



Fire Statistics in the US

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Data Sources

- ◆ National Fire Incident Reporting System (NFIRS)
- ◆ NFPA Annual Survey
- ◆ National estimates based on NFIRS and NFPA Annual Survey
- ◆ Fire Service Inventory
- ◆ Fire Incident Data Organization (FIDO)
- ◆ Others
 - ◆ Death certificates from National Center for Health Statistics
 - ◆ FBI's Uniform Crime Reporting



Our Statistics

- ◆ Measure what is reported to fire departments
- ◆ Details are based on what is reported to NFIRS
- ◆ Cannot measure risk unless combined with other databases



NFIRS

- ◆ U.S. Fire Administration compiles the National Fire Incident Reporting System
- ◆ Participating states use standard coding system
- ◆ Local NFIRS data is submitted through or released by states
 - ◆ About one-third to one-half of reported fires make it into NFIRS
- ◆ Largest and most detailed fire incident database in the world
- ◆ Not designed as a statistical sample



Data Classification System

- ◆ 1976 edition of NFPA 901, *Uniform Coding for Fire Protection*, used for 1980-1998 data
- ◆ Updated with Version 5.0
 - ◆ First used in 1999
 - ◆ Major overhaul of coding structure



NFIRS Fields

- ◆ Dispatch and summary data
 - ◆ Date, time, address, incident type, apparatus, personnel, losses
- ◆ Property details
 - ◆ Occupancy or property use and status
 - ◆ Number of stories
 - ◆ Construction type (dropped from 5.0)
 - ◆ Mobile property type
 - ◆ Complex
- ◆ Fire protection
 - ◆ Detection and automatic extinguishing systems
 - ◆ Presence and operation



Fire Descriptors and Causes

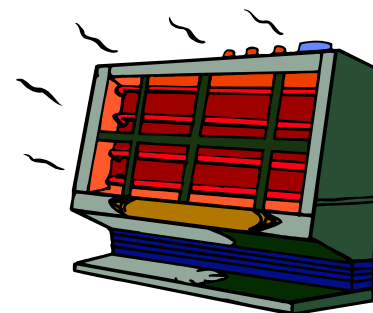
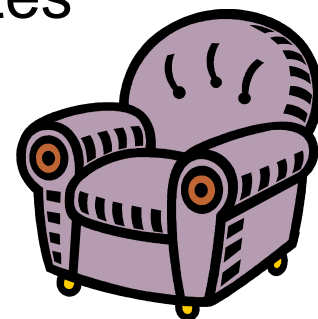
- ◆ Area and level of origin
- ◆ Heat source
- ◆ Item first ignited
- ◆ Equipment involved in ignition
- ◆ Factor contributing to ignition
- ◆ Extent of flame damage
- ◆ Victim characteristics on casualty reports



Combine Data Elements



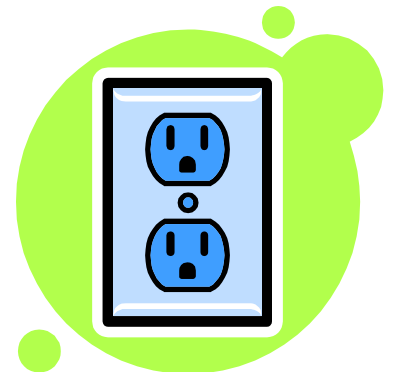
- ◆ Upholstered furniture fires started by cigarettes
- ◆ Electric or gas heater home fires
- ◆ Children playing with lighters vs. matches
- ◆ Arson (intentional fires) in schools
- ◆ Candle fires by month and area of origin or item first ignited





Defining the Questions

- ◆ Electrical fires may be defined by
- ◆ By electrical distribution equipment in equipment involved in ignition
 - ◆ Does not include electrical problems in cooking or heating equipment or other appliances
 - ◆ NFPA generally uses this approach
- ◆ By heat source
 - ◆ Includes appliances of all types
- ◆ Simple questions don't always have simple answers





Find More on NFIRS at

- ◆ <http://www.usfa.fema.gov/nfirs/>
 - ◆ Documentation and forms
 - ◆ Coding manuals
- ◆ May be helpful for some to look at code choices



NFPA Survey

- ◆ Sample includes all departments protecting populations over 100,000 and one-third of smaller departments, stratified by size
- ◆ Content
 - ◆ Fires, loss and casualties by incident type
 - ◆ Intentional structure and vehicle fires
 - ◆ Non-fire incidents, with special attention paid to false alarms
 - ◆ Firefighter injuries
- ◆ "Fire Loss in the United States During 2003" is free on <http://www.nfpa.org/Research/>

