



CHAPTER 14

Community Risk Reduction

LEARNING OBJECTIVES

Upon completion of this chapter, you should be able to:

- Describe the concept of community risk reduction.
- Discuss the origin of the fire service's involvement in community risk reduction.
- Define and contrast the terms *human-created risk* and *naturally occurring risk*.
- Describe the purpose and components of a community risk analysis.
- Discuss the importance of data in performing a community risk analysis.



Case Study

Hoarding is described as “the excessive collection and retention of things or animals until they interfere with day-to-day functions such as home, health, family, work, and social life.” It is viewed as both a mental health issue and a public health concern, and severe cases may pose serious safety and health hazards.

Hoarding conditions impact individuals, families, neighbors, and even pets and frequently result in fire and egress hazards that directly affect fire fighters. The Fairfax County, Virginia, Hoarding Task Force is comprised of staff from the Fire and Rescue Department, Adult and Child Protective Services, Mental Health Services, Department of Health, Building Code Services, Division of Solid Waste, Sheriff, Police Department, County Attorney, Animal Services, Planning and Zoning, and others.

The Task Force was established in late 1998 after four homeless persons died in a fire in an abandoned residential structure—filled with excessive debris and accumulated materials—where they had set up house. Lacking utilities, the individuals had been using an open fire for heat and light. The unsafe heating practices and the excessive accumulation of papers and possessions within the structure compromised egress, ultimately resulting in the death of four people.

Several months later, a second event occurred involving a family of six—two adults and four children—in a well-maintained suburban neighborhood. While responding to a 9-1-1 call, police discovered that the family's home contained an excessive amount of combustible materials and personal possessions, which blocked the egress and made the home unsafe for occupancy. The police, in turn, notified the Fire and Rescue Department's Fire Prevention Division, which, under the state code, had the authority to intervene and order the abatement of the unsafe conditions.

1. Is it in the best interest of the fire department to assign inspectors to the Task Force? Why or why not?
2. Of the agencies that comprise the Task Force, which one should be the lead?
3. Is hoarding a new problem?

Information for this case study came from: *2009 Fairfax County Hoarding Task Force Annual Report*. Available at: <http://www.fairfaxcounty.gov/code/hoarding/hoarding-annual-report.pdf>

Introduction

Chapter 10, “Fire Prevention Through Public Education, Awareness, and the Public Forum,” discusses the development and delivery of programs. This chapter discusses using readily available data to identify and define problems, beginning with fire risks, but extends beyond fire to address other risks that threaten a community, a concept known as *community risk reduction*.

The fire service is perhaps the most well-suited entity for developing and managing an all-risk reduction program for the community. Property protection traditionally has been, and remains, a core

responsibility of the fire service, and fire prevention bureaus in particular. Managing community risks is an extension of the fire service's precedent of dealing with calamity.

Public Law 90-259 (printed in its entirety as Appendix A), passed by the 90th Congress and signed by President Nixon in 1968, established a National Commission on Fire Prevention and Control. Over the next 32 years, *America Burning: The Report of the National Commission on Fire Prevention and Control* (1973), *America Burning Revisited* (1987), and *America at Risk* (2000) identified the need for increased fire prevention efforts. The changing role

of the fire service, from fire suppression to all-hazards mitigation and prevention, was underscored. *America Burning* included 90 recommendations by the Commission, which are printed as Appendix B of this text. Recommendation #7 identified the value of fire prevention programs: “The Commission recommends that local governments make fire prevention at least equal to suppression in the planning of fire department priorities.”¹ Other recommendations included the formation of the U.S. Fire Administration (USFA) and the National Fire Academy, and charged them with developing training and education courses and materials for state and local governments, as well as “educational materials for each occupational category that has special needs or opportunities in promoting fire safety.”²

The 1987 *America Burning Revisited* report documented successes in the 14 years since the release of *America Burning*, but concluded that America’s fire problem was still the worst in the Western world. The report went on to identify the changing role of the fire service in protecting communities:

Fire departments are generally the first responders to almost every kind of disaster, including natural and technological hazards, and even domestic terrorism and foreign attack. In addition, many departments are using the Integrated Emergency Management System (IEMS) concept, which includes the fire service as a primary component of all four phases of emergency management: mitigation, preparedness, response and recovery.

Reproduced from: U.S. Fire Administration, *America Burning Revisited* (Washington, DC: Federal Emergency Management Agency, 1987), page 19.

The 2000 *America at Risk* report underscored the fire service’s role in the mitigation of all risks:

The responsibilities of today’s fire departments extend well beyond the traditional fire hazard. The fire service is the primary responder to almost all local hazards, protecting a community’s commercial as well as human assets and firehouses are the closest connection government

has to disaster-threatened neighborhoods. Fire fighters, who too frequently expose themselves to unnecessary risk, and the communities they serve would all benefit if there was the same dedication to the avoidance of loss from fire and other hazards that exists in the conduct of fire suppression and rescue operations.

