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SHORT GUIDE TO EVALUATING LOCAL PUBLIC FIRE EDUCATION PROGRAMS



**FEDERAL EMERGENCY MANAGEMENT AGENCY
United States Fire Administration**

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WHY EVALUATE PUBLIC FIRE EDUCATION PROGRAMS?

Evaluating the effectiveness of a public fire education program is important for three reasons:

1. To determine if the program is worth repeating in the community or elsewhere;
2. To elicit feedback on how to improve the program; and
3. To provide a rationale for financial support of public fire education programs.

The U.S. Fire Administration's (USFA) Office of Fire Prevention and Arson Control has prepared this short guide in evaluating local public fire education programs to offer the fire service tools to evaluate public fire education programs. USFA also has prepared individual evaluation guidelines for use with specific USFA campaigns, such as *Check Your Hot Spots!*, *Curious Kids Set Fires*, *This is Fire* and *Let's Retire Fire*. The individual guidelines demonstrate how to apply the general lesson in this short guide to specific USFA programs.

THE GOAL OF EVALUATION

The primary goal of the evaluation process is to show that a public education campaign on fire prevention is successful in reaching and motivating its target audience to practice fire prevention. Because the purpose of such a program ultimately is to reduce the number of fires, and the resulting deaths, injuries, and dollar losses—in order to evaluate a program's effectiveness, it is helpful to ask: did the program change the community's fire prevention efforts?

The best way to measure the effectiveness of a prevention program is to show the degree to which the program reduced fires, deaths, injuries and/or dollar loss.

USFA'S Short Guide to Evaluating Public Fire Education Programs

The strongest possible evidence of a public education program's success is to demonstrate that it changed one or more of these factors: fires, deaths, injuries and/or dollar loss.

While demonstrating a reduction in fires, deaths, injuries, and dollar loss is the ideal measure of program effectiveness, there are practical problems in the real world. For example, it is difficult to show that it was a specific program that caused the change in behavior. Secondly, if the factors outlined above did not change after a program was conducted, how to show that it did help?

Even if changes in fire, death and injury rates, and/or dollar losses cannot be demonstrated, it still is possible to measure a program's effectiveness-although other measures do not provide as compelling evidence.

As shown in Table 1 (page 9), there are several ways to measure the effectiveness of a public education program. If a change in fire statistics cannot be shown, it still is possible to gauge the effectiveness of the program by looking at several scenarios that assist a fire public education program in being successful.

1. First, it is imperative to **reach** a substantial part of the public or target group with the safety message.
2. Second, the information presented must be clear enough for the audience to **understand** what actions to take or behaviors to change.
3. Third, the lesson must be persuasive enough to make people **act** by changing fire safety practices.

For example, people may act by maintaining a smoke detector, installing a fire sprinkler system, or buying fire-resistant upholstered furniture. People also act by not leaving food unattended by the stove, not smoking while in bed or feeling drowsy elsewhere in the home, or not overloading electrical sockets.

If a program persuades people to take the actions that make a difference, then fires, death, injuries, and/or dollar losses should be reduced, either immediately or over time. If they are not reduced, it may mean that the fire prevention actions targeted in the program were not the most important ones.

Measuring changes in behavior patterns is extremely useful in showing that any end impact was indeed caused by the public education program.

If a change in the number of fires is noticed after a public education campaign is started, it may or may not be attributable to the program. However, if it can be shown that 1) a majority of the community was reached with the message, that 2) a tested sample of people showed a sharp increase in knowledge of what to do in a fire, and that 3) a significant portion of the community now exhibit the proper behavior, then a much stronger argument can be made that it was indeed the fire prevention program that caused the change in the bottom line. In any event, these three scenarios should be measured regardless of the statistical outcome.

OUTREACH

Measure outreach by showing that a percentage of the target group was reached. This is an important fire indicator of whether the program is likely to impact on the bottom line.

It is important to state more than the absolute number of people who were reached. There is a significant difference between reaching 1,200 people out of 2,000 people, versus 1,200 people out of one million. Reaching 12 third-grade classes is impressive, unless there are 200 third-grade classes in the city.

KNOWLEDGE

Measure changes in knowledge by conducting pre- and post-tests.

One way to measure fire prevention awareness is to conduct pre- and post-testing in the community. An even better approach is to test retention several weeks, months, or even a year after a program was conducted. If a correct action is remembered at the end of the class in which it was taught, but not two weeks later, it is unlikely that much was accomplished.

BEHAVIOR

Measure changes in fire safety behavior by conducting a random survey before the public education campaign starts, and repeating the survey after the campaign is completed.

A citizen survey can involve simply asking a number of citizens one or two questions on the telephone. For example, before starting a program that advocates checking smoke detectors at least once a year, ask people how often they check their detector, and then ask the same question to another sample group after the program.

