Public Fire Education Planning for Urban Communities

A Five-Step Process Guide to Success

National Fire Protection Association

An adaptation of the U. S. Fire Administration

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Introduction

As a professional public fire and life safety educator in a large city fire department, you may face many challenges as you try to reach people with public education programs and promote changes in their home environments, such as installing smoke alarms. You know that you want every individual in your city to be safe from fire, but you may not have the resources to reach everyone at once or to modify your programs for greatest effectiveness with every distinct community.

* You know that your first priority should be groups at higher risk to fire, such as older adults, young children, and people with low incomes or less education, but you may not know how to find those people or how best to reach them.

* You know that some of the people you want to reach have communication, resource, or other limitations that you need to accommodate so they can benefit from your programs.
  - You may need to change the programs to fit the needs of people with disabilities or the needs of non-English-speaking immigrants.
  - You may need to account for the special hazards associated with some building features, such as bars or makeshift security devices on windows or doors, or generally poor maintenance, where the occupants can't rely on the electrical systems to operate safely, the walls to contain fires, or even the floors to stay intact long enough for them to escape.

While these characteristics are not unique to cities with populations of 250,000 or more, a smaller city or town is not so likely to contain a significant number of people with every possible risk factor and hazard. In a big city, successful delivery of safety to everybody means successful tailoring of programs to every imaginable kind of resident. And that challenge is unique to larger cities. Against these diverse and numerous challenges, the modern urban fire department must apply limited or even shrinking resources. You may not have enough public educators to take on the programs essential for your city.

On the other hand, you may have well-organized and sophisticated groups with whom you can partner to reach audiences or at least to help you tailor your programs and your approach to the important communities that those partners know better than anyone else. This is the upside of having significant numbers of people with every type of risk factor imaginable; there are probably enough people with any special characteristics to create their own group. Smaller cities may not have enough people for many of their target groups and will have to find other ways to reach immigrants, older adults or another defined population.

Whether you are a seasoned educator or new to the role of fire and life safety education, this planning guide for fire departments serving urban communities will have something new and useful to help you do your job. The guide presents a systematized process for identifying and prioritizing fire and life safety problems in your city. Additionally, it will walk you through a logical process to identify and customize proven programs that best match your goals and priorities. You are not alone. The guide will help identify community partners to work with you in your program planning, implementation, and evaluation. This will strengthen your visibility and credibility as a
fire department, in addition to enhancing the importance of fire safety in the community and reducing the devastating loss of life and property from fire. Successful fire and life safety programs have been achieved in urban communities – It Can Be Done!!

This guide uses a five-step process for identifying fire and injury risks in urban communities, developing partnerships, prioritizing programs and initiatives according to need, developing and implementing programs, and evaluating the results. Planning done in this manner ensures that the program strategies and initiatives really address the problems at hand.

The following five-step process will lead you to a successful program:

1. **Conduct a Community Analysis** – A community analysis is a process that identifies fire and life safety problems and the demographic characteristics of those at risk.

2. **Develop Partnerships in the Community** – A community partner is a person, group, or organization willing to join forces and address a community risk. The most effective risk reduction efforts involve the community in the planning and solution process.

3. **Create a Strategy to Solve the Problem** – An intervention strategy is the beginning of the detailed work necessary for the development of a successful fire or life safety risk reduction process.

4. **Implement the Strategy in the Community** – Implementing the strategy involves testing the interventions and then putting the plan into action in the community. A well-coordinated and properly sequenced implementation is essential. Implementation occurs when the intervention strategy is put in place and the implementation plan schedules are followed.

5. **Evaluate the Results** – The primary goal of the evaluation process is to demonstrate that the risk reduction efforts are reaching target populations, have the planned impact, and are demonstrably reducing loss. The evaluation plan measures performance on several levels, including formative, process, impact, and outcome objectives.

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**Why a guide specifically for fire departments serving urban communities?**

In 2006, NFPA identified a need to deliver fire safety messages and practices more effectively to high-risk populations (preschool age children, older adults, and multi-cultural communities) in large cities with populations of 250,000 or more. The NFPA Board of Directors chose the following corporate goal for 2007:

> To partner with fire departments from two major cities in North America to identify and define the causes of fire deaths and injuries among high-risk populations and the unique challenges associated with reducing/eliminating those deaths and injuries.

As a result, NFPA shared a report with recommendations to large city fire departments with the Metropolitan Fire Chiefs Association, implemented several projects in cities with populations of 250,000 and more and created an Urban Fire Safety Task Force for fire safety educators in large cities. (See Appendix A for history.)
In 2011, one of the Urban Fire Safety Task Force’s objectives was to adapt the U.S. Fire Administration, USFA, Public Fire Education Planning, A Five-Step Planning Process for urban fire departments.

**Why Use a Planning Process?**

Problem solving and quick action are part of the fire service culture. Both are necessary when responding to fire and medical emergencies. The urge to “get something done quickly” often transfers itself to fire and life safety education programs. It can be hard to resist! Distributing brochures at the state fair or community events, giving a few presentations at the local elementary school during Fire Prevention Week, or showing fire trucks and gear during a fire station tour while giving away red plastic fire helmets may promote the work of the fire department in the community, but do these activities really improve the fire safety in your community? Do these activities change the environment, attitudes and behaviors of residents the way something such as installing and maintaining smoke alarms in their homes would? Are you able to reach all age groups, including those that are at highest risk for fire? Are you even sure which groups in your community are at highest risk for fire? Regardless of the size of your community or fire department, you can have success using a simple, proven five-step planning process.

**Challenges of the Five-Step Planning Process**

Before we review some of the benefits of using the five-step planning process, you may want to know some of the challenges:

*Successful use of the five-step process requires a commitment by those involved.*

The use of this process requires an investment of some time and effort to truly reduce the fire problem in the community. If your goal is to do a once-a-year Fire Prevention Week open house at the fire station, this process may not apply. On the other hand, if you’re willing to use this process and engage the support of others within and outside of the fire department to address an identified problem, everyone must carry through regardless of the level of involvement.

*You need strong support from fire department leadership.*

Your fire department members need to be informed, involved and supportive. In large, as well as small, fire departments some members may resist change and the proposed program activities. Any perception that fire safety education programs may divert limited resources from suppression efforts could cause difficulty in achieving your program goals. The understanding and support from your chief officers is critical and will assist in your planning efforts.

*You may need assistance from outside resources during the planning process.*

Often when assessing your community fire issues during Step 1, you will need to reach out to outside agencies. Asking for assistance from individuals and organizations experienced with this process and appreciative of the importance in initially identifying your problem issues and audi-
ences is the first step toward success in your programs.

Getting community citizens and leaders excited about fire safety.

In urban communities, residents may be concerned about many other daily issues and problems that are far closer to home than fire, such as crime prevention. If fire safety seems a “non issue”, getting people to attend a presentation or participate in a home safety check or smoke alarm installation may take some added consideration and activities. This is where Step 1 can demonstrate with undisputable numbers where the high-risk areas are in the community, what fire risks and hazards need to be addressed, and who are the high-risk audiences affected by fire, as well as those who should be involved in addressing the issues.

Benefits of the Five-Step Planning Process

The benefits of this process include being able to identify your fire problems and target audiences clearly, especially those residents most affected when a fire occurs. Being able to prioritize these issues and addressing the highest priorities first allows you to maximize and integrate community resources to focus on solutions.

Another benefit is more community involvement. Any fire problem in a community actually belongs to the whole community. When a fire occurs, the effects are felt throughout the community including by individual families, insurance companies, schools, local government, local businesses, churches, and so on. Because the problem belongs to the community, the community should have a stake in the solutions.

In using the five-step process, everyone involved will develop skills and experiences that can be used in future community projects, including those not related to fire safety. Finally, you will see that when you and the community use the five-step process, the likelihood of success is greatly increased. You will achieve the program goals and, in the end, the people in your community will be safer from fire!

The five-step planning process for addressing fire problems in a community is a proven method that can be used in any size community. The fire department and the community as a whole will enjoy the many benefits from the use of this process, providing the fire department and the community make the commitment to work toward living in a fire safe community.

Let’s get started!!
Step 1:
Conduct a Community Fire Analysis

“We can begin by doing small things at the local level, like planting community gardens or looking out for our neighbors. That is how change takes place in living systems, not from above but from within, from many local actions occurring simultaneously.” – Grace Lee Boggs

The first step in planning your public fire education strategy is to identify large parts of your fire problem that can be addressed by a well-chosen and well-designed program. In other words, you want to get the highest return for your education program investment. Conducting a “community fire analysis”, which is an analysis of your city’s fire incident and other relevant data to show patterns and clusters of high risk, starts with answering the “who, what, when, where, how and why” about the fires in your community. Going through this process will help you identify and prioritize the fire problems in your community and the best targets for your programs.

Identify Available Resources for Information about Your Fire Problem

You may already be experienced in analyzing your data, in which case this guide will help you identify the kinds of analyses you may find helpful for public fire education planning. If not, you will need to recruit help.

* Your city may have a centralized department of information systems that may be able to help with the analysis.
* Your city may be home to a college or university with faculty experienced in this kind of analysis who may be able to help.
* And there are national agencies and organizations, such as NFPA and the U.S. Fire Administration, who may be able to help you with specific questions or access to aids and training.

As you begin to gather information, your primary source will be your own records of recent fires, what we call your fire incident database. This guide assumes that your fire incident database is computerized and coded, either as part of the U.S. Fire Administration’s NFIRS system or as part of a local-only or provincial database. Departments that have not maintained high standards for incident reporting may find their data lacking necessary detail. If this is the case in your city, refer to some of the groups above to help boost your data’s detail.

Develop a Community Fire Risk Profile

A community fire risk profile is an overview of the characteristics and trends of a community’s fire problem, usually presented one characteristic at a time.
Collect totals, trends and rates for the whole community by population.

Examine trends for totals and rates to determine whether your problem is rising, falling, or steady. Once you know the trends, you’ll know which problems have a more urgent need for reduction. Rates can also serve as a baseline for changes or differences in population.

First, profile total fires, civilian and firefighter deaths and injuries, and direct property damage. In addition, you can compare your rates with those of other large cities.

Fire rates are often expressed in terms of fires per 1,000 population, calculated as:

\[ \text{Fires} \div \left( \frac{\text{Population}}{1,000} \right). \]

Deaths and injuries are often expressed as rates per million population, calculated as:

\[ \text{Civilian Deaths} \div \left( \frac{\text{Population}}{1,000,000} \right). \]

When looking at casualties, examine deaths and injuries separately. Many civilian injuries occur in small fires when civilians try to fight the fire themselves. Also examine civilian casualties separately from firefighter casualties. You can frame the problem in terms of overall frequency of fires, deaths, injuries, or populations at risk. Some types of fires are very common but rarely cause death, injury, or major property damage. Other fires, such as fires started by smoking materials, are much less frequent but much more likely to be deadly.

Look at who is most frequently impacted by fire, as well as who is at greatest risk. In the United States, people age 65 and older face a risk of dying in fire that is more than twice that of the general population, and they account for roughly one-quarter of the fire fatalities. Half of the fatal fire victims were between the ages of 20 and 64. Adults ages 20 to 49 faced the highest risk of fire injury. Unattended cooking is a common cause of fire in most populations. Chimney fires, on the other hand, are much less common in apartments than in one- or two-family homes.

Collect totals, trends, and rates for census tracts, neighborhoods, or other geographic subsections.

Second, create a similar profile for each census tract in the city. Analyzing your fires by census tract may require getting outside help, especially if your data isn’t coded appropriately. Census tracts tend to include a couple thousand people per tract, and you will usually see a large difference in fire rates and fire loss rates between the highest-rate tracts and the rest of the city. If census tract data is unavailable, you may be able to use zip or postal codes or station protection areas. Census tract data is preferred because it provides easier access to population and other demographic data.

