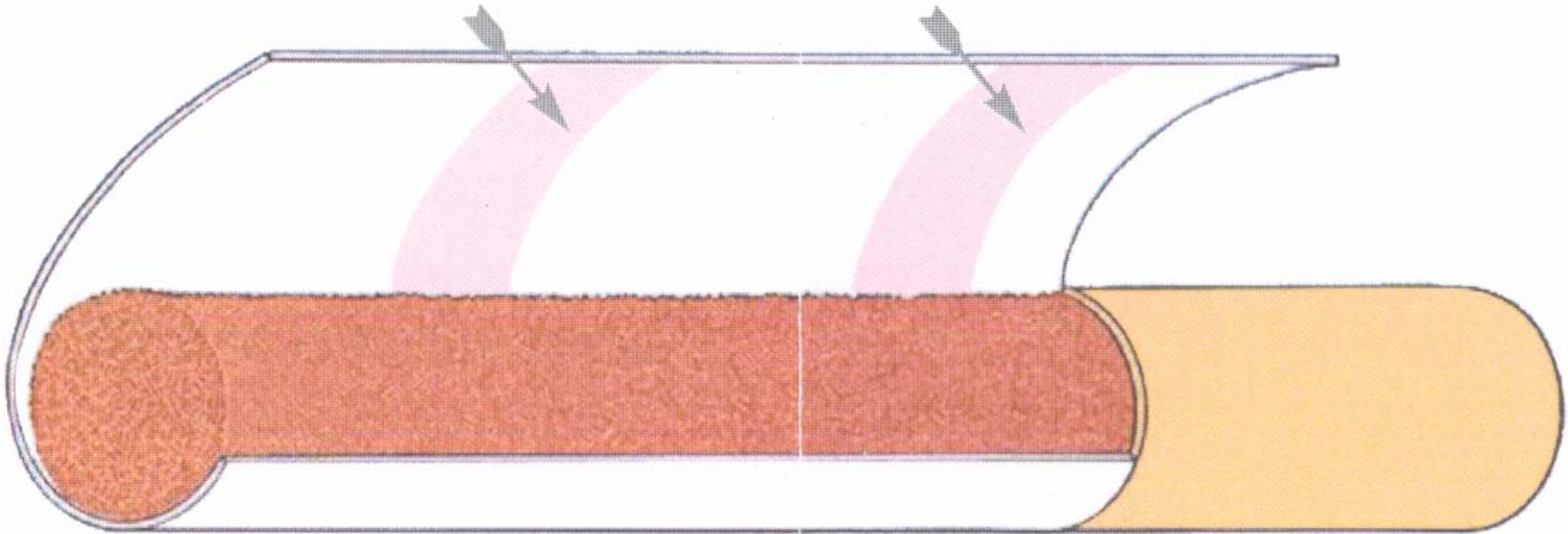
1980 2003

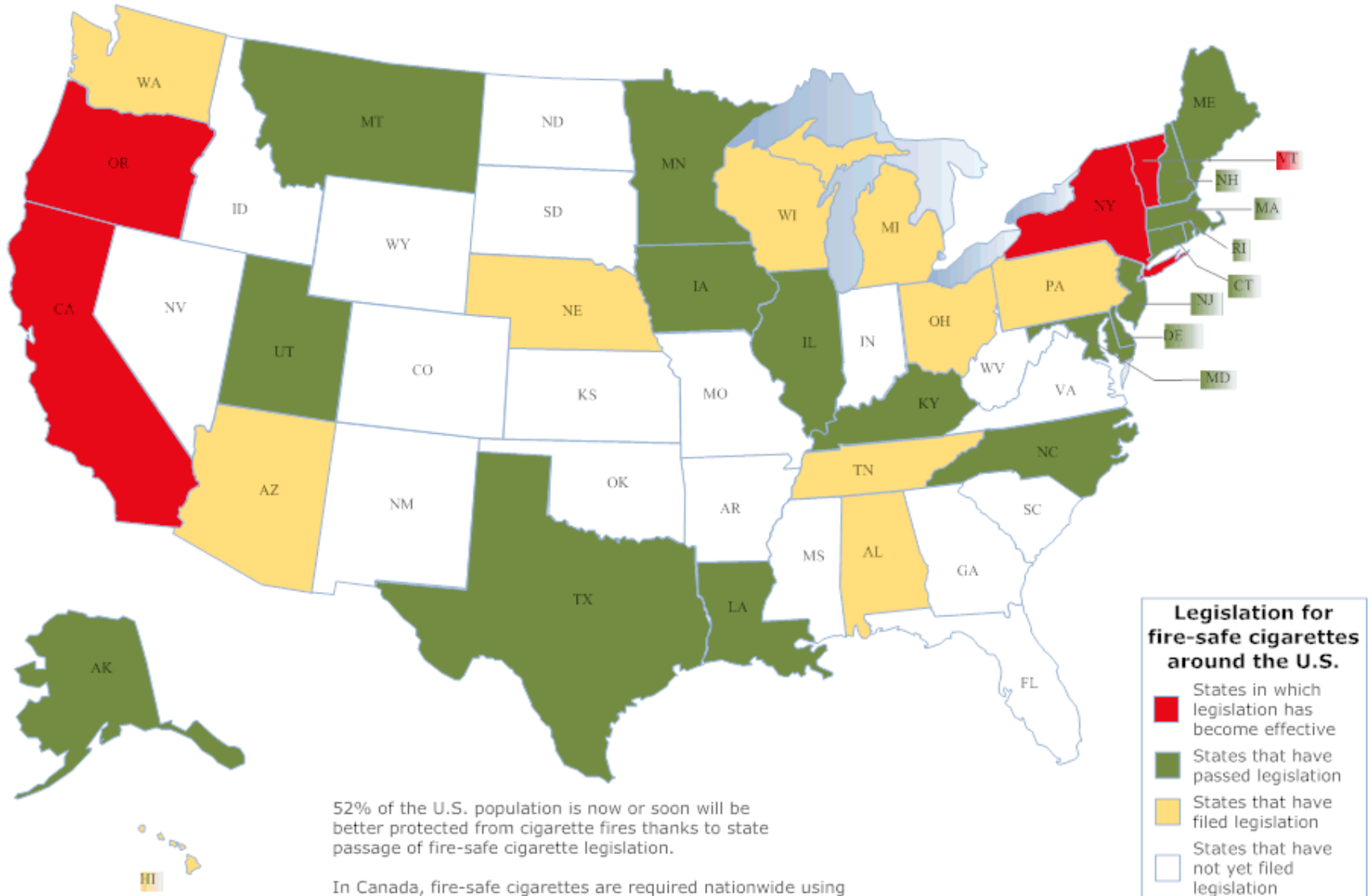
| | | |
|-----------------------|--------------|------------|
| Upholstered furniture | 1,030 | 320 |
| Mattress or bedding | 520 | 180 |
| Clothing | 70 | 30 |
| Other items | 190 | 160 |
| TOTAL | 1,810 | 690 |