Reproduced from: U.S. Fire Administration. *America at Risk: Findings and Recommendations on the Role of the Fire Service in the Prevention and Control of Risks in America* (Washington, DC: Federal Emergency Management Agency, 2002), page 18.

America Burning, *America Burning Revisited*, and *America at Risk* identified the fire service as uniquely qualified to take a leading role in risk identification and reduction. Fire departments across the United States are adopting an all-hazards approach to protecting people and property.

Identifying Risk in the Community

Model fire and construction codes contain general provisions for the entire the country, with *general* being the operative word. Some areas are more prone to seismic events; some are more prone to hurricanes. Connecticut’s wildfire threat is very different from California’s. Some areas see significant snow loads in winter; some areas are prone to tornados. Some risks are caused by human activity and some are acts of nature. We face some with regularity, while others only occur every decade or every generation.

Human-created risks arise from the acts of humans, such as manufacturing, transportation, and the use of hazardous materials. Cutting and welding with a torch is one such example. Incidents arising from these risks are generally accidental; however, some human-caused risks are intentional and malicious, such as crimes of arson, bombings, and domestic terrorism. **Naturally occurring risks** are acts of nature and include hurricanes, tornados, floods, and earthquakes.

The model building codes provide a good general level of safety for the construction and use of

buildings and structures. The fire codes regulate potentially hazardous activities and processes. Every community is different, however, and beyond the one-size-fits-all codes, there is much that can be done to improve public safety.

In order to address a problem, you must first identify what the problem is, who it affects, and where the affected population is located. Conducting a thorough risk analysis does not indicate that your department has signed on to develop programs to address all risks identified. Finding that more people in your community die by choking on food than by fires, for example, will not relegate your department to developing a public education program that encourages citizens to chew their food more carefully. Other agencies or organizations may already have programs in the areas identified; armed with your information, those agencies may be able to expand existing programs through grants or other resources. Existing and effective programs can usually accommodate an additional safety message. It is important to remember that we are all working toward the same goal: safe communities.

Tip

Identifying a risk does not obligate a fire department to develop a program to address it.

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The National Fire Academy (NFA) delivers two courses that address community risk reduction, *Leadership Strategies for Community Risk Reduction* (R0200) and *Executive Analysis of Community Risk Reduction* (R0274). The latter is the second required course of the Executive Fire Officer (EFO) curriculum. *Leadership Strategies* was adapted from the EFO course based on requests from non-EFO students who were tasked with developing, leading, and evaluating risk reduction programs in their communities.

NFA course attendees learn how to build a **demographic profile** and **risk profile**, two components of a community risk analysis. Those unable

to attend a course can still learn how to develop both, however, as the USFA has gone to great pains to make the information on developing them freely available. If you have access to the Internet, you are in business.

Community Risk Analysis

The USFA's *Public Fire Education Planning: A Five Step Process* is a good starting point for learning how to perform a **community risk analysis**. A web link to the document, which identifies the need for tailoring public education efforts to the community by performing a risk assessment, is included in the Additional Resources at the end of this chapter.

Be cautious when developing a community program based upon news reports or stories about a perceived problem, since these items may not always be representative of an actual problem in a community. Consider, for example, an organization in the northeastern United States that begins a swimming pool safety program based on news reports of children who drown in swimming pools. If the organization had looked carefully at its community's data, it would have identified only two cases of children drowning over the past decade. The news reports that prompted the safety campaign were, in fact, based on statistics from the southeastern United States. Further study of its own community's data would have instead revealed a large number of child pedestrian injuries and deaths. When developing programs, avoid using such a *ready-fire-aim approach*—that is, firing a weapon before aiming at the target or implementing a program before carefully identifying a problem within a community.

Public Fire Education Planning: A Five-Step Process reduces the risk analysis to five steps **Figure 14-1**:

1. Identify data to be analyzed.
2. Develop a community risk profile.
3. Write a **problem statement**.
4. Prioritize issues.
5. Identify target areas of the population.³

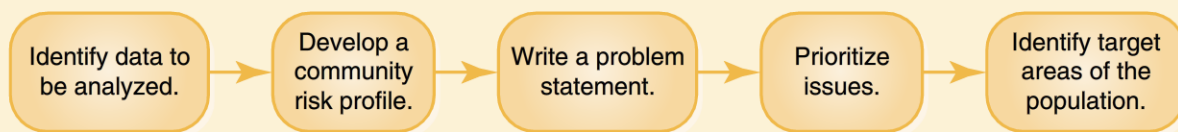


Figure 14-1 Performing a community risk analysis is a five-step process.

Modified from: U.S. Fire Administration, *Public Fire Education Planning: A Five-Step Process* (Washington DC: FEMA, 2008).

Data Sources

Data sources are the foundation of a risk analysis. If the foundation is not solid, your risk analysis will collapse. National, state, and local data sources are freely available but, which should you use? Before you declare that local data is best, consider this: The model fire codes require a permit to operate an auto body shop that spray paints automobiles. The permit requirement is based on national fire data that have identified inherent dangers involved in the spray finishing process. If there has not been a fire in an auto body shop in your city in 10 years, does that make the process any less dangerous?