Seeing stable fire rates by census tract is more likely if you use multiple years of data together. Census tracts typically have between 2,500 and 8,000 people. (U.S. Census Bureau. “Census Tracts and Block Numbering Areas,” See http://www.census.gov/geo/www/cen_tract.html) A group of people that size will average less than one reported fire injury a year and less than one fire death a decade. That all but guarantees a lot of statistical fluctuation from year to year and tract to year.

tract. One fire with several deaths and injuries could make the fire problem look much greater in a particular location than is normally the case. Because fires are more common than fire deaths or injuries, the fire patterns will be more stable than casualty patterns. Even so, localized arson statistics can be heavily influenced by one active arsonist.

If your city has recognized neighborhoods, you may want to combine census tracts to permit analysis and comparison by neighborhood. This will not only put the data in a form that locals can relate to more easily, it will also group the data to provide more stability in the rates. Mapping software can show neighborhoods with unusually large numbers of incidents.

**Collect totals, trends, and rates by fire characteristics**

Third, profile your fire incidents by fire characteristics. You may want to restrict your analyses to residential fires. Table 1 shows the leading causes of home structure fires reported to U.S. fire departments. Appendix B explains how we analyzed NFIRS data to produce this table. In this table, it is possible for one fire to be counted twice. For example, a fire may be coded with a cause of “intentional” and “playing with heat source” as a contributing factor.

**Table 1. Leading Causes of Reported Home Structure Fires 2005-2009 Annual Averages (Unknowns Were Allocated Proportionally)**

<table>
<thead>
<tr>
<th>Cause</th>
<th>Fires</th>
<th>Civilian Deaths</th>
<th>Civilian Injuries</th>
<th>Direct Property Damage (in Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking equipment</td>
<td>155,400 (42%)</td>
<td>390 (15%)</td>
<td>4,800 (41%)</td>
<td>$771 (11%)</td>
</tr>
<tr>
<td>Confined cooking fire</td>
<td>116,700 (31%)</td>
<td>0 (0%)</td>
<td>1,560 (12%)</td>
<td>$27 (0%)</td>
</tr>
<tr>
<td>Heating equipment</td>
<td>64,100 (17%)</td>
<td>560 (21%)</td>
<td>1,620 (13%)</td>
<td>$904 (13%)</td>
</tr>
<tr>
<td>Confined fuel burner or boiler fire</td>
<td>23,100 (6%)</td>
<td>0 (0%)</td>
<td>40 (0%)</td>
<td>$8 (0%)</td>
</tr>
<tr>
<td>Intentional</td>
<td>29,400 (8%)</td>
<td>340 (13%)</td>
<td>920 (7%)</td>
<td>$633 (9%)</td>
</tr>
<tr>
<td>Electrical distribution or lighting equipment</td>
<td>23,400 (6%)</td>
<td>390 (15%)</td>
<td>970 (8%)</td>
<td>$822 (12%)</td>
</tr>
<tr>
<td>Smoking materials</td>
<td>18,900 (5%)</td>
<td>660 (25%)</td>
<td>1,270 (10%)</td>
<td>$492 (7%)</td>
</tr>
<tr>
<td>Clothes dryer or washer</td>
<td>15,200 (4%)</td>
<td>30 (1%)</td>
<td>440 (3%)</td>
<td>$203 (3%)</td>
</tr>
<tr>
<td>Candle</td>
<td>12,900 (3%)</td>
<td>140 (5%)</td>
<td>1,040 (8%)</td>
<td>$471 (7%)</td>
</tr>
<tr>
<td>Exposure fire</td>
<td>12,400 (3%)</td>
<td>20 (1%)</td>
<td>70 (1%)</td>
<td>$853 (12%)</td>
</tr>
<tr>
<td>Playing with heat source</td>
<td>7,700 (2%)</td>
<td>100 (4%)</td>
<td>750 (6%)</td>
<td>$192 (3%)</td>
</tr>
</tbody>
</table>

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. The methodology used is described in the appendix.


The USFA developed a hierarchical sorting system to calculate the causes of structure fires. See http://www.usfa.fema.gov/fireservice/nfirs/tools/fire_cause_category_matrix.shtml. This methodology was used in USFA’s Fire in the United States 2003-2007, see http://www.usfa.fema.gov/downloads/pdf/publications/fa_325.pdf.

Some characteristics can be easily analyzed using fire incident data that will also match up well with existing programs:
• Fire cause. Resources are available to prevent fires caused by cooking, smoking, heating, electrical distribution and lighting equipment, and more.
• Were smoke alarms present? Does a smoke alarm installation program make sense?
• Did smoke alarms operate? Is a program needed to test alarms and replace batteries?
• Structure status: Occupied and operating, vacant, idle, under construction or under renovation? Statistically, vacant housing units are no more likely to have fires than occupied housing units. Vacant units are much more likely to have arson fires but much less likely to have any other type of fire, and the results tend to cancel out. Abandoned housing may be higher risk, but abandoned housing cannot be identified from fire incident or census data.
• Victim age. Programs exist geared to pre-school and school-aged children, as well as older adults.
• Was disability a factor? The coding of fire incident data does not identify specific disabilities and may combine disabilities with other physical or mental limitations. You may need to use incident narratives or other data if you want to pursue this characteristic in detail.
• Race or ethnic origin of fire victims. This may be most useful in being sure your materials are culturally appropriate.

Handling unknown and missing data

Every database will have some unknown information. Listing “unknown” as one of the leading causes of fires in your community, however, is not very helpful. When you are fairly confident that the fires with unknown or missing data are similar to those with known data, you can compensate for this fairly easily. Analyze causes and circumstances of structure fires, vehicle fires, and outside fires separately. Analyses of NFIRS data should examine fires with confined structure fire incident types (coded as 113-118) separately from other structure fires.

When you don’t deal with unknown data, you are essentially only looking at a small percentage of your fires. In the following figure, these are the fires in the red circle. A simple way to handle unknown data for one data element (heat source, cause of ignition, and so on) is to calculate the percentages of each type for that element for fires with known data only.² Then you can multiply the total of all reported fires (the biggest circle in the figure), by the percentages you calculated.

² Some fields have multiple entries. For these calculate total known as total minus fires with missing or unknown data.
The NFIRS field “cause of ignition” is used in the example below. The new estimate was calculated by multiplying the total of 300 by the percentage of total known. If this approach were not taken, the leading cause would have been unknown or missing.

**Example:**

<table>
<thead>
<tr>
<th>Cause of ignition</th>
<th>Raw data</th>
<th>Percentage of total</th>
<th>Percentage of known total</th>
<th>New estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - Cause, other</td>
<td>10</td>
<td>3%</td>
<td>5%</td>
<td>15</td>
</tr>
<tr>
<td>1 - Intentional</td>
<td>20</td>
<td>7%</td>
<td>10%</td>
<td>30</td>
</tr>
<tr>
<td>2 - Unintentional</td>
<td>90</td>
<td>30%</td>
<td>45%</td>
<td>135</td>
</tr>
<tr>
<td>3 - Failure of equipment or heat source</td>
<td>70</td>
<td>23%</td>
<td>35%</td>
<td>105</td>
</tr>
<tr>
<td>4 - Act of nature</td>
<td>10</td>
<td>3%</td>
<td>5%</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total known</strong></td>
<td><strong>200</strong></td>
<td><strong>67%</strong></td>
<td><strong>100%</strong></td>
<td><strong>300</strong></td>
</tr>
<tr>
<td>5 - Cause under investigation</td>
<td>50</td>
<td>17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U - Cause undetermined after investigation</td>
<td>40</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(No Entered Value)</td>
<td>10</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total unknown or missing</strong></td>
<td><strong>100</strong></td>
<td><strong>33%</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>300</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Use NFIRS data to create a table that includes cause of ignition, raw data and percentage of total, separating the known and unknown causes and including the total fires for known, unknown and the grand total. See above example chart.

2. Add a column for percentage of total known and new estimate.

3. Calculate the percentage of total known.
   
   Raw data from cause of ignition ÷ Total known raw data of known = Percentage of total known.
   
   Example using above data 20 ÷ 200 = 10 percent

4. Calculate new estimate of the number of fires for each cause of ignition
   
   Grand total x percentage of total known = new estimate of the number of fires for each cause of ignition.
   
   Example using above data 300 x 10 percent = 30

This type of analysis will help clear up the unknown or missing data causes, which in the above example represent 33 percent of the total fires and would have been considered the leading cause of fires. After this analysis, the leading cause of fires is unintentional with 135 fires.
**Compare your fire experience with the fire experience of the entire country or other communities.**

Once the local fire incident data has given you a basic view of the risks in your community, using other data sources to deepen and broaden your community risk profile may be useful. For example:

- Compare your analysis to results of similar analyses of fires in your state or for all cities of your size in the country. While you should have enough local data to analyze fire patterns, even a large city may not have enough data to develop stable results for rare events like fire deaths or large-loss building fires. If your local results don’t show some risks that have appeared in similar analyses of other communities like yours, consider that the differences may be a matter of chance and you may have been lucky rather than really different; you really do have risks like those seen elsewhere. On the other hand, if your local results show some risks as much worse than they have been in other similar communities, consider that those differences may also have been a matter of chance and you may have been unlucky rather than really different.

**The community itself.**

Your community fire analysis needs a context. Who lives there? What are their ages? What languages do they speak? How much education do they have? If heating fires are a problem, what kinds of heating are common? If cooking fires are common, what types of cooking do they do? What is the housing like? What percentage of the population is struggling financially? Each question gets to characteristics of people who will be the target population for your programs.

As you characterize groups of people, try to accomplish several tasks.

- First, identify high-risk groups – groups of people who account for a disproportionately large share of fires and fire losses.

  Remember the list of characteristics of fires that match up well with specific programs? Most of those fire characteristics are high-risk characteristics.

  High-risk characteristics may be socioeconomic characteristics of households, such as poverty, of individuals, such as age, or of environments, such as a lack of smoke alarms.

  Targeting high-risk groups means the safety value of every individual contact will be greater and your limited resources will produce bigger results. However, the high-risk groups may not account for a large share of the total problem when looking at total numbers. The potential effectiveness will depend on what share of the population those targeted high-risk groups account for and on how much higher their risk is than the average risk for everyone in the city.

- Second, identify groups who can be effectively targeted, for example, because just a few neighborhoods account for a large or at least disproportionate share of the high-risk households. In these situations, a door-to-door home contact program can be conducted efficiently. Targeting groups that are geographically clustered or that frequent the same places (such as schools, senior centers, places of worship or cultural organizations) means the cost per person reached will be lower, stretching your limited resources further.
Analysis for purposes of targeting programs benefits greatly from access to the more detailed information regarding people and households routinely collected by marketing firms. Census data can point to neighborhoods in which poverty is greatest, but a marketing analysis may identify individual homes or apartments. At the end of the day, you may not have access to that kind of information and targeting whole blocks or neighborhoods rather than individual homes may be more cost-effective. Or, perhaps, you believe collecting this very specific household data raises privacy and confidentiality issues. In terms of an overview of what is possible with today’s data and analysis, however, considering this kind of very sophisticated analysis is essential.

Third, you may have groups of people who are not identified as high-risk by statistical evidence but require extra strategy or effort in either adapting programs for them or in your outreach to them. For example, immigrants who lack fluency in English will need materials or presentations in their own language. More importantly, you will need to identify their leaders for guidance on cultural differences. People with disabilities need messages adapted for their particular challenges regarding escaping a fire or alarm warnings. In some instances, you will have to adapt presentations or lesson plans for people with particular learning disabilities.

Look at census data on your neighborhoods for patterns in your target population that may not be captured in fire incident reports. Analyses of fire incident data can identify a neighborhood as high-risk but cannot tell you that the neighborhood has a large poverty population or a large population with common ethnic or national-origin characteristics. Those facts won’t change your findings on what and where the high-risk populations are, but they could be very helpful in customizing programs to work well with the target population.