Measure change by visiting a sample of homes with a fire safety checklist of hazards; by surveying school children on their home fire safety practices; or by having them follow through with a home fire safety checklist.

Some cities have demonstrated that the number of fire safety hazards are significantly reduced following public education lessons that involve checking home hazards or individuals participating in other activities.

END RESULTS

Data on fires, death, injuries, and dollar losses are available from incident reporting systems in use at most fire departments.

MAKING COMPARISONS

There are a variety of ways to use comparisons to mark changes resulting from the program being evaluated.

Compare changes in the community before and after the introduction of a program.

If a community had a relatively high incidence of fires or deaths before a public education program and a much lower incidence after the program started, the program's effectiveness would be clear.

Compare a community with other similar communities that did not have the same program.

It is possible to demonstrate the success of a program by showing that all of the communities in a given area experienced no increase in the percentage of working smoke detectors, but that there was a small increase in a specific community because of the special resources devoted to that problem. Or, fires might be on the rise in a specific region because of increased use of woodstoves, but the increase in a specific area is less than in nearby communities because of concentrated education efforts.

It is possible to compare similar neighborhoods within a community.

It also is possible to compare similar neighborhoods within a community. One way would be to start a pilot program in schools in one area, and then see if the program made any difference

relative to the areas of the community that did not have the program.

In each case here, the goal is to compare a group that has the program to another group that does not. The principle is similar to testing out a new medicine by providing it to only one of two groups closely matched in characteristics and then checking to see which group does better.

ANECDOTES

Anecdotes can be a valuable tool to show that a public education program worked.

Anecdotes should be well documented, with testimonials specifically stating that information gained from a public education program helped avert injury or death from fire.

Several stories have much more power than a single one, which could be dismissed as an exception. Anecdotes in combination with statistics present the strongest case of all.

For example, several years ago, the Northlake, Illinois, Fire Protection District instituted a 10-week fire safety school program for second- and fifth-grade students. To date, there have been five "saves" that were attributed to his program, such as that of a ten-year-old girl who escaped from a fire in her home by crawling low in smoke and exiting by a side door. She ran to a nearby restaurant to call the fire department.

Another incident had a group of teenagers starting a fire while experimenting with a can of kerosene. One teenage boy slipped and fell into a flaming puddle. He panicked and ran, fanning the flames. A friend tackled him and rolled him on the ground to put out the flames. The hero credited his fifth-grade fire safety class with teaching him the right thing to do.

TAILORING MEASURES TO YOUR PROGRAM

Look at the particular changes in knowledge, behaviors, or bottom-line statistics that reflect the specific content of the fire safety messages being delivered.

If the program's focus is unattended cooking fires, look for changes in the number of cooking fires, not just the change in total number of fires.

Many prevention programs are aimed at a particular group in the community, such as senior citizens, school-age children, or people living in a target area. In these cases, look for changes in fires, injuries, or awareness for that specific group, not for the total population.

OUTSIDE FACTORS

Take into consideration some of the outside factors that can affect aspects of the fire problem.

For example, consider whether it was particularly cold or warm in recent years when studying fires related to wood heating. Don't forget to take into consideration population changes when analyzing data that has been collected over several years.

Look at data on a per capita basis, because that takes changes in population into account.

A constant number of fires during a five-year period while population has increase fifteen percent may not seem like a decrease, but in per capita terms it is a very impressive drop.

RESOURCE LIST**Practical Program Evaluation for State and Local Governments,**

Harry Hatry et. al., The Urban Institute, Second Edition,
1981, University Press of America, 4720 Boston Way,
Lanham, Maryland 20706.

Proving Public Fire Education Works, Philip Schaenman et. al.,

TriData Corporation, 1990, 1500 Wilson Boulevard, Arlington,
Virginia 22209.

Public Fire Education Evaluation Guide, National Fire Academy,

Federal Emergency Management Agency, 16825 South Seton
Avenue., Emmitsburg, Maryland 21727.

TABLE 1

WAYS TO MEASURE PUBLIC EDUCATION PROGRAMS

Aspect Measured	Examples of Evaluation Measures
Program Outreach	Percentage of population (or a subgroup) receiving public education materials. Percentage of seniors receiving safety lecture. Percentage of school children with x hours of safety instruction per year.
Awareness, Knowledge	Percent of population knowing how to extinguish a grease fire. Percentage of public that can use extinguishers. Percentage of public aware of need to crawl low in smoke. Test scores before and after education.
Behavior, Environment	Percentage of households with working smoke detector. Percentage of households with fire sprinklers. Percentage of chimneys cleaned at least annually.
End Results	Number of deaths, injuries, dollar loss or fires per capita. Anecdotes detailing saves linked to programs.