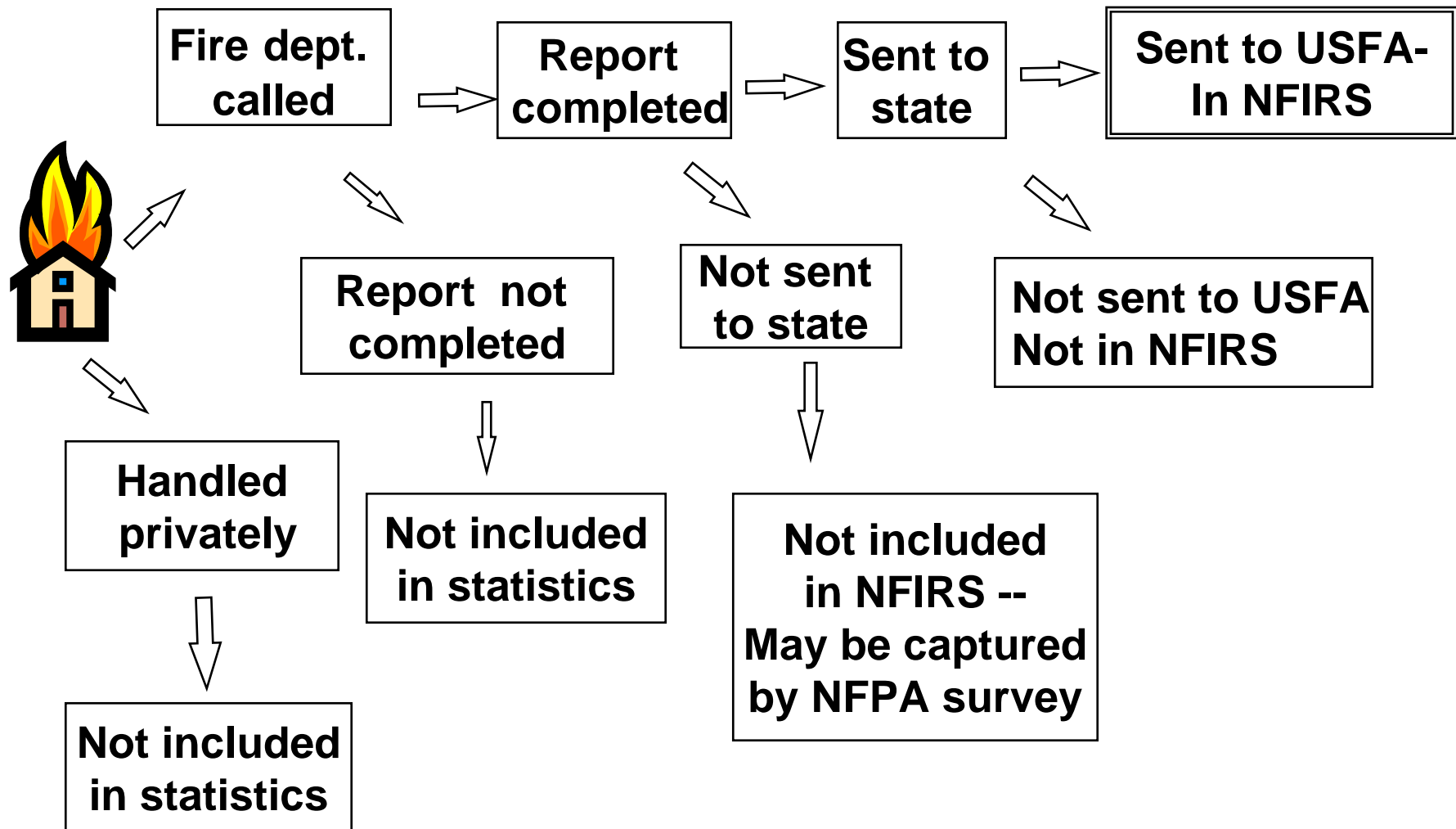


More on NFPA Survey

- ◆ Sample of fire departments allows for “big picture” national estimates
- ◆ Includes follow-up of vehicle fire deaths in smaller departments
- ◆ Cannot make state projections
- ◆ Limited regional projections possible
- ◆ Results in summer or early fall of following year