Fourth, identify high-risk groups whose risks involve common fire problems, such as a lack of working smoke alarms or problems with heating equipment. High-risk groups with similar risks match up well with targeted programs, such as smoke alarm installation programs or hazard-specific educational messages. Targeting a small number of types of fire problems allows you to use a program that is specific enough to be effective but broad enough to cover all of your targeted fire risks.

Look at the narratives from the fires that have the characteristics you have identified as defining your target fire problem. They occurred in the neighborhoods or in the homes of the people you identified as high-risk, and they are the kinds of fires you identified as the major risk for those high-risk populations. You won’t change your basic findings on who is high-risk and which fires to target, but you may notice some deeper patterns that you can incorporate into your programs. For example, your analysis might have led you to focus on home heating fires, but the narratives may suggest a closer look at specific types of space heating equipment. Then, some additional analysis of fire incident data or even census data might confirm the pattern you noticed in the narratives.

If your analysis has led you to focus on a particular group of similar fire incidents, try adding details to those records by matching the records on those incidents with incident records of other agencies and companies – including police reports (for arson fires),
hospital emergency room records (for fires with injuries), and insurance reports (for fires with significant property loss or business interruption costs). This special, after-the-fact analysis may be hindered by confidentiality rules and the effort may be greater than the value of the added information, but occasionally this approach will be especially helpful.

You can also use census data to characterize census tracts by demographics and by the percentage of housing that is dilapidated or otherwise in poor condition by using several different measures of condition. Age of housing or owner versus renter by themselves, for example, are not good indicators of high risk.

A community risk analysis may not be limited to problems where public fire education and related programs are the preferred solutions. These broader analyses can support fire code inspection and enforcement programs and may identify community hazards – locations, operations, or conditions with a heightened potential to start fires or to produce large losses if fire occurs.

- A home inspection program can provide data on community home hazards. If a home inspection program finds widespread problems with damaged cords, broken plugs, or cords running through traffic areas, for example, the department might want to implement an electrical safety campaign even if electrical fires did not surface as a current problem in the fire incident data analysis.

In all of this, the goal of the community fire risk analysis is always the same – to help you identify YOUR community’s biggest problems and YOUR community’s biggest opportunities to improve safety.

If you bypass this analysis, you will likely be left with less relevant and less accurate sources of information for your decisions. You may focus on fire problems that are “in the news” or that are receiving unusual attention nationally because of one or two headline-grabbing incidents. You may focus on programs that are very effective across the full range of fire problems but are not focused or targeted and so may not be the best use of your scarce resources.

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**Write Problem Statements for Potential Target Audiences**

A problem statement extends the analysis used in the community risk profile. It combines (a) identification of a specific target population, (b) identification of the specific fire problem(s) affecting that target population, and (c) additional information about the target population or the fire problem that will be useful in refining the chosen program(s) for greatest effectiveness.

A problem statement provides a basis for estimating how much the program will cost and how much safety it will deliver for that cost. This kind of specificity is essential to motivating everyone whose support and participation will be needed for success. Potential partners will see what you are asking them to do and why their contributions are needed for program success. City management can see why the program is a good investment for scarce resources. The public will be motivated by the realistic prospect of improvement in their lives. The department’s credibility will be enhanced and its vision for the community will become clearer and more compelling.
For all that, the problem statement does not need to be lengthy and probably will be more effective if it is no more than a paragraph or two with figures and perhaps an attachment with more detailed tables.

From the community fire risk profile, the target population will likely be defined as:

- One or more neighborhoods, each defined as a collection of census tracts;
- One or more age groups, probably focusing on children and older adults; or
- The entire city.

The specific fire problem will likely be defined as:

- One or more environmental features (such as smoke alarms or batteries for smoke alarms); or
- One or more specific behaviors (such as ensure that each home has large address numbers, stay in the kitchen when frying on the stovetop, community-wide fire drill, hunt for home hazards with specifics such as extension cords, overloaded outlets, space heaters near combustibles, etc.)

**Building a problem statement around a neighborhood.**

- The analysis should provide a socioeconomic profile of the neighborhood, primarily as an indication of the stresses and challenges faced by the target population, which are likely to affect their ability to respond to the program. They may not have resources to help pay for the program, and they may not have the education, or even the basic literacy, to easily grasp written materials in the program.

- The analysis should provide a profile of leading causes and smoke alarm presence in the neighborhood. Research on causes by census tract have found some evidence of higher percentages of intentional and playing fires in high-risk tracts. This will be important in selecting programs, many of which focus on specific fire causes or are built around increasing the presence of working smoke alarms.

- Including a profile of housing or building stock in the neighborhood may be useful. This could include vacancy percentages or, even better, percentages of abandoned buildings and possibly blocks with multiple abandoned buildings. A profile on percentages of dilapidated buildings may also be useful. Age of housing may be relevant if electrical system fires are a leading cause, because electrical system fires are an exception to the general rule that age of housing is not correlated with higher fire risk. Such a profile could also indicate a need to include partnerships with code enforcement officials or social service agencies that could assist with household repairs.

- Focusing on a neighborhood suggests building a program around door-to-door home contacts. New research conducted by the Tri Data Division of Systems Planning Corporation in the study “Global Concepts in Residential Fire Safety” shows that home visits, including things like smoke alarm installation, home-safety surveys and teaching safety messages, are one of the most effective public education methods. This type of program
could focus on one neighborhood at a time and should be explored as a priority in your community. Most likely, you’ll go beyond your public education/community risk reduction staff and engaging firefighters from the stations in the targeted community

- If this type of program is beyond the reach of your fire department, including a profile of characteristics that would suggest central places where the program could focus to reach many households at the same time may be useful. For example, a high percentage of households with school-age children might suggest working through the schools. A high percentage of people with a shared national origin or religion might suggest working through places of worship.

**Building a problem statement around an age group.**

- The analysis should provide a socioeconomic profile of older adults, primarily as an indication of the stresses and challenges faced by the target population, which are likely to affect their ability to respond to the program.
- People who speak a language other than English at home are more likely to also be older adults. Some older adults may be more resistant to change in general and to working with people not known to them. These points argue for identifying characteristics that can form the basis for partnerships with people older adults know and trust, who might be leaders and people from places of worship, senior centers, and social service networks. Analysis should indicate what fraction of the target population can be reached at such places.
- The analysis should provide a profile of leading causes and smoke alarm presence when older adults are victims of fire. Research on causes by age of victim has shown that older adults have a cause profile similar to younger adults. Research has also shown that older adults are slightly less likely to have smoke alarms.
- The analysis should provide a socioeconomic profile of children, with particular emphasis on the presence of two parents, because this will affect the ability of parents and caregivers to participate in a program for their children.
- School-age children can most easily be reached and educated at school, but high-risk children are mostly preschool children. Analysis should indicate what fraction of the target population can be reached through central places, including day-care centers, preschools, and pediatrician's offices.
- The analysis should provide a profile of leading causes and smoke alarm presence when children are victims. Research on causes by age of victim has shown that playing with fire is a leading cause for fires where small children are victims. Children under age 18 also account for the majority of arrests for arson.

**Building a problem statement around the entire city.**

- Because the target population is so large, identifying effective programs that can be delivered at a low cost per household will be especially important. That puts particular importance on providing an analysis-based specification of the leading environmental conditions and/or behaviors associated with fires and losses in the city.
• The analysis should provide a socioeconomic profile of the city, primarily as an indication of the stresses and challenges faced by the target population, which are likely to affect their ability to respond to the program. They may not have resources to help pay for the program and they may not have the education, or even the basic literacy, to easily grasp written materials in the program.

• The analysis should describe the size of groups in the city who share a characteristic that may make the program more challenging (such as speaking a language other than English at home) but may also provide a basis for partnerships (such as places of worship or social organizations built around that other language or tracing origins back to the nation where it is spoken).

Prioritize Problems

Each problem statement should provide an estimate of the number of fires, deaths, injuries and direct property damage averaged per year involving the specified types of fires and target populations. These are the losses that might be reduced or eliminated by an effective program and pending the identification of candidate programs, they provide the only basis for setting priorities.

Expressing the fires and losses as rates relative to the number of people in the target population may be useful, because the cost of the program will probably be related in part to the number of people targeted and such rates will give an early indication of which problems involve high targeted risk per person and so may provide high risk reduction potential per dollar of program cost.

EXAMPLE:

Big City A Problem Statement

Big City A identified by its own data that there have been an average of 12 fire deaths per year during the years from 2006 to 2010. Of the 60 fire deaths during that time span, 25 percent of the deaths or a total of 15 deaths occurred among older adults ages 65 and older.

The causes of death varied. Three resulted from smoking, four from heating, two from electrical malfunctions, two from cooking, two resulted from arson and two from unknown causes. Fire reports showed that only half of the older adults who had died in the fires had working smoke alarms in their homes. No other population group accounted for as many deaths as those that occurred among older adults.

Fire loss reports for the city also show that the older adults who died lived in varied neighborhoods, primarily in one-, two-, and three-family dwellings or small apartment buildings. The breakdown between home owners and renters among the older adults who died was about equal.

Because the department also provides emergency medical services (EMS), officials looked at other fatal and non-fatal unintentional injuries. They found 80 percent of the fall injury calls were to older adults ages 65 and older. For these older adults, the falls accounted for 10 times as many deaths as fires did and for every death, EMS made an additional 10 responses for injuries.
Wanting to know how their statistics compared with the nation, the analysis team looked at statistical reports from the National Fire Protection Association and found that the leading causes of fire deaths among older adults were smoking, heating, cooking, electrical distribution, candle and intentional (arson) fires. From the Centers for Disease Control and Prevention, the team saw that the leading cause of unintentional injuries and deaths for older adults were falls.

Summary

A community fire analysis identifies the fire problems in your community. It helps you to better understand the various groups of people who live in your community and are most affected by fire. This information derived from the analysis creates the foundation for developing your fire and life safety education programs.
Step 2: Develop Partnerships in the Community

“We don’t accomplish anything in this world alone ... and whatever happens is the result of the whole tapestry of one’s life and all the weavings of individual threads from one to another that creates something.” – Sandra Day O’Connor

Once you have conducted your community fire analysis, developed a community risk profile, and written your problem statement for the specific fire problem and targeted audience, you will need to begin step two to identify appropriate partners to help you accomplish your goals.

Community partnerships and networks are essential for accomplishing your goals. No matter your effort and commitment, making a positive change without help from others will be difficult. Having multiple partners or local networks makes sense in terms of having to identify the fire problem, develop a plan, and implement the solutions. The most successful fire and life safety education programs involve the community in the planning and solution processes.

Developing partnerships involves:

1. Getting support from your internal leadership,
2. Identifying possible community partners, and
3. Forming a community planning team.

Getting support from your internal leadership

When NFPA initiated the Urban Fire Safety Project, one of the recommendations for fire chiefs was that urban fire chiefs should support public fire and life safety education as an important role for the fire department. Public education and its related programs need to be valued as much as inspections, suppression, and training within the department.

Your program will have greater success if you have the support of your fire chief. Your first partners are your fire chief and others within your department who can help you accomplish your goals. Be mindful of the importance of following fire department protocol in presenting fire department officials with your program proposal based on the problem statement as described in Step 1.

Give the fire chief a written description of your fire problem statement (based on your community analysis) and a preliminary idea of the methods you plan to use in developing a solution to the problem. This would also include potential community individuals, agencies or organizations that may be interested in partnering with your department to provide needed resources to develop the program plan, implement program activities, promote the value of the program and evaluate the impact, as well as the outcome of the program. Remember the plan is only preliminary, it is dynamic and will develop once your team of partners is organized and on board. Obtaining this critical initial internal support for your program can lead to additional networking with other partners.
influential people throughout the community. Also, sharing your fire problem information with elected officials, who may have a stake in the program's success, may lead to additional resources and program visibility. This might include city officials, the fire commission, or even the county commissioner.