Source: The Smoking Material Fire Problem

One Current Technology

If a fire-safe cigarette is left unattended, the burning tobacco will reach one of these banded "speed bumps" and self-extinguish.





Click on any state to learn more.

Evaluation of NY Cigarettes

- Comparison before / after effective date of law
- 5 brands of cigarettes bought in NY, MA, CA
- Conclusions:
 - Full length burns: 10% (NY), 99.8% (MA, CA)
 - Tax data: no change in buying cigarettes in NY
 - No significant change in price, availability
 - No significant toxicity problems with FSC cigs


Source: Harvard School of Public Health, January, 2005

Preliminary NY Data: First Six Months of FSC Law

In 2005 "...28 people died in fires in New York blamed on cigarettes. Deaths from such fires totaled 43 in 2000, 44 in 2001, 38 in 2002..."

'Fire-Safe' Cigarette Law Yields Results: First Year of 'Fire-Safe' Cigarette Law in New York Yields Fewer Deaths
(Michael Gormley, The Associated Press, Jan 2006)

Factors Influencing Fire Data

- Flammability standards: furniture, mattresses, rugs
 - Smoke detectors, sprinklers
 - Smoking rates
 - Alcohol and/or drug consumption while smoking
 - Building codes
 - Disasters
 - Patient age, health and changes in medical care, etc.
 - Other...
- 

Problems with California Fire Data

- Underreporting to CA Fire Incident Reporting System (1980? - 2002)
 - 2002 Total fires = 12,270;
 - Deaths: 27 civilian deaths; 0 - “Upholstered furniture; 1 - “mattress/pillow”; 1 - “cigarette fires”; 1 - “candle fires”
- In 2003, CA joined NFIRS
 - 2003 total fires = 25,000; NCHS: 172 fire deaths
 - 2004 total fires = 37,000; NCHS: 187 fire deaths
 - 2005 total fires = 44,000
- Small numbers of fire deaths:
 - 187 unintentional residential fire deaths in 2004
- No data yet on impact of CA FSC law
(FSC law effective as of 1/1/07)

APL/JHU
FPP TR 37
DECEMBER 1978

Fire Problems Program

HUMAN FATALITIES FROM UNWANTED FIRES

WALTER G. BERL
BYRON M. HALPIN

THE JOHNS HOPKINS UNIVERSITY ■ APPLIED PHYSICS LABORATORY
Johns Hopkins Road, Laurel, Maryland 20810
Operating under Contract N00024-78-C-5384 with the Department of the Navy

Special Study

- Berl & Halpin reported on 414 fire deaths in Maryland ('72-'77)
- 44.4% of deaths caused by cigarettes

Fire Problems Program

**HUMAN FATALITIES
FROM UNWANTED FIRES**

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Initial Material Ignited

| | |
|----------------------|-------|
| ➤ Mattress/bedding | 24.4% |
| ➤ Flammable material | 15.5% |
| ➤ Sofa | 14.4% |
| ➤ Flammable liquids | 11.3% |
| ➤ Clothing | 5.5% |
| ➤ Chair | 5.2% |
| ➤ Electrical | 3.1% |
| ➤ Other | 10.5% |
| ➤ Unknown | 10.0% |

Conclusions

- Numbers of fires, fire deaths & injuries in USA & CA are down but reasons are complex, multiple, essentially unmeasured.
- No existing fire data source can determine by itself effectiveness of intervention.
- Must rely on special studies.