How a Fire Gets Counted





National Estimates

- ◆ NFIRS provides the details, but not the whole universe of reported fires
- ◆ NFPA survey is sample-based, so projections can be made about total
 - ◆ Lacks detail
- ◆ Combine the two to develop scaling ratios
 - ◆ Different ratios used for residential, non-residential, outside, vehicles, casualties and dollar loss
- ◆ Method developed by analysts from the USFA, NFPA and CPSC
- ◆ Statistics may be skewed by inclusion or exclusion of unusual incident
- ◆ Used in majority of NFPA's reports



Fire Incident Database Org

- ◆ Anecdotal database at NFPA
- ◆ Clipping service, Internet, other sources identify significant fires
 - ◆ Incident information is obtained from fire departments, insurance companies, etc.
- ◆ Source for Firewatch column and annual reports on catastrophic fatal fires, large loss fires and firefighter fatalities
- ◆ Not a valid source for most statistical analyses
- ◆ Sources are kept confidential



Fire Service Inventory

- ◆ Survey of fire department resources and staffing
- ◆ Three-year cycle
- ◆ Data source for Mike Karter's *US Fire Department Profile*
 - ◆ Describes what is, not what should be



Death Certificate Data

- ◆ Uses external cause of injury codes from International Classification of Diseases (ICD) codes
- ◆ Best historical data
 - ◆ National Safety Council data on unintentional fire or burn deaths goes back to 1913
 - ◆ Consistent coding system used nationally
 - ◆ Some disconnects with new versions
- ◆ More reliable at capturing subsequent fatalities
- ◆ Used in John Hall's report *US Fire Deaths by State*
- ◆ Fire deaths have been captured under category "Non-transport, unintentional injuries"
- ◆ Different analyses may use different codes



FBI's Uniform Crime Reporting (UCR)

- ◆ Police department data
 - ◆ Crimes
 - ◆ Solves
 - ◆ Arrests
 - ◆ Arrestees
 - ◆ Convictions
- ◆ Used in John Hall's *Intentional Fires and Arson*



Summary

- ◆ Different data sources were designed to meet different goals
- ◆ NFIRS details are available at local, state and national level
- ◆ NFPA survey provides national data only
- ◆ National estimates of specific fire problems are calculated by combining NFIRS and NFPA survey
- ◆ Death certificate data allows comparisons with non-fire data
- ◆ FBI's UCR data provides information about arson arrests



One-Stop Data Shop

The Source for Fire Statistics

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Customers and Questions

- ♦ Fire service, consultants, media, students, NFPA committee members, moms and dads
- ♦ Statistical
- ♦ Anecdotal
- ♦ Referrals



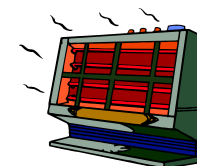
Products and Services

- ◆ Reports
- ◆ Custom Work
- ◆ One-Stop Data Shop on the Web



One-Stop Data Shop Reports

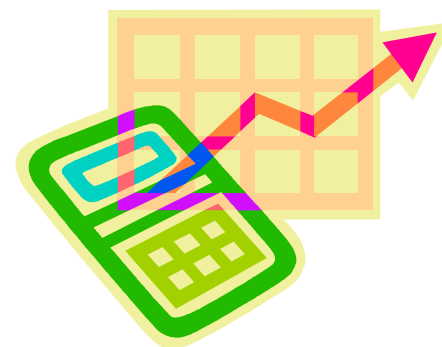
- ◆ Fire Loss During 2003
- ◆ Characteristics of Home Fire Victims
- ◆ Overview Report
- ◆ Smoking
- ◆ Heating
- ◆ Cooking
- ◆ Intentional Fires and Arson
- ◆ Children Playing
- ◆ U.S. Fire Death Patterns by State
- ◆ Candles
- ◆ Fire Protection: Smoke Alarms and Sprinklers





Custom Work

- ♦ Custom analyses
 - ♦ Produce national estimates of specific fire problems
- ♦ Incident searches
 - ♦ Search for articles in NFPA publications on specific topics





One-Stop Data Shop on the Web

- ◆ Reports available
 - ◆ Member benefit
 - ◆ Some free to all visitors
 - ◆ Executive summaries available to all visitors
- ◆ Fire fact a week
- ◆ Fact sheets
- ◆ Fire statistics





Contact Information

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Thank you and have a safe trip home.