**Identify possible community partners**

Think teamwork. As with firefighting, community fire safety education is best done by a group. Working alone will consume a great deal of time and resources and is seldom effective in reducing the community's fire problem. The most effective and time-wise approach is to build a partnerships around existing networks.

When people hear “resources,” they immediately think of money. While financial funding is certainly important, money alone will not accomplish everything. Generally, the needed resources fall into four categories: wealth, work, wisdom, and influence.

**Wealth,** of course, is about funding. Every fire safety education program requires funding. Money is needed for materials, events, and purchasing equipment, such as smoke alarms. At times, funding will come from the department's budget. Other times, you may have to go to the community for funding.

In-kind support is a type of wealth that involves resources in lieu of money and may include equipment, printed materials, supplies, and personal time. Donated professional services, such as consultations, program evaluation, and design of educational materials, are all examples of in-kind support.

**Work** involves the people actually conducting the fire safety education program. If, for example, you plan to install smoke alarms in the homes of older adults you will need people who can install the alarms. Often, members of the department will do the work. Other times, you may have to recruit help from the public, other community organizations, or service groups or you may have to create a new organization.

**Wisdom** involves the skills to plan, develop, implement, and evaluate the fire program. If you are lacking in this area, reach out to others. You may, for example, not have any experience evaluating a program. Perhaps a university in your city is experienced in this area and can guide you through the planning and evaluation. You can start with university departments, such as public health or social science departments (psychology or sociology). Or contact NFPA and USFA researchers for ideas. This is a case of using someone else's experience and skills to contribute to the success of the program.

**Influence** involves persuading others to take action or get involved. Think about who these people are in your community and set your sights on signing them up for your program. Where they go, others will follow. One type of influence is political support. Support from elected officials for fire safety education is crucial. Discuss any plans or ideas with elected officials who have a stake in the program's success. This may be a city council, district fire board, fire commission, or county commissioner. These people may know how to obtain additional resources and will often have information important to the program.
Identifying a group of partners who have a stake in the success of the fire safety education program is important. Many people and groups can offer insight into the people who live and work in the community and the fire problems they experience. A community partner is a person, group, or organization willing to join you and address the fire problem. Often, the partners you choose will depend on the specific fire problem. As a leader of the fire safety education program, you should identify who can bring work, wealth, wisdom, or influence to the program and get them involved.

Defining the concept of a community network is also important. A network, as used here, consists of a central organization with existing relationships for a specific purpose in the community. In most cases the central organization will be the fire department. The central organization also may be a the city public health department, a faith organization, a public or private school system, an organization for people with disabilities, a city-wide immigrant organization, or an agency on aging. The identity of the central organization is not as important as whether it has an established network in the community that can be used for fire prevention initiatives.

At this point, you should have selected the highest priority fire problem. Think about which groups in your city are most affected by the fire problem. Consider which organizations or agencies already provide services to these people and who care about the specific fire problem and the people it affects. These people may be the best to be involved in the fire safety education program. Another approach is to find out who has the needed resources to address the problem. You may determine, for example, that your community’s highest priority fire problem involves older adults. You will need to look for area agencies or councils on aging, places of worship or interfaith organizations, senior housing groups, home care associations and others as your partner groups.

Build around existing networks

Start building a team of partners by contacting the people you know in the community who are part of well-established networks and who are well-known, well-established, and trusted in the community. Explain the program and what you hope to achieve. They may be able to identify potential partners. You can also use internet searches and telephone directories to locate organizations. Find out which groups might be interested in a specific fire problem or already address fire problems. Throughout this step, avoid duplicating the effort of other agencies and organizations.

Possible community partners include:

- Members of the community the fire problem affects;
- Groups already interested in addressing the fire problem or similar safety problem, such as firefighter unions, local chapters of the International Association of Black Professional Fire Fighters and the National Association of Hispanic Fire Fighters, block clubs, or housing organizations that are concerned about arson in vacant or occupied homes;
- Health departments, public health personnel, and individual private care providers;
- Places of worship and urban interfaith groups;
- Groups serving people of color, such as the NAACP;
- Public and private school systems and individual schools;
• People or groups who feel the financial impact of the fire problem, including insurance companies, property owners, the American Red Cross, and so on;
• Groups or organizations who provide services or advocacy to older adults or people with disabilities;
• Boys and Girls Clubs of America
• Immigrant and refugee organizations;
• Community service and advocacy groups;
• National Council of La Raza
• Organizations that can help deliver safety messages, including the media. Look at special niche media, such as radio shows in languages other than English, television stations like Univision and Telemundo, or other foreign language networks; and
• Social network informal groups that communicate through Facebook and other social media.

While working with other organizations may seem complicated and cumbersome, failure to obtain the perspective and input of others in the community will greatly limit the success of your program development and outreach efforts. Recruit a core group of leaders with an interest in solving the fire problems. The group will share the responsibility for developing and implementing a quality fire safety education program.

Don’t expect everyone in the community to support your fire safety education program instantly. Many may not even believe that a fire problem exists. Instead, expect them to be part of the solution by educating them about the problem. Your community profile and problem statement are powerful tools, justifying why others should partner with you. Share your vision for the program and possible solutions with community leaders.

The most effective fire safety education programs have community “buy in” by involving the community in the planning and solution processes. The community must understand that a problem exists and that it can be solved. Sharing your collected information in a professional manner will be important. Be sure to explain how you obtained the information and from where. Then work with others to continue building the program.

**Form a community planning team**

Discuss your fire department’s intention of forming a planning team to tackle the community’s fire problem with the leaders and community organizations you identified as potential partners. If possible, try to meet individually with leaders of each group or go to the organization’s business meetings. Meeting individually is more personal and allows more time to answer specific questions. Have some examples on specific resources that the person, group, or organization can provide. More importantly, be prepared to listen to others’ ideas on how they think they can help. Be prepared to answer questions about what you expect from them. The more in-depth you can be, the more likely you will gain their cooperation. When you meet with the person or group to ask if they will join the planning team, also ask for their suggestions for other partners.
Once you have assembled a planning team, schedule a one-hour team meeting with an agenda. Your partners will expect you to use their time efficiently. If needed, ask someone with experience working with groups to help you set the agenda and facilitate the meeting.

Often community planning teams lead to the development of formal coalitions. A coalition is a group of people with different interests who come together to work on a common problem, such as the local chapter of Safe Kids USA, the local chapter of Mothers Against Drunk Drivers, and neighborhood associations. Coalitions usually include representatives from several different groups in the community and lend themselves well to the advancement of fire safety education programs.

**EXAMPLE:**

**Big City A**

Research from the latest census showed that people ages 65 and older made up 15 percent of the total population.

The fire department team sought out the following partners based on their ability to reach older adults.

**The City's Council on Aging**, which was tied into all the senior centers in the city and all the nutrition sites that served meals to older adults. The council estimates it reaches 20 percent of the older adults in the city.

**Urban Interfaith Organization**, which was made up of 500 places of worship. The organization had done its own research and estimates that the percentage of their combined membership in churches, temples and mosques that are older adults was 20 percent. They estimate that their network reaches 10 percent of older adults in the city.

**Big City Home Health Care Association**, which was the home visit organization with the greatest number of staff trained to assist older adults and the greatest number of older adults reached of any home visit group. The fire department chose this group because they wanted to reach many of the older adults who were less likely to attend a group presentation and had health problems or disabilities that would put them at greater risk if a fire occurred in their home. They estimate that this group reaches 15 percent of older adults in the city.

**The International Association of Fire Fighters Local Union** The public education staff realized their numbers of six public education staff would need support from the firefighters at the fire stations to handle smoke alarm installation if they chose this as part of the strategy in reducing deaths among older adults.

**Big City A Chapter of Rotary International** The fire department had worked successfully in the past with the local chapter of Rotary in raising money for their programs. The public education staff had also learned that other cities had some successful programs with Rotary members installing smoke alarms.

**Visiting Nurses Association** Although this association did not reach as many older adults as the home health care association, its members were involved when older adults left local hospitals and still needed care. They estimate that they reach 10 percent of older adults in the city.
The manager of the public education staff got the names of the leaders of each organization and set up appointments with them. In some cases, the leaders referred them to other, more appropriate staff. They worked to get the top decision maker of the organizations, and in most cases they got them.

After public education staff met individually with each leader, they held a meeting of everyone who had agreed to be involved.

Summary

Partnerships are essential to reduce the community fire problem. One person or a single organization cannot possibly reduce a fire problem alone. Fire departments generally rely upon mutual aid from other organizations for fire suppression efforts – apply the same strategy to community fire safety education programs.
Step 3:
Create a Strategy to Solve the Problem

“If you don't know where you are going, you will wind up somewhere else.” – Yogi Berra

Creating a strategy is the beginning of the detailed work necessary for developing a successful fire safety education program. In your strategy, include what will be done, where and how it will be implemented, and who will be responsible for each part of the program. During this step, you will also establish an evaluation plan to measure effectiveness.

Being a large city, you may identify a specific fire problem that is citywide (such as cooking or heating related fires or intentional/arsenal fires), yet your priority problem may focus on populations in cluster areas or neighborhoods. These areas in your city may have high fire incidents, deaths, or injuries and include a dense population of very young children, older adults, immigrants, or people with low income or education. Starting your program in these neighborhoods first may have the biggest impact on your problem and population at risk and demonstrate the best cost/benefit in the use of your resources.

Before beginning to create your strategy, the planning team should review your community analysis and problem statement so everyone on the team has a clear understanding of the community and the fire problem. If you are targeting a specific cluster area or neighborhood, reaching out to community leaders to understand their attitudes regarding fire and life safety, safety knowledge and understanding of the fire problem at hand is important. Listening to these leaders will help you understand how to reach the audience. You can also visit the leaders of the groups you are targeting or leaders who provided services to the groups you are trying to reach. Whether you’re implementing a city-wide program or one in a neighborhood, many people can help you understand the needs and characteristics of the people you are trying to reach.

Match community programs to problem statement(s)

Present your team with the community fire analysis you identified in Step 1, your community profile, priority problem statement, and the sources of the information. This is the start to developing your overall program strategy.

Fire incidents don’t “just happen”. Often, multiple events leading to, during, and following the incident may warrant interventions. This could include human behavior, such as not installing or testing smoke alarms, leaving cooking unattended, leaving matches and lighters in the reach of young children or placing space heaters too close to furniture, bedding or other flammable materials. Identify the intervention that will best affect the identified fire problem, target populations and locations for best intervention opportunities. While examining your data with your planning team, you may find other issues or audiences to add to your priority. Alternatively, you may find that you have existing programs in the community that you may include in your overall intervention strategy. This is the opportunity to learn what, if any, program or initiatives are in place
through other groups or organizations, as well as share ongoing programs in your department. Discuss if some of these existing efforts and resources can be directed toward this new combined team effort.

Create a program goal that includes a statement about the problem and what the team wants to accomplish.

**EXAMPLE:**

*Big City A Program Goal*

*Older adults account for 25 percent of all fire deaths in the city for the past five years. The deadly fires had a variety of causes.*

*Of the EMS calls for fall-related injuries, 80 percent were to older adults ages 65 and older.*

**Outcome goal:** To reduce the number of older adult fire deaths by 50 percent within three years and to reduce the number of older adult fall-related emergency calls by 5 percent in three years.

**Process goal:** To reach 25 percent of the older adult population with one facet of the Remembering When program in three years and 50 percent of older adults in five years.

## Estimates

Estimate program impact, program costs, and re-prioritize your problem/audience area of focus based on risk reduction benefits relative to costs.