Tip

Accurate data sources form a solid foundation, which is key to performing a thorough risk analysis.

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National, state, and local data are but a mouse-click away. Data from the USFA's National Fire Data Center and the National Fire Protection Association (NFPA) are available online. Statistical data are broken down by state in many of the reports. Data regarding accidents and injuries are published online by the Centers for Disease Control and Prevention (CDC) and the National Safe Kids Coalition.

State fire data are often available from state fire marshals or state insurance bureaus. On the local level, fire data spanning several years should be studied. Keep in mind, however, that regardless of the population and area sizes of a community,

the size of the statistical sample will still be quite small. Compare local data with state data. If you are in a metropolitan area that encompasses multiple jurisdictions and crosses state lines, compare your jurisdiction's data with other contiguous cities and counties.

Data Analysis

Your analysis should demonstrate *what* is occurring, *who* is being affected, and *where* they are located. Keep an open mind and accept that your findings may highlight a specific demographic; incidents do not occur with equal regularity across all ages or socioeconomic groups. The very old and the very young are typically more vulnerable than other age groups. People of few means often resort to temporary heating or cooking sources that are inherently less safe than permanent equipment. Children in low-income, single-parent households are often unsupervised after school because the parent is working outside of the home. Let the data speak.

Tip

Remain impartial when analyzing data.

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Look for patterns. Suppose you find there have been around a dozen residential fires in your jurisdiction between Thanksgiving and New Year's over the past 5 years. There were no injuries or fatalities, but the dollar loss was significant. Although they do

not amount to a significant number of fires in the big picture, the pattern bears looking into. When you determine the *who* and the *where*, you realize the fires occurred in the most affluent neighborhoods in your jurisdiction. What is really happening?

In this example, dwelling fires involving the improper disposal of fireplace ashes occurred more frequently in high-income neighborhoods than in nearby working-class neighborhoods. Why? The latter group of homeowners tended to burn wood to heat their homes on a more regular basis and, when cleaning their stoves, would often dump the ashes in their gardens. The more well-to-do families tended to use their fireplaces only a few times a year, over the holidays. After cleaning their fireplaces, ashes and debris were often placed in heavy-duty, brown paper leaf bags, which, when placed in the garage next to a vehicle, would easily ignite **Figure 14-2**.

In this instance the *what* is residential fires caused by improper disposal of fireplace ashes. The *who* is families who infrequently use their fireplaces, particularly around the holidays. The *where* is the more affluent communities where fireplaces are not consistently used as heating appliances.

The *who* may not be obvious at first. By identifying improper disposal of ashes and the preponderance of

incidents in high-income areas where the occupants admit to rarely using their fireplaces, an effective public education program could be developed. Effective strategies might include partnering with homeowner associations or posting articles in magazines or on websites that attract more affluent individuals.

Demographics

The fireplace ash example did not require much research to determine who was affected: The small number of incidents and a quick review of the addresses where they occurred made that determination easy. That typically will not be the case. Three characteristics that should be considered when building a demographic profile include:

1. Housing/Location

- Owner- or renter-occupied units
- Age and condition of structures
- Percentage of vacant/abandoned or blighted structures
- Proximity to colleges/universities or facilities with transient or seasonal populations

2. People

- Population density
- Age levels
- Gender
- Levels of education
- Household/family structures
- Persons with disabilities

3. Economic Information

- Family income
- Median income
- Economic projections for the community
- Persons below the poverty level
- Persons receiving public assistance
- Persons in public housing⁴

Most of this information is available through the U.S. Census Bureau's website, www.census.gov. Click on the *Data* tab and navigate to the *American FactFinder* tab under *Data Tools and Apps*. Enter your jurisdiction and explore the categories. Census



Figure 14-2 After identifying what the problem is, who it affects, and where the affected population is located, an effective public education program can be developed.

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information is listed for the entire jurisdiction and is broken down by census tracts. Census data do not record proximity to a college or university or another facility that might influence the demographic information of residents and must be determined independently.

Selecting and Prioritizing Issues

The risk analysis model proposed in *Public Fire Education Planning* appears to be a linear, step-by-step process, but selecting and prioritizing the issues to tackle are not always simple. Is it better to tackle a big fire problem with very little chance of success or several smaller ones with a high probability of success? There is no correct answer, but the mission is to have the most positive impact on the community.

Tip

When selecting and prioritizing a community's risks, aim to maximize the potential positive impact.

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Public education programs are not the only way to address risks. Sometimes the best way to prevent accidents and injuries is through the legislative or codes processes. Injuries and property damage from fireworks accidents have been reduced by strengthening fire codes and state and local laws. Residential smoke alarms, carbon monoxide alarms, and residential sprinklers are in our homes today because risks were identified and addressed through the model code and legislative processes.

An in-depth community risk analysis will likely uncover a considerable number of risks that fall outside the roles of the fire prevention bureau or the fire department. Rather than attempt to seize control of a problem from another agency or group, privately share the information and the method used in the analysis with the respective agency. Doing so may improve or help cement already strong interagency relations.