Delivering an effective program will depend on a number of factors. First, determine the number of residents in the cluster area, neighborhood, or population your program will reach. You will also need to know the total number of similar residents throughout the city so you can determine what percent of the specific audience will be reached. Other factors to consider are:

- The number of city-housing units and single-family homes occupied by the identified audience;
- The number of materials (such as smoke alarms);
- Available personnel, including the fire department, service providers, and trained volunteers;
- Estimated amount of time needed for the project versus the overall amount of time estimated in your goal statement; and
- Cost to deliver this program in the estimated amount of time, which will include staffing and training, supplies, equipment, transportation and fuel, implementation and marketing, and evaluation.

Identifying the above factors with your team will help establish a budget proposal that will demonstrate the resources needed to implement your program. Be aware that agencies use a specific budget cycle and that requesting support from an organization or agency beyond their approval dates may suspend your program for an entire year. Examples of commonly used budget cycles include:
At this time, you may want to estimate your program impact to evaluate whether the program you are planning is not only doable, but also cost effective. What knowledge gain, behavioral change, and modifications to living conditions or lifestyles would you expect following the implementation of your program? How would this change the number and severity of fires in your identified area and with your target population short term or long term? Once you have taken the steps to identify the cost categories involved in providing the necessary services you anticipate for your program, discuss how realistic your plan is given your existing resources so you have the opportunity to acquire the necessary support in a timely fashion to implement the program as planned. Alternatively, perhaps you may need to re-evaluate the scope or outreach of your program and discuss an alternate plan. Another discussion could involve re-examining your community analysis and fire problems and selecting an alternate fire problem at this time until you acquire resources.

Select or create your program

Many fire safety programs exist that address multiple fire safety issues and target populations. To develop a fire safety program from scratch requires a lot of time, money, and expertise. Reviewing existing programs that address the same fire problems that you’re dealing with and that target the same high-risk populations can often lead to conserving resources in your implementation plan. Some programs have been carefully designed and tested and offer a documented evaluation summary on how effective the program was in reducing particular fire problems with the identified target population. In reviewing available programs, look for the following program components:

- A presentation for delivery to a target population (may include talking points, digital slides, videos, props, and so on.);
- Printed handout materials with safety messages to address the fire safety issues key to your program (accurate, concise, and easy to read or understand);
- Press releases to inform the media (providing your targeted population with information about the fire problem and the actions people can take to prevent fires) – some programs may include prerecorded public service announcements to distribute to your local television and radio stations or through the internet on your department website;
- An evaluation tool, such as a survey, pre- and post-tests, a home safety checklist, etc.

Where can you find existing fire safety programs?

Your research can begin locally and within your state. Neighboring fire departments may be experiencing similar fire problems and may already have a proven, successful program in place. Your state fire marshal’s office may also be able to provide information about the programs that they help support or know of in the state as they relate to your fire problem. A number of states have organizations for fire and life safety educators or inspectors with the mission of public edu-
cation that can help you in your search. Don’t forget that other local organizations (local and state health departments, insurance companies, hospitals/burn units, universities, area agencies on aging, school health and safety departments, fire related local and statewide groups, American Red Cross Chapters, disaster and emergency management groups, and so on.) may have educational programs or program materials worth reviewing.

On a national level, a number of organizations and agencies have developed, tested, and distributed fire safety and prevention information and materials. Some of these resources are at no cost, while others are for purchase. Most of these programs and program materials are well designed and have been evaluated for effectiveness. Some of these national organizations include:

**National Fire Protection Association (NFPA)** is an excellent resource for programs (such as *Remembering When™ - A Fire and Fall Prevention Program for Older Adults*), materials, videos, brochures, ideas and suggestions for implementing a fire safety and prevention program in your community, targeting a wide variety of fire issues and target populations. Visit www.nfpa.org for free information, reports, and downloadable fact sheets, presenter information, presentations, current data, and a special focus on activities for young children at www.sparky.org.

**United States Fire Administration (USFA)** has a variety of programs and free program support materials (reports, brochures, videos). Order materials at www.usfa.dhs.gov.

**The Center for Disease Control (CDC)** now provides fire safety education materials. To get more information on available current materials log on to www.cdc.gov/health/fire.htm.

**Safe Kids, USA** formerly known as National Safe Kids, this organization is dedicated to eliminating childhood injuries, including those caused by fire. Safe Kids, USA works through state and local coalitions to help fire safety education programs. Learn more at www.usa.safekids.org.

In larger metro cities, you may experience a variety of challenges that an “off the shelf” program will not address or that you need to adapt to meet your target population (non-English speaking population, cultural group, people with disabilities, low literacy, etc.)

Any existing program you use in your city must directly apply to the fire risks that you and your team are addressing. You and your team may want to consider asking the following questions in reviewing existing programs and materials:

*How well does the program specifically address your fire problem?*

In the Big City A example, the team decided to use NFPA’s *Remembering When™ - A Fire and Fall Prevention Program for Older Adults* as their program. In this program, 16 fire and fall prevention behaviors are taught. There was no arson prevention message and arson was the cause of two of the deaths to older adults. The Big City A team added their own arson prevention message to the group presentations, home visits and education to go with the smoke alarm installation.

*How appropriate is the fire safety education program for your community?*

If the program does not fit your community’s characteristics, say a focus on farm or rural area fire safety, you may not be able to use it in a metro city.

*How appropriate is the fire safety education program for your target population?*

Does the program meet the language level needs, terminology, and physical abilities of your audience?
*Is this fire safety education program even possible, considering your available resources?*

If the program exceeds your available or anticipated funding, requires too many people to implement, or requires specific training that is unavailable within your timeframe, you may need to consider an alternate plan.

*Is the organization that designed and developed the fire safety education program actively involved in fire safety?*

Organizations whose primary mission is to prevent fires often produce better programs.

*Does the organization that developed the program offer support?*

Some organizations and groups offer training or assistance in the use of their programs, which can be very helpful if you have minimal experience with fire safety education programs.

Once you and your planning team review the possible fire safety education programs available, decide which ones, if any, you might consider. If the program of choice requires funding that you do not have, discuss how the team can raise the needed funds. Frequently, the temptation is to seek out only “free” programs, but free does not always equal “quality, accuracy, or audience appropriateness.”

If you select a program that needs to be adapted to your specific needs, fire problem, and target population, be sure not to violate copyright laws. You may need to contact the original developers to discuss the appropriate steps to take in altering or using the materials in a way other than intended to maintain the integrity of the program and how to recognize the original designers/developers. This still might be a more cost-effective approach to developing your program than starting from scratch in designing your own materials.

If, once your review is complete, no existing programs satisfy your needs and goals, even with a revision or adaptation, consider developing your own program. Remember, this approach will take a lot of time and cost and should be your last resort option. You may want to approach your university, college, or other community organizations that are familiar with developing community-based safety programs.

*What resources will you need to implement the program?*

Once you and your planning team have decided on a program, you’ll need to determine the resources required to implement it. Existing programs may identify the resources you need to implement the program (as with the NFPA Remembering When™ - Fire and Fall Program for Older Adults), but many do not. The planning team will discuss and decide the commonly needed resources to implement the program successfully. These will include:

- Funding to purchase the program, support materials, equipment such as smoke alarms, any need for paying personnel, and so on;
- The number of volunteers to assist in program delivery (In Big City A, this would be people to do the group presentations, home visits; and smoke alarm installations.)
- Where will any included presentations be held? Is there a cost involved? (In Big City A, this could be an accessible place where older adults gather, such as fellowship rooms or halls of places of worship, senior centers, luncheon programs for seniors at the local parks
and recreation building, and so on.) Will you need to print materials? (Brochures, presentation notices, invitations, home survey forms, appointment and evaluation forms, etc.)

In making your decisions, be willing to research the options, be creative and use the available new technology. Often, local city businesses will provide some of the needed props or printing services once you educate them about the fire problem and how their support will help address it. Be sure to keep a running list of your supporters so that you can recognize and thank them appropriately for their support during and after you implement the program. Their “buy in” to this community effort will demonstrate their commitment to the safety of its residents and allow them to be a part of the solution.

**Develop the evaluation strategy**

At the end of your program implementation, how will you and your team know if you successfully met your goals and objectives? Thinking about, and planning, an evaluation strategy before you begin to implement the program will allow you to assess your progress from the beginning to end. Ongoing evaluation also provides an early identification of ineffective or inappropriate intervention strategies, allowing the team to re-evaluate the activities or use of resources. Most grants available for fire safety education programs require that you demonstrate what type of evaluation process you will be using throughout and at the end of your program timeline. Also, remember that the community and all of the stakeholder agencies involved in supporting the program deserve to know about the success of your program as it progresses. This will also help to continue receiving support from the community to expand your program to other areas or to address other major fire problems you identified in your updated community analysis.

The evaluation plan will include your problem statement, the goals and objectives of your program, including the specific tasks to be performed, the timeline for the completion of the tasks, and the benchmarks that will be used to monitor the progress and success of the intervention strategy. The information, data, and community analysis that you completed in Step 1 provide a baseline. The accuracy of your record keeping will track your activities (presentations, home visits, smoke alarms installed, etc.), use of resources, and the incidents of fire.

The objectives that support the goal allow for three levels of evaluation:

- The process portion of the evaluation measures the effectiveness of the program activity, the outreach effort, scheduling and the team members.
- The impact portion of the evaluation measures knowledge gain and behavior and environmental changes and tracks changes in policy and legislation.
- The outcome portion of the evaluation measures end results. Examples include changes in the occurrence of the specific fire risk issue, dollar loss, and the number of injuries and death as compared to your baseline data.

Remember that this step is not where the evaluation actually occurs. Your planning team will decide which evaluation strategies to use, whom will be responsible, and when and where. Your
evaluation strategy need not be complicated. The work is detailed, however, and involves time and record keeping skills. Most metro city fire departments maintain a database that you can work with in keeping the information about your program. If you or members of your planning team have little experience with evaluating a community-based program, seek help from the staff of your local or state health department, school district, or universities that may have professionals trained in evaluation.

EXAMPLE:

Big City A

When the first meeting of the partner organizations was held, the fire department presented the background and history of the fire deaths, injuries and emergency runs responding to fires and falls among older adults. The public educators had done research on available national and state programs and brought some of the prototypes to the meeting.

The new coalition reviewed prototypes of programs and decided to use NFPA’s Remembering When™: A Fire and Fall Prevention Program for Older Adults and engage in all three of the Remembering When Program’s strategies: group presentations, home visits and smoke alarm installation. They decided to seek three more partners: the city’s department of public health to help with outreach and expertise of fall prevention and two local hardware retailers. They wanted to have someone install grab bars in the homes of the older adults where they would install alarms. Rotary International also agreed to raise money to fund the purchase of smoke alarms. The International Association of Fire Fighters (IAFF) local and the chief worked out a plan that firefighters would install smoke alarms in local homes for which they received referrals from public education staff and public health workers conducting group presentations. People who attended the group presentation could sign up to have smoke alarms installed in their homes. Referrals would also come from the home health care and visiting nurses. Older adults from any part of the city could also call a hotline to request alarms.

The coalition had originally planned on finding an organization that would install grab bars in the bathrooms of older adults. In subsequent meetings, the team modified their plan because they could not locate an organization that would do the installations and the cost of the grab bars was too high. The partner retailers offered to donate night lights and smoke alarms instead. Firefighters would hand out night lights when they installed alarms.

The team decided that the education part of the program would be presented by the fire department personnel in group presentations, the home health care staff when visiting the elders’ homes and local firefighters when installing alarms. Because a few older adults had died from intentionally set fires, the team decided to add a message on community arson watch to the Remembering When program’s standard messages.
Summary

Creating an intervention strategy for your selected fire problem involves a team approach and much detailed work to achieve success. Base your plan of action on a review of your fire risk data, the target population affected by the fires, location, and available resources. This strategy will include what will be done, where it will be done, how it will be done, and who will be responsible for doing it. Taking the time to research and identify existing programs that are well developed, proven successful, and appropriate for your fire problem and audience needs is time well spent. This can save you a tremendous amount of time and be very cost-effective. To complete this step in your planning process, your intervention strategy should identify an evaluation component that measures the effectiveness of the process and the program.
Step 4:  
Implement the Strategy in the Community

“We can begin by doing small things at the local level, like planting community gardens or looking out for our neighbors. That is how change takes place in living systems, not from above but from within, from many local actions occurring simultaneously.”  -- Grace Lee Boggs

Implementing the strategy involves putting the solutions you developed in Step 3 into action. In a sense, Step 4 is where the “rubber meets the road” for your fire safety education program. In the previous steps, you’ve already determined, or at least discussed, much of what is included in the implementation strategy.

The implementation plan provides the following details:

- How the program will be implemented, including who will do the work and when;
- The roles and responsibilities of each team member;
- Checklists that identify the needed implementation steps;
- Any economic incentives you’ve been able to include in your plan; and
- Any potential problems.

An action plan is a step-by-step outline of what you’ll need to get the program started. Sometimes a chart can help plan the implementation and monitor progress.

*Action Planning Chart*

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<th>ACTION PLAN</th>
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<td>Program Goal:</td>
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<th>Step #</th>
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The actions in the implementation step are:

1. Establish responsibilities and a timetable of activities.
2. Market the program to the community.
3. Start the program activities.
4. Monitor the program’s progress.
5. Periodically report the program’s progress.

The planning team and the members of the target groups develop the implementation plan. Often, the planning team is able to develop the plan without any additional assistance or membership. Resist any temptation to put the program into action without taking time to develop an implementation plan. Identifying who is responsible for each task is an important part of the plan. Those involved in implementing the program must be clear on what the team expects of them. A common problem among fire safety education programs is confusion about who is responsible for what and when it should be done. Your implementation plan will reduce or eliminate this confusion.

Remember, you’ll need many different tasks done to make the fire safety education program a reality. You’ll need some people, for example, to deliver the actual fire safety education presentations to the community and others to track the activity, do the reports, and so on. One important role of the planning team is to match peoples’ skills with the needed tasks.

**Establish Responsibilities and a Timetable of Activities**

You must coordinate the implementation of the program with team members completing the tasks in the proper order. To do this, the planning team should develop a predelivery checklist of everything that must be done before fully delivering the fire safety education program. Think of the predelivery checklist as your checklist for success.

Sample checklist Urban Fire Safety Education Program Predelivery Checklist

1. Recruit firefighters or volunteers, such as retired firefighters, teachers or health care professionals, to deliver fire safety education presentations.
2. Schedule fire safety education presentations at senior centers, senior or public housing, or local churches.
3. Make copies of the handout materials.
4. Send a notice regarding the presentations to local churches, newspapers, radio stations or neighborhood associations.

In order of completion, the checklist identifies:

- The people you should notify about the implementation of the fire safety education program, including team members, target groups, and any other interested parties; and
• The equipment and materials needed, which you identified in Step 3, and appointments and meetings you need to schedule, including fire safety education presentations that are part of the program.

• The checklist is a road map for the tasks that you must complete. It is not, however, foolproof. Expect additional needs to come up as the program gets underway.

Rarely does anyone implement a community fire safety education program without any problems. Some problems, however, are pretty common and can be expected. Have a backup plan for these anticipated problems.

To identify potential problems, bring the program team together with representatives for the target groups. Once you’ve assembled the group, have an open discussion about the potential issues. Brainstorm problems and feasible solutions. Involving team members who will be directly involved in the implementation of the fire safety education program is especially important, as their experience will be invaluable.

Market the Program to the Community

The program can work only if the community, particularly the target group, is aware of it and its purpose. Make sure you keep the community informed of the program and its progress. Many people in the community will be interested in the program, including members of the planning team, elected officials, sponsors, fellow firefighters, members of the target groups, the general public, and members of the program team involved in the implementation.

The program’s marketing information should inform people about the effectiveness of the program in achieving its goal of reducing fire in the community. In other words, you want to let people know the program works! Any future fire safety education program may depend on how well you market the results of this program. When providing information to the public, always use familiar, easy-to-understand terms. Have someone who was not involved in developing the program review the information for clarity. Make any needed changes before releasing the information.

Communicate the following information to the community:

• The details about the programs’ activities, including the number of presentations, the time and location of the presentations, and so on;

• The goal of the program;

• The organizations and individuals who helped develop and implement the program;

• The reasons for the program;

• Any anecdotal information about those involved in the program, including members of the target groups; and

• Any evidence that the program is working to reduce the number of fires.

You can use several methods to get information to the public. Most likely, no single method will be enough; use at least two simultaneously to ensure everyone gets the information. Some methods are more common than others.
Local media Generally, your local media is the best way to reach the general public, whether through news stories, advertisements, or letters to the editors. Meet with a local reporter to explain the program and why you need their help. Be specific about what information you want to get out and who you want the information to reach.

If you've chosen a prepared fire safety education program with news releases, use them. Providing local media with a prewritten story greatly increases your chances of getting the story printed. If necessary, make some changes to the story to tailor it to your community. Also, always provide pictures when appropriate and available.

Social media Using the web and mobile technologies can turn your communication into an active dialogue. Use Facebook, Twitter, YouTube or a Blog on your fire department webpage to reach out to residents in your community. Keep your entries short and easy to understand and be sure to invite followers to comment. Video presentations, activities, or media events to get the message out, raise awareness of residents and motivate the community to support your initiatives. It's a great way to get information out quickly and timely.

Direct mail For fire safety education programs that involve a target group in a specific part of the city, a direct mail piece sent to every resident in that part of the city may be effective. The local chamber of commerce, the city clerk, or a local utility may provide address lists. Keep your mailings to two pages or less, and make sure the reader can read it and understand it within a few minutes. As a rule, people will ignore or throw away anything that takes longer than 2 to 3 minutes to read. Direct mail materials may need to be translated into several languages to reach a neighborhood with a large immigrant population.

Meetings One of the most effective methods for communicating your information is through meetings with residents, which may include church meetings, community groups, and so on. A meeting lets you answer questions and emphasize the importance of the fire safety education program. Consider recruiting someone to help get information to the community, such as someone from your local newspaper, college or university, health department, or a local business with this kind of media communications experience and training.

Some tasks focus on the team rather than the public. One such task is recognizing team members. Successful fire safety education programs are the result of hard work by people committed to improving the community. These people are willing to sacrifice their time and expertise for the program’s goal.

Recognize anyone involved in developing and implementing the program, giving the highest recognition to those who contribute the most. Ways to recognize the efforts of the team include certificates of appreciation, gift certificates to local businesses, items that can be used at home or work, letters of appreciation by local elected officials, and appreciation dinners or other community events. If possible, plan your recognition of team members at a public or community event where a large segment of the community gathers, such as an annual dinner, a parade, or a sporting event. The large community presence gives extra meaning to the team members and shows the community the importance of the program.

Regardless of the recognition method, make your recognition sincere and meaningful and send the message that you and the community valued the sacrifice and hard work. Meaningful recog-
tion emphasizes the importance of the contribution and the program’s mission. If you do not recognize team members, they may feel you’ve taken advantage of them and that the community as a whole minimizes their efforts.

**Start the Program’s Activities**

When you and the team have developed the final program, put everything the team has worked on to use in the implementation. Follow the program implementation plan to avoid any confusion or problems. Use the action plan to guide the implementation. Also, follow through with responsibilities and schedules.

Piloting your program on a smaller scale first is a good idea. For example, set a goal for the first one to three months of your program. Keep good track of all your activities. Bring your team back together to look at the experiences—what worked well, what problems kept you from reaching your objectives, and so on. Make necessary adjustments early on in the program.

For example, perhaps you have a plan to reach a particular immigrant community in your city. You have materials translated and plan on speaking at their places of worship. You find that people really like the presentations at churches, but the educational materials in the translated language are above the reading levels of your targeted group. Getting this feedback early on will give you a chance to make changes in your materials before you deliver them to a wide audience.

Communication among the team members is critical to the implementation. Keep team members informed on the progress of the implementation, as well as any issues that arise. Personal face-to-face communication is the best, but e-mail will work, as well. Also, consider periodic meetings to discuss the program to provide the team an opportunity to address any problems and come up with appropriate solutions.

**Monitor the Program’s Progress**

Remember even after your piloting state you will need to monitor the progress of your fire safety education program by following the action plan. Everything needed to monitor the program should be in place before you implement it. Following through with commitments and responsibilities is sometimes all you’ll need.

To monitor progress, visit with team members actually doing the program, who can give you timely, direct feedback, as well as anecdotes helpful for the evaluating and marketing the program to the community.

**Periodically Report the Program’s Progress**

Throughout the implementation of your program, periodically communicate progress to the program team and the community. The program team includes not only those working directly on the program, but also any elected officials, appointed officials, and community leaders who supported developing the program. The community includes the target groups, as well as the community at large.
Direct communication, including verbal updates at meetings, is the most effective way to report progress to the program team. When verbal updates are not possible or timely, use written or e-mail communication, keeping it concise, succinct, and not more than one page.

The local media is a great outlet for communicating with the community and target groups. Again, keep your information concise and succinct and provide an update only when you have something worthy to report. Too-frequent reports lose their impact. In a sense, your progress report should be worthy of a headline. Report the information of interest to the program team and to the community, including:

- Human interest stories of how the program prevented a fire or injury to a local family;
- Completion of major benchmarks in the program, such as installing 500 smoke alarms in the first month;
- The completion of a program goal or objective;
- The accomplishments of the program at the end of a chosen period, such as the 2-year anniversary;
- Award of a major grant or other resource; and
- Recognition of the program by a government group, such as the office of the mayor, the city council or the fire department award program for volunteers and fire prevention personnel. Remember, the information must be timely – old news is no news.

Finally, monitoring the progress of your program may mean revising the program. If you are not making progress toward your goals, you and the team may have to revise the original plan.

**EXAMPLE:**

**Big City A Implementation**

Big City A decided to begin their program with a three-month trial in the north side neighborhood. During this time, the public education staff trained home health care workers that served this area, which was the poorest part of the city. Fire safety education staff also worked with the council on aging and the urban interfaith organization and started giving group presentations in senior centers and places of worship. In the first two months, they gave 20 presentations. Firefighters from fire stations serving the north side were trained on proper smoke alarm installation. One of the hardware stores donated the alarms and the Rotary contributed to the purchase of additional alarms and printed materials. Firefighters installed smoke alarms in homes during the second month of the pilot as they started getting referrals.

The planning team also sought the help of some media partners. The representative of a popular radio show and reps from two of the network television stations agreed to join the coalition. Their role was to develop a city-wide media campaign to:

- Share information about the program and its strategies, particularly efforts in the north side neighborhood; and
- Help advertise the group presentations and the smoke alarm hotline.
The media agreed to publish the fire and fall messages in neighborhood papers and publish photos and stories of group presentations. They worked with the fire department on public service announcements using the behavioral messages.

After the first three months, the planning group convened monthly to monitor progress. They made a few alterations in the program. The urban interfaith organization and the home visitors identified elders that needed the materials translated in five foreign languages. The group downloaded the Remembering When materials from NFPA’s website in the languages they needed.

Some of the home visitors also reported that including the 16 Remembering When behaviors and the one additional arson prevention behavior from the Remembering When program was cumbersome when they did their home visits because they also had their regular duties to perform. The coalition worked with the home visitors to reduce the number of behaviors addressed in the home visits to four fall prevention and four fire prevention. The fire safety educators who gave the group presentations, however, reported that they had no difficulty presenting all of the behaviors so they did not alter their presentations.

After three months, the team expanded the program, including the alterations, to other neighborhoods. They trained the visiting nurses on the program so they could begin making referrals. Firefighters from fire stations throughout the city were trained on the program and followed up on referrals for smoke alarm installation. There was such a demand for group presentations throughout the city that leaders in the urban interfaith organization, the council on aging and Rotary were trained to deliver the program.

For more information and tips on marketing your fire safety education program and your fire department to the community, order a copy of the USFA manual Strategies for Marketing Your Fire Department Today and Beyond at no cost through the USFA’s website www.dhs.gov.

**Summary**

Implementing the strategy involves putting the plan into action in the community. Sometimes, you’ll need to revise the program for continued progress. Marketing the program to the community is an important part of implementation that you should not overlook. Monitoring the progress of the program and preparing regular progress reports are important, as well.
Step 5:
Evaluate the Results

“The only man who behaves sensibly is my tailor; He takes my measurements anew every time he sees me, while all the rest go on with their old measurements and expect me to fit them.” – George Bernard Shaw

The primary goal of the evaluation process is to demonstrate that your fire safety education program is reaching the target groups in the community and is achieving the desired results. In other words, evaluation is all about determining whether you achieved the program’s goal. So much is at stake in the evaluation process that giving it the appropriate effort is critical.

Often, people overlook, or intentionally skip, the evaluation step. Fire departments generally give three reasons for not evaluating fire safety education programs – fear of working with statistics, fear that the evaluation may identify problems in the program and make the program look bad, and lack of evaluation experience.

Many people believe that evaluation involves difficult, complex math formulas and calculation, which is simply not true. Evaluation involves identifying the current problem, determining the future fire loss you are working towards, making some comparisons, and reaching some conclusions about the results of the program. Simple math is more than adequate.

Many fire departments and planning teams don’t know how to evaluate a fire safety education program. Fortunately, help is readily available from numerous sources, including the USFA, the NFPA, local teachers, college and university social science and psychology departments, and public health officials. Available resources include evaluation manuals and handbooks, reports of successful programs, and staff members who can help design an evaluation strategy.

A good evaluation process will prove that your program achieved its goal. Failure to evaluate may result in a less-than-successful program. Seeking help from others who regularly conduct evaluations will be a wise investment.

The actions in the evaluation step are:

1. Collect program data.
2. Compare data.
3. Modify the program when needed.
4. Report program results.

Evaluation involves comparing the community's fire problem after the program with the fire problem before the program.

For evaluation to be effective you must have accurate information on the local fire problem. You should have addressed this in Step 1. The old saying, “garbage in, garbage out” certainly applies to the quality of your evaluation process. Before proceeding, review the information from Step 1: Conduct a Community Analysis.
EXAMPLE:

Big City A Evaluation

In the Big City A the team decided to evaluate the program in several ways, including a process evaluation keeping careful track of all the outreach.

They developed simple reporting forms for every step of the program. Members who provided group presentations used reporting sheets to keep track of the presenters; date and location of the presentation; local place of worship or senior center contact person; and number of people attending. Presenters also kept notes of their comments and feedback they received.

Coalition members tracked their home visits and referrals and submitted their tallies to the fire department's public education staff.

Firefighters installing alarms also used a survey from the Remembering When leader's guide to track homes in which they installed alarms, what the alarm situation was before they installed new alarms, and the number of alarms they tested and installed.

Also, the city's department of public health created a short five-question survey that they conducted among random participants in all facets of the program.

After two years of running the program, the group determined it had reached 10 percent of the older adult population with at least one facet of the program. In their strategic plan they sought to reach another 40 percent in the following 3 years.

After 3 years, the number of older adults dying in fires was reduced by 50 percent and the number of emergency calls for falls to older adults was reduced by 5 percent. Program organizers were hopeful that their program had made a difference even though this kind of impact is often difficult to prove.

Evaluate two areas, the first of which is the program's activity, which includes the amount of work done by the team members. The Big City A scenario, for example, had the goal of reaching 25 percent of the older adults in the city with at least one facet of the program (group presentations, home visits or smoke alarm installation) within three years and reach 50 percent within five years. Keep in mind that activities don't always reduce the fire problem. Generally, well designed activities will reduce the fire problem. Sometimes, though, the activities do not reduce the fire problem. In short, don't assume that doing lots of things will always reduce the fire problem.

Second, evaluate the impact of the program. The impact is the effect the program has on the actual fire problem. In the Big City A scenario, for example, the team had hoped to reduce the number of older adult fire deaths by 50 percent in three years and to reduce the number of older adult emergency calls relating to falls by 5 percent in three years. (Remember that the number of older adult deaths for the five years before the implementation of the program was 15 or an average of 3 a year.) The impact of the program will be the actual reduction of those fire deaths and the actual number of emergency calls due to older adult falls after three years of the implementation of the Remembering When program. If, during the three years of the program, the city only experienced four deaths the actual reduction would be more than 50 percent. Always remember that impact measures the actual change in the fire problem the planning team identified in the community profile. You cannot determine impact without accurate data on the fire problem.
Keep in mind that even if deaths have gone down you may not know that those changes are attributed to your program alone.

**Collect Program Data**

In Step 1, your planning team developed a community profile that described the fire problem in your community. In that process you identified a specific fire loss, which may have included the number of fires, the types of fire, the people affected by the fires, and so on. This starting-point profile information is known as baseline data and you will use it in the evaluation process.

The profile information on your community’s fire problem may include the frequency of the fires; location of the fires; the time, day, and month of the incidents; the cost in terms of economic loss, loss of life, and injuries; and the cause of the fires.

**Compare Data**

Doing your evaluation well and early can provide the framework to set up a successful fire safety education program. Establish a starting point – or baseline – and identify a destination or goal – or benchmark. You identified the baseline data in the community profile and you developed the benchmarks, or program goals, in Step 3. The benchmarks are the desired change to result from the fire safety education program.

A review of the Big City A scenario helps illustrate this concept.

**Modify the Program When Needed**

Monitoring the progress of your program is important, which is why the evaluation strategy measures both activity and impact. Following through with each can provide tangible evidence that the fire safety education program is moving towards its goal. The evaluation must be valid and objective to measure exactly what you want to measure without bias or prejudice.

Usually, impact evaluation is a long-term process and, as such, is difficult to complete before the program ends. Measuring the impact of the program on the fire problem may take three to five years. As the program progresses, you can, however, measure the program activity by comparing the actual program activity against the goals of the program. This comparison can provide you and your team with valuable information about the progress of the program.

If one of the program goals, for example, was to delivery 35 fire safety education presentations a year to elementary school children and you only delivered 10 in the first year, you know you need to modify the program. Maybe you need to change your presentations to the schools or maybe you need to recruit more educators. Regardless, you know that you have to change something to get the program back on track.

Of course, if the end-of-program evaluation results show that you did not achieve your goals, the planning team will have to figure out why. The team should be able to identify what to change and incorporate those changes into the next program or in the modification of the current program.
Report Program Results

Share results of the evaluation process with the planning team, your fire department, the target groups, political leaders and decision makers, and the community in general. Once your team has developed some conclusions from the evaluation, provide that information to the planning team. In fact, holding a team meeting to review and discuss the results is best.

At this point, you and your team should have decided whether to modify the fire safety education program. If the team decides modification is necessary, inform everyone involved of the decision and the reasons for the modification.

Once you’ve completed the program, report the program result to the target audience, the organizations involved, and the community. Use the conclusions from the evaluation process as the basis for the report and let them determine the report’s length.

Generally, the program report should include

1. The problem statement;
2. The community profile;
3. The program’s goals;
4. An overview of the program, including partners and supporting organizations;
5. A summary of the activities undertaken during the program;
6. Highlights of the program, including anecdotal stories;
7. The impact of the program in terms of the fire problem;
8. A summary of the conclusions; and

Summary

Some steps are essential to perform a successful evaluation. First, you and your team must commit to the evaluation knowing that the process will take time and effort. Then, if you need help, ask someone with experience in performing evaluations. You must complete the evaluation as you designed it. Keep an open mind and be prepared to make changes based on the findings of your evaluation.
Summary

Many urban fire departments shy away from starting fire safety education programs due to a lack of resources and expertise in fire prevention. Every community has the ability to develop and implement a successful fire safety education program to reduce its fire problem. In urban communities, these programs may focus on a certain population or neighborhood. Starting small and having a good implementation plan will lead to success. Fire prevention requires a commitment by the fire department and community leaders, as well as the community working together to solve the fire problem.

Successful programs usually follow a five-step process:

Step 1: Conduct a Community Analysis.
Step 2: Develop Community Partnerships.
Step 3: Create a Strategy to Solve the Problem.
Step 4: Implement the Strategy in the Community.
Step 5: Evaluate the Results.

Working as a community to follow the five-step process makes identifying and reducing the local fire problem possible. This process will result in a safer community and a stronger relationship between the fire department and the citizens of the community.
Addendum

Bibliography


Suggested Resources

- Building Collaborative Partnerships, Chapter 1, North Central Regional Educational Laboratory, Learning Point Associates”. http://www.ncrel.org/sdrs/areas/issues/envrmnt/css/ppt/chap1.htm
Appendix A
History of NFPA Urban Fire Safety Project and Recommendations

Historical Perspective...Using a planning process to decide what issues to address in your prevention and public education programs is not a new concept for the fire service. The Public Fire Education Planning – A Five Step Process was originally published in 1977 by the National Fire Prevention and Control Administration (now the U.S. Fire Administration) detailing an effective planning model for fire educators to develop and implement fire safety education programs. This basic approach is still applicable today. The scope of the problems, changes in culture, and new technologies prompted a revision of this document in 2002, as well as a specific version entitled Public Fire Education Planning for Rural Communities: A Five-Step Process (2007) that was developed jointly by the National Fire Protection Association and the FEMA/U.S. Fire Administration to specifically address the needs of rural communities.

In 2006, NFPA identified a need to more effectively reach high-risk populations (preschool age children, older adults, and multi-cultural communities) in large cities with populations of 250,000 or more with fire safety messages and practices. In 2007, the NFPA Board of Directors chose the following corporate goal:

To partner with fire departments from two major cities in North America to identify and define the causes of fire deaths and injuries among high-risk populations and the unique challenges associated with reducing/eliminating those deaths and injuries.

Working with leadership within the departments, develop strategies necessary to address the identified challenges.

The goal will be met when a report detailing effective strategies is completed and distributed through all metro cities and other communities where results may be transferable.

NFPA worked with fire departments in two cities on this project – Louisville, Kentucky, and Milwaukee, Wisconsin. The project examined causes of fire deaths and injuries among their high-risk populations and challenges in reaching these high-risk audiences; surveyed existing public education, smoke alarm installation, and outreach programs; and identified what was working and what could be replicated in urban areas with similar populations and challenges.

Among the many challenges identified through this Urban Fire Prevention Initiative was the difficulty communities had in reaching older adults, especially those who might not participate in a group presentation. Getting an organized fire and life safety curriculum adapted into a large school system was a challenge, as was reaching people of all ages in low-income neighborhoods who may not be able to maintain their homes or install safety equipment. Another challenge facing the fire departments was reaching immigrant groups with fire safety education and practices. The fire departments had to learn about individual cultures, their attitudes toward safety and how to communicate when language barriers existed.
Strong fire department leadership that emphasizes fire and life safety public education programs is critical to success. The report also recommended gaining support from fire organizations, such as the International Association of Firefighters and others. Specific to programs, NFPA found that the most effective urban smoke alarm programs were those in which firefighters installed the alarms and provided fire safety and escape information and identified other home hazards during their visits. The most effective programs were year-round, visible within the community, and had firefighters’ participation as a part of their on-going, regular activities. In some of the cities, fire department administration and unions considered these activities as part of each firefighter’s professional development.

The following recommendations were offered to fire departments serving urban communities based on NFPA’s Urban Fire Safety Initiative.

**National Fire Protection Association – Urban Fire Safety Project Recommendations**

(February 2010)

The recommendations from the Urban Fire Safety Project team correlate with the challenges and strategies identified with this project. Many ideas used in the recommendations came from the fire department and community leaders from the cities in which NFPA conducted interviews.

In presenting the recommendations, the project team realizes that urban fire departments may not be able to implement all recommendations. On the other hand, many urban fire departments are already doing a number of the things NFPA recommends. The project team hopes that departments will choose one or two of the recommendations to put into action.

1. Smoke alarm installation programs should be a part of the service that urban fire departments provide for their residents. If possible, these programs should be a part of the fire department structure and involve firefighters in the active role of installing. Developing skills and receiving training in this activity should be part of the formal firefighter career development.

2. Include fire safety education as part of a child’s formal education. The ideal methodology is to use a formal curriculum in the schools taught by classroom teachers. Support from the fire department is important to motivate teachers to include fire safety education as part of their curriculum.

3. Partner with the area agency on aging, community centers, and places of worship to reach older adults. Working with these partners, provide group presentations, home visits through the partner agencies, and smoke alarm installation in the homes of older adults as a part of the overall smoke alarm installation program.

4. Analyze numbers of deaths and residential fires by census tract to identify those geographic areas that should receive special emphasis when delivering fire safety programs. Determination could be by numbers of fire deaths, injuries or fires in the community or, with absence of sufficient data, could be based on income levels, low levels of education or other characteristics that NFPA has learned are associated with higher fire-death rates. Once neighborhoods have been identified, develop and implement an educational campaign focusing on at least two of the leading causes of fire deaths in those neighborhoods. Or the campaign could focus on at least two of the leading causes of fire deaths in North American urban areas, such as smoking, heating, cooking, arson and electrical fires.
5. Every fire department should have a plan to reach the immigrant population. If possible, one or two people should be identified to receive specific training on cultural issues in immigrant communities and how to best address them. The fire department should work to provide educational materials in formats and languages appropriate for the varied immigrant population.

6. Fire department officials should use proven methods of community outreach to identify the key leaders and organizations that serve the individual targeted communities. Listen to what they have to say regarding effective delivery to their community members. Use this process to reach the diverse populations the fire department serves. (C. Rosomando, Rosomando & Associates, Reaching High Risk Groups: The Community-Based Fire Safety Program, Washington, D.C., 1996.)

7. Local fire departments and the national fire service should partner both nationally and locally with lending institutions and housing and community organizations to develop strategies to prevent home foreclosures and abandoning of homes.

Note: In all appropriate recommendations, NFPA will provide information to community leaders on the importance of home sprinklers in one- and two-family dwellings.


NFPA Urban Projects As a result of the work done in Louisville, Kentucky, and Milwaukee, Wisconsin, and the Recommendations of NFPA’s Urban Fire Safety Initiative Report (2007), NFPA started working with cities on special public education projects. These projects were conducted in partnership with the Columbus, Ohio, Division of Fire Department in 2008; the Philadelphia, Pennsylvania, Fire Department; the Cleveland, Ohio, Division of Fire; and the Hamilton, Ontario, Canada Emergency Services in 2009 and El Paso Fire Department in 2010/2011. Each city chose at least two of the recommendations from the Urban Fire Safety Project Report to work with NFPA to accomplish in their cities.

Urban Fire Safety Task Force In 2007, NFPA also established the Urban Fire Safety Task Force, whose goal is to reduce fire deaths and injuries in urban areas with populations of more than 250,000 through public education and community outreach. The task force examines the unique challenges facing fire and life safety educators in large cities with populations of 250,000 and more and develops strategies to address those challenges and shares them with large city fire departments. The task force also looks at how to implement the recommendations of the 2007 Urban Fire Safety Report in an increasing number of North American cities.
Appendix B
Methodology and Definitions Used in “Leading Cause” Tables

This methodology is applied only to structure fires, including mobile property used as a fixed structure. (Incident types in the 110-123 range). Exclude the confined fire incident types (113-118) from the query.

The cause table reflects relevant causal factors that accounted for at least 2 percent of the fires in a given occupancy. Only those causes that seemed to describe a scenario are included. Because the causal factors are taken from different fields, some double counting is possible. Percentages are calculated against the total number of structure fires, including both confined and non-confined fires. Bear in mind that every fire has at least three “causes” in the sense that it could have been prevented by changing behavior, heat source, or ignitability of first fuel, the last an aspect not reflected in any of the major cause categories. For example, several of the cause categories in this system refer to types of equipment (cooking, heating, electrical distribution and lighting, clothes dryers and washers, torches). However, the problem may be not with the equipment but with the way it is used. The details in national estimates are derived from the U.S. Fire Administration’s National Fire Incident Reporting System (NFIRS). This methodology is based on the coding system used in Version 5.0 of NFIRS. The NFIRS 5.0 Reference Guide, containing all of the codes, can be downloaded from http://www.nfirs.fema.gov/documentation/reference/.

Confined structure fires (incident type 113-118) should be analyzed separately. If not, they can be treated as separate entries in the table. Incident type 118 – “Trash or rubbish fire with no flame damage to structure or its contents” is the most problematic as these fires do not fit as neatly into a scenario as the others.

Cooking equipment and heating equipment are calculated by summing fires identified by equipment involved in ignition and relevant confined fires. Confined fires will be shown if they account for at least 2 percent of the incidents. Confined cooking fires (cooking fires involving the contents of a cooking vessel without fire extension beyond the vessel) are identified by NFIRS incident type 113.

Confined heating equipment fires include confined chimney or flue fires (incident type 114) and confined fuel burner or boiler fires (incident type 116). The latter includes delayed ignitions and incidents where flames caused no damage outside the fire box. The two types of confined heating fires may be combined or listed separately, depending on the numbers involved.

Intentional fires are identified by fires with a “1” (intentional) in the field “cause.” The estimate includes a proportional share of fires in which the cause was undetermined after investigation, under investigation, or not reported. All fires with intentional causes are included in this category regardless of the age of the person involved. Earlier versions of NFIRS included codes for incendiary and suspicious. Intentional fires were deliberately set; they may or may not be “incendiary” in a legal sense. No age restriction is applied.
Fires caused by **playing with heat source** (typically matches or lighters) are identified by code 19 in the field “factor contributing to ignition.” Fires in which the factor contribution to ignition was undetermined (UU), entered as none (NN) or left blank are considered unknown and allocated proportionally. Because factor contributing to ignition is not required for intentional fires, the share unknown, by these definitions, is somewhat larger than it should be.

The heat source field is used to identify fires started by: **smoking materials** (cigarette, code 61; pipe or cigar, code 62; and heat from undetermined smoking material, code 63); **candles** (code 66), **lightning** (code 73); and **spontaneous combustion or chemical reaction** (code 72). In NFIRS 5.0, one grouping of codes encompasses various types of open flames and smoking materials. In the past, these had been two separate groupings. A new code was added to NFIRS 5.0, which is code 60: “Heat from open flame or smoking material, other.” NFPA treats this code as a partial unknown and allocates it proportionally across the codes in the 61-69 range, shown below.

- **61. Cigarette**;
- **62. Pipe or cigar**;
- **63. Heat from undetermined smoking material**;
- **64. Match**;
- **65. Lighter: cigarette lighter, cigar lighter**;
- **66. Candle**;
- **67. Warning or road flare, fuse**;
- **68. Backfire from internal combustion engine. Excludes flames and sparks from an exhaust system, (11); and**
- **69. Flame/torch used for lighting. Includes gas light and gas-/liquid-fueled lantern.**

In addition to the conventional allocation of missing and undetermined fires, NFPA multiplies fires with codes in the 61-69 range by

\[
\text{All fires in range 60-69} \\
\text{All fires in range 61-69}
\]

The equipment involved in ignition field is used to find several cause categories. This category includes equipment that functioned properly and equipment that malfunctioned.

To compensate, NFPA treats fires in which Equipment Involved in Ignition = NNN and heat source is not in the range of 40-99 as an additional unknown. In other words, if the heat source indicates operating equipment was involved, an entry of “none” for equipment involved in ignition is considered an unknown.
To allocate unknown data for EII, the known data is multiplied by

\[
\text{All fires} \\
(\text{All fires} - \text{blank} - \text{undetermined} - [\text{fires in which EII = NNN and heat source <> 40-99}])
\]

In addition, the partially unclassified codes for broad equipment groupings (i.e., code 100 - heating, ventilation, and air conditioning, other; code 200 - electrical distribution, lighting and power transfer, other; etc.) were allocated proportionally across the individual code choices in their respective broad groupings (heating, ventilation, and air conditioning; electrical distribution, lighting and power transfer, other; etc.). Equipment that is totally unclassified is not allocated further. This approach has the same downside as the allocation of heat source 60 described above. Equipment that is truly different is erroneously assigned to other categories.

**Cooking equipment in non-confined fire** refers to equipment used to cook, heat or warm food (codes 620-649 and 654). Fire in which ranges, ovens or microwave ovens, food warming appliances, fixed or portable cooking appliances, deep fat fryers, open fired charcoal or gas grills, grease hoods or ducts, or other cooking appliances were involved in the ignition are said to be caused by cooking equipment. Food preparation devices that do not involve heating, such as can openers or food processors, are not included here. A proportional share of unclassified kitchen and cooking equipment (code 600) is included here.

**Heating equipment in non-confined fire** (codes 120-199) includes central heat, portable and fixed heaters (including wood stoves), fireplaces, chimneys, hot water heaters, and heat transfer equipment such as hot air ducts or hot water pipes. Heat pumps are not included. As noted in A proportional share of unclassified heating, ventilation and air condition equipment (code 100) is included here.

**Electrical distribution and lighting equipment** (codes 200-299) include: fixed wiring; transformers; associated overcurrent or disconnect equipment such as fuses or circuit breakers; meters; meter boxes; power switch gear; switches, receptacles and outlets; light fixtures, lamps, bulbs or lighting; signs; cords and plugs; generators, transformers, inverters, batteries and battery charges.

**Torch, burner or soldering iron** (codes 331-334) includes welding torches, cutting torches, Bunsen burners, plumber furnaces, blowtorches, and soldering equipment. A proportional share of shop tools and industrial equipment (code 300) is included here.

**Clothes dryer or washer** (codes 811, 813 and 814) includes clothes dryers alone, washer and dryer combinations within one frame, and washing machines for clothes. A proportional share of unclassified personal and household equipment (code 800) is included here.

**Electronic, office or entertainment equipment** (codes 700-799) includes: computers and related equipment; calculators and adding machines; telephones or answering machines; copiers; fax machines; paper shredders; typewriters; postage meters; other office equipment; musical instruments; stereo systems and/or components; televisions and cable TV converter boxes, cameras, excluding professional television studio cameras, video equipment and other electronic equipment. Older versions of NFIRS had a code for electronic equipment that included radar, X-rays,
computers, telephones, and transmitter equipment.

**Shop tools and industrial equipment excluding torches, burners or soldering irons** (codes 300-330, 335-399) includes power tools; painting equipment; compressors; atomizing equipment; pumps; wet/dry vacuums; hoists, lifts or cranes; powered jacking equipment; water or gas drilling equipment; unclassified hydraulic equipment; heat-treating equipment; incinerators, industrial furnaces, ovens or kilns; pumps; compressors; internal combustion engines; conveyors; printing presses; casting, molding; or forging equipment; heat treating equipment; tar kettles; working or shaping machines; coating machines; chemical process equipment; waste recovery equipment; power transfer equipment; power takeoff; powered valves; bearings or brakes; picking, carding or weaving machines; testing equipment; gas regulators; separate motors; non-vehicular internal combustion engines; and unclassified shop tools and industrial equipment. As noted in Appendix A, a proportional share of shop tools and industrial equipment (code 300) is included here.

**Medical equipment** (codes 410-419) includes: dental, medical or other powered bed, chair or wheelchair; dental equipment; dialysis equipment; medical monitoring and imaging equipment; oxygen administration equipment; radiological equipment; medical sterilizers, therapeutic equipment and unclassified medical equipment. A proportional share of commercial and medical equipment (code 400) is included here.

**Exposures** are fires that are caused by the spread of or from another fire. These were identified by factor contributing to ignition code 71. This code is automatically applied when the exposure number is greater than zero.